EXPLAINING WELFARE DEVELOPMENT IN EAST ASIA BY USING SET-THEORETIC METHODS

East Asia in Transition

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Doctor of Philosophy

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Social Policy and Social Work

May 2016

Abstract

After Gøsta Esping-Andersen published his classic thesis *The Three Worlds of Welfare Capitalism* in 1990, comparative welfare research entered a flourishing period. Compared to this, the comparative study of East Asian welfare systems has remained relatively underdeveloped. Particularly, during and after the Asian financial crisis in 1997, East Asia's economic and social structures came under strain, and their social progress faced many challenges, which sparked new debates regarding the crisis and its social consequences. The classic Productivist Welfare Capitalism (PWC) thesis faced a fundamental challenge as part of these debates. Drawing on the PWC thesis, this thesis theoretically and empirically explored the welfare developments and reforms of East Asian states in this context. The analysis of welfare systems focuses on the debates of the distinction between 'productive' and 'protective' dimensions of welfare. As such, six key policy fields, education, health-care services, family policy, old-age pensions, housing and the protective labour market policy, of six states, China, Hong Kong, Japan, South Korea, Singapore and Taiwan, over the past two decades are explored by set-theoretic methods. First, employing fuzzy-set ideal type analysis (fsITA) it is argued that it is inappropriate to talk about a single, homogeneous welfare model in East Asia. East Asian states have distinctive patterns of welfare development often combining 'productive' and 'protective' welfare policies. What is more, after the 1997 Asian financial crisis, social protection became a more important aspect of welfare systems across East Asian states. Second, the reasons for the diverse developmental trajectories are examined by employing fuzzy-set qualitative comparative analysis (fsQCA). Here, the findings suggest that in contrast to the PWC thesis, economic growth was not a necessary condition for welfare development in East Asia. Instead, it is argued that welfare development can occur under both weak and strong socio-economic conditions in combination with demographic conditions and the level of globalisation. This thesis thus advances current debates in the literature on East Asian welfare models and development and sets the stage for future research.

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Acknowledgements

First and foremost, I would like to express my sincere gratitude to my supervisor, Dr Stefan Kühner, for his genuine interest in this project, for his continuous support of my PhD study and for his patience, motivation and immense knowledge. His guidance helped me throughout the time of researching and writing this thesis. Many thanks also go to Professor John Hudson for his insightful comments and encouragement.

I have also received useful feedback from participants at several conferences, including the East Asian Social Policy Research Network (EASP) International Conference in Singapore; the Social Policy Association (SPA) Annual Conference in Sheffield and the Network for European Social Policy Analysis (ESPAnet) Workshop in Mannheim. I am especially grateful to Professor Patrick Emmenegger from the University of St Gallen in Switzerland for some very useful comments and suggestions regarding the methodology section of my research. Professor Yeun-wen Ku from the National Taiwan University also offered suggestions on some of the empirical work in this thesis.

My sincere thanks also go to Professor Carsten Schneider from the Central European University in Hungary and to Professor Claudius Wagemann from the Goethe University in Frankfurt for their knowledge and their suggestions regarding the methodology of this research.

Many thanks go to my family, my mother and my father, especially to Di. Thank you for your support and understanding. I would also like to thank all my friends who encouraged me to strive towards my goal.

Finally, I give thanks to the members of staff in the Department of Social Policy and Social Work and ReCSS at the University of York. Thank you for supporting and advising me during my studies in York.

Author's declaration

All of the work contained within this thesis represents the original contribution of the author. Her work has not previously been presented for an award at this, or any other, University. All sources are acknowledged as References.

Some of the material presented within this thesis has been published in the following papers:

John Hudson, Stefan Kühner, and Nan Yang (2014), "Productive Welfare, the East Asian 'Model' and Beyond: Placing Welfare Types in Greater China into Context", *Social Policy and Society*, 13, 2, 301-315

Nan Yang (2016), "East Asia in Transition: Re-examining the East Asian Welfare Model Using Fuzzy Sets", *Journal of Asian Public Policy*

Chapter One

Introduction to the thesis

Since Esping-Andersen (1990) published his milestone work *The Three Worlds of Welfare Capitalism* in 1990, scholars have continued to question whether East Asian states could be categorised into his welfare regime typology (see, for example, Aspalter, 2006; Gough, 2001; Holliday, 2000, 2005; Esping-Andersen, 1997). There were fierce debates regarding the existence of a homogenous East Asian welfare model that covers differences between cases (Kwon, 2005, 1998; Goodman *et al.*, 1997; Aspalter, 2006). While some scholars strongly rejected this idea (Goodman *et al.*, 1998; Mishra, 1995), most others agreed that East Asian states have some similarities in their welfare systems, giving credence to the notion of an East Asian welfare model (Holliday & Wilding, 2003; Holliday, 2005, 2000; Kwon, 1997; Goodman & Peng, 1996).

The key points of social policy in East Asia are its predominant economic concerns and the limited degree of autonomy (Holliday, 2005, 2000). Welfare initiatives were made on the basis of accelerating economic growth. Hence, scholars argue that as well as the three welfare styles proposed by Esping-Andersen (1990), there is a fourth, the productivist world of welfare capitalism in East Asia (Holliday, 2000). However, during and after the Asian financial crisis, East Asia's economic and social structures have been under strain, and their social progress has been facing challenges, which has sparked new debates regarding the crisis and its social consequence.

The productivism thesis has been confronted with a fundamental challenge as part of these debates. Some East Asian states have reformed their welfare systems and started to provide more generous social benefits. For example, in the case of the Republic of Korea (hereafter Korea), the extent of welfare has been expanded dramatically after the crisis (Hwang, 2012). Wilding (2008, p. 29) argues that the Korean welfare model is more like a hybrid type that somewhere between purely productivist and 'pure'

welfare state. Indeed, after examining Korea's productive welfare, Kuhnle (2004, p. 61) argues that Korean welfare system may have 'more in common with the "Nordic" or Scandinavian, "social-democratic" welfare regime than any of the other European and Western types'.

However, many of those who identified and supported the productive East Asian welfare models continue to hold their earlier position. For example, although Holliday (2005, p. 147), the founder of the productivist thesis, recognised that after the financial crisis, the leading East Asian economies "reveal their true social policy colours", he still claimed that the productivist concept remains "plausible and useful" for analysing East Asian social policy systems. Kwon (2005b, p. 494) also notes that

> *"the change in the overall goal of economic policy, and a shift toward democratic politics, has made the developmental welfare state more inclusive in both Korea and Taiwan. What remains unchanged is that social policy is set and used for economic development, even though social inclusion is now considered and an important social policy goal".*

Aspalter (2011, p. 741), too, maintains his earlier view, indicating that the level of direct redistribution is low in East Asia. The redistribution

> *"takes on a more indirect form – it is directed toward growth-generating investment in education, health care, and public housing, but also increasingly social assistance ...social policy ...the key ingredient to stable and continuous economic growth".*

Hence, due to these debates and the ambiguity of the existing literatures regarding East Asian welfare regimes, it is necessary to re-examine the welfare regimes of East Asian states in depth and with up-to-date information.

In addition, during the last two decades, the socio-economic environments have changed dramatically in East Asia. The ageing population has become a considerable challenge. Moreover, urbanisation, changes in family structure, globalisation and democratic progress all have impacted in different ways on the development of welfare

systems in the region. It is， therefore， interesting to see how the reforms have proceeded and to examine the real driving forces behind welfare reforms in East Asia.

1.1 Overview of economic and welfare development in East Asia from 1990 to the present

Tables 1.1 and 1.2 give an overview of some basic data of economic and social development in East Asia. The six states exhibit a series of broad similarities. However, if we look at the core data of these states (Table 1.1), it is easy to acknowledge that there are also some significant differences among them.

Regarding geographical size, China is even larger than the total area of the other five states put together. In contrast, Hong Kong and Singapore are both city-states. Indeed, Hong Kong is not even a state technically (Holliday & Wilding, 2003a). Of these six states, China is nearly 25 times larger than Japan, which is the second largest among the six. Its land area is almost 13,848 times larger than that of Singapore. The populations are also very diverse (*see* Table 1.1).

The populations of all the states have increased during the last decade, but in different proportions. Singapore's population has grown by a quarter, from four million in 2000 to five million in 2010, while Japan's has almost remained the same - its population growth rate is below 0.5%.

Regarding the size of its population, China has the largest population within the group again. Hong Kong and Singapore are still much smaller than others. However, they are both much more densely populated, and this difference causes different living standards in these states.

The population structures of the six states are not substantially different. The birth rates declined during the last decade in all six societies. Japan has the largest proportion of elderly people, which is 10% more than the other five states. Hong Kong has the youngest people within the research group. However, there are no marked

differences between the states expect for Japan. Japan again has the smallest proportion of youth, which is almost 10% less than in the other states.

There has been a slight increase in the rate of urbanisation within the group, except in China, Hong Kong and Singapore. Hong Kong and Singapore, as city-states, remain 100% urbanised. China has gained 178 million more urban citizens during the last ten years. One main reason for this could be the immigration of rural workers which has become one of the most important social issues in China in recent years. All these diversities create different demands on social policy.

The unemployment rates remained lower than 5% in all six societies during the past two decades, which is comparatively much lower than those of Western countries[1]. Hong Kong, Korea and Singapore worked well in reducing their unemployment rate from 2000 to 2010. While in the other three states, the rates slightly increased.

In economic terms, there are also significant differences. In 2010, China was the largest economy among the six. Its GDP in 2010 was over twice that of Japan, although in 2000, Japan's had been slightly higher than China's. Hong Kong and Singapore have the smallest GDP. The economic development rhythms are quite diverse between the states as well. During the last decade, the GDP of China has increased fourfold from 2,987.95 billion to 10,124.44 billion US dollars, while during the same period, Hong Kong and Singapore both doubled their GDP. The GDPs of Korea, Taiwan and Japan increased as well, but by less than 100%.

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[1] The average of unemployment rate of OECD member states was 6.73% in 1990. It continued increasing to 8.36% in 2010 (the World Bank, 2014)

Table 1.1 Basic geographical population and economic data for East Asian states, 1990, 2000, 2010

	Year	China [a]	Hong Kong	Japan	Korea	Singapore	Taiwan
Area (sq.km.)		9596961	1092	377915	98480	693	35980
Population (millions)	1990 2000 2010	1135.2 1262.65 1337.83	5.7 6.67 7.07	123.5 126.87 127.45	42.86 47.01 49.41	3.02 4.03 5.08	20.23 22.28 23.16
Population ages 0-14 (% of total population)	1990 2000 2010	28.02 25.48 19.07	21.49 17.2 11.51	18.31 14.62 13.36	25.62 20.96 16.43	21.46 21.46 17.4	27.1 21.1 15.7
Population ages 15-64 (% of total population)	1990 2000 2010	66.04 67.52 72.73	69.82 71.80 75.75	69.74 68.20 63.95	69.40 71.70 72.43	72.94 71.18 73.59	66.7 70.3 73.6
Population ages 65 above (%of total population)	1990 2000 2010	5.94 7.01 8.19	8.70 11.01 12.74	11.54 17.18 22.69	4.98 7.34 11.14	5.60 7.36 9.01	6.2 8.6 10.7
unemployment rate (% of total population ages 16-65)	1990 2000 2010	2.5 3.1 4.1	1.3 4.9 4.3	2.1 4.7 5.1	2.4 4.1 3.7	2 4.4 2.8	1.7 3 5.2
Degree of urbanisation (%)[b]	1990 2000 2010	26 36 49	100 100 100	77 79 91	74 80 83	100 100 100	53 56 59
GDP ($bn, ppp)	1990 2000 2010	902.39 2987.95 10124.4	97.63 176.11 327.22	2372.76 3294.69 4326.44	341.25 808.4 1422.89	55.53 136.01 293.95	- 451.98 824.67

Note: [a] Excludes Hong Kong, Macao and Taiwan

    [b] Degree of urbanisation = urban population as % of total population

    -    Data not available

Sources: ADB (2000); DGBAS (2013); The World Bank (2012)

In addition, when talking about economy in East Asia, the Asian economic crisis in 1997 is probably the most important economic event in the region of the past few decades. All East Asian high-growth economies suffered unprecedented economic and financial hardship. These states experienced a rapid and sudden fall in economic growth (*see* Figure 1.1), devaluation of currency values, stock market decline, and capital flight.

Figure 1.1The GDP growth trends of East Asian states, 1995-2005

The GDP growth trends of East Asian states, 1995-2005
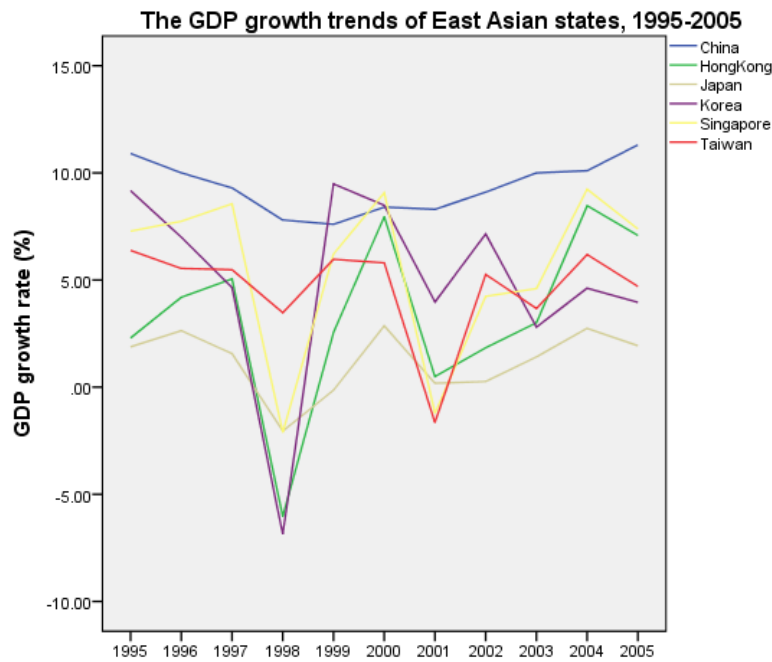
Source of data: DGBAS (2013); The World Bank (2012)

In Korea, one of the most affected economies, the economic growth rate dropped to -5.71% in 1998 from 5.77% in 1997 (The World Bank, 2012). In Hong Kong, many more people applied for public social assistance. The Gini coefficient reached a record of 0.525 in 2001(Tang & Midgley, 2002). The other city-state, Singapore, fared slightly better than Hong Kong. The economic growth rate there fell to -2.23% in 1998, the first time it had fallen below zero since the previous recession in 1986 (The World Bank, 2012). One year later, the unemployment rate rose to 4.9% (*see* Figure 1.2), the highest level since 1986.

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Figure 1.2 Unemployment trends of East Asian states, 1980-2009

Source of data: ADB (2012, 2000)

Similarly, in Japan, the economy faced a crisis during the Asian financial crisis. It had a negative economic growth rate of -2% in 1998 which was the first time it had fallen below zero since 1974. The unemployment rate suddenly increased from 3.4% in 1997 to 4.1% in 1998, and rose further to a record 5.4% in 2002.

The situation in Taiwan was seemingly better than in the states discussed above. It was relatively unscathed by the crisis. The difficult economic environment was mainly due to Chen Shui-bian's government which came to power in 2000 (Tang & Midgley, 2002). As a result, its GDP growth rate fell to a lower level than in the crisis period.

Of the six states in the research group, China was the least affected by the 1997 Asian crisis. Even so, it was not completely free from economic difficulties, particularly in terms of the unemployment issues. At the end of the 1990s, China's macro economy experienced a downturn due to the serious reduction of domestic demands on investment and consumption. State-owned enterprises (SOEs) started to reform by reducing staff to improve their efficiency to extricate themselves from heavy losses (Cai & Wang, 2009). As a result, the unemployment rate gradually increased after 2000. Massive lay-offs of urban workers cast a shadow over China's economy which has continued to be a major challenge for Chinese politicians till the present

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Table 1. 2 Social expenditure in East Asia in international comparison 2000s (% of GDP)[a]

	China [b]		Hong Kong		Japan		Korea		Singapore [d]		Taiwan	
	2000	*2010*	*2000*	*2010*	*2000*	*2010*	*2000*	*2010*	*2000*	*2010*	*2000*	*2010*
Social security and welfare	0.74	2.27	2.10	2.33	10.56	17	3.20	4.80	0.66	1.17	5.70	3.23
Health	1.76	2.65	2.80	2.59	6.09	7.86	2.07	3.86	1.22	1.37	6.50	3.72
Education	2.58	3.13	3.90[e]	3.51	3.62	3.78	3.90[e]	4.67[f]	3.32	3.11	4.6	4.31
Housing	-[c]	0.59	0.37	0.54	4.63	2.64	1.13	1.05	1.99	1.36	0.35	0.22

Notes:
   a. The figures are based on the ADB categories
   b. Data for all governments level (includes both central government and local governments)
   c. No available quantitative data
   d. Excludes expenditures of the Central Provident Fund (CFD)
   e. Refers to 2001
   f. Refers to 2009

Sources: ADB (2012), China Statistics Press (2012); Department of Statistics Singapore (2012); Hong Kong Census and Statistics Department (2011); Hong Kong Food and Health Bureau (2016); MOE (2014, 2012); OECD (2012a); OECD (2010); Qu & Ma (2011); Statistics Bureau Japan (2012); The World Bank (2012) and personal calculations

On the welfare development side, a significant feature of East Asian welfare development is the comparatively low levels of social welfare expenditure (*see* Table 1.2). The government spending on social security and welfare of five of the East Asian states were lower than 5% of their total GDP in 2010, which is much lower than in traditional welfare states (compared with Denmark's 21.2% and Germany's 20.4%) (ADB, 2012; OECD, 2010). Japan seems to be the only exception within the research group. Its public expenditure on social welfare is much higher than that of the United States, but still less than that of Germany.

Five of the states have gradually increased their social expenditure during the last decade, while Taiwan is the only society which had lower social expenditure in 2010 than in 2000. Japan had increased its social welfare expenditure by almost 7% by 2010 compared with ten years before. It is the only state in the group that has virtually the same level of public social expenditure as traditional welfare states in OECD countries.

Another point of interest is the comparatively higher education expenditure of some East Asian states compared with their social welfare spending. All the six states spent

at least 3% of their total GDP on education in 2010. Moreover, during the last decade, except Japan, Korea in 2010 and Taiwan in 2000, all other states spent more on education rather than on social security. In Singapore, the education expenditure was even double that of the social welfare spend.

However, although the public social expenditure is comparatively lower than in OECD countries, East Asian states show good performances in at least two areas. First, the empirical evidence suggests that in conjunction with their economic performance, the Asian miracle economies have made dramatic improvements regarding their citizens' quality of life (Quibria, 2002). The poverty reduction in the East Asian miracle economies was essentially due to their economic growth. From 1970 to 1990, the number of absolute poor in East Asia fell from 400 million to 180 million, a reduction which is all the more remarkable as the East Asian population grew by some 425 million persons over the same two decades (Johansen, 1993). It was not simple subtraction that 220 million were out of poverty threshold, but another 425 million were added above the poverty standard. During the same period, while absolute poverty was reduced to a tenth of the population in East Asia, there remained around half of the population in poverty in Africa and a quarter in Latin America (Johansen, 1993).

Especially, China plays a major role in this. According to the World Bank's data, the poverty rate in China was reduced from 84.02% in 1981 to 13.06% in 2008 (The World Bank, 2012). Analogously, the miracle economies have made remarkable strides in social indicators of the quality of life. Their standard social indicators have improved significantly. It can be seen that they did rather a good job compared with other developing countries regarding life expectancy, infant mortality and adult literacy rates (*see* Table 1.3). All three of these indicators in these states are gradually converging toward the European Union and the World averages.

Table 1.3 Social Indicators, Selected East Asian Economies, and Selected Regions, 1960-2010

Economy and region	Life expectancy at birth (years)						Infant mortality rate (per 1000 live births)						Adult illiteracy rate (percentage of people age 15+)	
	1960	1970	1980	1990	2000	2010	1960	1970	1980	1990	2000	2010	1970	1995
Miracle Asia														
China	45.10	63.61	68.56	71.07	72.93	75.03	-	78.10	49.80	38.30	27.30	15.80	-	22.21c
Hong Kong	70.77	75.03	77.90	80.30	83.90	85.90	-	-	9.7a	6.5b	2.92	1.70	21.5	8.20
Korea	55.51	64.77	70.03	75.50	79.62	84.25	100.90	40.90	15.40	6.40	5.00	4.20	13.20	3.10
Singapore	69.20	71.71	74.65	78.03	80.10	84.10	35.70	21.70	11.50	6.10	2.90	2.10	26.90	9.20
Average	*60.14*	*68.78*	*72.78*	*76.22*	*79.14*	*82.32*	*68.30*	*46.90*	*25.57*	*16.93*	*9.53*	*5.95*	*20.53*	*6.83*
Regions														
East Asia & Pacific	49.22	62.83	67.68	70.84	73.02	75.27	-	76.18	52.53	39.95	29.11	18.79	44.20	17.40
European Union	72.12	74.17	76.41	78.48	80.46	82.60	37.84	25.71	16.00	10.42	6.29	4.22	26.20	13.30
Latin America and Caribbean	58.09	62.43	67.39	71.57	74.90	77.31	114.48	86.25	63.03	42.94	28.47	18.10	68.50	49.10
South Asia	42.49	48.36	55.34	58.84	62.81	66.71	161.47	131.81	107.17	85.86	65.66	51.64	71.80	44.10
Sub-Saharan Africa	41.97	46.04	49.67	51.21	51.01	55.35	-	136.63	115.70	105.16	94.26	76.36	-	-
World	*54.56*	*61.15*	*65.09*	*67.53*	*69.31*	*71.74*	*-*	*95.19*	*76.70*	*62.37*	*52.04*	*41.00*	*45.10*	*26.50*

Notes: a. 1981
   b. 1991
   c. 1990
   - Data not available

Sources: Quibria (2002); The Hong Kong Council of Social Service (2008); The World Bank (2012)

Another popular way to measure quality of life is the Human Development Index (HDI), which was created and developed by the United Nations Development Programme (UNDP) in 1990 (Tang, 2000a). It measures the level of national well-being by three dimensions - health, education and living standards. Similar to the indicators shown in Table 1.3, the health component is measured by life expectancy at birth. Education is measured by a combination of expected years of schooling for children of school entry age and mean years of schooling for adults aged 25 years. Living standard is measured by gross national income per capita. The HDI development can be seen in Table 1.4. According to the UNDP (2011), Japan ranked 12, ahead of Korea (13), Hong Kong (15), Singapore (26) and China (101). In total, 187 countries were included in the research, with the highest score being 0.94, the lowest score being 0.29, and the world average being 0.68 in 2011.

As Taiwan is not a member of the United Nations, it is not included in the official Human Development Report. However, the DGBAS (Directorate-General of Budget, Accounting and Statistics) of Taiwan compiled the nation's score according to the same method used by the UNDP to determine that Taiwan ranked 22nd in 2011 in the international ranks (Chan, 2011).

Hence, except China, all the other five states are classified as high human development countries. Their scores are very close to the top of the list. A trend analysis of the HDI from 1980 to 2011 shows a continual improvement within the research group. Especially for China and Korea, where the average annual index growth rose over 1% from 1980 to 2011. Also, China and Hong Kong significantly raised their rankings from 2006 to 2011. Despite China's HDI score being much lower than those of its neighbours, it has moved from being a 'low human development country' to a 'medium human development country' (UNDP, 2011).

While it could be concluded that all the six states have significantly improved the quality of life of their citizens, a note of caution is in order. The indicators used in measuring HDI do not capture all aspects of social development (Tang, 2000b). Most indicators are closely linked to education and health. One significant feature of East Asian states is their passion for spending on education and public health. It is therefore not surprising that they do exceptionally well on these measures. However, excessive

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emphasis on only a few indicators would give us a biased picture. Other social indicators such as income inequality and poverty should be treated with equal weight. The East Asian states have claimed that they have achieved the balance between growth and equality. However, their claims are not supported by international organisations such as the World Bank (Tang, 2000a). The picture of inequality provided by the Bank is somewhat different.

East Asian states have achieved remarkable growth in their poverty reduction and the improvement of their citizens' quality of life. However, these achievements received little or no help from improvements in income distribution. Indeed, when most miracle economies were making major progress on poverty elimination in the period from the 1970s to the 1990s, income distribution either deteriorated or remained stable. In other words, in most East Asian states, when the largest proportions of their residents were transported out of poverty and they, therefore, became members of East Asian miracle, in reality, they were not pro-poor[2] (Kakwani & Pernia, 2000).

Thus while economic growth helped the process of poverty elimination in East Asian economies, inequality remains a real issue in most of the states and obviously, affects the social welfare systems in this area.

Table 1.4 Human Development Index for East Asian states, 1990, 2000, 2010

	1990	*2000*	*2010*	*HDI rank change 2006-11*	*HDI rank 2011*	*Average annual HDI growth (%)*
China	0.49	0.59	0.68	6	101	1.73
Hong Kong	0.79	0.82	0.89	14	13	0.77
Korea	0.74	0.83	0.89	3	15	1.13
Japan	0.83	0.87	0.90	1	12	0.47
Singapore	-	0.80	0.86	3	26	0.71
Taiwan	-	-	-	-	-	-

Notes: - Data not available

Source: UNDP (2011)

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[2] Pro-poor growth means a situation in which the income growth of the poor is higher than that of the non-poor (Kakwani & Pernia, 2000; Ravallion, 2004).

1.2 Why East Asia is so attractive?

1.2.1 The economy matters

That economic development is closely linked with welfare is widely accepted by scholars. It is basic to material welfare (Spicker, 2000). In East Asia, the interests of researchers in this region also first started with the economic concerns (Holliday & Wilding, 2003b; Vogel, 1991; White & Goodman, 1998). Indeed, the economic success has always been the dominant part of the East Asia puzzle. The economic developmental structure has a tremendous influence over the East Asian states. The social welfare development in this area has been inevitably influenced by it.

The East Asian States, a term that mainly refers to Japan and the Newly Industrialised Economies (NIEs), notably refers to the four 'little dragons' of Korea, Hong Kong, Taiwan and Singapore. Among these economies, Japan's success has always been considered as the milestone of East Asian developmental history. In 1951, Japan's Gross National Product (GNP) was 14.2 billion US dollars, which was nearly half that of the West Germany, one-third that of the Great Britain, and 4.32% of that of the United States (Sentaa, 1983). Twenty years later, by 1970, the Japanese economy had overtaken all European countries. The extraordinary success of the Japanese economy has attracted burgeoning interest in the West. Later, in the 1980s, through the notable economic growth in other Asian states, this interest had spread accordingly. In the 1990s, more Asian states, including the Southeast Asian nations and mainland China, had been noticed by the West. Their economic growth records are impressive around the world. Morley (1999) has summarised that these notable economic development experiences of East Asian states are unique in modern human history.

The East Asian story has encouraged its Western competitors to explore the economic 'secret' (White & Goodman, 1998). It has been named by The World Bank as 'The East Asian Miracle' (The World Bank, 1993). The bank summarised their successes as resulting from their 'market-friendly approach' and 'getting the basics right'- private domestic investment and rapidly growing human capital were the principal essential engines of growth (Amsden, 1994; The World Bank, 1993). In addition, the report acknowledged that government intervention was overarching in their economic

systems, which carried its influence "systematically and through multiple channels into their economic structures" (The World Bank, 1993).

Comparing the miracle economies with the world average, it is clear that despite suffering from the East Asian financial crisis in 1997, the performance of the East Asian economies was still impressive (*see* Table 1.5). It contrasts sharply with that of Latin America and Sub-Sahara Africa. Between 1961 and 2010, the longest period for which comparable data are available, the NIEs grew around 6% per year, with the highest growth of 8.33% during the period 1961 to 1970 and the lowest during 2000 to 2010, of 5.13%. The income levels of the NIEs increased more than tenfold in five decades. Hong Kong transformed itself from a 'refugee haven' to first an industrial economy and then a world financial centre (Chau & Yu, 1999; Hoogvelt, 2001).

Mainland China is another astounding example. Since the late 1970s, Deng's government pushed ahead to the socialist market and reopened China's door to the world (Dwyer, 1993). Consequently, China's average annual growth rate from 1980 was over 9%. Compared with the world average and the rates of well-developed countries, this progress is exceptional.

In a nutshell, East Asian states have achieved economic success in the last two decades. It is, therefore, interesting to explore the welfare development in the region.

Table 1.5 Economic Indicators, Selected Asian Economies and Selected Regions, 1961-10

Economy and region	GDP growth (%)					GNI per capita growth (%)					GNI per capita (constant 2000 US$)				
	1961-70	1971-80	1981-90	1991-00	2000-10	1961-70	1971-80	1981-90	1991-00	2000-10	1961-70	1971-80	1981-90	1991-00	2000-10
Miracle East Asia															
China	4.65	6.28	9.35	10.45	10.49	-	6.26	7.80	9.11	10.04	-	175.41	298.18	676.96	1627.29
Hong Kong	10.29	9.70	6.79	3.99	4.09	7.44	6.97	5.32	5.55	3.64	-	-	-	24871.07	31303.75
Korea	8.26	7.30	8.74	6.19	4.16	5.69	5.12	7.66	5.18	3.81	1479.45	2758.85	4930.87	9363.15	14125.20
Singapore	10.12	9.03	7.81	7.23	5.69	7.16	6.03	5.70	4.32	3.02	-	7802.13	12145.93	20252.94	26887.81
Average	*8.33*	*8.08*	*8.17*	*6.96*	*6.11*	*6.76*	*6.09*	*6.62*	*6.04*	*5.13*	*1479.45*	*3578.80*	*5791.66*	*13791.03*	*18486.01*
Regions															
East Asia & Pacific	8.81	4.84	4.66	3.08	3.68	7.08	2.76	3.07	1.87	2.99	1406.94	2146.42	2781.34	3633.11	4597.63
Latin America and Caribbean	5.44	5.65	1.32	3.25	3.27	2.50	3.38	-0.84	1.64	2.05	2325.29	3244.21	3397.78	3736.39	4297.84
South Asia	6.12	3.05	5.45	5.21	7.12	6.02	1.05	2.86	3.10	5.60	174.10	225.40	279.67	372.11	576.98
Sub-Saharan Africa	4.95	3.70	1.86	2.32	4.82	2.57	-0.36	-0.79	-0.25	1.53	-	543.37	525.00	481.41	532.28
European Union	5.77	3.46	2.40	2.16	1.18	-	2.56	2.10	2.11	1.07	8982.81	10486.25	12611.58	15519.37	18963.43
World	*5.44*	*3.87*	*3.14*	*2.88*	*2.54*	*3.37*	*1.79*	*1.37*	*1.51*	*1.27*	*3326.16*	*3715.37*	*4192.33*	*4829.15*	*5691.50*

Notes: i. '–' refers to not available

ii. GDP: Gross Domestic Product

iii. GNI: Gross National Income

Sources: Quibria (2002); The World Bank (2012)

1.2.2 East Asia as a challenge for comparative welfare state research

As discussed in the previous section, research interest in the East Asian states first started because of the 'East Asian Miracle'. East Asian states have made a remarkable economic development, and there has been strong academic and political interest in the role of the state in the economic rise in East Asian states (Rieger & Leibfried, 2003). However, social policy remains insufficiently addressed during this development -.

East Asian states are rarely included in welfare studies in Western countries. The reasons for this are varied. First, welfare research has for a long time not to been popular in East Asian states. Social policy is not exactly headline-grabbing in East Asia. It is only "a part of low not of high politics", as observed by Rieger and Leibfried (2003, p. 241). Especially so in China: most China experts have little interest in welfare matters. 'Social policy' is almost a new term in China which appeared only a decade ago. Welfare issues normally appear as a chapter in a book.

In the field of comparative social policy, the literature on welfare development in East Asia is sparse. There are limited works on East Asian welfare systems. Some studies have been carried out by Western scholars who are not able to use indigenous sources; their works rely mainly on the data provided by international organisations. It may sometimes cause misunderstanding. A few studies have been undertaken as collaborations by Western and local scholars, mostly focusing on introducing the East Asian welfare system to the rest of the world. These works are particularly useful for enabling people to recognise the social policies in East Asia.

On the other hand, the numbers of works that have been carried out by indigenous scholars in each of these East Asian states have been gradually growing over the last two decades. Most of them look deeply into their national welfare system. They provide some useful materials for better understanding the social policy development within these states (*see,* for example, Ku, 1997; Kwon, 1999; Takahashi, 1997; Tang, 1998). However, these analyses tend to be country-specific. Many of them are descriptive and analytical. Some of them may be cross-national studies. Most,

however, are comparisons between their own domestic country and one other advanced industrial country on one specific welfare area.

However, a common problem of these articles is their failure to build connections between the welfare systems in East Asian states with the theoretical and methodological debates in comparative social policy research (Tang, 2000a). In addition, although some studies have drawn some important and useful conclusions in recent years, there have rarely been real comparative research regarding East Asian welfare regimes. Ku and Finer (2007) argued that only Holliday's (2000; 2003) and Ramesh's (2004) studies be carried out under a comparative framework. Table 1.6 summarises recent comparative welfare regimes studies involving East Asian states. The most recent comparative social policy study including East Asian welfare states was that presented by Hudson and Kühner (2012) entitled '*Analysing the Productive and Protective Dimensions of Welfare: Looking Beyond the OECD'*. In that study, the writers examined the welfare systems of 55 states worldwide, including five East Asian states, China, Hong Kong, Japan, Korea, and Singapore, using fuzzy-set ideal type analysis.

Table 1.6 Previous comparative researches regarding East Asian welfare studies

Authors	*Year*	*Title*	*Methodology*	*Countries/States involved*
Catherine Jones	1993	New Perspectives on the Welfare State in Europe	Case Study	Singapore, Hong Kong, Korea
Huck-Ju Kwon	1997	Beyond European Welfare Regimes: Comparative Perspectives on East Asian Welfare Systems	Case Study	Korea, Japan
Didier, Jacobs	1998	Social Welfare Systems in East Asia: A Comparative Analysis Including Private Welfare	Case Study	Japan, Hong Kong, Singapore, Korea, Taiwan
Ian Gough	1998	East Asia: The Limits of Productivist Regimes	Case Study	Indonesia, Korea, Malaysia, the Philippines, Thailand
Ian Holliday	2000	Productivist Welfare Capitalism: Social Policy in East Asia	Case Study	Japan, Hong Kong, Singapore, Korea, Taiwan
Sven Hort and Stein Kuhnle	2000	The Coming of East and South-East Asian Welfare States	Case Study	Hong Kong, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan, Thailand

Authors	Year	Title	Methodology	Countries/States involved
Ian Gough	2001	Globalisation and Regional Welfare Regimes: The East Asian Case	Case Study	Indonesia, Korea, Malaysia, the Philippines, Thailand
Christian Aspalter	2001	Conservative welfare state systems in East Asia	Case Study	Japan, Korea, Taiwan, Hong Kong, Singapore, China
Aurel Croissant	2004	Changing Welfare Regimes in East and Southeast Asia: Crisis, Change and Challenge	Case Study	Indonesia, Korea, Malaysia, the Philippines, Thailand, Taiwan, Singapore
M. Ramesh	2004	Social Policy in East and Southeast Asia: Education, health, housing, and income maintenance	Case Study	Hong Kong, Singapore, Korea, Taiwan
Huck-Ju Kwon	2005	Transforming the Developmental Welfare State in East Asia	Case Study	Korea, Taiwan, Singapore, Hong Kong
Christian Aspalter	2005	The Welfare State in East Asia: An Ideal-Typical Welfare Regime	Case Study	Japan, Korea, Taiwan, Hong Kong, Singapore
Alan Walker and Chack-Kie Wond(eds)	2005	East Asian Welfare Regimes in Transition	Case Study	China, Hong Kong, Japan, Taiwan, Korea, Singapore
Christian Aspalter	2006	The East Asian welfare model	Case Study	Japan, Korea, Taiwan, Hong Kong, Singapore
Yeun-wen Ku, Catherine Jones Finer	2007	Developments in East Asian Welfare Studies	Case Study	East Asia as a region
Yih-Jiunn, Lee Yeun-wen, Ku	2007	East Asian Welfare Regimes: Testing the Hypothesis of the Developmental Welfare State	Factor analysis, Cluster analysis	Taiwan, Korea, Japan
John Hudson and Stefan Kühner	2012	Analysing the Productive and Protective Dimensions of Welfare: Looking Beyond the OECD	Fuzzy Set Ideal Type Analysis	China, Hong Kong, Japan, Korea, Singapore

1.3 Why East Asia and why now?

The rapid economic growth rate which started in the 1960s in the region was distinctive enough to attract the attention of social science scholars worldwide. Rapid economic growth, low public social expenditure, enhanced national status in the world, and improvement in the quality of life all encouraged scholars to explore the secret held by this region.

First, it is interesting to study the relationship between economic growth and social welfare. According to the Industrialism (Wilensky, 1975), economic growth can generate welfare states. However, this seems not happen in East Asia. The welfare development in the region is not with the same speed as the exceptionally high economic growth rate. Hence, it is interesting to explore how East Asian states could achieve almost the same level of social performance as advanced industrial countries, but with relatively much lower public welfare expenditure.

In addition, since Esping-Andersen (1990) published his milestone work *The Three Worlds of Welfare Capitalism*, scholars have continued to question whether East Asian states could be categorised into his welfare regime typology (Esping-Andersen, 1997; Gough, 2001; Holliday, 2000). Around the Asian financial crisis that started in 1997, there was fierce debate regarding the existence of a unique East Asian welfare model which is distinctive from that of the West (Goodman *et al.*, 1997). Some scholars strongly rejected this idea (Goodman *et al.*, 1998; Mishra, 1995). Moreover, most other scholars agreed that East Asian states do have some similarities in their welfare systems, and that this represented an East Asian social policy model (Goodman & Peng, 1996; Holliday, 2000; Holliday & Wilding, 2003b; Kwon, 1997). There is, therefore, a fourth: the productive world of welfare capitalism in East Asia (Holliday, 2000).

However, during the Asian financial crisis, East Asia's economic and social structures came under strain, and their social progress faced challenges as well. Economic growth declined from around a 5% annual GDP per capita increase to negative levels in the following year, especially in Korea. It almost destroyed the poverty reduction

achievements of the past decades in this region (Atinc & Walton, 1998). It is further sparked debates regarding the crisis and its social consequences.

The financial crisis, especially the crisis in Korea, has led to social welfare reforms in the region. Social development and social institutions have been written back into the governments' developmental agendas in East Asia (Tang, 2000a). For example, in the case of Korea, in 1998, the IMF imposed a standard structural adjustment programme on the economy for Korea to solve its financial bail-out. The programme included massive lay-offs and a reduction in the government budget. However, this plan was seriously criticised. So instead, the IMF and the Korean government adjusted the plan by expanding the unemployment insurance programme.

Therefore, the productivist thesis has been facing a fundamentally challenge. Shin (2000, p. 104) noted that the reforms of Korean welfare system after financial crisis were about building a "more redistributive and comprehensive welfare system". Another Korean scholar, Kwon (2002), further asked whether Korea might be moving "beyond the developmental welfare state". Even the founder of the productivist thesis, Holliday (2005), recognised that in the 1990s, the leading East Asian economies "reveal(ed) their true social policy colours". However, he further claimed that even after the financial crisis, the productivist concept remained "plausible and useful" in analysing East Asian social policy systems.

Finally, as Table 1.6 shows, even up to the present, East Asian welfare systems have rarely been explored under a real comparative framework. The existing researches seem either over-generalised and try to use one theory to fit the whole region, or are *ad hoc* - that is, they are country specific. In addition, most important works were undertaken around 2000. Over a decade has passed since then, so undoubtedly some changes have occurred in the member states. Therefore, a comparative study of East Asian welfare systems is more urgently needed today.

1.4 Research objective and research questions

The debates regarding East Asian welfare capitalism remain highlighted in the field of social policy research. The success in economic development of East Asian states,

the special features of East Asian welfare systems and the controversial views of its natures of welfare all stimulate researchers to explore the answers behind the 'East Asian secret'. In addition, given the shortage of literature which is reviewed in the following chapter regarding East Asian welfare regimes, it is necessary to re-examine in depth the welfare regimes of East Asian states at present.

With this overall aim, this paper focuses on these two objectives: first, it develops a more complete and up-to-date research study to explore East Asian welfare models. Second, in the post-crisis era, some East Asian states have reformed their welfare systems. It is, therefore, interesting to see how the reforms have proceeded, and to examine the driving forces behind welfare reforms in East Asia.

The research questions in this thesis are as follows:

- Does East Asia have a homogenous productivist welfare model?

- What developmental trajectories have they followed?

- Under which conditions have governments implemented the welfare reforms?

1.5 Organisation of the thesis

This thesis consists of ten chapters which are organised into two parts. Following the introduction, the first section of this thesis is covered Chapter 2, 3, 4 and 5. These chapters consist the systematical literature reviews and the introduction of the methodology.

Chapter 2 reviews the related literatures including the debates regarding comparative welfare regimes and East Asian welfare models. Chapter 3 critically discusses the debates of East Asian productivist welfare model and presents the conceptual framework of this research. Chapter 4 and 5 are the methodology sections. While Chapter 4 focuses on the choice and general introduction of set-theoretic methods, Chapter 5 is more technical in nature.

The second part of this thesis is concerned with empirical analysis of East Asian welfare models and the welfare developments during the past two decades. It consists of Chapter 6, 7, 8, 9, 10, and 11.

Chapter 6 and 7 provide the empirical analysis of productive and protective welfare dimensions of the six states. Six policy fields are examined with in-depth case studies. The welfare dimensions are calibrated by fuzzy-set ideal type analysis (fsITA). The findings of East Asian welfare models are presented in Chapter 8. Chapter 9 examines the conditions of welfare developments in the region by using fuzzy-set qualitative comparative analysis (fsQCA). Chapter 10 critically discusses the findings. Finally, the main findings and contributions of this thesis are concluded in Chapter 11.

Part One

Literature Review and Methodology

Introduction to Part One

As mentioned in Chapter 1, this thesis is organised into two parts. The first part of this thesis consists of Chapter 2, 3, 4, and 5. These chapters concern the literature reviews and methodology of this research. Chapter 2 systematical reviews the literatures regarding comparative welfare regimes and East Asian welfare models. Chapter 3 critical discusses the productive welfare debates in welfare regime studies and provides the conceptual framework of the thesis. Chapter 4 presents the rational choice of the methodology, and introduces the set-theoretic methods. Chapter 5 explains the detailed technique of the fsQCA analysis.

Chapter Two

Comparative research on welfare regimes

This chapter reviews the related literatures of this thesis. It consists two parts. The first part summarises the mainstream Western theories of comparative welfare state models. It begins with Esping-Andersen's classical work *The Three worlds of capitalism*, and reviews the literatures that expanded the purview of this theory.

The second part focuses on the debates on East Asian welfare models. Mainstream literatures such as the productivist welfare capitalism have been reviewed critically. The aim of this chapter is to discuss the theoretical debates regarding East Asian welfare models which raise the main research questions of this research.

2.1 The world of comparative welfare state models

The welfare state is a European invention (Flora, 1986). It was developed, expanded, adjusted, refined and modified over a period of more than 100 years since the German government of Chancellor Bismarck published a comprehensive compulsory social insurance programme in the 1880s (Kuhnle, 2004). The initial purpose of that programme was to maintain the regime and to quell the political demands of socialist political organisations. Later, welfare policies were introduced into other European countries, mainly due to the democratic process and the competition between different political parties.

In the twentieth century, social welfare in Western countries has been developed significantly. Democracy and economic development have been regarded as two fundamental reasons for this. The types of welfare state are varied in Europe, mainly due to different "socio-structural prerequisites and interests, and various social and political philosophies, values and visions" (Kuhnle, 2004, p.48). Comparative welfare state research has entered into a flourishing period.

Among various studies of the welfare state, research into welfare models has dominated. According to Johnson (1987, p.11), a model is a "conceptual framework which helps to categorise phenomena and understand the relationship between sets of variables". It has frequently been used in social science for explanatory analysis. Unlike the sophisticated models in economics, the models in social policy analysis are relatively straightforward. The purpose of model-building in social policy is, as Titmuss (1974, p.145) said, "not to admire the architecture of the building, but to help us to see some order in all the disorder and confusion of facts, systems and choices concerning certain areas of our economic and social life".

In comparative social policy research, in order to divide welfare states into different welfare regimes, two standpoints have been highlighted by scholars: one emphasises 'quantitative aspects' between states, while the other focuses on 'qualitative aspects' (Kim, 2005). Table 2.1 summarises the early typology of research into welfare states.

Quantitative studies focusing mainly on social spending began in the 1970s. With a quantitative view, the first generation of comparative social policy researchers focused more on crude social expenditures to measure welfare states, such as Cutright (1965) and Wilensky (1975). According to them, states with relatively high public welfare expenditure were often classified as "welfare leaders". By contrast, states with relatively low public welfare expenditure were classified as "the welfare-state laggard(s)".

However, this conceptualisation of welfare regimes has been widely criticised. According to Gilbert and Moon (1988), high public social expenditure may not represent a high level of welfare, but instead may reflect high levels of unemployment or of retired people in the society. They further argued that with this point of view, the efforts of the private and voluntary sectors are neglected. Since then, many classification systems have been devised to account for this complexity of welfare states.

From the 1980s onwards, the scope of research expanded to include more qualitative aspects such as basic principles and the level of social rights (Kettunen & Petersen, 2011). Therborn (1987) commented that over-quantification of the welfare state was

the major weakness of this first generation of comparative social policy research. He further suggested that it is necessary to add qualitative dimensions to measure welfare states in future research studies.

Table 2.1 Early typologies of the welfare state research

TITMUSS (1974)		
Residual welfare model -state is a temporary last resort	*Industrial achievement-performance model* -welfare institutions are an adjunct of the economy	*Institutional redistributive model* -universal services allocated on the basis of need
MISHRA (1974)		
	Integrated or corporatist welfare state - social sector integrated into economic and industrial policy (Austria)	*Differentiated or pluralist welfare state* - social welfare sector is distinctive and unrelated to economic policy (UK)
THERBORN (1987)		
Market-oriented welfare states - limited social rights, low commitment to full employment (Australia, Canada, US, UK, New Zealand *Full employment-oriented welfare states* - low social entitlements, Commitment to full employment (Japan)	*Strong interventionist welfare states* - extensive social policy, strong commitment to full employment (Sweden, Austria, Norway) *Soft compensatory welfare states* - generous social entitlements, low commitment to full employment (Belgium, Denmark, Netherlands, France, Germany, Ireland, Italy)	
ESPING-ANDERSEN (1990)		
Liberal welfare state -dominated by market, modest benefits, means testing (US, Canada, Austria)	*Conservative/corporatist welfare state* - strong state welfare orientation, minimal private insurance, conservative attitude towards family (Austria, France, Germany, Italy)	*Social democratic welfare state* - state is principle means of realising social rights, graduated universal insurance system, commitment to full employment (Sweden, Norway)

Source: Pinch (1997, p.13)

In this context, the second standpoint emphasises the qualitative view in comparative social policy research. The research moves beyond analysing the 'black box of expenditure' towards a more comprehensive evaluation of the contents of the welfare state (Johnson, 2003). For example, Titmuss (1974) classified welfare states into three clusters: 'the residual welfare model', 'the industrial achievement performance model' and 'the institutional redistributive model', based on the level of citizens' satisfaction with the provision to meet the needs of the market, the family and the state. His typology had a great impact on subsequent comparative research on welfare states (Kim, Y.M., 2005).

Qualitative comparative research was heavily driven by the Danish sociologist Gøsta Esping-Andersen, who published his *The Three Worlds of Welfare Capitalism* (1990) which has been regarded as the gold standard of comparative welfare state studies. Pierson (1998, p. 175) stressed the importance of this publication as "much of the burgeoning literatures about comparative welfare state as published in the 1990s can be seen as a 'settling of accounts' with Esping-Andersen". Esping-Andersen's welfare regime approach has remained today's best-known and major reference point for welfare states (Baldcok *et al.*, 2007).

2.1.1 Three worlds of welfare capitalism

Esping-Andersen's typology was largely influenced by the previous researches into the welfare state (Arts & Gelissen, 2002). Theoretically, Esping-Andersen's typology was based on a range of studies by Marshall (1965, 1981) and Titmuss (1958, 1974). And empirically, it could benefit from previous comparative research studies, including those of Flora (1986), Flora and Heidenheimer (1982), Mommsen (1981) and Wilensky (1975).

Ideologically, Esping-Andersen's typology relies on Weber's (1949) methodological essay. Weber (1949, p. 90) defined an ideal type as

"formed by the one-sided accentuation of one or more points of view and by the synthesis of a great many diffuse, more or less present and occasionally absent concrete individual phenomena, which are arranged according to those one-sidedly emphasized viewpoints into a unified analytical construct".

An ideal type analysis enables researchers to "ascertain similarities as well as deviations in concrete cases" (Coser, 1977, p. 223). It provides the basic method for comparative study. Weber (1949) identified two kinds of ideal-type: individualistic and holistic (Arts & Gelissen, 2002).

Esping-Andersen's typology is the latter approach. Generally, Esping-Andersen's typology emphasises the 'big picture' of the world of welfare, rather than an individual state or cases (Ku & Finer, 2007). Esping-Andersen (1990) identified three models or ideal-types of welfare state which he named the conservative, the liberal, and the social democratic regime types. One notion must be stressed here: the term 'ideal-type' here may only "help make sense of the complex real patterns of similarity and difference that (exist) in the welfare provisions of different countries" (Bochel *et al.*, 2009, p. 466). The ideal type is used for guiding the comparison. In the real world of welfare states, there are no one-dimensional welfare states. By contrast to the ideal type, in reality, it is likely to exhibit hybrid forms (Arts & Gelissen, 2002).

Esping-Andersen's three welfare regimes have a deep root in political mobilisation and political philosophy (conservatism, liberalism and socialism respectively) (Arts & Gelissen, 2002). He clustered eighteen OECD countries by their respective degrees of 'decommodification' and 'stratification'. The first notion, 'decommodification', was one of Esping-Andersen's major arguments which refers to the level of "socially acceptable standard of living independently of market participation" that can be upheld by individuals or families (Esping-Andersen, 1990, p. 37). Esping-Andersen (1990, p. 22) further stated that "decommodification occurs when a service is rendered as a matter of right and when a person can maintain a livelihood without reliance on the market".

Esping-Andersen calculated the degree of decommodification for old age pensions, sickness benefits and unemployment insurance by examining the eligibility rules, the replacement rate of previous income, the duration of benefits, and the ways in which benefits are founded, which he then weighting by the relevant population coverage rate. Despite some criticisms of this methodology, the concept of decommodification is one significant principle in comparative social policy studies (Baldock, Manning & Vickerstaff, 2007).

The term 'stratification' refers to the type of social structure which welfare programmes promote. It includes a measurement of the degree of corporatism (number of occupationally distinct public pension schemes), etatism (expenditure on pensions to government employees), average levels of universalism (average for sickness, unemployment, and pensions) and benefit equality, and proportions of spending on mean-tested poor relief, private pensions and private health spending (Esping-Andersen, 1990, pp. 70-71).

Ideologically, the 'conservative' type of welfare regime closely links to Catholicism and absolutism, which were characterised by the legacies of corporatism and statism (Arts & Gelissen, 2002; Tang, 1998). Conservative welfare states aim to preserve status differentials and family patterns by providing social benefits linked to class and status. There are three important consequences of stratification. First, the income maintenance benefits are calculated closely linked to previous earnings. Second, married women are strongly discouraged from participating in the labour market. The reason for this refers to the historical link with Catholicism, which was dedicated to preserving traditional family structures. Lastly, the conservative welfare state only plays the role of a substitute welfare provider when the family is unable to afford the services which its members need (Esping-Andersen, 1990, p. 27). Continental European countries such as Germany, France and Italy belong to this cluster.

The 'liberal' welfare state is characterised by a high degree of dependence on the market and an emphasis on the work ethic. It aims to provide support only for low-income groups who are unable to provide for themselves in the marketplace (Arts & Gelissen, 2002). Consequently, the benefits are modest, and rely mainly on means-testing. Moreover, liberal states encourage using non-state alternative social assistance

such as private forms of social protection. The liberal principle of stratification leads to a division in the population: the low-income group which is attended to by the state, and others who are protected by private social insurance. Within liberal welfare states, women are encouraged to work, particularly in the service sectors (Arts & Gelissen, 2002). This welfare regime has the lowest decommodification scores. Countries such as the US, Australia, Canada and, to a lesser extent, the UK are clustered in this group.

Finally, the third 'social democratic' type emphasises extensive citizenship rights which aim to achieve adherence to cross-class universalism and equality. In contrast to the liberal welfare states, "this model crowds out the market and, consequently, constructs an essentially universal solidarity in favour of the welfare state" (Esping-Andersen, 1990, p. 28). Universal forms of generous benefits provided mainly by the state aim to promote the highest degree of equality within the society. The main purpose of the welfare system in these countries is to maximise the individual's dependence. Democratic countries are generally committed to full employment. Consequently, women in these countries are highly encouraged to work, particularly in the public sectors. Scandinavian countries such as Sweden, Norway and Denmark belong to this framework.

2.1.2 Going beyond Esping-Andersen

Esping-Andersen's work had an enormous impact on comparative social policy research. However, it also stimulated major debates in this field of study. These debates have mainly focused on the theoretical aspects of his typology. For instance, some scholars argue the classification problem with his three welfare regimes (Bonoli, 1997; Castles & Mitchell, 1993; Ferrera, 1996; Leibfried, 1992); the neglect of gender in his typology (Bambra, 2004; Lewis, 1992; O'Connor, 1993; Orloff, 1996; Sainsbury, 2000, 1994); the emphasis on cash benefits (Bambra, 2005; Kautto, 2002), and the methodological problems (Bambra, 2006; Castles & Mitchell, 1993). Among these debates, the first classification issues are particularly linked with this research.

The classification issue of Esping-Andersen's typology is the most crucial starting point for East Asian welfare regime research. Basically, the classification issue includes two aspects. First, some scholars emphasise the need to develop more than

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the three welfare regimes; second, researchers argue the misclassification inherent in his typology. For instance, East Asian experts doubt that Japan could be fitted into this typology (*see* most notable, Holliday (2000)). Bambra (2007) also indicates that the miscalculation of the mean and standard deviation in Esping-Andersen's typology led to the misclassification of three countries (Japan, UK and Ireland).

The discussion of the issue of coverage was started by Leibfried (1992). He argued that southern European ('Latin Rim') countries, mainly referring to Italy, Spain, Portugal and Greece, could not fit simply into one of the three regimes but display characteristics which made them different. Following this argument, Leibfried (1992) specified four different policy models: modern, institutional, residual and rudimentary. Based on these dimensions, he identified four social policy regimes within the countries of the European Community: the Scandinavian welfare states, the 'Bismarck' countries, the Anglo-Saxon countries and the Latin Rim countries. Leibfried (1992) has added a fourth category, the 'Latin Rim', to Esping-Andersen's original typology.

Likewise, Bonoli (1997) and Ferrera (1996) all agreed that it seems logical to have a separate South European cluster which has been named the 'Southern model' of social policy.

Ferrera (1996) also identified four welfare regimes which were the same as Leibfried's (1992). These social policy regimes are based on four dimensions of social security systems: the rules of access, the conditions under which benefits are granted, the regulations to finance social protection and, finally, the organisational-managerial arrangements to administrate the various social security schemes.

Similarly, Bonoli (1997) classified the Southern countries as a separate welfare regime within his analysis of welfare states. Basically, he used a combination of two approaches, one emphasising the 'how much' dimension and the other focusing on the 'how' dimension of social policy. Using these criteria, he developed four welfare regimes: the British countries, the continental European countries, the Nordic countries and the Southern countries.

A most recent research from Karamessini (2008) confirms that there still exists a distinctive Southern European welfare model by examining the labour market structures and characteristics of four Southern European countries: Greek, Italian, Portuguese and Spanish.

Comparing these typologies with Esping-Andersen's original work clearly shows that the component countries of their first three regimes are quite similar to Esping-Andersen's three welfare regimes. The most distinctive is the fourth category which they added, the 'Latin Rim' or 'Southern countries'.

As well as the Southern model, Castles and Mitchell (1993) argued that Australia and New Zealand have a more specific and a more inclusive social protection system than the standard liberal welfare states. The reason for this is that the Antipodean countries have the world's most comprehensive systems of means-tested income support benefits (Arts & Gelissen, 2002). Esping-Andersen's relatively simple calculation could not represent their real level of social protection. This issue is, therefore, leading a discussion about whether the Antipodean countries represent a separate social policy model.

A similar argument occurs in East Asian welfare regime studies. As a matter of fact, some scholars have tried to cluster East Asian states within Esping-Andersen's three-world typology. However, these works rely heavily on conceptual clarification, while neglecting empirical analysis, as Lee and Ku (2007) commented. For instance, Ku (1997) analysed the welfare capitalism in Taiwan, and suggested that the welfare systems in Taiwan could be clustered in the conservative welfare regime. There were three important reasons for this suggestion: first, benefits for civil servants account for the greater part of welfare expenditure; second, the welfare system represents the feature of etatism; and third, the states are dedicated to equality of opportunity rather than income redistribution.

Analogously, Kwon (1999) carried out research on Korea. Historically, Korea is quite similar to Taiwan. However, his results were contrary to those of Ku (1997). He also pointed out three reasons which are contrary to a conservative welfare regime. First, despite the similar political strategies about social policy initiatives, the nature of class

politics underlying these initiatives is different (Lee & Ku, 2007). Second, the welfare ideologies are different between Korea and Western countries. In Korea, social policy development is based on social and economic modernisation rather than Catholicism. Third, the conservative welfare regime usually functions more as a comprehensive welfare state with higher standards of welfare provision, whereas Korea does not fit this feature.

Meanwhile, Esping-Andersen (1997) himself re-examined the welfare regime of Japan. He suggested that "it is virtually impossible … to identify it in the typology of regimes" (Esping-Andersen, 1997, p. 187). He identified Japan as belonging to a hybrid model which combines both the liberal and the conservative models fairly equally.

All the four works discussed above were based on Esping-Andersen's original typology published in 1990. However, this raised a problem in analysing East Asian cases. East Asian experts started to question whether Esping-Andersen's framework, which was developed under the Western welfare ideology, can really help to understand the East Asian cases. Might other typologies can better describe the East Asian states but still follow the logic and methods of welfare regime study (Lee & Ku, 2007)?

2.2 The Fourth World of East Asia

Research regarding the East Asian welfare model started in the mid-1980s. Initially, there were a few overview articles on East Asian social policies which were written by Western scholars. Midgley (1986) tried to use convergence theory[3] to examine welfare development in Hong Kong, Korea, Singapore and Taiwan, and found that the dynamics of industrialisation provide little explanation for these four little tigers. Instead, he argued that the key characteristic of social policy in Asian NICs is incrementalism. Midgley (1986, p. 234) stated that

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[3] Convergence theory: Wilensky (1975) argued that economic growth and its demographic and bureaucratic outcomes are the root cause of the general emergence of the welfare state in industrialised countries. Hence, convergence theory regards industrialisation and its outcome in economic growth as the key causes of welfare development.

> *"The incrementalist style of social policy in the four Asian NICs had been congruent with a marked reluctance on the part of political elite to expand social programmes. They have consistently affirmed their faith in the virtues of free enterprise, self-reliance and hard work and frequently declared an aversion to welfarism. But although this attitude has retarded the development of social policy and contributed to its incremental character, it has not prevented the emergence of a variety of social programmes."*

A key issue of Midgley's (1986) work is that he did not mention the reason why welfare development should occur under the ideological 'reluctant welfarism' of a political elite. Especially, empirical evidence clearly showed that state intervention is a crucial element in the development of education, public health and social security in the Asian NICs. There could be other forces pushing the political elites to change their minds and develop welfare provisions (Ku, 1997). Hence, incrementalism, as Midgley concluded, is a characteristic of welfare development in the Asian NICs but cannot explain why they have developed in this way.

Despite Midgley's first attempt seeming not to produce a satisfactory result, that publication then inspired a number of East Asian scholars to conduct research into East Asian social policy using their own experiences of their countries; for example, Takahashi on Japan (1997), Ku on Taiwan (1997), Tang on Hong Kong (1998) and Kwon on Korea (1999).

East-Asian welfare systems have been labelled differently based on diverse research approaches and perspectives. Among dozens of literatures, two distinct perspectives have prevailed. One is that there exists a unique East Asian welfare regime which is different from the West. This view was first promoted by Jones (1990) from the cultural perspective and was supported by some influential East Asian experts (for example, Holliday, 2000; Holliday & Wilding, 2003b; Kwon, 1997). The other perspective was promoted by Esping-Andersen (2005, 1997) who strongly disagreed with distinguishing East Asian welfare regimes from Western theory. According to him, Japan, as a representative of East Asian states, could be described as a 'hybrid' regime which is between a conservative welfare state regime and a liberal welfare state regime, and features corporate social policies which are highly dependent on market and family.

In order to explore the East Asian welfare world, different perspectives have been employed. Two broad schools, one emphasising cultural and historical influence and the other political economy, have emerged.

2.2.1 The cultural and historical approach for understanding a special East Asia

Cultural explanation of East Asian welfare regime

The starting point of most East Asian research studies is the distinctive culture of East Asian states. The basic argument is that cultural impact makes East Asia a unique welfare model different from Western theories.

Chow (1987) was perhaps the earliest scholar to emphasise the cultural differences between the Western and Chinese ideas of social welfare. He pointed out that the importance of families and kin networks in Chinese society is the most significant difference between the West and China. Indeed, families and kin play a vital role in providing welfare support in traditional Chinese society compared with the religious philanthropy of the West. As a matter of fact, this tradition has a deep historical root in Chinese society. Lin (1990) stated that from early times to the Ch'ing Dynasty, families and local gentry already took the greatest responsibility for welfare support rather than the government. In addition, it is important to point out that culture has been regarded as a factor of resistance and a formidable opponent to change by scholars since Margaret Mead (1955) published her *Cultural Patterns and Technical Change*. It is also one crucial reason why there seem to have been no changes of Chinese culture despite hundreds of years have passed.

Later, in 1990, one of the earliest experts in East Asian cultural approach research, Catherine Jones, proposed the concept of 'oikonomic welfare states' by analysing the 'household management' style of government via the management of each national 'household economy' (*oikos* in classical Greek) with the aid of 'Western-style' social services in Hong Kong, Taiwan, Singapore and South Korea (Jones, 1990). In her view, popular culture is a common factor in the historical context of these countries. She argued that, first, in these East Asian states, "whatever the extent or otherwise of notional democratisation, Western-style politics does not come easily - or fit easily when/if ever it arrives" (Jones, 1993b, pp. 202-203). Instead, the Confucian respect

for hierarchy deters public participation in policy implementation and this produces a 'top-down' model of the policy process. Hence, the development of public welfare is slackened. By stressing duties over rights, Confucianism "discourages the idea that citizens have a right to welfare" (Kasza, 2006, p. 114).

Second, she indicated that these states share a common core of beliefs, values and priorities which she called 'Chineseness'. In Confucian welfare states, she found that the government has little enthusiasm for supporting the poor.

> *"Chinese tradition has had little to say about the needs (let alone rights) of the disadvantaged per se. The emphasis has rather been on the duties of families and villagers to take care of their own" (Jones, 1990).*

Consequently, the family has been regarded as the key welfare providing unit. The social security in these states is "dependent in the last resort not on governments but on families and communities" (Jones, 1990). Based on these two arguments, Jones summarised her view in the aphorism that "welfare states are born, not made". The welfare policies have deep-rooted cultural values, which are resistant to the ephemeral interests and creative impulses of statesmen. Similarity, Rieger and Leibfried (2003, p. 243) emphasised the influence of Confucian culture in East Asia as "the fundamental cause of an independent path of welfare state evolution". Families and companies are two basic welfare providers, rather than the institutions of the state.

To summarise Jones's (1993b, 1990) works, seven important features of East Asian welfare systems can be concluded. First, in the Oikonomic or Confucian welfare state, economic growth is the top priority of social policy development. Second, family is an important provider of welfare. Third, the state places emphasis on duty and the obligation of individuals. Fourth, there is no participatory democracy. Fifth, indiscriminate, unconditional social obligation replaces the social rights in Western countries. Sixth, the role of the state is regarded as that of a householder who monitors, instructs, reproves, protects, encourages and rewards his family members; and seventh, social policy is using for preserving social stability.

Following Jones's work, Goodman and Peng (1996, pp.193-195) generated a similar conclusion that there may exist 'East Asian social welfare regimes' which are different from Western concepts by analysing social policy in Japan, Korea and Taiwan. These states share common features which they called "the language of Confucianism" including:

"respect for seniors, filial piety, paternal benevolence, the group before individual, conflict avoidance, loyalty, dutifulness, lack of complacency, striving for learning, entrepreneurship and meritocracy".

Rieger and Leibfried's (2003) work is one of the most influencial East Asian researches involving the cultural perspective. Gough (2004, p. 184) appraised it as "the most sophisticated" culturalist explanation of East Asian social policy. Based on Max Weber's study of Confucianism and Taoism, they argued that the "Confucian culture can be identified as the fundamental cause of an independent path of welfare state evolution in East Asia" (Rieger & Leibfried, 2003, p. 261). They further proposed three basic details of welfare state development which are shaped by cultural factors. According to them, culture could channel basic welfare state trajectories; it could also explain why welfare state development in East Asia has been slower and more restrained than in the West; and finally it conditions a "society's institutional arrangement in the sense of a more or less explicit linking or interweaving of its individual elements in a consistent pattern" (Rieger & Leibfried, 2003, p. 284).

However, despite some scholars agreeing that culture is a significant factor making East Asia distinct from the west (as summarised above), in general the idea of a Confucian welfare regime type has been abandoned (Abrahamson, 2011). Even Rieger and Leibfried (2003, p. 244) also recognised that cultural explanations often have a bad reputation in linking with social policy development. Walker and Wong (2005, p. 214) concluded that the notion of a Confucian welfare regime was an overemphasis of explanatory power with reference to both the past and the present of welfare regimes in East Asia. Two issues emerge for including culture in comparative social welfare research.

First, in the field of comparative research on social policy, there is a fundamental theoretical argument about the relationship between culture and social policy. The question about whether culture is relevant to social policy has been argued by scholars from different perspectives (Van Oorschot, 2007; Baldock, 1999; Van Oorschot, Opielka & Pfau-Effinger, 2008). Particularly in Britain, the cradle of the welfare state, the study of social science has paid little attention to the concept of culture. Indeed, many scholars would deny paying attention to the cultural influence of social policy. Baldock (1999) argued that the mass culture of a society, its broad values and tastes, is not the missing variable in understanding social policy. Culture is neither a likely cause nor a supportive context for the welfare state, according to him.

In addition to the basic and general theoretical debates, some advocates of the East Asian welfare model disagree on the relevance between culture and the East Asian welfare model. For instance, Goodman and Peng (1996, p. 195) affirmed Confucian influence in their work. However, in a later essay, Goodman (1998, pp. 15-16) was less sanguine about cultural explanations. In addition, Kwon (1998, p. 27) indicated that the Confucian culture is "weak" in explaining the precise national profiles of social policy and differences between welfare systems. On the one hand, scholars argue that the cultural approach, as Kasza (2006, p. 115) described, is more like a 'gross brush' which can paint the values of an entire society. It may help when "the mass public is deemed responsible for the content of policy". However, when dealing with smaller numbers of strategic policy actors, a generic cultural portrait may only have minimal explanatory power.

Second, besides the theoretical issues, including culture in comparative research seems like a challenge for methodological reasons. That is also the reason why scholars have already acknowledged the importance of religious cultures in comparative social policy research, but there is still a limited body of work regarding the religious foundations of welfare states.

To sum up, cultural influence is an important factor for distinguishing East Asia from other parts of the world, but in the second instance (at the macro level) (Aspalter, 2005b), when taking a bird's-eye view of an overall welfare system, culture certainly stands at the top level. "Policy structures operate within cultural frameworks which

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associate particular values with state, market, occupational and family welfare", was Taylor-Gooby's (2001, p. 13) summary.

However, in terms of comparative analysis between East Asian states, culture seems to have weak explanatory power. Furthermore, no scholars have attempted to gauge the presence or impact of Confucianism in these societies any more than anecdotally. In addition, Confucianism does not say anything about old-age pension provision and unemployment insurance. Consequently, one cannot use Confucian values to explain the contradictory positions on public welfare. Moreover, if Confucian influence is constant in a society, this cannot explain why states adopt various welfare policies over time. On the contrary, if Confucian influence has changed over time, there is no method to track and measure its ebb and flow (Kasza, 2006).

Therefore, to include culture in the comparative framework of East Asian welfare regime research still needs to be considered carefully.

Historical roots in East Asia

As well as Confucianism, the common historical experience of East Asian states (mainly referring to North East Asian states) is another important cultural factor that has allegedly shaped an East Asian pattern of welfare provision.

Scholars argue about whether a colonial or occupying power is vital in shaping East Asian welfare systems (Goodman & Peng, 1996; Rieger & Leibfried, 2003). A good example is the case of the influence of the Japanese social welfare system in the region. One Japanese scholar, Baba (1978), argued that there might be a distinctive Japanese welfare system which he called the 'Japanese-style social welfare system' (*Nihongata shakai fukushi*) (Goodman & Peng, 1996). He summarised two notable characterises of this system: first, it relies on a particularistic social insurance system; second, family is an important social welfare and service deliverer. A similar observation can also be made for Korea. In addition, besides Korea, Peng (1995) argued that the Japanese rule

was for decades a salient element in Taiwan as well, mainly because of the historical links between these countries. Both Taiwan and Korea are former Japanese colonies.[4]

Although almost no scholars have argued that Japan expanded its welfare approach in the region, however, for Goodman and Peng (1996), Japanese colonialism affected welfare policy in Taiwan and Korea in a more indirect way. As a result, in these two states there are "vital institutions, financial, industrial, educational and political, which still today have much in common with Japanese contemporary systems" (Goodman & Peng, 1996, p. 195). They identified Japan, Korea, and Taiwan as "Japan-focused East Asian social welfare regimes", and pointed out six significant common features. First, family support is a crucial part of the welfare system, which appears to negate much of the need for state welfare. Second, the system is a status-segregated and somewhat residual social insurance-based system. Third, the social programme mainly focuses on 'core' workers in the societies. Almost all social programmes began with those who could pay contributions. Fourth, the social expenditures of these states cannot reflect the real level of social welfare. Kwon (1995) argued that the Korean government is more like a 'regulator' than a 'provider'. Goodman and Peng (1996) identified a similar issue in Taiwan and Japan as well. Fifth, the reason for developing social welfare in these states is mainly a response to immediate political and economic conditions rather than part of an overall coherent plan. It can therefore be described as 'piecemeal' (Goodman & Peng, 1996, p. 208). And sixth, Goodman and Peng (1996) concluded that the synthesis of Western, indigenous and regional (Confucian) discourses and 'traditions' is the most significant characteristic of the social welfare systems of Japan, Korea and Taiwan.

In addition, Goodman and Peng (1996) also pointed out that the intra-regional emulation of welfare policies is a homogenising factor in East Asian welfare systems. They noted that besides the three states discussed above, other East and South East Asian states such as Thailand and Malaysia have also studied Japanese public programmes. They therefore suggested that this model could spread even further.

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[4] Taiwan was under the control of Japan from 1895 to 1945. Korea was occupied by the Empire of Japan in 1905, and officially annexed in 1910. Its colonial history finished in 1965.

2.2.2 Political economic approach

The alternative approach for explaining the miracle of East Asia is a political economy one. The starting point of this idea is Johnson' s (1982) famous theory of 'the developmental state'. This idea has strongly influenced East Asian research (Aspalter, 2006).

The original concept of the 'developmental state'

The theory of 'developmental states' can be regarded as one of the most powerful and persuasive explanations for the economic success of East Asian countries (Pempel, 1999). It was first proposed by Chalmers Johnson in 1982 by analysing the modal economic planning bureaucracy in Japan. The idea of the developmental state goes beyond the contrast between the American and Soviet economies (Johnson, 1999). It is a key breakthrough in the American literature on Northeast Asia which provides a breath of fresh air compared with the liberal constructions of the modernisation literature or the successive 'pluralist' conceptions of post-war Japan (Cumings, 1999).[5]

One most creditable contribution of Johnson (1982) was that he proposed a three-way division of states using Weberian ideal types; 'plan rational' (Japan), 'plan ideological'[6] (Stalinist state), and 'regulatory'[7] (the New Deal American state) based on the state's relationship to the domestic economy (Cumings, 1999).

The developmental state, according to Johnson (1982), can be seen as a causal argument linking interventionism with rapid economic growth. The East Asian states, as viewed in the developmental approach, have been successful because their governments have the controlling power over a variety of things in order to guarantee economic success. This is different from a 'regulatory state' and a 'plan-ideological'

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[5] 'Patterned pluralism', 'bureaucratic inclusionary pluralism', 'network state' – all such terms seek to graft an American pluralist conception onto an unyielding Japan (Cumings, 1999, p. 63).

[6] According to Johnson, C. (1982, p.18), 'plan ideological' is different from 'plan rational'. Economies of the Soviet type are plan ideological where "state ownership of the means of production, state planning, and bureaucratic goal-setting are not rational means to a developmental goal… they are fundamental values in themselves, not to be challenged by evidence of either inefficiency or ineffectiveness".

[7] 'Regulatory state': the principal goals for these states are to set basic 'fair' rules for economic competition and to umpire private market disputes. Typical liberal-democratic or even social-democratic states are clustered in this group. The United States and Britain are two typical examples.

state which define their primary long-term mission as improving national economic development by active and regular interventions by the governments.

Central to the activities of developmental states is a highly competent and autonomous national bureaucracy, and the intimacy of its relationship with the private sector and the intensity of its involvement in the market (Leftwich, 1994; Johnson, 1982). More specifically, Pempel (1999, p.139) summarised these government strategies as to:

> *"extract capital; generate and implement national economic plans; manipulate private access to scarce resources; coordinate the efforts of individual businesses; target specific industrial projects; resist political pressures from popular forces such as consumers and organised labour; insulate the domestic economies from extensive foreign capital penetration; and more especially, carry through a sustained project of ever-improving productivity, technological sophistication, and increased world market shares".*

Following Johnson's work, scholars named the similar development strategy in the four tiger economies as 'developmental state theory'.

The 'developmental welfare state'

About three years after Johnson's (1982) developmental concept was first raised, a pioneering book edited by Dixon and Kim (1985) first linked the institutional characteristics of welfare systems in Asia with the political and socio-economic context of their development. Following this work, a range of publications appeared to expand to cover welfare systems in the Middle East, Africa and the developed market countries (for example, Dixon, 1987; Scheurell, 1989).

As mentioned previously, Midgley (1986) was the first welfare expert to expand the concept of the developmental state in political economy study to welfare research. According to him, East Asian tiger economies represent a "reluctant welfarism" in which social welfare has been developed with the goal of fast economic growth. In order to achieve the economic goal, policies need to guarantee cheap production costs, for instance, low taxes and wages, and flexible and long working hours. As a result,

social spending has remained at a low level. Welfare benefits and their coverage have been developed reluctantly by the governments of East Asian states.

In addition, Deyo (1992, 1989) further argued that social and economic development goals in Asian NICs are closely linked under their basic model of development of export-oriented industrialisation (EOI). EOI requires more efficient utilisation of human resources, such as low wages and compensation levels, high productivity and low levels of labour conflict. In order to achieve the success of EOI, some social policies such as education, health and housing are needed to maintain or reproduce human resources. Furthermore, for the maintenance of a low level of labour conflict, states need to intervene in wage negotiation and control the trade unions by reducing their influence on wage setting, and on labour and welfare policies. It was a notable feature of welfare development in East Asian states during the fast economic growth period in the twentieth century. Although there are some differences among the components of the social policies between the Asian NICs, some common features can be summarised: they all perform well in terms of enhancing labour productivity, encouraging enterprise training and subsidising wages for economic growth (Deyo, 1992, pp. 304-305).

Following the works of Deyo (1992, 1989), Tang (2000a) further highlighted the role of developmental states in economic and social policy development by analysing state welfare in Hong Kong, Singapore, Korea and Taiwan. He re-emphasised the nature of developmental states and their particular ideologies. According to him, developmental statism has shaped East Asian welfare systems. He indicated that all these developmental states share a common feature of government intervention (Tang, 2000a, p. 137). He noted that in East Asia, the governments take a 'production-first' approach to public policy. As a result, their policies have been "modest, reactive, and cautious". The top priority of the governments of developmental states is to stimulate industrialisation. In order to achieve this goal, social policy has been mainly used to promote the legitimacy of the government, to pacify the labour force and to guarantee investment in the education and health of the workforce (Aspalter, 2005a).

Both Midgley (1995, 1986) and Tang (2000a) emphasised the ideology of developmentalism in these countries, which is that the states believe that economic

growth will eventually benefit all of the population. Tang (2000a, p. 139) summarised the common features of these states on the basis of his analytical efforts on the important aspect of social development in comparative social policy research – although not clearly referring to the existence of an East Asian welfare model - indicating that East Asian states share a common ideology: the trickle-down theory of development. They believe that the whole population could gain real benefits through economic growth. And all these states are labelled as having low public social expenditure, relatively flexible labour markets, and limited universalism and egalitarianism where social policy is mainly designed to target politically pivotal groups. Consequently, an unequal stratification between social classes is very common. Welfare reforms only happen when the ruling parties face a real political challenge, such as a financial crisis. Despite statutory social assistance programmes being established in all the tiger economies, compared with other industrialised countries, the scope of the programmes remains small and the level of benefits is low. And finally, family and individual are the main welfare deliverers in these states. Tang (2000a) thus clearly indicated that the existing welfare theories of western countries do not fit the East Asian situations. He further provided an alternative framework to understand the features of East Asian welfare systems.

The idea of the developmental welfare state has been recently supported by Kwon (2005a; 2005b;1997). Kwon (2005a) indicated that in developmental welfare states, only a selected group of people can access the social protection programmes, while the vulnerable section of the population is living outside the system. To avoid the demand for universal welfare benefits, the state does not provide funding for the welfare programmes. Instead, it seeks to enforce both formal and informal rules to regulate contributions to social benefits by companies and their employees. Because of this selective system, the initial stage of development in the East Asian states had its inevitable downside. Since social benefits only covered mainly industrial workers, the welfare state tended to reinforce socio-economic inequality (Kwon, 2005a). Kwon (1997) therefore pointed out that the vulnerable people in the societies suffered not only because of the difficult situation, but also because of their exclusion within the welfare state. Kwon (2005a) summarised that a regressive welfare system and the suppression of dissenting voice are two significant features of East Asian developmental welfare states.

The most recent research regarding developmental welfare states was conducted by Lee and Ku (2007). Their study is one of very few empirical studies involving East Asian welfare regimes, which makes it particularly noteworthy. Fifteen variables were used to develop an index for factor and cluster analyses of nineteen OECD countries including Japan and Korea, and Taiwan (which is not a member of the OECD). The fifteen variables were governmental social expenditure, social investment, social consumption, labour union movement, economic modernization, non-coverage of pensions, gender discrimination, stratification in welfare, self-reliance in retired life, contribution from employees and employers, family supports, scale of private pensions, dependency on trade, and resource dependency which were grouped into four main factors: developmentalism, corporatism, individual responsibility in social security and international trade competition.

Lee and Ku (2007) concluded that East Asian states precisely demonstrate developmental characteristics, such as low levels of public social expenditure, economic modernization and labour union movement, and high levels of family support and gender wage disparity. The results of hierarchical-cluster analysis showed that the welfare regimes of Korea and Taiwan were different from Esping-Andersen's three worlds, despite sharing features of liberal (low-coverage) and conservative regimes (welfare stratification). However, Japan, unlike its neighbours, contains various characteristics of different regimes, which places it between developmental regimes and Esping-Andersen's conservative regimes.

Productivist welfare capitalism

Based on Johnson's (1999, 1982) concept of the developmental state, Holliday (2000) expanded Esping-Andersen's (1990) welfare typology by adding a fourth criterion - 'productivist welfare capitalism' (PWC). The PWC thesis has made an important contribution to understanding the features of social welfare development in East Asian states (Kim, 2008). It has two central features: first, East Asian states are growth-oriented developmental states, and second, social policy is strictly subordinate to the overriding policy objective of economic growth (Holliday, 2000).

The PWC perspective strongly emphasises economic growth in the formation of social policy in East Asian states. Holliday (2005, p. 146) indicated that in the miracle

economies, "welfare initiatives were made on the basis of their expected contribution to growth". As a result, the states had "minimal social rights with extensions linked to productive activity, reinforcement of the position of productive elements in society, and state-market-family relationships directed towards growth" (Holliday, 2000, p. 708). By adding the fourth regime into Esping-Andersen's (1990) typology, Holliday (2000, p. 709) summarised:

"a liberal world prioritizing the market, a conservative world defined by status, a social democratic world focused on welfare, and a productivity world premised on growth".

Based on this basic logic of PWC, Holliday (2000) further identified three clusters within productivist capitalism: facilitative, developmental-universalist and developmental-particularist (*see* Table 2.2). The facilitative regime is similar to Esping-Andersen's liberal type, except that its social policy is subordinated to economic growth. As a result, in this type of state, social rights are minimal, stratification effects are limited, and the market is prioritised. In developmental-universalist states, social rights are extended to productive elements of the population. The state plays a major role in economic policy. Therefore, its social policy lies significantly alongside the market and families. The developmental-particularist state has almost no social rights. The welfare is provided among productive elements in society. The state plays a direct role alongside the market and families. Five East Asian states (Japan, Korea, Hong Kong, Singapore and Taiwan) were analysed by brief national case studies, and he eventually summarised that Japan, Korea and Taiwan are developmental-universalist states within a productivist world, Hong Kong is mainly a facilitative state, and Singapore is a developmental-particularist state.

The ideas of productivism or productivist welfare capitalism and developmentalism or developmental social welfare are sometimes used synonymously by some scholars (Holliday, 2005; Gough, 2004; Holliday, 2000). Both terms are used to describe the importance of economic growth in the states' welfare strategies in East Asian states.

Table 2.2 The Productivist World of Welfare Capitalism

	Social policy	*Social rights*	*Stratification effects*	*State-market-family relationship*	*Example states*
Facilitative	Subordinate to economic policy	Minimal	Limited	Market Prioritised	Hong Kong
Developmental-Universalist	Subordinate to economic policy	Limited; extension linked to productive activity	Reinforcement of the position of productive elements	State underpins market and families with some universal programmes	Japan, Korea, Taiwan
Developmental-particularist	Subordinate to economic policy	Minimal; forced individual provision linked to productive activity	Reinforcement of the position of productive elements	State directs social welfare activities of families	Singapore

Source: Holliday (2000)

Holliday (2000, p. 148) argued that "social policy is an extension of economic policy, and is subordinated to and defined by economic objectives". At this level, productivism and developmentalism share a common interest in the relationship between economic and social policies, which appear to be synonymous. On the other hand, the distinction between the core assumptions of these two concepts is also apparent. This is in contrast with the ideology of developmentalism, where the idea of integration prevails (Lee, 2010, p. 6). As mentioned above, Holliday (2000) further refined the PWC into three levels based on the degree of subordination of social policy to economic policy. In terms of developmentalism, as Midgley (1997b, p. 181) suggested, "social development seeks to integrate economic and social policies". Midgley and Tang (2001, p. 245) further stressed:

"Social policy cannot take place without economic development, and economic development is meaningless if it fails to bring about significant improvements in the wellbeing of the population as a whole".

It is clear that developmentalism emphasises the integration of social policy and economic development. On one level, one could argue that this difference is slight, however, it should be treated carefully when merging the two concepts together.

As well as Holliday, Rudra (2007) also used the term 'productive' to identify the East Asian welfare characteristics. Drawing on the work of Esping-Andersen (1990) and Dréze and Sen (1989), she determined the two welfare regimes to describe welfare development in low-developing countries – productive and protective. Unlike Holliday, she linked a productive welfare regime to Esping-Andersen's commodification concept. Degrees of commodification including the level of public investment in education and health-care, the literacy rates, the rates of infant mortality, and the percentage of infants vaccinated against diphtheria, pertussis and tetanus (DPT) are used to measure productivity. Productive welfare states, according to her, are export-led countries which prioritize commodification (2007, p. 384), and East Asian states were clearly grouped into the productive welfare regime. Although the productive welfare regime has different explanation from Rudra and Holliday, there are some common features which can be summarised. Both of them emphasize public investment in education and health, and the range of social policies is much more limited and closely linked to economic purpose.

Productivist welfare capitalism is one of the most important concepts in East Asian welfare research. However, like Esping-Andersen's typology, it is also one of the most controversial theories in East Asian welfare studies. Scholars argue its rationality in a variety of aspects. One crucial view is that after the economic crisis in East Asian countries, particularly in Korea, the productivist model no longer seems to work (Kim, 2008). It has therefore been suggested that the theory needs to be reviewed seriously on at least five points.

First, from the most fundamental view, scholars argue whether there is actually a unique East Asian welfare model. For instance, Kwon (1998, p. 67) argued that East Asian welfare states have their distinctive patterns of welfare development. It is therefore not pertinent to talk about a single, homogeneous welfare model in East Asia. Similarly, White and Goodman (1998, p. 14) pointed out that there are clear and important differences between East Asian states. A divergence is seen in their method of welfare provision (Kwon, 2005b).

Second, the PWC strongly emphasises the priority of economic growth in East Asian welfare development. As well as his original work on PWC, Holliday (2005, p. 145)

stressed again that "welfare initiatives were made on the basis of their expected contribution to growth" in his later publication. Based on this logic, welfare development is regarded as an obstacle to economic growth. As a result, the welfare regimes of East Asian states should have been maintained as 'productivist' after the Asian crisis in 1997. However, Kim (2008) argued that contrary to the PWC logic, over the last decade, in Korea and Taiwan, the welfare systems have tended to be more redistributive. More importantly, welfare development in Korea seems to follow a path common to the welfare state development in other industrialised countries, rather than staying on the unique East Asian productivist path.

Third, some features of PWC may not be uniquely Asian. For instance, one important argument of PWC is that the welfare programmes in East Asia are mainly introduced for specific and political purposes rather than to meet social needs (Holliday & Wilding, 2003b, pp. 162-163). This might be true. However, this purpose of welfare development can also be found in other regions in the world. Even in Western traditional industrial countries, some examples prove that the welfare states are also contributed by non-humanitarian motives. For instance, in Germany, state insurance programmes were introduced to co-opt the militant socialist labour movement (Rimlinger, 1974).

In addition, Holliday (2005, pp. 153, 157) argued that welfare programmes focused on selected key industrial workers are one of the main features of productivism in Korea and Taiwan. However, the development of European welfare states shares a similar pattern in terms of the coverage of welfare programmes: from key industrial workers to other workers, and then finally to the self-employed (Pierson, 1998, p. 111). Pierson (2004, pp. 223-232) further pointed out that this pattern has been recurrent in Latin America and East Asia as well. Therefore, the privilege of industrial workers in East Asian states could be seen as an onset of universalization. There is no evidence to prove that this is a permanent element of the productivist welfare system. Hence, Bonoli and Shinkawa (2005, p. 21) may be right to point out that,

> *"Welfare states everywhere help improve productivity and contribute to economic growth by facilitating social cohesion and peaceful class relationships. In that sense, all welfare states are productivist."*

In addition, it should be noted that in East Asia, the relationships between welfare programmes and non-humanitarian intention are not always realised (Kim, 2008). They may sometimes weaken or even vanish. Scholars argue that since the mid-1980s, in East Asia various non-state actors such as civil movements and labour unions have played an increasingly important role in shaping and reforming welfare programmes (Peng, 2005; Wong, 2004).

Fourth, the PWC perspective lacks a real comparative framework. One central argument for applying PWC in East Asia is its ability to capture the unique characteristics of the East Asian welfare system rather than Esping-Andersen's typology. However, compared with the measurement indices of the three regimes, Holliday's analysis lacks quantifiable, systematic indicators enabling a consistent and a comparative measurement of 'the degree of subordination' of social policy to the economy (Kim, 2008). This perspective is largely based on some unsystematic features, which were based on some selective case evidences. Thus, the PWC thesis faced some critical challenges in terms of its rationality.

Finally, the PWC typology has neglected the difference in stratification effects between East Asian states, which had been regarded as an essential criterion of Esping-Andersen's welfare typology. East Asian states choose different schemes for building their modern welfare systems. The welfare systems in Korea and Taiwan rely initially on social insurances, and the selective feature remains the centrepiece of their system (Kim, 2008). In Singapore, the Centre Provident Fund (CPF) is the core welfare provider. In Japan and Hong Kong, public assistances are the crucial part of their welfare systems. In China, the situation is even more complex where the welfare system combines public funds, social insurances and public assistances. More importantly, Ku (2003) and Ramesh (2003) both argued that this difference between the states' choices in terms of welfare schemes became more salient after democratisation and the financial crisis.

Therefore, in the nutshell, as with Esping-Andersen's typology, although the PWC is the most important conceptual framework of East Asian welfare systems, it still needs to be reviewed carefully in the light of the above drawbacks.

The starting point of both the productivist and the developmentalist theses is economic concern, and besides these two main streams, Aspalter (2001) emphasised the conservative characteristics of the East Asian welfare system from the political perspective. This idea is not necessarily a new one in the Western world. Researchers in Europe and the United States (see, for example, Allan & Scruggs, 2004; Budge & Keman, 1990; Woldendorp, Keman & Budge, 1998) have proved that the length in power of a party and the nature of political parties in government as exemplified in their party programmes are the vital foundations for the overall design of a welfare state and for their social policies in particular (Aspalter, 2005b). Woldendorp, Keman and Budge (1998) found that with a conservative party, the government is less likely to invest in and develop welfare programmes. Drawing on this basic idea, Aspalter (2001) argued that East Asian states including Japan, Korea, Taiwan, Singapore, Hong Kong and mainland China are conservative welfare regimes which are independent as a fourth type of welfare regime, in that conservative political parties and conservative social forces play an essential role in welfare development in the region. In his framework, the European conservative regime in Esping-Andersen's typology was named as Christian Democratic. The features of conservative social policy, however, are almost identical to developmental/productivist regimes, in which social insurance systems are to a large extent designed for the occupational classes, social assistance is highly stigmatized, and mostly guaranteed only after means tests, and the state shows strong disapproval of government-financed social welfare policies (Aspalter, 2001, p. 4). Aspalter (2006, p. 300) concluded that "social policy in East Asia is marked by its inherent support for the economic system".

Another influential research study regarding East Asian welfare ideal-type analysis was proposed by the Bath research programme 'Social Policy in Development Contexts' led by Gough (2006, 2000). Unlike previous researchers, Gough argued from the most fundamental level of a welfare regime - the definition. He redefined a welfare regime as the most "general level an institutional matrix of market, state and family forms, which generates welfare outcome" (Gough, 2006, p. 23). Drawing on this typology, rather than Esping-Andersen's original horizontal division, he classified welfare regimes vertically. In this framework (2004, pp. 33-34), the first type is a welfare state regime in which "people can reasonably expect to meet (to a varying extent) their security needs via participation in labour markets, financial markets and

the finance and provisioning role of a 'welfare state'". The second one is an informal security regime in which "people rely heavily upon community and family relationships to meet their security needs, to greatly varying degrees". The last ideal type is an insecurity regime in which there is "a set of conditions which generate gross insecurity and block the emergence of stable informal mechanisms to mitigate". This regime can only be found in areas of world "where powerful external players interact with weak internal actors to generate conflict and political instability". East Asian states, based on this analysis of welfare mix, are firmly located under an informal security regime which reflects a set of conditions where people rely heavily upon community and family relationships to meet their security needs.

2.3 A difficult conclusion

Despite scholars' attempts to identify East Asian welfare regimes from varied perspectives during the last two decades, it seems that it is difficult to reach a satisfactory conclusion. All the existing theories have been regularly criticized and reviewed from a variety of perspectives and approaches. Choi (2007) argued that the existing discussions have neither provided a satisfactory tool to understand current welfare changes nor offered new and meaningful insights.

However, although the East Asian model thesis has faced considerable challenges, it cannot be denied that East Asian states do share some common characteristics.

First, the cultural influence shapes the initial characteristics of welfare programmes in these states, though in different degrees and from varied aspects. For instance, although facing considerable criticisms, Confucianism, one of the most influential ideologies in East (specially North-East) Asian states, can still be viewed as an important macro-level factor in the policy-making process. In addition, the colonial experiences of Korea and Taiwan from Japan, and Hong Kong and Singapore from the United Kingdom caused these states to share some common features.

Second, economic development is the central goal for the states, and social policy is mainly designed for maintaining this goal. This viewpoint has been cited by most East

Asian welfare literatures. The East Asian cases illustrate how economic and social policies are integrated and how they interact.

Third, due to the economic priority feature, the states insist on minimizing their own role and maximizing the role of firms and families in terms of welfare provision. In other words, the states act as regulators instead of providers.

Fourth, in order to achieve the minimal financial investment, welfare programmes are either insurance-based or based on provident funds, or a mixture of the two. Such welfare provision structures rely heavily on civil society for finance. As a result, redistribution is minimal in these states.

Fifth, universalism and equalitism are very limited. Welfare programmes are mostly selective, focusing first on state employees and core workers with slower expansion to other groups. Such common characteristics have led scholars to argue the existence of the new fourth type of welfare regime - the Asian welfare regime (*see* Table 3.3).

These shared features of East Asian states offered by the existing literatures could obviously help further research studies. These studies have lit a light for opening discussion about welfare development in the region. They also provide some meaningful empirical studies for further research.

Besides these similarities among East Asian states, in recent years, scholars have tended to identify the intra-regional differences within East Asian states. The recent research findings on the ideal type analysis of welfare systems show systematic differences in the region. Looking more closely at East Asian states, it is easy to find a great many differences across these states from their political structures and economic systems to their welfare systems (Takegawa, 2005). It seems that some researchers have recognised the differences (see, for example, Walker & Wang, 2005; White & Goodman, 1998), but most of the work has tended to emphasise the similarities rather than the differences in order to make them comparable to Western style.

Even so, there still some studies which have noticed these differences in the region. For example, Hort and Kuhnle (2000) argued that two groups can be identified within East Asian states – one based on the German-style social insurance programmes, whereas the other uses provident funds based on the legacy of British colonialism. Another famous example is Holliday's (2000) work. He proposed three sub-types of productive welfare regime, as previously mentioned.

An empirical work regarding the intra-regional divergence was that of Park and Jung (2007) which clearly shows the diversity across East Asian states. Based on cluster analysis of three aspects – the number and timing of welfare legislation, contents of the main welfare programmes (including pension, health, work injury and unemployment) and public expenditure on social welfare (including education, housing, social security and health), nine East Asian states were clustered into sub-types.

The first sub-type comprised Japan, Korea, Taiwan, Thailand and the Philippines. These states are mostly in the first generation of economic and welfare development with social insurance programmes. Consequently, two parallel development strategies can be found in these states. On the one hand, they focus on education to boost economic growth. Simultaneously, they develop social security programmes to calm the increasing social pressure over inequality within the context of democratisation. The welfare provisions in these states are mainly insurance-based.

The second group comprises two city-states: Hong Kong and Singapore. Both of them rely mainly on provident funds in terms of welfare provision. Their shared British colonial experiences encouraged their development of housing and education.

The third group consists of Indonesia and Malaysia. These two South-Eastern states show a mixed model of welfare provision (social insurance and provident funds). Both of them concentrate on education and health investment. Their work challenges the homogenous view of East Asian welfare systems.

Moreover, if we broaden the research boundary from Japan and the little tigers to China or South-Eastern Asia, this adds a further challenge to comparative East Asian welfare research. It obviously adds more diversity into this research area.

The most recent empirical East Asian welfare study presented by Hudson and Kühner (2012) has supported this viewpoint. Seven Asian countries, Malaysia, Singapore, China, Taiwan, Korea, Hong Kong and Japan, were included in this study. By using fuzzy-set ideal type analysis, the authors found that it is difficult to argue that there is a consistent East Asian model of welfare. The seven states were classified into four sub-groups. Malaysia and Singapore were placed in the purely productive ideal type; both of these countries show extremely high scores for education investment. China and Taiwan were clustered into the protective plus ideal type, which features both social protection (including income protection and employment protection) and education investment characteristics. Korea joined Hong Kong in the weak-productive-protective ideal type, but each shows a slightly different focus: in terms of social protection, Korea emphasises only employment protection, while Hong Kong chooses to focus on income protection. Japan fell into the pure non-productive ideal type.

Hudson and Kühner's (2012) research also supported the recent East Asian welfare thesis - 'beyond productivism' or 'beyond developmentalism'. Scholars argue that after the financial crisis, social policies in East Asia (especially in Taiwan and Korea) have moved from productive toward a more protective or universal pattern (Kim, 2008; Kwon, 2005b, 2002). They argued that social policy in the region had gone beyond the 'economic axis' logic, and had developed its own autonomy. Hudson and Kühner's (2012) work has provided strong empirical evidence to support this point of view.

2.4 Where to go next?

The ongoing debates regarding East Asian welfare regimes seem to have passed their peak in recent years. The number of comparative East Asian welfare studies has not greatly increased, especially when compared with the remarkable social development in the region. Choi (2007) argued that the research has come to a standstill. Two most obvious reasons for this view stand out.

First, current research lacks theoretical creativity, according to Choi (2007). He argued that most East Asian welfare studies rely on (or at least start from) existing Western theories, which causes them to neglect the significant socio-political-economic differences between the West and the East. A notable example is the new institutional approach, which has frequently been used in analysing the welfare trajectory from the past to present. However, he acknowledged a need to be careful when using it in East Asian cases. It should be remembered, he commented, that the roots of institutions in East Asian states are still shallow and electoral politics have not functioned effectively in many cases or have not taken a firm root.

Second, together with the theoretical weakness, current research fails to conduct an effective empirical analysis for its argument. One crucial issue is that it is difficult even to transform the central arguments of East Asian welfare regime to measurable empirical evidence. For example, the axis of East Asian welfare systems is economic priority. However, how can we measure it? In addition, the data issue cannot be overlooked. Compared with the West, welfare is still in its infancy in most East Asian states. While comparable datasets have begun to appear in recent years (for example, the 'key indicators' data developed by the Asian Development Bank), without theoretical grounding, it is hard to expect that this data could be used for an effective study. Choi (2007) commented Lee and Ku's (2007) work as an example. He indicated that despite this study is one of only a few empirical researches regarding East Asian welfare regime, which in itself makes it remarkable, it is highly questionable in terms of their choice of developmental factors. He argued that these factors, including low government social expenditure, family support, non-coverage in pension, self-reliance in retired life, a high proportion of the labour force in agricultural sector, and a high gender gap, can be found in many low-developed capitalist economies/welfare regimes. These shared characteristics can hardly represent a unique East Asian regime. Hence, in order to test the East Asian welfare regime, a new framework and a new research tool are particular necessary.

2.5 Summary remarks

To sum up, existing mainstream theories of East Asian welfare model, which focuses on the differences between the East and the West is helpful for revealing some unique

characteristics of East Asian welfare system. However, most current studies of East Asian welfare type are relying on in-depth case studies. The findings are therefore unsystematical. A recent work from Hudson and Kühner (2012) tries to solve this issue by using fuzzy-set ideal type analysis. They build a productive-protective model to analyse the welfare system of 55 high and higher-middle income countries. This study also includes China, Hong Kong, Japan, Korea and Singapore. However, their classification only relies on four indicators: education investment, training investment, employment protection and income protection. Some key policy fields such as health care are not included in this research which may cause the findings unprecise. In addition, this study is conducted based on the analysis of quantitative data which sometimes may not explain the complexity of the cases. Also, this research is carried out based on data from specific years, which cannot reflect the policy changes in the region. Nevertheless, this study provides a useful starting point of this research. Drawing on their work, the following chapter provides the conceptual framework of East Asian welfare system based on the debates of productive welfare model.

Table 2.3 Classification of welfare state regimes and characteristics of East Asian welfare systems

	Classical Western theory of welfare state regimes			Welfare regime
	Social Democratic Welfare Regime	*Conservative welfare regime*	*Liberal welfare regime*	*East Asian welfare systems*
Dominant Social Policy Instruments	• Universal Social Security systems • Public Social Services • Public Employment • Social Transfers (redistribution by way of subsidies, social assistance and taxation)	• Occupational Social Security • Preferential Treatment of special Interest Groups • Corporatism in Social Service Provision (esp. NGOs and the Church) • Social Transfers (redistribution by way of subsidies, social assistance, and taxation	• Means-tested welfare benefits • Private savings and insurance • Tax Programmes (mostly tax cuts benefiting the rich)	• Public investment in human capital development • Social policies are directed towards economic contribution • Employment-based welfare and social security programmes (including mandatory savings) • Occupational social security systems • Social policy prefers to special interest groups
Focus in Social Welfare Policy lays on	• Individual • State	• Family • State	• Individual • Market	• Family • Market
Degree of decommodification	Strong	Medium	Weak	Weak
Degree of Redistribution (effect on stratification	Strong	Medium	Weak	Weak to medium
Example	Sweden	Germany	United States	East Asian states

Source: Elaborated by author based on Aspalter (2006, 2005c), Esping-Andersen (1990) and other original East Asian welfare research

Chapter Three

The theoretical framework for East Asian welfare regime study

The aim of this chapter is to develop a theoretical framework to overcome the current dilemma and compare East Asian welfare systems in a more systematic way. This chapter is divided into three main sections, following this introduction, section one reviews the debates regarding to the productive welfare model. This section focuses on the different understandings of productive welfare regime. Drawing on the points raised in the debates, the research provides a new conceptual framework to assess the East Asian welfare systems in the section two. And finally, the section three provides the details of the rational choice of the cases.

3.1 Productive welfare debates in welfare regime studies

Since the PWC emerged for explaining East Asian welfare regimes in the 2000s, 'productivism' has become a kind of mainstream notion in East Asian welfare regime research studies. It is easy to find a plethora studies to support this thesis (*see*, for example, Aspalter, 2001, 2011; Kwon, 2005b). Some scholars, however, have raised questions about the robustness of this thesis. The concerns mainly focus on two areas: 1) can the current concept of productivism really explain social development in East Asia? And 2) how true is it that this term is unique and different from the western welfare world? To answer these questions, the first important thing that has to be clarified is what 'productivism' actually means.

For Holliday, the founder of East Asian productivist welfare studies, there are two central aspects of productivist states: a growth-oriented development strategy and all aspects of state policy, including social policy are designed to achieve this goal (Holliday, 2000, p. 709). The basic characteristic of a productive social policy is its emphasis on "economic growth and political legitimation" (Holliday, 2005, p. 148).

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Social policy in productive welfare states, however, has no autonomy – it serves for achieving economic/industrial goals. According to Holliday, this is also the fundamental difference between East Asian productivist welfare capitalism and traditional welfare states:

> *"Whereas Esping-Andersen's three worlds allow social policy some autonomy and thereby allow it to become one of the shaping forces of the social order, the productivist world does not permit this. Instead, **economic objectives are paramount,** and set the tone for society as a whole. Welfare states are partly or wholly defined by their social policy. It is one of the marks of their particular brand of civilisation. **Productivist states are defined by their economic policy. For them, the rest is incidental."***

(Holliday (2000, pp. 707-709), Holliday (2005, p. 148), bold emphasis added by the current author)

Holliday further indicated that productivist social policy does not mean minimizing social protection (Holliday, 2005, p. 148). In a productivist state, in order to achieve the economic objectives, the social policy has some clear tasks – "led by education, but also taking in all other sectors" (*ibid.*). Based on this statement, Wilding (2008, p. 22) explained the role of productivist social policy as "securing a ready supply of appropriately qualified personnel to service the economy, securing political and social stability, ensuring the smooth operation of the labour market and so on". More simply, Gough (2004, p. 190) stated that a very crucial development of the key feature of productivist social policy is its emphasis on social investment rather than on social protection. This point of view has been widely accepted and cited by East Asian welfare scholars. It is also the reason why most of the subsequent research into East Asian welfare regimes have focused on distinguishing and weighting the two dimensions of social policies, production and protection (*see*, for example, Holliday, 2000; Hudson & Kühner, 2012).

However, although theoretically productivism has always been viewed as one of the most significant 'labels' of East Asian welfare regimes, it is not an entirely new term in the welfare world. It can be traced back to the 1960s in the western welfare states. Choi (2013, p. 213) summarised the history of this concept by explaining that the origins of this term are the two earliest theories of welfare states: the industrialist thesis and the capitalist thesis. Based on the arguments for industrialism (*see*, for example,

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Wilensky, 1975), the welfare state can be regarded as a by-product of economic growth and increasing social demands. And analogously, the capitalist thesis (for example, neo-Marxist theory) emphasises that the role of a capital-based state is to create and/or maintain the conditions for producing profitable capital (O'Connor, 1973, p. 6).

Hence, both of these theses indicate that a welfare state can be seen as a productive entity for promoting economic growth. Especially during Keynesian economic management in the 1960s, the welfare state was regarded as "a proper strategy of national macroeconomic management in advanced capitalism" (Weir & Skocpol, 1985, p.108). In this period, therefore, social benefits were introduced to protect a productive workforce where welfare programmes were mainly focused on male workers (Van der Veen & Groot, 2006). The welfare state was regarded as a tool for promoting productivity growth – economic growth in other words.

From the 1970s, with the end of the Keynesian welfare state, welfare state crisis debates emerged in the Western world. During this period, many welfare states reformed their welfare systems and welfare retrenchment was dominant in the western world (Choi, 2013). The term 'productivism' was understood in a different way in this context. It started to be formally used by western scholars thereafter.

Goodin (2001) was one of the pioneers in the West for using the term 'productivism' in the field of welfare research.[8] In '*Work and Welfare: Towards a Post-productivist welfare regime*', he classified countries by using the links between 'work' and 'welfare'. According to him (2001, pp. 13-14), Esping-Andersen's classification of welfare states can also be explained by this linkage: the liberal is 'work, not welfare'; the corporatist is 'welfare through work', and the social democratic is 'welfare and work'. Taken in this sense, he concluded that all these regimes share a common essential: productivism. In other words, according to Goodin, productivist welfare can be regarded as welfare achieved through productivity. 'Productivism' here simply

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[8] Esping-Andersen (1994) also used 'productive' to characterize a welfare model, but in a rather narrow and specific way. According to him, a 'productive' contribution only refers to paid and not unpaid labour, which according to Goodin (2001: 14) could also possibly be regarded as equally productive in a broader sense.

refs to work or productivity. He, therefore, proposed a simple work-welfare typology for analysing welfare regimes.

The term was, however, regarded with suspicion by Fitzpatrick (2004). In '*A Post-Productivist Future for Social Democracy*', Fitzpatrick (2004, p. 214) showed that productivism is not the same as productivity. He argued that an increase in productivity leads to growth and hence to the possibility of spending on state welfare. Therefore, productivity is essential to the positive-sum strategies of social democratic capitalism, whereas

> *"productivism is the institutional, discursive and psychological process by which social goals are subordinated to the domains of productivity growth" (Fitzpatrick, 2004: 216).*

So in order to achieve productivism, social policy has to be introduced for growth.

Holliday's 'productivist welfare capitalism' combines the viewpoints of Goodin, Fitzpatrick and traditional liberal welfare regime in the western world. First, it shares the liberal view that large welfare expenditure and comprehensive social policy are not desirable for promoting economic growth. Second, it refers to Goodin's argument that selective welfare programmes were introduced which benefited mainly the productive workforce. The level of benefits should also be closely linked to current status in the labour market. Finally, similar to Fitzpatrick's productivism, social policy should serve economic growth as well.

In addition to the above discussion of productivism, Rudra (2007) also used the term 'productive' to identify the East Asian welfare characteristics. As discussed in previous chapter, in addition to the productive dimension, she also proposes an opposite dimension, protective, which describes welfare development in low-developing countries. Degrees of commodification are used to measure productivity.

Although the productive welfare regime has different explanations from Rudra and Holliday, there are some common features which can be summarised. Both of them

emphasise public investment in education and health, and the range of social policies is much more limited and closely linked to economic purpose.

The most recent empirical study focusing on comparative East Asian welfare studies was that of Hudson and Kühner (2012). In that study, similar to Rudra's classification, the authors also used the productive and protective dimensions to cluster welfare states (including East Asian countries). Four key indicators were used for measurement: employment and income protection programmes refer to 'protective' dimension, and investments in education and active labour market programmes (hereafter ALMP) reflect 'productive' dimension.

3.2 Conceptualise East Asian welfare models

3.2.1　Defining the dimensions

Conceptualisation is the key part of this research study. In terms of the choice of welfare programmes, scholars choose different indicators or dimensions to classify states due to various research interests (*see* Table 3.1).

Drawing on the discussions regarding the productive welfare, following Hudson and Kühner's (2012) and Rudra's (2007) typologies, this thesis also used the 'protective' and 'productive' dimensions to classify the welfare systems of East Asian states.

In order to identify the productive welfare dimensions, according to Holliday's (2000) productivist thesis, a key characteristic of productivism has been considered, that is high investment in human capital for promoting human productivity.

Based on this argument, three policy areas were selected in this study to measure the productive feature of welfare systems. First, investment in education is a crucial variable which reflects the investment in human capital. Focusing on education has always been regarded as the most significant feature of East Asian welfare regimes.

As well as education, as Table 3.1 shows, health care has also been frequently used to examine the productivism of East Asian welfare system. Comparing to education, health care is an ambiguous aspect. Some scholars also use it to measure the protective

dimension (*see,* for example, Croissant, 2004). However, bearing in mind that the outcomes of a health-care service are improvement of life expectancy and an increase in child survival rates. Therefore, in this sense, health-care services enhance the productivity of the whole population. Hence, as in Rudra's typology, easy and cheap-to-access health-care is used as productive factor in this research.

In addition, comprehensive maternity leave is also employed in assessing productive characteristic of welfare systems. The reason behind is maternity leave is an important policy field for encouraging females to participate in the labour market.

So a high investment in education, comprehensive maternity leave, and an easily and cheaply accessible health-care service are the three essential features of the productive dimension which were selected for this study.

On the protective side, this study mainly follows Esping-Andersen's decommodification ideology. Protective welfare state should protect individuals without requiring any participation in the labour market. Drawing on this argument, same as productive dimensions, three protective welfare dimensions are examined in this research.

First, income protection can be regarded as a bedrock for measuring social protection in the field of comparative social policy research studies. The most notable of which is Esping-Andersen's typology. Sickness benefits, old-age income protection and unemployment insurance are used in this classical theory for calculating the degree of decommodification. Similar to Esping-Andersen, old-age pension and unemployment benefits are employed in this research. These two policy fields have also been analysed frequently in comparative East Asian welfare research (*see*, for example, Hudson & Kühner, 2012, 2011; Lee & Ku, 2007).

Housing policy has also been included in this research. It mainly refers to public housing in welfare research, which has always been neglected in comparative welfare studies. However, it is an important part of a safety-net in a society. Hill (1996) suggested that housing is a crucial method for eliminating inequality and poverty in a

society as it accounts for a large part of a household's need. So housing was also included in the protective dimension.

To sum up, six policy fields are included in this research. While education, health care service and family policy (refers to maternity leave in this research) are used in assessing the productive feature of a welfare system, the protective welfare feature are examined by old-age income protection, housing policy and passive labour market policy (refers to unemployment benefits in this research).

Table 3.1 Overview of selected welfare regime typologies

Authors	*Analytical Focus*	*Indicators*
Jones (1993b)	Cultural influence in welfare development	Social welfare, social security, health, housing, education
Hort and Kuhnle (2000)	Conditions of welfare development	Occupational injury, sickness, pensions, unemployment insurance, family
Holliday (2000)	Productive characteristics	Overall social welfare development
Gough (2004)	Exploring East Asian welfare regime	Welfare mix: education, health, social security (old age pension), safety nets/ welfare outcome: human development index, povery rate, gini index
Croissant (2004)	Features of welfare regimes	Public social expenditure (including social security and welfare, health, education, housing) / development of social security programmes: the year of original and current social programmes introduced, and the type of programmes (including work injury, sickness, old age, unemployment, family allowance)/Contribution rates: old age and all social security programmes/ Coverage of important social security programmes in the private sector
Aspalter (2005a)	Constitute the fourth welfare regime	Overall welfare development of each East Asian states
Lee, Y. J. and Ku (2007)	Testing developmental thesis	Developmentalism: Governmental social expenditure, family supports, non-coverage in pension, gender wage lag, social investment, self-reliance in retired life, economic modernization, labour union movement, social consumption/ Corporatism: contribution from employers, stratification in welfare, contribution from employees/ Individual responsibility in social security: scale of private pension/ International trade competition: Trade dependency
Park and Jung (2007)	Intra-regional diversity	Social welfare programmes (pension, health, work injury, unemployment): programme type, coverage, benefits, contribution /Welfare efforts: public spending on welfare programmes
Hudson and Kühner (2012)	Testing productivism thesis	Employment protection: employment laws index /income protection: Botero et al. (2004)'s index/ education investment: 'key indicators' of ADB/ (Labour market training: qualitative cases)

Source: Elaborated by author from original studies

3.2.2   The conceptual framework

On the practical level, this research study used the ideal type analysis for assessing the welfare models of East Asian states. The ideal type concept can trace its historical origins back to Max Weber (1949). Burger describes Weber's view:

> *"Ideal types are statements of general form asserting the existence of certain constellations of elements which are empirically only approximated by the instances of the class of phenomena to which each type refers" (Burger, 1976, pp. 133-134).*

Following this ideology, a welfare system is constructed by two distinctive welfare policy dimensions: productive and protective dimensions. As discussed above, each dimension consists of three policy fields. Productive welfare dimension includes education (E), health-care (H) and family policy (F), while protective dimension is examined by old-age income protection (I), public housing policy (P) and the passive labour market policy (U). Figure 4.1 illustrates the conceptual framework of this thesis.

Four aggregated welfare models or ideal types are identified at this point based on the weighting of productive and protective dimensions: productive welfare model, protective model, balanced welfare model, and underdeveloped model. More sub-models are identified in Chapter 8.

Figure 3.1 The conceptual framework of welfare system

Welfare System
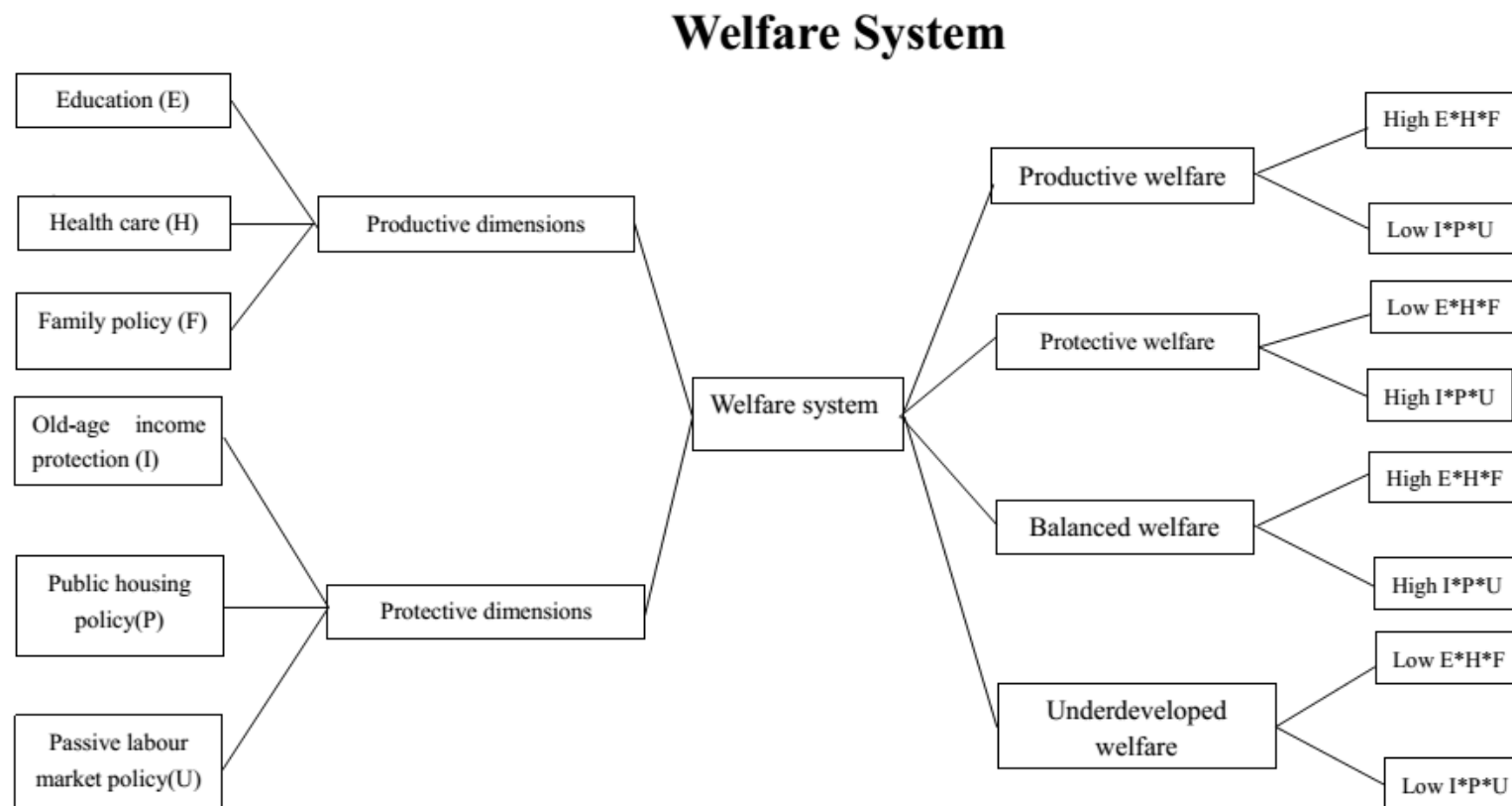
The purely productive ideal type is represented by high scores in health care, education and family policy, and low scores in old-age income protection, passive labour market policy and housing policy. In other words, a high productive score together with a low protective score are a conjunction of necessary conditions for a state to be a purely productive welfare state. The other three ideal types follow the same ideology. Protective welfare model is the opposite of the productive welfare model that with high membership scores of protective dimensions and low scores of productive dimensions. Balanced welfare model combines both productive and protective elements. And underdevelopment welfare model is represented by low scores on both productive and protective welfare dimensions. More details of the classification of the welfare models are presented in Chapter 8.

In terms of measurement, the purely social expenditure approach was abandoned in this thesis for three reasons.

First, in most developing countries, underestimation is a common issue in official statistics as a result of different governmental accounting practices (Kim, 2010). Especially in East Asian states, a significant feature of the welfare systems is multi-dimension welfare provision. States act like a regulator rather than a provider in welfare practice. Consequently, measuring public expenditure is not precise and is 'unfair' to these states.

In addition, it cannot reflect ongoing institutional change which will be reflected in future spending.

And lastly, although it cannot be proven, social spending in terms of common sense arguably has a negative effect on economic growth. So governments tend to keep the growth of social expenditure lower than the GDP growth rate. It is, therefore, sometimes produces a fake image of social development in these states (Kim, 2010).

Hence, Esping-Andersen (1990, p.19) concluded that "expenditures are epiphenomenal to the theoretical substance of welfare states". They should not be used individually to measure the welfare regimes.

Therefore, in addition to the social expenditure data, this study mainly relies on in-depth case studies. Both expenditure data and qualitative case studies are employed for assessing the six policies. For example, the education is evaluated by public spending on education as well as the duration of free mandatory education and the accessibility of tertiary education. The detailed calibration of the welfare dimensions is presented in Chapters 6 and 7.

3.3 Defining the fields – Who can represent East Asia?

The final step of this conceptual framework is to form a clear understanding about the research fields. The first question is always the most basic one. However, it has always been neglected by scholars. Who can represent East Asia?

In this research, China, Hong Kong, Japan, Korea, Singapore and Taiwan have been selected due to three reasons.

First, most studies on East Asian welfare systems focus mainly on analyses of Japan, Korea, Hong Kong, Singapore and Taiwan. One important reason for this is that these states have similar economic and cultural backgrounds. And these states have been selected in some important researches on East Asian welfare regimes, such as productivist welfare capitalism. Some later researchers aimed to follow this choice. As one main objective of this research is to test PWC thesis, it is, therefore, necessary to include Japan, Korea, Hong Kong, Singapore and Taiwan in the analysis.

In addition, despite China has rarely been incorporated into comparative social policy research studies, it should be involved in. The most important reason is that it is increasingly an economic and political power in the world. China was the world's second largest economy by the end of 2011. Great economic success with unbalanced social welfare development encourages scholars to explore this country. In addition, as mentioned in Chapter 1, very few comparative social policy studies include China before. Hence, it is worth to explore the welfare development in this country.

And finally, all these societies share some common characteristics. They have similar cultural backgrounds. A common language of Confucianism, and to a lesser extent, Mahayana Buddhism, are often combined in a religious and philosophical syncretism as an ethnic identity of the region (Goodman & Peng, 1996, p. 195).

They also have some similar features in their economic development. All of them have experienced high economic growth in recent decades. The economic growth has essentially been based on an export-oriented economic structure in the region. Also, each society shows comparatively high savings rates, which may be connected with the lack of state provision of social welfare.

Therefore, based on these similarities of these six states, it is reasonable to include them to analyse East Asian welfare models.

In addition, the research covers the policy changes from 1990 to 2010. There are two main reasons. First, this period covers two financial crises in the region. It is, therefore, can help to explore the effects of the crises on the welfare developments in East Asia. Second, most mainstream theses were published during this period (most notable, Esping-Andersen's *the Three World of Capitalism* in 1990 and the PWC in 2000). Three time points were selected accordingly, namely 1990, 2000, and 2010.

3.4 Summary

According to Holliday (2005, 2000), the basic characterise of a productive social policy is its emphasis on economic growth and political legitimation. A productive welfare state emphasises on social investment (such as education) rather than on social protection. Drawing on this argument, this research develops a framework to assess the welfare models of six East Asian states by weighting the two dimensions of social policies – productive and protective.

For evaluating the productive dimension, this research is mainly following Holliday's (2000) ideology that a key characteristic of productive social policy is its high investment on human capital in order to promote human productivity. Three policy areas have been employed in this research: education, health care service, and family policy (maternity leave). On the protective side, drawing on Esping-Andersen's

decommodification ideology, old-age income protection, housing policy, and passive labour market policy are used.

Four aggregative welfare models are identified in this chapter, including productive welfare model, protective welfare model, balanced welfare model and underdeveloped welfare model. In addition, six East Asian states including China, Hong Kong, Japan, Korea, Singapore, and Taiwan are selected in this research mainly based on their popularity in existing East Asian welfare research. And the research covers from 1990 to 2010.

Chapter Four

The choice of methodology - set-theoretic methods

Generally, this thesis employs set-theoretical approaches as a research methodology. Based on the research purposes, two methods will be used in this research. Fuzzy-set ideal type analysis (fsITA) is used for classifying East Asian welfare capitalism, and fuzzy-set qualitative comparative analysis (fsQCA) is employed for analysing the reasons for welfare reforms in these countries. The aim of this chapter is to introduce the methodological approach employed here. Since this methodology approach is still relatively rare in comparative social policy analysis, the chapter will first explain why traditional research methods such as case study, regression and standardised measurement analysis are not used in this research. Finally, the chapter will focus on a discussion of fuzzy-set analysis and elaborate two of its techniques: 1) fuzzy-set qualitative comparative analysis, and 2) fuzzy-set ideal type analysis.

4.1 Why not use traditional approaches?

Comparative social policy researchers use various techniques for comparing cases. Some are employed most often and hence could be labelled as the 'traditional' approaches, such as regression analysis, case studies and index measurements. In this section, a discussion of why these methods are not used in this research is presented. The analysis focuses on the reasons why many scholars use these techniques and what problems they present.

4.1.1　Regression

Regression analysis has always been regarded as the 'traditional', 'mainstream', 'classical' or 'frequentist' statistical approach in social science research (Abbott, 1998; Freedman, 1991; Kent, 2009). It was originally introduced by Legendre and Gauss in the early nineteenth century in order to analyse data on the orbits of astronomical objects (Kent, 2009). It was then developed by several scientists, notably Francis Galton and Karl Pearson. It has been used in the social sciences at least since 1895,

when Yule introduced it - a student of Pearson - in the *Economic Journal* with an article entitled 'On the correlation of total pauperism with the proportion of out relief'. At present, regression models have been used to make causal arguments in a wide variety of social science applications (Freedman, 1991).

Regression analysis and related techniques, including multiple regression, logistic regression, factor analysis and structural equation modelling, are based on frequency distributions of recorded values for a given set of cases (Kent, 2009). It is by far the most frequently-used technique in the social, behavioural, educational and health sciences (de Leeuw, 2004). However, regression analysis has received considerable critical discussion over a long period. These criticisms come not only from 'qualitative' researchers, but also from some 'quantitative' experts (Cooper & Glaesser, 2012).

As early as 1948, Turner started to question the assumption of regression analysis that cases are a "causally homogeneous universe" and the linear logic in social science. Meehl (1970) raised questions regarding the conceptualisation and adequacy of 'control' variables.

Similar arguments were discussed by Abell (1971). Freedman (1991) criticised the problems of using regression as a causal modelling procedure. Ragin emphasised the inability of regression to deal with complexity in social science. Analogously, Mahoney and Goertz (2006) summarised the crucial differences between the linear algebraic approach and an alternative technique to the regression-set-theoretical approach. Moreover, most recently, Kent (2009) has criticised the limitations of frequentist statistics in social science research based on the four fundamental characteristics of the regression approach.

Despite the fact that the criticisms regarding regression are different based on the different viewpoints of scholars, some fundamental limitations of regression, especially in this research, can be summarised. It should be stated here that the variable-oriented approach is not used in this research, not only because the number of cases is small but, more importantly, because quantitative research has its fundamental drawbacks which may not be appropriate for East Asian welfare research.

First and foremost, regression analysis makes some assumptions which in practice may not be justified (Kent, 2009). It assumes that all variables are metric and are normally distributed. In other words, by using regression analysis, variables are assumed to have equal distances between the rating scales, which, however, in social science, are often different (Kent, 2009). In addition, regression-based techniques assume linearity. However, in practice, the social sciences are far more complex than a straight line. It is easy to find some examples in the real world that one observation causes two distinct outcomes. Finally, regression analysis assumes that the independent variables are not highly inter-correlated. In practice, independent variables are often highly related. If these assumptions are not well justified or examined before launching a research study, the result could be far from reality. Therefore, Schrodt (2006) argued that the result of linear regression is just like "a box full of gerbils on methamphetamines", in that only a minor change in model specifications could cause huge differences.

Second, to some extent, frequentist statistics are difficult to use for a 'real' causal analysis. In the opinion of quantitative researchers, causality is a property of mathematical and statistical propositions rather than a property of real social action (Abbott, 1998). Results are generated by reliance on mathematical techniques, but not the reality itself. However, if we go back to the original idea of causality proposed by Aristotle, several different types of causal link exist (Kent, 2009). Zetterberg (1965) summarised a series of linkages between determinants and results in the third edition of his classic book '*On theory and verification in sociology*', including reversible and irreversible relations, deterministic and probabilistic relations, sequential and co-extensive relations, sufficient and contingent relations, and necessary and substitutable relations. Similarly, Ragin (2000, 1987) showed that the social sciences are complex and contain various causal relations. According to him, causality includes necessity, sufficiency, equifinality[9] and conjunctural causation[10] are hard to determine by conventional quantitative research methods[11].

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[9] Equifinality: a scenario in which alternative factors can produce the same outcome. With an equifinality relationship, there are multiple paths by which the outcome can occur.

[10] Conjunctural causation: a causation includes of various sets, where single conditions need to combine other conditions to have effect on the outcome.

[11] There are ongoing debates regarding whether the set-theoretic methods are priority to standard regression analysis in dealing with causal complexity. Section 4.3 briefly discussed the details of the debates.

In addition, causality in variable-oriented analysis seeks to identify systematic patterns among values in a set of variables across cases in an aggregate (Cooper *et al.*, 2012). Cases have little effect in research that has been simply rewritten by several numbers. They lose their identity, their complexity and their narrative order that describe each as a story (Abbott, 1992). However, using aggregated data may cause several problems in research. There are well-known problems in using data produced by organisations (Cooper *et al.*, 2012). First, there may be substantial differences between the concepts that inform the data collection and those that are the interests of researchers. Second, there may be significant diversity between the data and the phenomena concerned by using different concepts and standards. Third, the validity of aggregate data may also be a problem. For instance, for collecting data on gender, in order to identify people as female or male, trust is often placed in official records, or even on differences in first names. However, methods such as these will never be without error. Finally, one common challenge for every East Asian expert is the lack of available comparable data. Therefore, regression analysis has rarely been used in East Asian social policy research.

4.1.2 Case Study

Unlike the quantitative approach, in-depth case study can also work where there is a complexity of phenomena. It is the commonest method in East Asian welfare research studies. Almost all the literatures regarding East Asian welfare systems are based on case studies. For example, in the book edited by Aspalter (2002), case studies regarding welfare systems in Japan, Korea, Hong Kong, Taiwan and Singapore are presented to produce the conclusion. Holliday (2000) also used case study in his classical East Asian welfare article. He analysed the social policies of five East Asian welfare states: Japan, Korea, Hong Kong, Taiwan and Singapore. In the case studies, social protection systems such as the pension system and health services, the coverage of social protection and the state's role in establishing a welfare system are analysed country-by-country.

However, with this methodology, the shortcoming is also significant. With country-by-country case studies, it is hard to build a real comparative framework. The result is that, despite some notable conclusions in the field of social policy study, most existing studies regarding East Asian welfare are not comparative research in any real sense due to "the absence of a consistent, longitudinal and comparable data set regarding East Asian welfare systems" (Ku & Finer, 2007, p. 122). They are more like introductions to East Asian social policies, rather than actual comparative research. However, although case study has some weaknesses in comparative studies, it is still important in East Asian welfare research.

In addition, with case study, it is to some extent difficult to generalise findings (Bennett & Elman, 2006; Mahoney & Goertz, 2006). One purpose of this thesis is thus to find a more systematic way to consider East Asian cases. Therefore, a purely case study approach is not appropriate for this work.

4.1.3 Standardised measurement

Standard examination such as z-score is a very common method when comparing cases from different distributions in social science. In the field of social policy research, it is often employed for examining welfare states. Especially, since Esping-Andersen's (1990) work was published, his typology has influenced comparative social policy research for over two decades. By building a de-commodification index, he classified eighteen OECD countries into three welfare regimes: liberal, conservative and social democratic. Three indicators are selected for constituting the index: old-age pension, sickness benefits and unemployment insurance. Each indicator uses three elements to measure: the net replacement rate of previous income, coverage of the benefits and eligibility rules. Then the index is produced by standard deviations from the mean. Esping-Andersen simply gave each state a score of 1, 2 or 3 by comparing the scores of each indicator and standard deviation from the mean (Figure 4.1 shows this in detail). In his research, '1' is given for any value smaller than one standard deviation from the mean; '2' is given for any values within one standard deviation of the mean; and '3' is given for any values greater than one standard deviation from the mean.

Figure 4.1 Esping-Andersen's typology

$$> (s.d. + mean) = 3$$

$$\left\{ \begin{array}{l} > (mean - s.d.) \\ < (s.d. + mean) \end{array} \right\} = 2$$

$$< (mean - s.d.) = 1$$

Factors' scores (1-3)
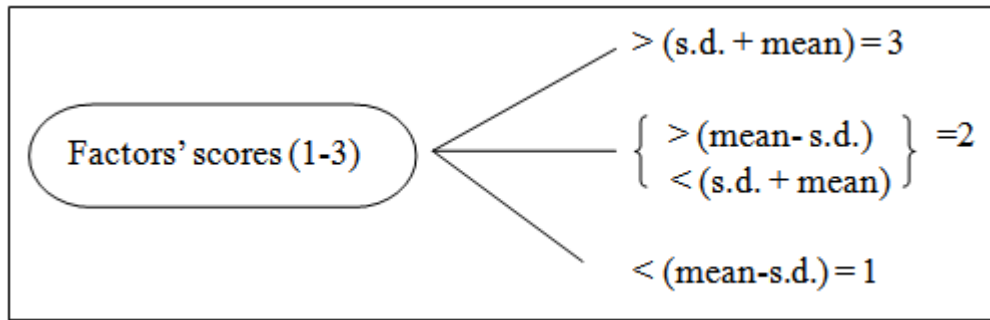
Source: adapted from Esping-Andersen (1990, p. 54)

Esping-Andersen's typology is a good example of index measurement. However, this method has been frequently criticized (for example, Hudson & Kühner, 2012, 2010; Kangas, 1994; Ragin, 1987). Hudson and Kühner (2010) in their work listed in detail the drawbacks of the z-score in comparative welfare states research. They argued that the shortcomings of this traditional method are significant. One of the primary problems is that the result relies deeply on statistical variables such as mean average and standard deviation, which may mask some important information. In addition, this typology may have more issues if it is used for analysing East Asian welfare. As mentioned in the previous chapter, one feature of the welfare systems in East Asian states is the emphasis on human capital investment, such as education. If this standardised typology is used to analyse East Asian welfare, the result will be based on the means that combine the social protective and the 'productivist' indicators. In this case, if there are two states, one ranking low in protective welfare indicators but high in productive features, and another has the opposite scores, the final scores of these two states could be at the same level.

Moreover, in most cases, the welfare system of a state may show protective and productive features at the same time. Thus, with the traditional typology, the final result may have limited research value. Especially with East Asian states, their advantages in productivism are restricted by their shortcomings in protective features. Therefore, simply using standardised measurement such as Esping-Andersen's typology and z-scores may not be a suitable choice for this research.

4.2 An alternative choice: set-theoretical methods

4.2.1 What are set-theoretical methods?

The term 'set-theoretical method' was proposed by Schneider and Wagemann (2012) but it often comes under different labels, such as 'Boolean methods' (Caramani, 2009), 'logical methods' (Mill, [1843], 1974) or the well-known term 'Configurational Comparative Methods' (CCM) proposed by Rihoux and Ragin (2009). In this current research, the term 'set-theoretical method' has been employed because it focuses more on the foundation of the methods than the social reality being analysed by set-theoretic relations.

Technically, set-theoretical methods are based on Boolean algebra in mathematics. Therefore, they follow the mathematical theorems of set relations (notably the de Morgan's law). The roots of set-theoretical methods in social science go back at least to the nineteenth century, notably to the work of Mill ([1843], 1974). It was first fully introduced in Ragin's book *The Comparative Method*, published in 1987, and has been further developed in subsequent articles and books (notably Ragin, 2008 and 2000; Rihoux & Ragin, 2009).

The set-theoretical methods are employed to perceive relations between social phenomena as set relations by working with membership scores of cases in sets. The data used in this method are membership scores in sets which represent social science concepts. Scholars have established two basic qualitative breakpoints, 1 and 0, which refer to whether a case is 'fully-in' or 'fully-out' of a set.

For instance, Britain is a member of the set of democratic countries whereas North Korea is not. Therefore, in this set, the member score of Britain is 1 and that of North Korea is 0. In the fuzzy-set version, member scores can go beyond the purely dichotomic division that can be allocated between 0 and 1. In other words, cases can be partial members of the sets. A case such as North Korea could be scored lower than 1 but higher than 0 in the democratic set.

In addition, by employing the set-theoretical method, the relations between social phenomena are perceived as set relations. Still using the democratic set as an example,

West European countries can be seen as democratic countries. However, the set of democratic countries in the world has also included other countries such as the US. Therefore, in terms of democracy, the set of Western European countries is a subset of democratic countries.

More importantly, the subset relations are closely linked with necessary and sufficient conditions between social phenomena, or even in more complex modifications such as the so-called INUS and SUIN conditions (Schneider & Wagemann, 2012). Indeed, the analysis of different conditions (especially necessary conditions) is the ultimate goal for most social science research studies. In the following section, the rules for operating sets and the different types of condition are discussed individually.

Rules for operating sets

Although set-theoretical methods are case-based methods, this does not mean that numbers and mathematical principles do not matter. Set-theoretical methods (including QCA) employ set theory, the logic of propositions, and Boolean and fuzzy algebra in practice (Schneider & Wagemann, 2012). In general, three basic operations are crucial in set-theoretical analysis: logical AND, logical OR and logical NOT.

First, logical 'AND' is used in order to denote a combination of two sets. For instance, a set of 'democratic OECD countries' requires both the elements 'democracy' (*D*) and 'OECD' (*O*) to be present at the same time. Then the combination of *D* and *O* would be called '*D* and *O*', This operation is called a conjunction, or a logical AND conjunction.

In Boolean and Fuzzy algebra, the logical AND is also called a Boolean, or fuzzy multiplication. A symbol '*' is used to denote this operation. Therefore, in Boolean and Fuzzy algebra, '*D* and *O*' can be written as '*D*O*'. Alternatively, a dot '· ' is also used in some reports. Alternatively, even more commonly, many scholars simply report without any operator (*DO*).

Theoretically, in set theory, the combination of elements is an operation of intersection. Still take the 'European OECD countries' as an example. The combination of *D* and *O* are two sets that countries can be members of or not. Set *D* contains all European

countries and excludes all non-European countries, while set *O* contains all OECD countries and excludes all non-OECD countries. The intersection of *D* and *O* is the area where sets *D* and *O* overlap. Thus, the countries in the overlap area are fulfilling the joint requirement which is both European and OECD countries.

Furthermore, in set relations, in order to calculate a case's membership score in an intersection, it is necessary to take the minimum value of the case's membership across the sets that are combined. For instance, if a country scores 0 in set E which means that it is not a European country, and scores 1 in set *O* which means it is an OECD country, the final score of the set *DO* is equal to 0, since 0 is the minimum value of all sets across the elements that are combined by logical AND. This operation is also denoted as the minimum rule in set-theoretical methods.

The minimum rule is also used when dealing with fuzzy sets. For instance, a country scores 0.3 in set *D*, and scores 1 in set *O*, so the membership score of the combination of sets (*DO*) is 0.3 (the minimum of 0.3 and 1). It is similar in crisp sets, and the principle of the minimum rule is also called the 'weakest link in the chain' (Schneider & Wagemann, 2012, p. 44).

The minimum rule is one basic principle of the set-theoretical method. It is distinctive to the arithmetical average which is the predominant practice of data aggregation in most social science disciplines (Goertz, 2006b). For instance, in the above example, with membership in set *D* of 0.3 and in *O* of 1, the score of *DO* would be 0.65 by using the average, whereas, with the minimum rule, the score downs to 0.3. These different methods lead to different results which are quite important differences in the set-theoretical perspective.

By using set-theoretical methods, if a country has a membership score 0.3, this means that this country is more or less out of the democratic OECD countries, whereas a score of 0.65 means that it is more in than out. Hence different aggregation strategies lead to qualitatively different membership scores. Using the average aggregation strategy conceals the lower scores of the case by yielding to the higher scores.

However, the logical AND or the minimum aggregation rule, by contrast, regards all constitutive sets as indispensable for the overarching concepts The minimum rule could represent every possibility of the case. It does not allow mixing the 'weak' and 'strong' dimensions together. It is also an important advantage of set-theoretical methods when comparing cases with several indicators, such as fuzzy-set ideal type analysis.

Another crucial operator of set-theoretic methods is logical alternatives. This is called logical 'OR' ('*D* OR *O*'). Logical OR describes a disjunction between sets. It describes the sets of cases that are a member of at least one participating set.

In Boolean and Fuzzy algebra, it is called a Boolean OR and a fuzzy addition. A symbol '+' is used to present this set relation. It is important to note here that the '+' in Boolean algebra is different from the same symbol in linear algebra. For instance, in Boolean algebra 1+1=1, whereas in linear algebra 1+1=2.

In order to calculate the logical OR, in contrast with the logical AND, the maximum value across the single components is used. For instance, if a country scores 0.3 in set *D* and 1 in set *O*, then the final result of this country within the set of 'democratic or OECD countries' is 1.

The third basic operator of set-theoretical methods is the negation (or the complement) of a statement, which has been called logical NOT. It describes the negation of a set. For instance, the set of non-democratic countries is a set of NOT *D*. In Boolean algebra, this is written as *1-D*. In set-theoretical methods, the notations of '~*D*' or '*d*' (lower case) is frequently employed to denote logical NOT. Calculating the negation is straightforward: simply subtract the case's membership score from 1. For instance, if a country scores 0.6 in set *D*, then in set ~*D* (or *d*), it scores 1-0.6=0.4.

For logical NOT, one notification which should be mentioned is that a logical NOT set does not automatically denote the conceptual counterpart of the original set. For instance, the set of all NOT-rich countries does not automatically mean a set of poor countries.

These three operators are the most fundamental concepts of set-theoretical methods. In practice, the set relations could be a combination of all three operations, and are sometimes very complex.

Basic logic of sufficiency

Sufficiency is one of the most basic relations between phenomena. Theoretically, a condition can be considered sufficient for an outcome if the outcome always occurs when the condition is present. However, the outcome could also result from other conditions. In other words, the sufficient condition should not be the single condition which causes the outcome to occur. For example, if condition X is a sufficient condition of outcome Y, this can be expressed as follows:

$X \rightarrow Y$

This statement means 'if X then Y', or 'X implies Y', or 'X is a subset of Y'.

However, it should be borne in mind that X is sufficient for Y does not mean that $\sim X$ is automatically sufficient for $\sim Y$ (the symbol $\sim$ means *not*). In other words, all cases which are not members of Y are not automatically sufficient for all cases not in the set X. And cases with $\sim X$ are logically irrelevant for the statement of sufficiency of $\sim Y$. Indeed, technically, if we use de Morgan's law, it is clear that if $X \rightarrow Y$, then $\sim X \leftarrow \sim Y$. In other words, if X is sufficient for Y, then *not X* is necessary for *not Y*.

In short, if X is sufficient for Y, three patterns can be confirmed. First, cases are members of both X and Y. Second, no case is with X and $\sim Y$. Third, for cases with $\sim X$, no assumptions about the value of Y can be made. Hence, $X \rightarrow Y$ is falsified if and only if cases are both members of both X and $\sim Y$.

For the fuzzy-set version, the XY plot is frequently used for displaying the membership scores of cases in the set of condition X and outcome Y. For the sufficiency test, each case's fuzzy-set membership score in X must be equal to or smaller than its fuzzy-set membership in Y (Ragin, 2000, p. 237). Thus, if we apply this set relation in the XY plot, the sufficiency for a condition X of an outcome Y should be illustrated as shown in Figure 4.2.

The main diagonal - the line which starts at the bottom left point (0,0) and goes to the top right point (1,1) - divides the chart into two parts. The main diagonal shows the situation when *X* is equal to *Y* (X=Y). The area above the main diagonal contains the cases with membership *X* smaller than *Y* (*X<Y*), while the area below contains the cases with membership *X* greater than *Y* (*X>Y*). If all cases in the area above or on the main diagonal (in other words, if *X* is a subset of *Y*), *X* is the perfect sufficient condition for outcome *Y*. However, in practice, it is usually more difficult to find perfect subset relations for fuzzy sets than for crisp sets. (Rihoux & Ragin, 2009, p. 114).

Figure 4.2 XY plot-sufficient conditions

Distribution of cases for sufficient condition X
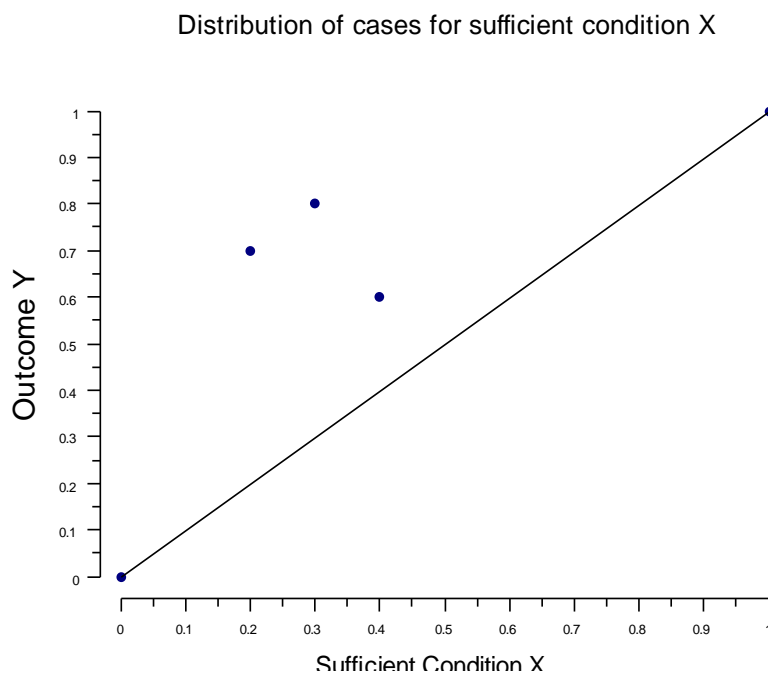
The common concern about causal analysis is whether the conditions are trivial or unimportant (Cooper et al., 2012, Schneider & Wagemann, 2012, Mahoney, Erin & Koivu, 2009, Rihoux, & Ragin, 2009, Ragin, 2000, Downs, 1989). However, compared with trivial necessary conditions, trivial sufficient conditions are rarely considered by scholars (Goertz, 2003). A fully trivial sufficient cause is also a sufficient condition which could cause the presence of the outcome. However, as it is trivial, it would never be actually present and as a result. Therefore, a sufficient cause becomes more important and less trivial when it approaches the threshold of also being a necessary condition, in other words, when *X* approaches *Y* (Goertz, 2006a; Mahoney, Erin & Koivu, 2009; Ragin, 2006a).

Basic logic of necessity

Logically, the necessary condition can be viewed as a mirror image of a sufficient condition. Thus, in this section, the discussion of the necessary condition will be shorter than that in the previous section of the sufficient condition. Theoretically, a condition *X* is a necessary condition for outcome *Y* if *X* is always present when *Y* occurs. In other words, *Y* cannot be present without *X*. This can be expressed as follows:

$$X \leftarrow Y$$

This statement means 'if *Y*, then *X*' or '*Y* implies *X*', or '*Y* is a subset of *X*'. In the test sufficiency, only cases that are members of condition *X* are interesting. Similarly here, only cases that are members of outcome *Y* are a matter for research (Schneider & Wagemann, 2012).

In the fuzzy-set version, it is similar to those for sufficiency. An XY plot is used to illustrate the set relations (*see* Figure 4.3). In contrast to a sufficient condition, if *X* is a necessary condition, the membership of *X* should be greater than or equal to the membership of *Y*. *X* is a superset of *Y*. And all cases should be located on or below the main diagonal.

Figure 4.3 XY plot-necessary condition

Distribution of cases for necessary condition X
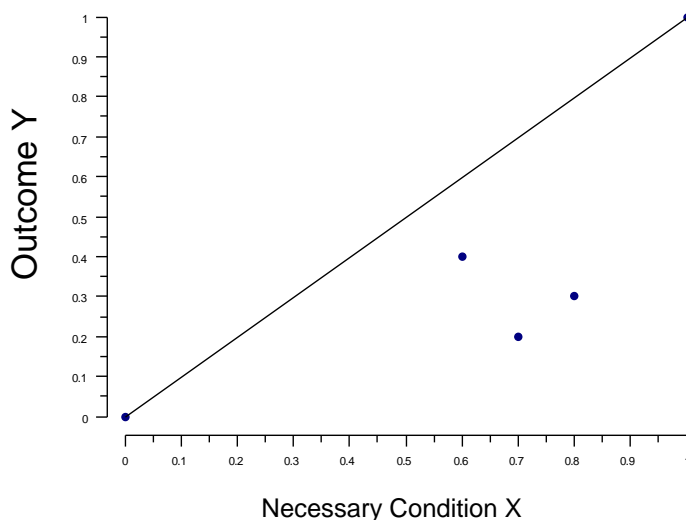
In a nutshell, if a condition *X* is a necessary condition for an outcome *Y*, then X≥Y for all cases. As with sufficient condition, this is also an asymmetrical relationship. *Y* is a subset of *X*. In an XY plot, all cases have to fall below or onto the main diagonal.

Assessing the importance of a necessary condition is a crucial part of causal analysis. It has always been emphasized by scholars. Indeed, trivial necessary condition is also the reason why some scholars distrust the use of causal analysis in social research. Distinct from trivial sufficient conditions, fully necessary conditions are always present, regardless of the presence of the outcome (Mahoney, Erin & Koivu, 2009). The most valuable necessary conditions are the ones that are present only when the outcome is present. In other words, they can predict the presence of the outcome. Avoiding trivial necessary conditions is important in order to have a precise result.

Causal complexity in set-theoretic methods-INUS and SUIN conditions

One significant advantage of set-theoretical methods is the possibility to deal with complex causes which is comparatively difficult in quantitative research. The social complex can be defined by three characteristics: conjunctural causation, equifinality and causal asymmetry (Berg-Schlosser *et al.*, 2009; Mahoney, 2008; Ragin, 1989. 2008, 2000; Schneider & Wagemann, 2012).

'Conjunctural causation' is allowed in the set-theoretical methods (especially QCA). It focuses on the combination of single conditions leading to the outcome. The existence of a necessary but non-sufficient condition explains conjunctural causation, since this necessary condition must be in a form of combination or a union in order to imply the outcome.

'Equifinality' allows for a different causal path to lead to the same result. For instance, different social forces leading to the emergence of welfare states in Western Europe (Esping-Andersen, 1990). The existence of a sufficient but non-necessary condition explains equifinality as it means that there is at least one other sufficient condition that exists for the outcome.

Finally, 'causal asymmetry' is different from symmetric notions which are predominant in the quantitative approach. With symmetric analysis, if causation can

explain positive or high values of a dependent variable, then it is also possible to explain negative or low values of the dependent variable. In other words, it does not need a separate analysis of high or low values of outcome *Y*. The explanation of *Y* automatically implies the explanation of ~*Y* and *vice versa*. In symmetric analysis, the explanations of occurrence and non-occurrence of a phenomenon such as democracy and non-democracy are the same. However, in asymmetric analysis, these explanations are different. The basic idea of asymmetry is that the causation *X* for outcome *Y* does not contain information on the causation ~*X* for *Y* (Schneider & Wagemann, 2012). Therefore, the causation *X* can only refer to one qualitative state of a phenomenon (or an outcome) *Y* - present or absent.

For instance, the following equation shows the typical QCA results:

$$A * B + C * D \rightarrow Y$$

This equation clearly illustrates the causal complexities in set-theoretical methods. *Both* solution paths *A*B* or *C*D* can lead to outcome. This is equifinality. However, no single condition (refers to A, B, C or D) can play a causal role without combining with other factors. This is conjunctural causation.

The conditions A, B, C and D alone are neither simply necessary nor sufficient, but in a form of combination they lead to the outcome. These are the so-called INUS and SUIN conditions.

The acronym INUS was coined by the philosopher Mackie (1965, p. 246), who defined it as "An insufficient but necessary part of a condition which is itself unnecessary but sufficient for the result". The first two letters in INUS capture the natures of single conditions, while the last two letters refer to the nature of a configuration. This was also the backbone of Ragin's work on qualitative comparative analysis in 1987 and 2000.

X_1 is an INUS cause of Y_1 if the overlapping set created by X_1 and one or more other causal factors is a subset of Y_1. (Mahoney, Erin & Koivu, 2009, p. 125)

INUS frequently occurs in set-theoretical research. For instance, in the above equation, condition *A* causes the outcome *Y* only in combination with condition *B*. It is insufficient but necessary to form a sufficient conjunction *A*B*. Also the sufficient conjunction *A*B* is not the only path to the outcome *Y* (there is another path *C*D*). Therefore, *A*B* together is unnecessary to the outcome. Thus, condition *A* itself is, as the definition shows, an insufficient but necessary part of a condition *A*B* which is itself unnecessary but sufficient for the outcome *Y*.

A final kind of cause is the SUIN condition, which has been regarded as the "last missing piece in the set-relational tool box" (Mahoney, Erin & Koivu, 2009, p. 143). Following Mackie's (1965) terminology, a SUIN cause is a "sufficient but unnecessary part of a factor that is insufficient, but necessary" for an outcome. Using the set theory, a SUIN condition can be defined formally as follows:

> *X_1 is a SUIN cause of Y_1 if Y_1 is a subset of the joint space created by X_1 when combined with one or more other causal factors.* (Mahoney, Erin & Koivu, 2009, p. 127)

An example of the SUIN condition can be shown by the following solution formula:

$$(A + B) * (C + D) \leftarrow Y$$

With this formula, two necessary conditions can be identified: the unions *A+B* and *C+D*. Each of the two unions is insufficient for the presence of outcome *Y*. In addition, each component of the unions, which is *A* and *B* for the first union and *C* and *D* for the second, is neither necessary nor sufficient for the outcome *Y*. However, both *A* and *B* are sufficient for the condition *A+B*. Likewise, both *C* and *D* are sufficient for the condition *C+D*. None of these conditions (*A, B, C* and *D*) is indispensable. However, when it is present, a necessary cause is present. Therefore, the SUIN condition is more related to the analysis of necessary condition (Mahoney, Erin & Koivu, 2009; Schneider & Wagemann, 2012).

In sum, set-theoretical methods are case-oriented methods which have been relatively rarely used in social policy research. There are several subfields, such as fuzzy-set

qualitative comparative analysis (fsQCA), crisp-set qualitative comparative analysis (csQCA), fuzzy-set ideal type analysis (fsITA), and so on. However, at the most fundamental level, the set-theories in mathematics such as Boolean algebra are used. With QCA analysis, four basic causal relations may be used in historical explanations, especially necessary and sufficient conditions which are the basic for logic. In this thesis, fsQCA and fsITA have been employed, and the analysis is mainly achieved using the software R (R Core Team, 2014) with QCA package (Dusa & Alrik, 2014) and SetMethods package (Quaranta, 2013)

4.2.2 Fuzzy-set ideal type analysis (fsITA)

FsITA follows all the principles of fuzzy-set theory with the addition of ideal type analysis. The sets are understood as "distinct and differing configurations of multiple, conceptually rooted, dimensions" (Hudson & Kühner, 2010, p. 169), which need to be designed to reflect theoretical concepts and analytical constructs (Kvist, 2007). The possible combinations of the sets constitute the so-called multi-dimensional property or vector space. With k being the number of aspects or sets, there are 2^k possible combinations in this property space, in other words, the ideal types.

The operation of fuzzy-set ideal type analysis is quite straightforward. According to Kvist, the pioneer of fsITA, a complete fsITA includes four basic steps (Kvist, 1999).

First, identifying aspects (or sets) based on theories and substantive knowledge. This step in this research is choosing the related social policies for examining the welfare system. It has been done in Chapter 3.

Second, calibrating the cases' membership scores of each set by using fuzzy-set theory. In other words, specifying the membership scores between two breakpoints - fully-in (1) and fully-out (0). The calibration needs to be based on "external, dependably known standards" and should not use "very crude but passive" mean averages and standard deviations (Ragin, 2008, p. 77). Depending on the varied substance of concepts and the raw material, numerous fuzzy category intervals may be used (Kvist, 2007; Ragin, 2000). The details of different calibrations are presented in Chapter 5.

Third, calculating the membership of each case in the ideal-typical model by using set-theoretical rules (*see* 4.2.1).

And finally, fourth, evaluating the homogeneity of cases to measure the conformity of each case to the ideal-typical instance. According to Goertz (2006, p.84), an ideal type means those cases that score 1 (i.e., the maximum) on dimensions. Inherent in the notion of an ideal type is that it lies at the extreme, usually positive, pole of the continuum. It is useful to think of ideal types in geometric terms. The ideal type is the point where all dimensions are at the maximum. Therefore, an ideal type with the highest score is a case's ideal type.

Fuzzy-set ideal type analysis offers a number of advantages compared with traditional measurements.

First and foremost, it reflects the real extent of diversity between cases. For instance, if a welfare state is 'weak' in one aspect, its final result with fuzzy-set ideal type analysis will not be made up by its 'very strong' aspect (Hudson & Kühner, 2010). This is a common drawback of conventional quantitative measurements. Cases sometimes appear different to what they 'really are'.

Second, the fuzzy-set method allows qualitative concepts to be compared quantitatively. Third, it builds a close correspondence between theory and data analysis (Ragin, 2000, p. 4).

Finally, one of the most interesting features of the fuzzy-set method is that it can respond to a question approximately based on an imprecise knowledge (Quaranta, 2010).

In addition to above advantages, the ideal type fuzzy-set approach may offer several advantages especially for this research.

As mentioned previously, the largest challenge of East Asian welfare research is the difficulty of obtaining available hard data. Using fuzzy-set methodology may combine the qualitative and quantitative research techniques together. In addition, the features

of East Asian welfare systems determine that using purely quantitative analysis may not represent the truth. And finally, the fuzzy-set approach could represent every possibility of a particular case. It does not allow mixing the 'weak' and 'strong' dimensions together, hence, the result may be more precise compared with the mean average approach. In this context, combining the features of the fuzzy-sets, this relatively new research method is adopted in this thesis.

4.2.3   What is Fuzzy-set Qualitative Comparative Analysis (fsQCA) ?

QCA analysis was developed in the field of political science during the 1980s in the US, where quantitative research had become dominant and where there also existed a historical qualitative comparative research tradition. Its roots go back at least to the nineteenth century, notably to the work of (Mill, [1843], 1974). It was first fully presented by Ragin (1987) in *The Comparative Method*, and was further developed by himself and other scholars in subsequent articles and books (notably Ragin, 2000 and 2008).

The starting point of QCA was to be Ragin's dissatisfaction with existing quantitative methods. He argued that there are many questions in social science which are not addressed properly, especially when relatively complex causal processes are involved, comprising conjuctions and maybe also disjunctions of causal factors (Ragin, 2008). Although various statistical techniques can to some extent be employed in this kind of research through the investigation of interaction effects among causal factors, this can only be achieved in some large datasets. However, sometimes in social science, only small numbers of cases have been involved. In addition, he also challenged what he regarded as simplistic assumptions in conventional quantitative analysis where causal relationships are always treated in a linear fashion (Ragin, 2006a). Finally, as a qualitative researcher, Ragin questioned whether statistical methods alone are sufficient to explain the variety between cases. The cases in some researches have always been treated in the same general way. For instance, in some national-level comparisons, all nation-states have been treated in the same way, without regard for their population and geographic size.

Therefore, some scholars propose that it is important to involve cases studies for discovering causal relationships in comparative research studies (Rihoux & Ragin, 2009). In this context, QCA and the further derivative - fuzzy logic - is the most important invention of case-oriented methods. In the past few years, it has gained considerable influence within social science research, especially in political historical research. According to Rihoux *et al.* (2013), 313 journal articles regarding QCA applications have been published from 1984 to 2011.

Ragin has used a variety of terms as partial synonyms for QCA, such as 'case-oriented approach', 'diversity-oriented approach' and 'Boolean approach' and, most recently, 'configurational comparative method' which is also the best known in social research.

On a most fundamental level, QCA is a research approach. It provides a new path to "dialogue between ideas and evidence" (Ragin, 2000, p.144). It contributes a bridge between variable-oriented, or quantitative and case-oriented, or qualitative research approaches. There were two ultimate goals for Ragin to introduce QCA (Ragin, 1987). First, it is used for gathering in-depth insight in the different cases and capturing the complexity of the cases. Second, compared with traditional qualitative research, QCA is designed for producing some level of generalisation. In addition, as a method standing in between the case-oriented and variable-oriented methods, QCA can "integrate the best features of the case-oriented approach with the best features of the variable-oriented approach" (Ragin, 1987, p.84).

First and foremost, QCA integrates some key advantages of the qualitative approach. It provides a bird's eye view of cases. In other words, it is a holistic approach. Each individual case is considered as a whole entity in QCA analysis. Moreover, as with other case-oriented methods, it provides in-depth insight of all the cases.

Furthermore, it develops a new conceptual method for causal analysis which maintains the complexity between observation and social phenomena. In recent decades, the emphasis on causal analysis has become dominant in most fields of social science. However, in the real word, causal relationships are not easy to explore. As Ragin (1987, p. 19) emphasized, "social phenomena are complex", which is also widely accepted by social scientists. It is the fundamental reason why QCA analysis is appropriate in

analysing causal relationships between observations in social science. He further argued that the social complexity which he termed 'order-in-complexity' is even more apparent in comparative social science, especially in national-level comparisons. As mentioned in 4.2.1, by employing QCA, researchers could explore the causal complexity of social phenomena.

On the other hand, QCA integrates some key strengths of the quantitative approach. First, it allows researchers to go beyond small-N restriction, which is a primary drawback of case-oriented studies. This is a key advantage of QCA as it allows the possibility to produce generalisations (Rihoux & Lobe, 2009). Moreover, its key operations rely on mathematical logic - Boolean algebra. Each case has been analysed and reduced to a series of variables (conditions and an outcome). Hence, it is an analytical approach and it is fully replicable. The replication allows researchers to test existing research, which is a key condition for progress in scientific knowledge (Popper, 1963). Finally, the Boolean algebra allows QCA to identify causality in the most parsimonious form. In other words, it can reduce the number of possible conditions for the outcome.

4.2.4   Why use fsQCA?

In addition to the advantages of fsQCA discussed in the previous paragraphs, fsQCA is also employed in this thesis because of the special characteristics of East Asian states. In this section, the reasons for using fsQCA and not regression for analysing the welfare reforms in East Asian states are summarised. There are at least four reasons.

First, six states were selected for this research, a sample size which is relatively small for using traditional statistical analysis. fsQCA as a case-oriented method is more appropriate in small-N causal analysis.

In addition, every East Asian expert faces one common problem which is the lack of variable comparable data. Among the six states, only Japan and Korea are OECD countries which have relatively complete comparable datasets. Of the others, Taiwan in particular is not a member of most international organisations. Consequently, it has not been included in most international datasets such as the World Bank, the IMF and

the United Nations. Moreover, China is a newly industrial country, so its data is not complete in most aggregative datasets.

Third, the cases selected for this research are varied in many aspects which makes it difficult for them to be compared in pure quantitative research. The differences include their geographic sizes, populations, political and socio-economic environments, and welfare system structures and providers. China is a super-size country, while Hong Kong and Singapore are city states. Moreover, the welfare systems are significantly different within these states. For instance, the main welfare provider in Singapore is CPF. However, most aggregate data of welfare expenditure does not include the CPF, which makes the result far different from the reality.

Another important issue is China. At the most basic level, two parallel welfare systems in rural and urban areas operate in China. Furthermore, some important social terms have been defined in a variety of ways between East Asian states. For instance, the term 'social security' means different things in different countries. Hence, crudely using aggregative data for this study could cause some serious problems. It is necessary to include case evidence in the study.

And finally, welfare regime research is basically a historical analysis. In other words, pure quantitative data cannot reflect the historical development of the welfare systems. For instance, public housing and public rental housing are important indicators for measuring housing benefit. In China, only a few cities provide public rental housing at the moment. If we only look at the data, China would have a very poor score on this indicator. However, if we take a historical view, about two decades ago, most Chinese families got free or nearly free housing from their work place, which is another kind of housing benefit. In this case, case study is a useful method to explain the real situation of the policy. Thus, for East Asian welfare research studies, the case-oriented method is more appropriate in this research. fsQCA as an important case-oriented causal analysis method has been therefore employed.

4.3 Summary

The set-theoretical method, as a relatively new research approach, has been used relatively rarely in comparative social policy research.

Of course, the set-theoretical approach does have its own shortcomings. For example, in recent years, there are ongoing debates regarding the comparison between set-theoretic methods and standard quantitative methods (i.e. regression analysis). The debates have focused on the ability for analysing causal complexity. Some scholars consider set-theoretic methods and standard quantitative research to be closely linked in analysing causal complexity, they cannot substitute for each other in analysing causal complexity (Mahoney, 2008; Thiem, Baumgartner, and Bol, 2015). While some argues that the former have clear competitive advantages over the latter (Ragin, 2008 , 2000, 1989;Schneider &Wagemann 2012, 2010; Vis, 2012), some strongly reject this viewpoint (Clark *et al.,*2006; Munck, 2016; Paine, 2015).

For example, Clark *et al.* (2006) argue that regression analysis with interactions is superior for testing hypotheses about necessity and sufficiency relations. This view appears to have recently been accepted by a number of scholars (i.e. Brady, 2013; Hug, 2013). Also, some scholars argue that the set-theoretic methods to some extent share common foundations with quantitative research. The improvement of set-theoretic methods regarding causal complexity is therefore questionable (*see,* for example, Paine, 2015). Recently, the most serious challenge has been proposed by Munck (2016), he argues that the set-theoretic methods have some fundamental issues for explaining causality due to the problematic Boolean algebra.

For responding these challenges, the experts of set-theoretic methods such as Schneider (2016) argues that many arguments regarding the set-theoretic methods are due to misunderstand of the approach. The set-theoretic methods do have its advantages on analysing causal complexity (Schenider, 2012, 2010).

To sum up, as these debates are recently emerged and are still continuing, there are no clear answers of whether the set-theoretic methods are problematic or whether they are superior to traditional quantitative regression analysis.

In addition, the choice of methodology in this research has been made also because of the specific characteristics of East Asian research. By connecting the quantitative and qualitative methods together, the set-theoretic methods could help to overcome the data availability issues of East Asian states. Therefore, despite there are ongoing debates regarding the set-theoretic methods, it is still the most appropriate choice for this research.

Besides that, scholars also argue the issue of how to define qualitative break-off points for the upper and lower boundaries of fuzzy sets (Hudson & Kühner, 2010). This is also the reason why the set-theoretical approach requires careful in-depth case studies as the backbone. All decision-making should be based on both theoretical and case-based knowledge.

Chapter Five

The basics of fuzzy-set qualitative comparative analysis

The previous chapter presents the basic rules of the set-theoretic methods. In this chapter, the emphasis are some crucial techniques of fuzzy-set qualitative comparative analysis, including calibration, truth table, consistency and coverage.

5.1 Calibration of set membership

Calibration is an initial and crucial step for any set-theoretic method. Theoretically, it is a "process of using empirical information on cases for assigning set membership to them" (Schneider & Wagemann, 2012, p. 32). However, the question which immediately arises here is 'how to calibrate the cases?' To answer this question, Ragin (2000, p. 150) proposed a basic guideline of calibration which is that set memberships should be assigned based on the combination of theoretical knowledge and empirical evidence in the process of calibration. In other words, the knowledge used for calibration should be external to the data (Ragin, 2008; Ragin & Giesel, 2008). Using measures such as the mean or median should be avoided in calibration unless they can be supported by theoretical or case knowledge. However, this does not mean that the distribution of raw data should be disregarded. Raw data is certainly important in calibration. It just means that case and theoretical knowledge should also be used for analysis. In fact, set membership scores are highly dependent on the research context (Ragin, 2008). In other words, the same raw data may be transferred into different set-memberships based on different concepts. For instance, on public welfare spending, Japan spent 27.53% of GDP in 2010, which would not translate into full membership of the set of high public social spending countries. However, in the context of an East Asian study, in contrast, Japan would be a member of the set of high public social spending countries. Set-membership scores are restricted to the research in which they are used (Schneider & Wagemann, 2012, p. 34). They are not universal indicators of concept (Collier, 1998, p. 5), but closely linked to the research context and concepts.

In practice, there does not exist a universal rule of calibration. Fuzzy-set scholars use different techniques to calibrate cases. Basically, three methods of calibration are frequently used by set-theoretic experts: 'direct', 'indirect' and 'theoretical' or 'qualitative' methods. According to Ragin (2008), the direct method uses a logistic function to fit the raw data in between the three qualitative thresholds for full non-membership, the cross-over point, and full membership. It has been frequently used by scholars in QCA analysis (see, for example, a series of works by Vis in 2011, 2010 and 2009, and the work of Ishiyama and Batta, 2012). In contrast to the direct method, which relies on the specification of the numerical values linked to three qualitative anchors, the indirect method of calibration requires a broad grouping of cases into set-membership scores. Therefore, the initial step in indirect calibration is not the expatiation of the three qualitative anchors, instead, the researcher roughly classifies the cases into different levels of membership based on case and theoretical knowledge. Compared with the direct method of calibration, indirect calibration is rarely used by scholars. Schneider (2008) stated that the direct method is more preferable for calibrating cases. However, if a researcher lacks the external criteria used for specifying the three qualitative thresholds in the direct method, the indirect method is an alternative choice. As well as the indirect method of calibration, qualitative (or theoretical) calibration can also be used when scholars lack precise knowledge of qualitative anchors. Compared with the first two methods, qualitative calibration is more straightforward and gives more freedom to scholars. The fuzzy-set membership scores are fully based on each scholar's case and theoretical knowledge. The qualitative calibration is also a common method frequently employed by scholars (*see*, for example, Emmenegger, 2010; Hudson & Kühner, 2012, 2009; Kvist, 1999).

The procedure of qualitative calibration is very similar to the first step of the indirect method. With the indirect method, cases are initially clustered into several categories and are scored with fuzzy-set membership scores based on the scholar's case and theoretical knowledge. With qualitative calibration, instead of groups of cases based on scores, each case is directly assigned to a fuzzy-set membership score based on the author's qualitative knowledge. With qualitative calibration, unlike the two methods described above, no tedious mathematical formulas are involved.

A major goal of calibration is to provide a "faithful translation of theoretical statements into a formal language" (Verkuilen, 2005, p. 466). Therefore, a quality calibration is particular important in set-theoretic research.

Compared with the indirect method of calibration, most fsQCA researchers use the qualitative or direct methods to calibrate cases, especially qualitative calibration.[12] Some quantitative scholars may still be concerned about the subjectivity of qualitative calibration. In response to this concern, Verkuilen (2005, p. 470) argued that

"there is nothing inherently wrong with direct[13] subjective assignments, although there are better or worse ways of doing it. In many circumstances, particularly in more macro-scale areas such as sociology, political science, or economic history, the likely error in subjective assessments is less than those found in seemingly objective indicators, which may have substantial bias".

In addition, Schneider and Wagemann (2012) also criticised qualitative forms of calibration as misleading. They argued that in practice, the analytical results derived from QCA are generally robust. There are no major differences between the fuzzy-set membership scores obtained by using qualitative calibration and the direct method of calibration. They used Emmenegger's (2010) set 'many institutional veto points' as an example. The majority of cases display identical membership scores, and no cases have dramatic moves within the fuzzy-set scales. Therefore, they concluded that

"as long as the locations of the qualitative anchors are carefully chosen and thus not subject to changes in the calibration strategy (theory-guided, direct, indirect, etc.) or the functional form used in the semi-automated procedures (logistic, quadratic, linear, etc.), then the differences in set-membership scores will not be of major substantive importance" (Schneider & Wagemann, 2012, p. 38, emphasis added by the current author).

Scholars use different calibration strategies based on different research contexts and theoretical knowledge. In practice, some QCA researchers even use more than one

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[12] The results have been concluded by summarising fifteen fsQCA journal articles published between 2010 and 2012.

[13] The term 'direct' method refers to qualitative calibration in Verkuilen's article.

method of calibration to make the fuzzy-set membership scores more meaningful. However, no matter which calibration strategy has been used, conceptual and theoretical knowledge remains the most important base line of a good calibration.

In this research, the direct calibration and qualitative calibration are employed based on the quality of data. The direct calibration is achieved by R (R Core Team, 2014) with QCA package (Dusa & Alrik, 2014) and SetMethod package (Dusa & Alrik, 2014).

5.2 Truth tables

A truth table is a core concept of QCA, both in the sense of it as an approach and as a technique. After calibrating cases, the fuzzy-set membership scores need to be analysed within a truth table. The truth table lists all logically possible combinations of causal conditions and the outcome of each configuration (Ragin, 2008). The impact of each cause is examined in all logically possible contexts within the truth table. The goal of a truth table is to analyse the relationship between combinations of causal conditions and outcomes. At first glance, it is similar to a standard data matrix. Each column denotes a different set and each row represents one of the logically possible AND combinations, which is also called a configuration. The total number of rows is calculated by the expression 2^k, where k represents the number of conditions used and 2 denotes the two different states (presence or absence[14]) (Schneider & Wagemann, 2012). Using a truth table, it is possible to assess the sufficiency of all logically possible combinations of presence or absence conditions (Ragin, 2008). In other words, the truth table indicates under which combination of conditions a given outcome occurs and under which conditions it does not occur (Schneider, 2008). Each row with an outcome value of 1 can be interpreted as a sufficient combination of causal conditions for the occurrence of the outcome, while any row with an outcome value of 0 can be interpreted as a sufficient combination for the non-occurrence of the outcome. In addition, the truth table is also a process of learning about cases and a generalisation of cases. For example, in the dominant party political system, Ishiyama and Batta (2012) defined four conditions to evaluate the outcome. With these four

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[14] In the fuzzy-set version, the two states are more in than out of the set (above 0.5) and more out than in (below 0.5).

conditions, their truth table should have 2^4, or sixteen rows (configurations). The central task of QCA research is to minimise the truth table to find solutions for an outcome occurring.

5.2.1 From data matrix to truth table

In order to illustrate the procedure for transforming from a fuzzy-set data matrix to a truth table, the data in Chapter 9 is used. Table 5.1 shows the membership data matrix of this research. Column 2 denotes the degree of fuzzy-set membership in the sets of three causal conditions in the research. Column 3 displays the degree of membership in the set of the outcome. The fuzzy-set membership scores reflect general characterizations of these states.

Table 5.1 Fuzzy-set data matrix

1.Cases	2. Conditions			3 Outcome
States	Socio-economic situation (SE)	Demographic condition (P)	Globalisation (G)	Welfare Development (W)
China1	0.60	0.16	0.31	0.83
China2	0.90	0.47	0.32	0.51
China3	0.81	0.63	0.37	0.51
HongKong1	0.73	0.69	0.95	0.33
HongKong2	0.35	0.88	0.95	0.67
HongKong3	0.54	0.94	0.96	0.67
Japan1	0.79	0.92	0.46	0.51
Japan2	0.32	0.99	0.36	0.33
Japan3	0.15	1	0.30	0.51
Korea1	0.86	0.05	0.51	0.33
Korea2	0.64	0.53	0.48	0.67
Korea3	0.60	0.88	0.47	1
Singapore1	0.96	0.10	0.94	0.33
Singapore2	0.61	0.54	0.93	0.33
Singapore3	0.75	0.72	0.94	0.51
Taiwan1	0.97	0.30	0.67	0.17
Taiwan2	0.74	0.70	0.68	0.33
Taiwan3	0.39	0.86	0.69	0.51

For transforming data matrix to truth table, there are simple three steps (Ragin, 2008). This is the least problematic stage during the whole QCA research.

The first step is to construct a fuzzy-set membership scores matrix by listing all 2^k logically possible combinations of the k conditions. With three conditions, there are 2^3, or eight logically possible AND combinations. The column for the outcome value is left empty. Lower-case letters in this table signify the negation of a condition (for example, *se=~SE*). The degree of se is a negation of the degree of *SE*. For example, China1 scores 0.6 in the set of *SE*, its membership score in the set of se is 1-0.6, or 0.4.

The second step is to assign each case from the data matrix to a truth table row. Each case can only belong to one truth table row, while each truth table row might contain more than one case or no empirical case at all. With crisp set, this procedure is fairly easy. Each case can only have a binary score (either 0 or 1) in each set of logically possible combinations. In order to identify the truth table row to which a case belongs, it is simple to find the exact match between the case's crisp-set membership scores and the truth table rows. For example, case A scores 1 in the set of *SE*, 0 in the set of *P*, and 1 in the set of *G*. In the crisp-set version truth table, this case A can be simply identified into the truth table row of *SE*p*G*. However, with fuzzy-sets, this procedure can be more complex. Cases with fuzzy-set membership scores in the k conditions do not exactly match any of the truth table rows. For instance, it is difficult to assign China1 to a truth table row, with its set membership scores of SE= 0.6, P= 0.16 and G=0.62.

In order to solve this issue, Ragin (2008) developed what he called the 'truth table algorithm' to transform the fuzzy-set membership scores into a truth table. He proposed the concept of a property or vector space to illustrate the sets in truth table analysis. This idea goes back to Barton's (1955) initial ideas: each set constitutes one dimension of the property space. Therefore, the property space of Table 5.1 is 3 (as there are three conditions). This four-dimensional space has $2^{3\,(SE,\,P,\,G)}$ (=8) corners (the configurations or logically possible combinations). Each corner of the property space represents one specific combination of the conditions (in this example, four conditions).

More specifically, each corner corresponds to a combination of the four conditions in their extreme values that are possible in fuzzy sets-full membership (1) and full non-membership (0). For example, a logical combination of the three conditions ('1,1,1')

denotes the *SEPG* corner, and a combination of '0,0,0' denotes the sepg corner. The other six corners follow the same logic. All of these corners are ideal-typical situations (Schneider & Wagemann, 2012). Therefore, with the property space theory, it is clear that each case must fall inside the property space, and it can only have one precise location in the multi-dimensional space. With fuzzy-set membership scores, unless a case displays crisp-set membership scores, it will not be located directly in one of the corners.

Therefore, the second step, in other words, is to locate each case in the property space. Fuzzy-set cases have membership scores between 0 and 1. Thus, theoretically, a case can be located anywhere in a multi-dimensional property space. The question is which corner does this case most belong to and how far it is a member of this ideal type (Schneider & Wagemann, 2012).

For locating the case into the property space, a standardized method can be used to precisely define the membership of cases in truth table rows. As mentioned previously, the truth table rows correspond to all logically possible AND combinations of causal conditions. In order to calculate the membership of an intersection, the lowest score or lowest degree of expression is used. This is an important operating rule in set-theoretic methods, called the minimum rule. For example, China1 scores 0.6 in the set of socio-economic situation (*SE*), 0.16 in the set of demographic condition (*P*), and 0.31 in the set of globalisation (*G*). For measuring the fuzzy-set membership score of China1 in a logically possible combination *SE*P*G* or *SEPG* a minimum formula is used:

$$R_i = min (SE_i, P_i, G_i)$$

where, 'R' is degree of membership in a combination of four conditions, 'min' indicates the selection of the lowest of the four fuzzy scores, and 'i' indicates that the formula is for an individual case. Hence, here China1 scores 0.16 in the set of *SEPG*.

As Table 5.2 shows, each case has a membership score in each corner of the property space. Due to the use of the Boolean minimum rule, the membership scores are

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relatively low. The crucial point is that one case can have one and only one membership higher than 0.5[15] in all the 2^k logically possible combinations.

For example, China1 scores 0.6 in *SEpg*, which is its only membership score higher than 0.5 across the sixteen logically possible combinations. This special combination is the ideal type of this case. In other words, the truth table row which corresponds to this combination is the row to which this case best belongs. Therefore, defining the truth table rows to which each case best belongs requires finding the truth table row in which the case's partial set membership is higher than 0.5 (Schneider & Wagemann, 2012). In other words, in a truth table with 2^k rows, each case only belongs to one row where its membership is more in than out of the set.

The third step is to assign the outcome value of each truth table row. In a truth table, the outcome of each row is a statement of sufficiency (Schneider & Wagemann, 2012). This means that the outcome refers to the sufficiency of each truth table row. In other words, in a fuzzy-set data matrix, a case's membership score of a logically possible combination (aka a truth table row) is smaller than or equal to its outcome's membership score, so this case could declare a sufficiency of the combination for the outcome.

For example, Table 5.2 shows the fuzzy-set data matrix of each case with all the logically possible combinations (column 3) and the outcome scores (column 4). China1 scores 0.16 on the truth table row *SEPG*. The outcome value for China1 is 0.83. Thus, for the case China1, the logical combination *SEPG* is a subset of the outcome. As a sufficient condition, it receives a score of 1. However, this data matrix contains eighteen cases. Thus, in order to identify *SEPG* as a sufficient combination of conditions for the outcome in the whole set, one case alone is not enough. All the

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[15] Note that in practice, if a case has a 0.5 membership score in one or more causal conditions, then the maximum of the membership score across all logically combinations is only 0.5. In other words, its membership will not exceed 0.5 in any of the truth table rows. In addition, any case with a membership score of 0.5 on a causal condition will not belong to any single corner of the property space. For example, in Table 5.6, Gagauzia scores 0.5 on both conditions E and G. Consequently, in Table 5.7, Gagauzia has a membership 0.5 on four logically possible combinations (aka truth table rows). It is therefore difficult to assign Gagauzia to one of these four truth table rows. Thus, it is necessary to be careful about assigning the fuzzy-set membership score of 0.5 to cases. Indeed, if possible, using the 0.5 membership score, which was referred to as the "point of maximum ambiguity" by Ragin (2008, 2000), to assign any of the causal conditions should be avoided.

eighteen cases are analysed following the same logic (*see* column 4 of Table 5.3). If one or more case's membership in the row exceeds that in the outcome, then the respective logical combination (the truth table row) is not a perfect subset of *Y* and receives a score of 0.

With all the above relevant information, it is possible to construct a standard crisp truth table. Each row contains a logically possible combination, a binary score which represents whether this combination is a subset of the outcome, and the cases that belong to the row. Table 5.4 shows the truth table with a perfect subset relation of the outcome.

However, it must be borne in mind that so far the above procedure for transforming a data matrix to a truth table is just a standard procedure. It consists of rows that contain cases whose membership scores in that row and the outcome contradict the statement of sufficiency (Rows 1 and 8) which are referred to as contradictory or inconsistent rows, and the rows for which no empirical cases are available, which are called logical remainders (Rows 4 and 7). The presence of these rows is referred to as the phenomenon of limited diversity. An incomplete truth table cannot be used directly in Boolean minimization. How to deal with these limited diversities is particular important in a quality QCA research.

Table 5.2 Fuzzy-set membership in ideal types for a hypothetical data matrix

1. Cases	2. Conditions			3. Ideal types/Truth table rows (Logically possible combinations of conditions)								4.Outcome
States	SE	P	G	SEPG	SEPg	SEpg	sepg	sePG	sePg	sepG	SEpG	W
China1	0.60	0.16	0.31	0.16	0.16	*0.60*	0.40	0.16	0.16	0.31	0.31	0.83
China2	0.90	0.47	0.32	0.32	0.47	*0.53*	0.10	0.10	0.10	0.10	0.32	0.51
China3	0.81	0.63	0.37	0.37	*0.63*	0.37	0.19	0.19	0.19	0.19	0.37	0.51
HongKong1	0.73	0.69	0.95	*0.69*	0.05	0.05	0.05	0.27	0.05	0.27	0.31	0.33
HongKong2	0.35	0.88	0.95	0.35	0.05	0.05	0.05	*0.65*	0.05	0.12	0.12	0.67
HongKong3	0.54	0.94	0.96	*0.54*	0.04	0.04	0.04	0.46	0.04	0.06	0.06	0.67
Japan1	0.79	0.92	0.46	0.46	*0.54*	0.08	0.08	0.21	0.21	0.08	0.08	0.51
Japan2	0.32	0.99	0.36	0.32	0.32	0.01	0.01	0.36	*0.64*	0.01	0.01	0.33
Japan3	0.15	1	0.30	0.15	0.15	0	0	0.30	*0.70*	0	0	0.51
Korea1	0.86	0.05	0.51	0.05	0.05	0.49	0.14	0.05	0.05	0.14	*0.51*	0.33
Korea2	0.64	0.53	0.48	0.48	*0.52*	0.47	0.36	0.36	0.36	0.36	0.47	0.37
Korea3	0.60	0.88	0.47	0.47	*0.53*	0.12	0.12	0.40	0.40	0.12	0.12	1
Singapore1	0.96	0.10	0.94	0.10	0.06	0.06	0.04	0.04	0.04	0.04	*0.90*	0.33
Singapore2	0.61	0.54	0.93	*0.54*	0.07	0.07	0.07	0.39	0.07	0.39	0.46	0.33
Singapore3	0.75	0.72	0.94	*0.72*	0.06	0.06	0.06	0.25	0.06	0.25	0.28	0.51
Taiwan1	0.97	0.30	0.67	0.30	0.30	0.33	0.03	0.03	0.03	0.03	*0.67*	0.17
Taiwan2	0.74	0.70	0.68	*0.68*	0.32	0.30	0.26	0.26	0.26	0.26	0.30	0.33
Taiwan3	0.39	0.86	0.69	0.39	0.31	0.14	0.14	*0.61*	0.31	0.14	0.14	0.51
Sufficient for outcome				0	1	1	1	1	1	0	0	

Note: membership score higher than 0.5 is marked in **bold italic**

Table 5.3 Fuzzy-set membership in rows and outcome

1. Cases States	2. Truth table row ESPG	3. Outcome Welfare development(W)	4. Membership in row ≦ Membership in outcome
China1	0.16	0.83	1
China2	0.32	0.51	1
China3	0.37	0.51	1
HongKong1	0.69	0.33	0
HongKong2	0.35	0.67	1
HongKong3	0.54	0.67	1
Japan1	0.46	0.51	0
Japan2	0.32	0.33	1
Japan3	0.15	0.51	1
Korea1	0.05	0.33	1
Korea2	0.48	0.37	0
Korea3	0.47	1	1
Singapore1	0.1	0.33	1
Singapore2	0.54	0.33	0
Singapore3	0.72	0.51	0
Taiwan1	0.3	0.17	0
Taiwan2	0.68	0.33	0
Taiwan3	0.39	0.51	1
The outcome score of the row EGMA in the truth table		0	

Table 5.4 Truth table from hypothetical fuzzy-set data with limited diversity

Row	SE	P	G	Sufficient for outcome D	No. of Cases
1	1	1	1	0	5
2	1	1	0	1	4
3	1	0	0	1	2
4	0	0	0	1	0
5	0	1	1	1	2
6	0	1	0	1	2
7	0	0	1	0	0
8	1	0	1	0	3

5.2.2 Logical minimization of a truth table

The empirical information contained in a truth table can be minimized to a more succinct answer through a process of logical reduction achieved by using the Quine-McCluskey algorithm (Schneider & Wagemann, 2012).

The rule for logical minimization formulates that if two truth table rows coincide in their outcome value, and differ only in the value of one condition, that condition is

logically redundant. It can be eliminated and the two truth table rows can be merged into one (Schneider & Wagemann, 2012). For example, row 2 in Table 5.4 states $SE * P * g \rightarrow W$ and row 3 states $SE * p * g \rightarrow W$. Hence, in the presence of $SE * g$, condition P is irrelevant for the sufficiency of outcome W. Row 2 and row 3 can therefore be logically minimized to expression $SE*g \rightarrow W$. Applying this principle to all rows with Y=1 yields could the most parsimonious solution for W.

5.2.3 Logical remainders in comparative qualitative research

In the real world, social science research based on observational data, as opposed to experimental data, almost inevitably suffers from the issues caused by limited diversity. The presence of limited diversity can seriously affect the final result of truth table minimization.

The logical remainders are those rows which are sufficient for the occurrence of an outcome, but without enough empirical cases in them that have a membership of higher than 0.5. They are also called counterfactual cases (Ragin, 2008). The analysis of logical remainders is therefore a counterfactual analysis. To some extent, assessing a combination of conditions that does not exist by using empirical evidence may seem esoteric. However, this analytic strategy has a long tradition in the history of social science.

Max Weber (1949) is commonly cited as the first social scientist to advocate the use of thought experiments in social research. He argued that imagining 'usual' cases could help researchers to gain insight into the causal significance of individual components of events. QCA analysis is one of the few techniques available that directly addresses the limited diversity of naturally occurring social phenomena (Ragin, 2008).

In Table 5.5, rows 1 to 10 contain the empirical observations, rows 4 and 7 are logical remainders. Unlike Table 5.4, the logical remainders in the table below are marked as '?'. In other words, in an applied QCA research study, logical remainders can be

assigned to different values ('0', '1' or 'do not include') based on their natures and sources. Indeed, how to deal with logical remainders is crucial in QCA analysis.

Table 5.5 Truth table and limited diversity

Row	SE	P	G	Sufficient for outcome D	No. of Cases
1	1	1	1	0	5
2	1	1	0	1	4
3	1	0	0	1	2
4	0	0	0	?	0
5	0	1	1	1	2
6	0	1	0	1	2
7	0	0	1	?	0
8	1	0	1	0	3

By including different truth table rows, the solutions differ. Solution when no logical remainders are included in the minimization is a complex solution. In other words, it treats all logical remainders as false (excluded) in the analysis. This solution is also often referred to as the 'conservative solution term' (Schneider & Wagemann, 2012; Ragin, 2008). Solutions with all logical remainders are the 'most parsimonious' solutions of the outcome.

By definition, QCA analysis is a process of simplifying assumptions. Ragin (2008) distinguished two types of logical remainder in the simplifying process: easy and difficult counterfactuals. Easy counterfactuals are defined as

> *"those simplifying assumptions that are line with both the empirical evidence at hand and existing theoretical knowledge on the effect of the single conditions that compose the logical remainder" (Schneider & Wagemann, 2012, p. 168).*

By contrast, difficult counterfactuals are those in line only with the empirical evidence at hand, but not with existing theoretical knowledge.

In a standard QCA analysis, only easy counterfactuals can be included for producing intermediate solutions. The strategy for dealing with logical remainders has always been the most crucial part in QCA research. Easy counterfactuals need to be carefully selected on the basis of on theoretical knowledge.

5.2.4 Measures of fit – consistency and coverage

In truth table analysis, each row in the table is a statement of a sufficiency of the outcome. If in each row the membership scores of all cases are lower than or equal to the outcome's membership score, then this row is a perfect sufficient combination of conditions for the outcome. This is the most fundamental logic of truth table analysis. However, this deterministic relation (as it requires all cases with lower or equal membership scores than the outcome to be able to claim the sufficiency) is often dismissed by sceptics who doubt that QCA has any practical value as a case-oriented research method in a real and stochastic world. The determinism in social science can raise the problem that it may be not certain or that it may be difficult to specify the correct model or to be correctly operationalized to measure the variables (Schneider, 2008).

Fortunately, QCA allows for deviations from perfect set relations. Two parameters of fit-consistency and coverage provide measurements for how well the QCA solution represents the underlying data from which it has been generated (Ragin, 2008, 2006b; Schneider, 2008; Schneider & Wagemann, 2012). In other words, QCA allows the existence of a limited level of plausible solutions. The consistency provides "a numerical expression for the degree to which the empirical information deviates from a perfect subset relation" (Schneider & Wagemann, 2012, p. 129). If all cases have lower or equal membership scores in condition X than in outcome Y, the consistency value of condition X is 1, indicating that condition X is fully consistent with the statement of being a sufficient condition of outcome Y. More cases with higher membership scores in X than in Y indicates the lower consistency value for this condition being a sufficient condition for Y.

In a standard QCA research, the consistency values for a sufficient statement in a truth table row should not be below 0.70 (Schneider, 2008, p. 69). Indeed, even values below 0.75 are often problematic (Schneider & Wagemann, 2012). However, it should be noted that this threshold is heavily dependent on the specific research context. There does not exist a universally accepted consistency threshold in QCA research.

The coverage measures the degree to which the outcome is covered by a solution term. The calculation of coverage only makes sense for those conditions which reach the threshold of consistency. In other words, the consistency test should be made before the coverage (Schneider & Wagemann, 2012).

Three types of coverage can be identified. 'Raw coverage' indicates how much of the membership in the outcome is covered by the membership in a single path. 'Unique coverage' measures how much of the outcome is covered only by a specific path. The difference between raw coverage and unique coverage is important since sufficient paths may overlap. The unique coverage measures the unique contribution of each path to the outcome. 'Solution coverage' indicates how much of the outcome is covered by the entire solution term.

Hence, while consistency measures the degree of a condition (or a combination of conditions) to be sufficient for the outcome, the coverage assigns an empirical weight to that condition (Schneider, 2008, p. 68). The consistency, to some extent, is similar to the significance value of inferential statistics, and the coverage value shares some characteristics with R^2 and partial correlation coefficients in regression analysis.

Theoretically, a higher unique coverage value of a path indicates that empirically it is more important (Schneider & Wagemann, 2012, p. 137). However, in contrast to consistency, coverage does not have a lower threshold. In other words, in practice, there is a need to be careful to make a judgement regarding low coverage, since conditions with low coverage may just cover a little of the outcome, however, this little outcome may be hugely theoretical or substantively important.

In a nutshell, consistency is the nucleus for assessing set relations. Only if consistency is satisfactory does coverage need to be calculated. Comparing the formulas of consistency and coverage, it should be noted that the two formulas are precisely opposite. Therefore, it is not possible to achieve high consistency and high coverage values at the same time. Indeed, a high consistency often refers to a low coverage value.

5.3 Summary

In this chapter, the basic process of QCA research has been presented. Calibration and truth table analysis both stand at the centre of QCA. In applied QCA, researchers use different methods to calibrate cases based on distinctive research contexts. However, no matter what methods are used, case and theoretical knowledge remain the most important guideline. The more precise the calibration, the more useful the result that can be generated.

Following the discussion of calibration was a consideration of truth table analysis. Logical combinations of conditions were analysed within the truth table by applying Boolean minimization. Three terms of solution can be generated: the most parsimonious solution which includes both easy and difficult counterfactuals, the intermediate solution which only accounts for easy counterfactuals, and the complex solution which does not include any logical remainders. Among these three solutions, the intermediate solution has various important features. It is a subset of the most parsimonious solution and a superset of the conservative solution. It is more complex than the most parsimonious solution and more parsimonious than the conservative solution. Therefore, it can strike a balance between complexity and parsimony based on a theoretical selection of logical remainders included in the minimization.

Coverage and consistency are two important parameters of fit in QCA. Conceptually, they are similar to R^2 and significance in linear regression analysis. In applied QCA research, the threshold of consistency value for sufficient conditions should be set with reference to the specific research context. Normally it should be higher than 0.75. By contrast, there is no lower threshold for coverage. However, it should be noted that coverage is worth calculating only when the consistency value is satisfied.

Part Two

Empirical Analysis of welfare development in East Asia

Introduction to Part Two

This thesis is conceptually into two parts. While the first part consisted of the literature review (including the development of conceptual framework) and the choice of methodology, the next part emerges directly in response to the research questions.

The literature review presented in Chapter 2 and 3 represents the current mainstream theories of comparative welfare state regimes and East Asian welfare models. While this review leads us some way towards answering the research questions of this thesis, two main weaknesses are that it offers: 1) most mainstream literatures lack systematical comparative framework and 2) few systematical comparative East Asian welfare studies either only cover relatively fewer policy areas or heavily rely on quantitative data.

As mentioned previously, the first limitation relates that most findings of East Asian welfare style are relying on unsystematical in-depth case studies. The second limitation relates to that, only few comparative East Asian welfare studies have real comparative framework currently. These studies are either heavily relying on quantitative data (*see*, for example, Hudson and Kühner, 2012; Ku and Finer, 2007) or only cover limited policy areas (*see,* for example, Hudson and Kühner, 2012). Using pure quantitative data has several limitations for comparative welfare studies. For example, high public social expenditure in Japan may not represent a high level of welfare development, but instead, may reflect high level of ageing population. Also, pure quantitative data can not reflect the historical development of the welfare systems. Especially for East Asian cases, data availability is another issue for doing a pure quantitative research.

With these limitations in mind, this research was decided to undertake a case study based empirical analysis of six policy areas by focusing especially on productive and protective welfare dimensions of six East Asian states.

Set-theoretic methods are employed in this research including fsITA for assessing East Asian welfare models in past two decades and fsQCA for exploring the causal mechanism of welfare development in the region.

Four chapters are included in the next part of this thesis. Chapter 6 and 7 analyse the productive and protective welfare dimensions of six East Asian states. Chapter 8 presents and discusses the results of East Asian welfare style in past two decades. Based on the findings in Chapter 8, Chapter 9 explores the reasons of welfare change in East Asia. Chapter 10 critically discussed these findings. Finally, Chapter 11 concludes this research.

Chapter Six

Fuzzy-set ideal type analysis of East Asian welfare dimensions: productivism

The fuzzy-set ideal type analysis referred to in this study is mainly based on qualitative case studies. The detailed policies of the six welfare fields are discussed in depth in the following two chapters. In this chapter, the education service, health-care policies and family policies are evaluated to measure the degree of productivist features of the six states. The discussion of each policy field includes the country case studies and fuzzy-set calibration.

Calibration is crucially important in operating the fuzzy-set ideal type analysis. Transparent calibration is highly recommended by experts in order to produce replicable analyses (Ragin, 2008; Schneider & Wagemann, 2012). Table 6.1 shows the empirical indicators and their fuzzy interval scores. The fuzzy interval scores generally follow Kvist's (1999) classification.

Table 6.1 Empirical indicators and fuzzy set interval scores

Area	Empirical indicator	Fully in the set 1.00	Almost in the set 0.83-0.99	Fairly in the set 0.67-0.82	More or less in the set 0.51-0.66	Neither in nor out of the set 0.5	Fairly out of the set 0.33-0.49	Mostly out of the set 0.17-0.32	Almost out of the set 0.01-0.16	Fully out of the set 0.00
Education	*Spending* measured by ratio of public education expenditure in total public expenditure (%)	>20				15				<10
	Generosity measured by the duration and cost of compulsory education	Twelve years free education		Nine years free education		Eight years free education		Six years free education		No free education
	Accessibility measured by the difficulty for affordability of higher education	Easy to afford/ unselective student loan with loose requirement, various financial aids available	-	-	-	Moderate/ Selective student loan with fairly strict requirement	-	-	-	Difficult to afford/ Very strict selective financial aid
Health	*Spending* measured by the proportion of public health expenditure in total public expenditure (%)	>14				10				<6.9
	Universality measured by the coverage of public health service (%)	>80				50				<20
	Affordability measured by the percentage of private expenditure (% of total health expenditure)	<31				35				>52
Family policy	*Generosity* measured by net replacement rate of maternity leave (%)	>75				66				<20
	Duration	>24				18				<14
	Accessibility measured by the difficulty to be eligible for the benefits	For all women will deliver babies. No conditions for qualifying.				For all female employees.				Very strict requirements for selective female employees

6.1 Education service (E)

Heavy investment in human capital is a key characteristic of a productivist welfare regime. Education has always been regarded as an important tool for promoting economic growth in the region. After John's (1993) Confucianist welfare theory, education has rarely been absent from research studies into welfare systems in East Asian states. It is also one of the fundamental policy fields of Holliday's productivist typology. In this thesis, therefore, education is also used to measure the productivism of East Asian states.

To measure education, three sub-indicators were used to create an image of education services: public spending on education (S), the generosity of the education service (G) and the accessibility of tertiary education (A). Public education expenditure as a proportion of total public spending was used to measure the public investment in education. It is the most direct indicator for knowing how important education is regarded by a government. It also gives an overview of the status of an education service within a government's public spending. For measuring the generosity of education service, the duration and the cost of compulsory education provided by governments were adopted. The accessibility of tertiary education was measured by the affordability of higher education for students (especially those in financial difficulties).

In the presentation of the education set, an education service can be expressed in fuzzy set terms as the ideal typical location – SPENDING * GENEROUS*ACCESSBILITY – or in plain English, a better education service is characterised by high public spending on education, a generous mandatory education service and easy access to higher education.

In terms of calibration, only the direct calibration and the qualitative calibration are used in this research.

In East Asia, education is one of the most important areas, not only for governments, but also for families. Education has played a central role in economic development in the region. The emphasis on education is also reflected by the high public expenditure (*see* Table 6.2). In 1990, all six states spent more than 15% of their total public expenditure on education. This was much higher than the average of OECD countries, which was around 11% in the 1990s. Despite the investment decreasing gradually in China and Korea over the last three decades, the education expenditure in the region was still higher than the OECD's average level in 2010 (12%), with the only exception of Japan. Japan's public investment in education is also the lowest among the OECD countries. Table 6.2 shows the public education expenditures of the six states.

Table 6.2 Public education expenditures of six East Asian states (as % of total government expenditure) in 1990, 2000 and 2010

States	*1990*	*2000*	*2010*
China	25.95	21.08	13.96
Hong Kong	16.88	18.94	18.94
Japan	16.04	13.49	8.73
Korea	16.97	15.30	15.00
Singapore	19.88	21.03	21.02
Taiwan	17.70	18.02[a]	20.13

Source: ADB (2012, 2000), Mai and Shi (2001, p. 287), MOE (2006, 2013a)

Note: a refers to 2001

The fully-in point of the spending set was set at 20%, the fully-out point at 10% and the cross-over point at 15%. This was mainly based on Hudson and Kühner's (2009) view that education is one of the five important aspects of social policy (education, health service, housing, social security and employment). Theoretically, all five aspects should be given equal emphasis, and a 20% share of each aspect was set as the middle point in their work. However, compared with other social aspects, education spending is

significantly lower. During the last two decades, the education spending of the OECD average has never reached 20%. So in this thesis, 20% was set as the fully-in point, with 10% as the floor point.

For calibration, as the three cut-off points are relatively clear for the set *S*, the direct method of calibration was used, and the fuzzy scores were generated by R (R Core Team, 2014) with QCA package (Dusa & Alrik, 2014) and SetMethods package (Quaranta, 2013).

In terms of the generosity of an education service, the states that are fully-in the set have free compulsory pre-university education, including kindergarten, primary and secondary education. Countries with nine-year free compulsory education were set as fairly in the set as nine-year compulsory education is the world average (the World Bank, 2012). Hence, eight-year was set as neither in nor out of the set. The states which are fully-out of the set have no free compulsory education service. In this part, 'free education' is narrowly defined as 'education without the need to pay any tuition fees'. The calibration was based on case knowledge.

The education service in China is a state-run system operated by the Ministry of Education. However, China's compulsory education was different in the early stage compared with the other states. It was compulsory, but not free. In 1985, the Central Committee of the Chinese Communist Party (CCP) published the 'Decision of the Reform of the Educational Structure' which provided a guideline for the 'Compulsory Education Law (CEL) of the People's Republic of China' which was put into effect in the following year. Under this law, the state provided nine years of basic education for all children, including primary and junior middle school. Theoretically, this service should have been free and compulsory. However, this law did not clarify the spending provision. Consequently, at the operational level, some local governments could not afford to provide a free education service for their citizens. So six years after the promulgation of the CEL, in 1992, the State Council announced the 'Enforcement

Regulations of CEL' which allowed schools to charge miscellaneous fees. This regulation was further defined in the 'CEL temporary regulations of fee scheme' in 1996. Since then, education in China has been compulsory but not free. In addition, during this period, the difference between tuition fees and miscellaneous fees was not defined. So schools charged tuition fees but called them miscellaneous fees. In the late 1990s and early 2000s, the unjustified charges in education became a serious issue in China. According to a financial audit report on the education systems of 45 counties in 2004, the unjustified charges amounted to over 4.5 billion RMB (around £476 million sterling) (Wei, 2006). Therefore, in 2006, the CEL was revised. It now clearly stated that the compulsory education must be free, including both tuition fees and miscellaneous fees. The operational funds for compulsory education had to be guaranteed by the State Council and the local governments at all levels under the revised law (Standing Committee of the National People's Congress, 2006). At the operational level, from 1 September 2008, compulsory education in China, including both rural and urban areas, was made free. It was a milestone in China's education history.

Similar to China, Japan also has nine years of compulsory and free education for all schoolchildren in public elementary and middle schools (Human Resources Development Working Group, 2015).

Hong Kong and Taiwan have the longest compulsory education among the six states. Nine years of free and compulsory education have been offered in Hong Kong since 1978, comprising six years in primary school and three in junior secondary school. Also, since 2008, Hong Kong has extended the free education period to twelve years. Taiwan introduced nine years of compulsory education, comprising primary and secondary education, for all citizens from 1968. In 2011, a plan for twelve years of compulsory curriculum was developed. In 2012, the project was audited, and it was finally implemented in 2014 (MOE, 2013b).

The Korean education system consists of six years of primary school, three years of middle school, three years of high school, and two years of junior college or four years of college or university. The Korean government launched its first six-year plan for free compulsory primary education in 1954 and completed in 1959. By the late 1960s, primary education had become free for all eligible school-aged children. The compulsory education was financed by the Education Tax Act (Kim, 2002). By 2004, the process of making middle-school education compulsory nationwide had been completed. Middle school education is only partially free, which means that only those students in rural areas and students specified under the Special Education Promotion Act [16] can receive completely free secondary education (International Bureau of Education, 2011).

Compared with the other states, Singapore introduced its compulsory education relatively late. From 1 January 2003, the Compulsory Education Act came into operation (Ministry of Education Singapore, 2003) and it provided free education up to primary six, which was a period of six years (Ministry of Education Singapore, 2015a). Primary education is free for all Singaporean citizens. Singapore went on to achieve free universal primary education from the 1960s but did not make it compulsory (GOH & Gopinathan, 2008). In the *Straits Times* in 1965, the former minister for education Ong Pang Boon was reported as saying that "The people of Singapore are becoming so education conscious that we have achieved universal primary education without making it compulsory" (GOH & Gopinathan, 2008, p. 17). Singapore achieved universal lower secondary education in 1970. This secondary education is heavily subsidised. So for Singapore, loose requirements were used in this study. As Singapore does not have compulsory secondary education, pupils enter secondary school on the basis of on their PSLE performance. Table 6.3 summaries of the generosity of the education services in the six states.

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[16] 'Special Education' is defined as providing an education service for disabled children.

Access to higher education is essential for both national development and individual advancement (Altbach, 2006). So the accessibility of tertiary education for students in financial difficulties was adopted as a measure in this research. Tuition fees, the availability of student loans and access to financial aid were considered for scoring. Similar to the set *G*, as there was no comparable hard data which could be used directly, the qualitative method of calibration was adopted for this set. The fuzzy scores were based on case knowledge.

Table 6.3 Generosity of education service, 1990-2010

States	*Compulsory education (duration/cost)*		
	1990	*2000*	*2010*
China	nine years/paid	nine years/heavily paid	nine years/free
Hong Kong	nine years/free	nine years/free	twelve years/free
Japan	nine years/free	nine years/free	nine years/free
Korea	six years/free	six years/free	nine years/partly free
Singapore	No/free primary education, heavily subsidised secondary education	No/free primary education, heavily subsidised secondary education	six years/free, heavily subsidised secondary education
Taiwan	nine years/free	nine years/free	nine years[a]/free

Note: a twelve years in 2014

China's tuition fees have increased dramatically since the 1990s. In 1990, higher education was free in China. Students only needed to pay a small amount for their miscellaneous fees. The tuition fee had increased to 2500 Yuan (around £250 sterling) on average by 1999, and continued increase to 6000 Yuan (nearly £600 sterling) in 2009. Although it is still much lower than in OECD countries and in the other five East Asian states, considering the average income, it is still difficult for many Chinese families to afford it. According to China's social security system development report (2012), supporting one student to complete tertiary education in China needs 4.2 years' net income of an urban worker or 13.6 years net income of a peasant. Tuition fees

increased 25 times from 1989 to 2009. China launched its first student loan programme in 1986, named the Student Loans Scheme (SLS). The average amount of the loan was small, 300 Yuan per year, that is 25 Yuan per month, which was too small to resolve the difficulties of poor students. The repayment period was short, and the loan had to be repaid before graduation (Shen & Li, 2003). As well as the SLS, grants, scholarships, work-study funds and tuition-cost waiving were also available for Chinese students. However, the coverage of these financial aids was small and declining in the 1990s. In fact, the SLS and tuition-cost waiving had almost ceased. Consequently, most poor students could not obtain sufficient financial aid. Therefore, 'new' loan schemes were introduced. In 1999, the General-Commercial Student Loans Scheme (GCSLS) was announced, and this was implemented in 2000. The scheme applied to all post-secondary-education students and their parents or guardians. All students aged eighteen and over in higher education institutions (including both public and private) were eligible to apply. A student could borrow 2000-20,000 Yuan per academic year to pay for tuition and living costs in 2002. The repayment periods were flexible, based on the regulations of different loan providers. An application to the GCSLS needed a guarantee based on the assets of parents/guardians. Consequently, it was targeted more at students from middle- or upper-class families which could mortgage assets for loans. The GCSLS was, therefore, to some extent, unequal in terms of access (Shen & Li, 2003). In addition to the GCSLS, China introduced the Government-Subsidised Student Loans Scheme (GSSLS) in 2000. The policy was further reviewed in 2004 and 2006. The GSSLS was focused on poor students. The maximum loan is 6000 Yuan per academic year. However, even with these two student loan schemes, still, only a limited proportion of students (around 20% of the total student body) can access financial aid.

Japan has been classified by the OECD into the group with the highest fees but limited access to financial aid (OECD, 2012b). A large proportion of private provision could be a reason for this: 87 national universities are run by the Ministry of Education, and 76 public universities are run by local or regional governments, compared with 582 private universities (Maruyama, 2008). In addition to universities, there are also 525

junior colleges (of which most are private) and 63 technical colleges. For these private universities and colleges, tuition fees account for a major part of their income. The Japanese higher education system underwent major reform in 2004 which granted independent corporation status to the 87 national universities. As a result, they were able to set tuition fee levels up to 10% (20% from 2007) higher than the standard tuition fee set by the Ministry of Education and the Ministry of Finance, which was about £2700 sterling a year, regardless of the field of study (Maruyama, 2008). More than 75% of students are studying at private universities, so it is understandable why tuition fees are higher in Japan than in other countries. A new student loan system was introduced in 2004 under the Independent Administrative Institution Japan Student Services Organisation (JASSO). There were two means-tested student loans available under the new system: Category 1 loans (interest-free) and Category 2 loans (low interest). Both were dependant on academic ability and family income[17] (JASSO, 2014). To be able to apply, a student must meet both criteria. Therefore, with these strict selective conditions, only 27% of tertiary students were participating in the two lending programmes in 2008 (Newby *et al*., 2009), and this figure increased to 33% in 2010 (OECD, 2012b).

Korea has the third highest tuition fees in OECD countries, one place higher than Japan. The public resource is limited in tertiary education, whereas its high private expenditure in higher education is also significant (OECD, 2012b). Korea has implemented various student loans or grants schemes since 1967. The Korean student loans have a clear occupational preference: they have primarily been available to the children of public sector employees (including government and faculty employees) and industrial

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[17] Loan criteria: 1) Category 1 loan: academic ability: above 3.5 GPA at high school (on 5.0 scale) ; family income less than 8.52 million yen (approximately £46,580) for national and local public universities and 9.07 million yen (approximately £47,290) for private universities; 2) Category 2 loan: academic ability above average, recognized to be excellent in one specific field and to have high motivation to study; family income less than 11.75 million yen (approximately £61,264) for national and local public universities, and 12.23 million yen (approximately £63,766) for private universities.

workers.[18] In 1995, a new need-based and merit-based student loan was introduced with a special focus on students from farming and fishing villages. Since 1999, the student loan scheme has expanded to include poor students. In 2007, 615,063 students benefited from this type of loan (Chae & Hong, 2009). More recently, in 2010, a new income-dependent student loan programme (referred to as the Study-Now-Pay-Later programme) was introduced (Lee, 2010). No guarantors were needed for this loan. Students were required to pay back the loan within 25 years of attaining employment. This type of student loan is quite similar to the student loans in western countries. Since it has only recently been implemented, there are no available data showing the number of beneficiaries. However, the Korean government has stated that it might enable about half of the university students to continue studying without worrying about how to finance it (The Korea Times, 2009).

Tuition fees in Hong Kong once took up a high rate of 16% of the total recurrent cost in 1962 (Bray, 1993, p. 41). It reduced to 3% to 6% in the 1970s and early 1980s. In 1990, the tuition fee was around HK$8700 (around £800 sterling). In addition, the Hong Kong government launched a series of grant and loan for students with fiscal difficulties. Therefore, the fee affordability during this period was not a big issue. However, the tuition increased rapidly in 1990s. It increased gradually to HK$42100 (around £3720 sterling) in 1997. The average annual increasing rate was around 25% from 1990 to 1997. In the last decade, due to the influence of the Asian financial crisis started in 1997, and also in order to build a knowledge-based economy, the flat tuition fees have been implemented in order to attract more young people to study in the science and technology fields. Hence, the tuition fees have remained at HK$42100 until the present,

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[18] The first student loan scheme was run by the Government Employees Pension Corporation and was implemented in 1967: government employees and their children were the main target group. In 1976, the Korean Teachers Pension Fund provided support for faculty members and their children. Industrial accident victims and their children were included in the student loans scheme in 1987. In 1995, a new student loan programme was published to cover beneficiaries of employment insurance.

which is a decent level compared with the average salary. The tuition fee levels are reviewed annually by the Hong Kong government.

The Hong Kong government's education policy is to ensure that "no qualified students are deprived of education through lack of means" (University Grants Committee, 2010, p. 33). The Tertiary Student Finance Scheme (TSFS) for publicly-funded programmes provides means-tested financial assistance to full-time students who are in need. It is intended to ensure that no eligible student is unable to participate in higher education due to lack of means. The financial assistance is provided in the form of a grant and/or loan. The grant is to cover tuition fees, academic expenses and compulsory union fees and the maximum amount available is equal to the tuition fee. The loan is for living expenses. The levels of grants and loans are calculated on the basis of 'Adjusted Family Income' (AFI). In 2015, families with an income below 36,108 HK$ (approximately £3050) could receive the maximum grant or loan, while those with an AFI over 69,818 HK$ (approximately £5898) are not eligible for the grant or loan (Student Fiance Office, 2015). In addition, from the late 1990s, the government offered non-means-tested loan schemes to cover tuition fees and (in some cases) living costs for students not eligible for means-tested grants.

Singapore provides non-need-based student grants. A Tuition Grant Scheme (TGS) was introduced by the Government in 1980 to subsidise the cost of tertiary education. It is open to students enrolled in full-time diploma or undergraduate courses at fourteen institutions (Ministry of Education Singapore, 2015b). The grant partially covered the tuition fee. As at the National University of Singapore (NUS), students who are citizens of Singapore pay about 18% to 26% of the total fees depending on their subjects of study and the remainder of the fees is covered by the grant. The tuition fees vary depending on institutions and subjects. Undergraduate tuition fees at Nanyang Technological University (NTU), and NUS have regularly increased since 1990. There was a large increase of 45% in 1991, then around 3% per year after then (Ministry of Education Singapore, 2006). According to the Parliament of Singapore, these increases

were a response to the wage inflation of university employees which averaged 5% from 2000 to 2005. Meanwhile, the tuition fees are still heavily subsidised. Therefore, the membership scores for accessibility dropped slightly between 1990 and 2000 and remained the same from 2000 to 2010. For public higher education institutions in 2015, tuition fees for Singaporean students ranged from S$2100 (approximately £1100) to S$18,960 (approximately £9950). The average level was S$6620 (approximately £3475).

The higher education sector in Taiwan has grown dramatically over the last six decades. As in Japan and Korea, the private sector has played a significant role in this growth. Since 1999, the number of private universities has exceeded that of public universities (Lo, 2014). Inspired by the Japanese education reforms in the 1980s, the Taiwanese government revised the University Act in 1994, established the principles of university autonomy and academic self-determination and developed its own curriculum. Later, in 1999, legislation of the Statute governing the Establishment of School Funds of National Colleges and Universities gave more financial autonomy to public universities which allowed them to set their own tuition fees. Unlike Japan and Korea, however, tuition fees in Taiwan have been moderate. Studying at a national university costs around £1330 a year, and around £2450 is needed for private universities (Minister of Education, 2013). Similar to Hong Kong, Taiwan also has a fee-capped policy at Taiwanese universities (Marcucci & Usher, 2011). The financial aid policy is a more complex system than those of the other five states. It operates a set of subsidies with different target groups, including student loans, subsidies for students with low incomes or unemployed parents and aboriginal students. In 2009, the grant was 5000 TWD (approximately £110) for a student in a public higher education institution and 8000 TWD (roughly £175) for a student in a private higher education institution. In addition, since 2005, the Ministry of Education and higher education institutions have enhanced financial aid to students. The levels of grant depend on family incomes, from 10,000 TWD (approximately £220) to 14,000 TWD (approximately £305). Students from low-income families can also apply for free housing. Moreover, like Korea, Taiwan also has

some specially targeted subsidy programmes, such as grants for students with parents who work as civil servants, soldiers and faculty members, and for children of farmers and fishermen. As well as these grants, student loans are also available for students from middle- and low-income families, and were expanded in 2003 to cover high-income families with more than two children in higher education. After this reform, more than half of the families were eligible for the loan.

Table 6.4 gives a brief overall summary of the tuition fees and financial assistance in the six states.

Table 6.4 Tertiary education 1990, 2000, 2010

States	**Higher education (tuition fees[19]/financial assistance)**		
	1990	*2000*	*2010*
China	Free/strictly selective	High/fairly selective	Moderate/selective
Hong Kong	Low/selective	Moderate/not selective	Low/not selective
Japan	High/strictly selective	High/strictly selective	High/strict selective
Korea	High/strictly selective	High/fairly selective	High/strict selective financial aid and no n-selective loan
Singapore	Low/non selective	Low/not selective	Low/not selective
Taiwan	Low/strictly selective	Low/fairly selective	Low/selective

Finally, to combine the three sub-indicators, set-theoretical rules were employed. Suppose case x has a membership value V^S in fuzzy set S for SPENDING, a membership value V^G in fuzzy set G for GENEROSITY and a membership value V^A in fuzzy set A for ACCESSIBILITY. In order to combine these three sets to form the education set, two basic rules of set-theoretical method could be used – the intersection rule (also called the minimum principle) and logical alternatives (maximum principle). In this current case, the intersection rule was used. The value of education set (E) in $S*A*G$ is the minimum value of V^s, V^a and V^g. This operation represents logical AND, denoted *. More details are explained in Chapter 4.2.1. Table 6.5 shows the fuzzy-set score of the

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[19] Compared with the GDP per capita in the target years.

education service in the states under consideration. In the calibration, Korea scored 0.5 in the education spending set which could cause a 0.5 issue[20] in the next step analysis (Schneider & Wagemann, 2012; Ragin & Giesel, 2008). As a comparatively rigid benchmark has been used to measure education spending, the score of Korea was adjusted to 0.51 to avoid the potential risk.

Table 6.5 Education service with fuzzy set scores

States	Year	Spending in education service (S)	Generosity of education service (G)	Accessibility of education (A)	Education in ideal-type analysis (Minimum of S, G, and A)
China	1990	1	0.75	1	0.75
	2000	1	0.67	0.40	0.40
	2010	0.40	0.82	0.14	0.14
Hong Kong	1990	0.69	0.82	0.83	0.69
	2000	0.89	0.82	1	0.82
	2010	0.89	1	1	0.89
Japan	1990	0.60	0.82	0	0
	2000	0.35	0.82	0.17	0.17
	2010	0	0.82	0.32	0
Korea	1990	0.70	0.32	0.15	0.15
	2000	0.53	0.32	0.51	0.32
	2010	0.51	0.75	0.75	0.51
Singapore	1990	0.99	0.73	1	0.73
	2000	1	0.73	0.98	0.73
	2010	1	0.78	0.98	0.78
Taiwan	1990	0.77	0.82	0.55	0.55
	2000	0.80	0.82	0.62	0.62
	2010	1	0.82	0.72	0.72

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[20] When applying the set-theoretical method, it is wise to avoid 0.5 scores since they are fully indeterminate. Theoretically, a case with a 0.5 membership score means that it cannot cluster to any of the applied categories. In more detail, if a case has a 0.5 membership score in one set, it has the possibility to score 0.5 in the final ideal type set. And the membership of 0.5 cannot be assigned to any ideal types. Therefore, scholars suggest not using 0.5 scores in set-theoretic method analysis.

6.2   Health service (H)

Although health care is one of the largest areas of social welfare (Bambra, 2005b), and accounted for an average of over 9% of GDP in the 34 OECD countries in 2011 (OECD, 2014), it seems to have been neglected in most welfare state literature and the regimes debated by comparative welfare researchers (Bambra, 2005a, 2005b, Freeman, 2000). However, health services are one of the key sectors of society. They were proposed by William Beveridge in the famous Beveridge Report as one of the five most important services of a welfare state. Health services are also a crux of PWC theory. Health-care services have different functions in a society. On the one hand, they could be regarded as a tool to secure a healthy labour force and thus increase the productivity of the society. The lack of capacity to provide health services has significant effects on individual and public health, poverty, income generation, labour market productivity, economic growth and development (ILO, 2015). On the other hand, they could also be used as a social tool to protect people's lives. Health services are therefore used as an indicator by scholars from different viewpoints. In short, they can be used to measure both the productivity and the protective sides of a welfare system. In this thesis, following Holliday's PWC theory, the first argument was adopted, that better health care could ensure the stability of labour supply and increase the productivity of the state.

Three sub-indicators are used for measuring a health service: spending (S), universality (U) and accessibility (A). All three indicators are important for evaluating a health service. The absence of any of them renders an evaluation incomplete. Similar to education services, the minimum of S, U and A were used to produce the fuzzy score of a health service.

As in education provision, spending is measured by the proportion of public health expenditure against total public expenditure. The cut-off points are set based on the average of government expenditure across the world. According to a WHO (2010) report, the average share of public spending on health across the world was between 7%

and 14% from 2000 to 2007. So the fully-in point for this thesis was set at 14%, the fully-out point at 6.9% and the cross-over point at 10%. As with the education spending set, direct calibration was also used for health spending.

The health expenditures of the six states varied according to different datasets and reports. For example, based on information published by the Asian Development Bank (ADB), China's proportion of health expenditure from total government spending in 2010 was 5.3%. However, according to the WHO's NHA indicator, the share was about 12% in 2010. This variation could be caused by the use of different measurements of government spending (for example, ADB data only includes central government spending whereas the WHO data considers both central and local government spending). The case of Hong Kong is another example. Based on the ADB report, public health expenditure in 2010 was $HK 32,720 million, whereas the Hong Kong government's report showed that the spending was $HK 37,027 million. This thesis is therefore primarily based on the WHO database. The earliest health expenditure data published by the WHO was for 1995. Therefore, the expenditures for 1995 instead of for 1990 by China, Japan, Korea and Singapore were used. As Hong Kong and Taiwan are two special districts, they are not members of the WHO. In this case, Hong Kong's data were taken from the national census. For the case of Taiwan, there are significant differences between the ADB data and the report published by the Ministry of Health and Welfare of Taiwan. The ADB data shows that Taiwan's public expenditure on health is extremely low which is contrary to most reports and news reports of Taiwan's health care. So the health expenditure data of Taiwan were taken from the report of the Ministry of Health and Welfare of Taiwan, and the earliest data available was for 1991. Detailed figures are given in Table 6.6.

Table 6. 6 Public health expenditure (as % of total government expenditure) 1990, 2000, 2010

States	1990	2000	2010
China	15.00[a]	11.70	12.10
Hong Kong	9.70	11.82	12.45
Japan	15.50 [a]	15.80	19.70
Korea	7.10 [a]	9.70	11.80
Singapore	9.30 [a]	7.00	10.00
Taiwan	5.00[b]	6.50	12.00

Sources: WHO (2015a); Hong Kong Census and Statistics Department (2000, p. 197); Hong Kong Census and Statistics Department (2010, p. 240): Ministry of Health and Welfare (2015b)
Notes: *a*. 1995
     b. 1991

The affordability of health services is measured by the percentage of private expenditure in the total health expenditure. In this context, according to the WHO NHA producers guide, private expenditures are expenditures incurred by organisations or individuals outside the public sector (Rannan-Eliya, 2008). They consist of expenditures by households, firms, non-profit organisations and medical insurance schemes. According to the WHO World Health Report 2006 (WHO, 2006), the private expenditure on health accounts was between 1.5-3% of GDP in most countries. The share of private health expenditure is higher in poorer countries than in richer countries (*see* Table 6.7).

Table 6. 7 Share of private expenditure in countries at different income levels, 2003

GDP per capita	Private expenditure on health (% of GDP)	Private expenditure (% of total expenditure on health)
<$1000	2.7	52
>$10000	2.4	31

Source: WHO (2006)

Based on these figures, the fully-in point was set at 31% which is in accordance with the average share of private health expenditure in high-income countries; the fully-out

point at 52% which is the average share of low-income countries; and the cross-over point at 40% which is about the average level of high and low income countries. A summary of private health expenditure is shown in Table 6.8. As the public health expenditure data, the private health expenditure data for China, Japan, Korea, and Singapore were from WHO dataset (2015a). The data for Taiwan (Ministry of Health and Welfare, 2015a) and Hong Kong (Food and Health Bureau, 2015) were taken from the government's statistic reports. Same as the public expenditure dataset, the earliest publish of the private expenditure by the WHO was 1995. For the case of Taiwan, the earliest data published by the government was 1991. Hence, the expenditures for 1995 and for 1991 instead of for 1990 by China, Japan, Korea, Singapore and Taiwan were used.

In terms of universality, the percentage of the population covered by the public health-care system was used. The fully-in and fully-out points were set by following Kvist's (1999) typology: 80% was the fully-in point, 20% was fully-out of the set, and 50% was the cross-over point.

Table 6.8 Private health expenditure (as % of the health expenditure) in 1990, 2000, 2010

States	1990	2000	2010
China	46[a]	59	35
Hong Kong	58	45	51
Japan	14[a]	15	14
Korea	53[a]	41	34
Singapore	49[a]	53	61
Taiwan	47[b]	40	43

Source: Food and Health Bureau (2015); Ministry of Health and Welfare (2015a); WHO (2015a)
Notes: a. 1995
    b. 1991

Since the establishment of the People's Republic of China in 1949, especially after the major economic reform of 1978, China has achieved impressed results in health-care

development. The health status of Chinese people has been improved dramatically. Life expectancy at birth rose from 35 years before 1949 to 75 years in 2010, which ranks China near the top among developing countries (The World Bank, 2014). High life expectancy had also resulted in a higher average population age. In 2010, people aged 60 and over accounted for 13% of the total, and this has continued to increase to 15% in 2015 (WHO, 2015b).

Unlike other states, China has been undertaking two major reforms of its health care system in the last three decades. The health system has spanned the full range of potential health system models, from a pure government delivery model to one mainly driven by economic profit, and now China is building its 'third way' health-care system which is a mixed vision of basic universal health care with the possibility of paying for additional services (Ho, 2011).

Before the market liberalisation in the late 1970s, China's health-care system was a classic government delivery model. In urban areas, it relied on public hospitals which were established by the government or from pooled community funds. The cost to urban patients was low; the health services were very cheap. In rural areas, health services were delivered by government-subsidised local health centres at very low cost. Following the economic development, the agricultural and the industrial reforms, the health-care system began to change in the late 1980s: an experimental health insurance system was introduced in some areas. From then on, the free health-care service in China began to die out gradually. The formal reform officially started in the late 1990s (Ramey, Huang & Cui, 2009).

In 1997, the State Council of the People's Republic of China published the 'Decision on Health Care Reform and Development' which introduced one major reform of China's health system. In 1999, many public hospitals and health-care centres were sold to private entrepreneurs identified by the local governments. One year later, the General Office of the State Council issued 'The Directive Proposals on the Reform of Urban

Medical and Health Care System'. Following the same ideology, the Ministry of Health and other departments issued an 'Administrative Rules of Urban Medical and Health Care Agents Classification' which formally allowed the former state-owned, non-profit, health-care agencies to be transferred to profit-making organisations.

Two important changes were made after this reform: first, health services began to be marketed, and second, health insurance systems replaced the state budget system. During this period, unlike the old universal health-care coverage, the new urban health insurance system only covered part of patients' spending on health services. In 2003, the government established a Social Health Insurance Scheme in urban areas. Although some private insurance companies joined the market later, the coverage of health insurance was still less than 50% of urban residents at that time. Meanwhile, the cost of health services was increasing dramatically. In rural areas, after the rural communal health centre system had collapsed during this reform, uninsured rural patients had to seek health care in urban hospitals, which was difficult to afford for most of the poor rural population.

From 1996 to 2000, the number of rural health centres was reduced by about 4%, and from 2000 to 2005, the number continued to decrease by 17%. Nearly all rural communal health centres vanished (Ramey, Huang & Cui, 2009). Therefore, in order to eliminate the negative effect of this decline in rural areas, the government developed a New Cooperative Medical System (NCMS) in 2003. However, this only covered 10% of the rural population when it was established. In short, during this period, the provision of public health-care services was limited and the level of out-of-pocket costs for patients was high.

This unexpected major change enraged most people in China. There was a great debate regarding the health-care reforms at that time. A number of newspapers, research studies and internet articles criticised the reform. In order to address these issues, the Central Committee of the Communist Party of China and the State Council published

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'Views on Furthering Health Care Reform' on 6 April, 2009, which marked the starting point of the most recent health-care reform in China. The central goal of this reform was to establish a basic health-care system which provides universal coverage (Guo, 2011).

As a result, the medical insurance system has been expanded to cover 1.2 billion people. In urban cities, the Resident Basic Medical Insurance has been implemented across China and its coverage had reached 433 million people in 2010. In rural areas, the New Rural Cooperative Medical System covered 836 million rural dwellers, which was more than 95% of the peasant population. The insurance covered the spending ranged from 30% to 80% depending on the location and hospital. In 2008, 87% of the total Chinese population was covered by various social health insurance schemes (Meng & Tang, 2010). The results of this reform are also reflected in the expenditure data. The proportion of private health expenditure from total health expenditure decreased from 59% in 2000 to 35% in 2010.

Hong Kong has a comparatively generous public health service. The health system is highly efficient and Hong Kong has achieved impressive health outcomes for its population. Life expectancy at birth had increased to 81.2 years for males and 86.7 years for females in 2014 (Centre for Health Protection, 2014). The health delivery service has changed little over the last six decades, except for the restructuring of public hospitals in 1990. The health-care system in Hong Kong is very similar to the National Health Service (NHS) in Britain. No financial contributions are required to access the public health service. The public health-care system provides universal coverage: all Hong Kong citizens are eligible to have full access to public health care, from primary to tertiary care, which is all highly subsidised (WHO, 2012a).

Public hospitals only make a small charge for each visit. In 2012, a visit to a public hospital only cost HK$45 (around £4) including medicines, X-ray examinations, laboratory tests and so on. Visiting specialists cost double that at HK$100 for the first

attendance, HK$60 (around £5.5) for a follow-up and HK$10 (around £0.9) per drug item (GovHK, 2012). This system includes not only Hong Kong citizens and permanent resident, but also non-permanent residents. However, even though Hong Kong has a universal health-care system, private expenditure on health is still comparatively high in Hong Kong. The spending accounts for around 50% of total health spending which is much higher than in the UK where there is a similar health-care system (around 16% in 2010) (WHO, 2015a).

Japan's health care system stands out as one of the best in the world in a number of respects, including access, effectiveness and efficiency (Jones, 2009). The Health Insurance Act (1922) and the National Health Insurance Act (1938) established a health insurance system that covered the entire population by 1961. Everyone could receive health care at any institution at any time, subject to a payment at the time of service. The Japanese insurance-based health-care system has also been applauded for its low cost, its fairness and excellent population health (Shibuya *et al*., 2011). Japan has always ranked at the top of OECD countries in a number of categories, including life expectancy. Japan's health-care system has undergone no major changes during the last three decades. The health-care delivery system has three pillars and covers the whole population impartially (WHO, 2012b). Japan's private expenditure on health services, especially the out-of-pocket costs for patients, is among the lowest in East Asian countries (*see* Table 6.8). Even compared with OECD countries, it stands around the average level.

Similarly, Korea's health-care services are also insurance-based. Health insurance was first introduced in Korea in 1977 for employees of companies with 500 or more employees (Jeong, 2005). By 1989, health insurance had been extended gradually to the entire population. Universal coverage was rapidly achieved by limiting the range of benefits covered by the National Health Insurance (NHI) (Jones, 2010). The NHI is provided by the National Health Insurance Corporation (NHIC) – a non-profit institution. All Koreans, except those in the lower-income groups, are required to pay

health insurance premiums. For employees, a 5.33% rate of salary is paid equally by employees and firms. For the insured self-employed and their dependents, the premium is based on a formula that takes property, income, motor vehicle ownership, age and gender into account. The low-income population is subsidised by the government (WHO, 2012c).

Health care in Taiwan is also an insurance-based system, named the National Health Insurance (NHI), the same as Korea's national insurance. It was implemented in March 1995. Before 1995, there were a range of separate insurance schemes covering around 57% of the population (Wu *et al*., 2010). The health insurance system was fragmented and provided labour insurance, governmental employee insurance, farmers' health insurance and fishermen's health insurance. This fragmented system, together with independent general practitioners (GPs), caused high levels of out-of-pocket costs for patients.

After integrating these varied insurance schemes, NHI would be able to improve the efficiency of the health-care system as well as the coverage. It is mandatory for all citizens in Taiwan to contribute to NHI, the only exceptions being prisoners and citizens living abroad. Hence, the coverage is around 99%. Patients under the NHI scheme can choose to use both public and private health services. The scheme also has a comprehensive coverage of services: from dental care to maternity service, from Western medicine to traditional Chinese medicine, and even elderly home care is covered. The insured are classified into six main categories and fifteen sub-categories based on job and income. The premium paid by the insured for each category varies from 0% for the low-income group to 100% for the self-employed. All health services require co-payment which varies in different institutions, from £6.37 in hospital to £1.09 in GP clinics. Those in the low-income group who cannot afford co-payment can receive public assistance.

The health-care system in Singapore is unique among the six states. In 1983, the first comprehensive National Health Plan was introduced in Singapore. The philosophy of Singapore's public health services is to build one strong government support system combined with individual responsibility and community support (WHO, 2011, p. 391). There is thus a dual system of health-care delivery. The public health-care services are managed by the government, and the private system is provided by private hospitals and private general practitioners. The dual system is designed to ensure universal coverage for all citizens. The government provides access to a basic level of care and subsidises most of the cost to make sure that everyone can receive basic health care.

For example, patients who choose to stay in subsidised wards within a public hospital could get up to 80% subsidy. In addition, primary health care is subsidised in both public and private institutions. At polyclinics, the average outpatient consultation fee is about $8. Singaporean citizens aged 65 and above, children up to eighteen years old and all schoolchildren are given a concession of up to 75% on their consultation and treatment fees. Other Singaporean citizens are given a 50% concession. In addition to the government directly subsidising health services, the government also encourages individuals to save and pay for their medical services.

This is realised through Medisave, a compulsory individual medical savings account. Medisave is an extension of Singapore's Central Provident Fund (CPF). Both employees and employers have to contribute a specific percentage to the account. As well as Medisave, there are also a range of different insurance schemes to protect people, such as MediShild, ElderShield and Medifund. These various health-care schemes are also one reason why Singapore's private health expenditure is the highest among the six states.

The calibrations of public-health spending and private expenditure follow the direct method by R. The scores of the universality are based on case knowledge and the final fuzzy scores are generated using the minimum principle.

Table 6.9 shows the fuzzy scores of the health services of the six states.

Table 6.9 Health services in fuzzy set scores

States	Year	Spending in Health service (S)	Universality of health care (U)	Affordability of health care (A)	Health service in ideal type (minimum of S, U and A)
China	1990	0.98	0.6	0.13	0.13
	2000	0.34	0.1	0.02	0.02
	2010	0.79	1	0.51	0.51
Hong Kong	1990	0.34	1	0.02	0.02
	2000	0.75	1	0.15	0.15
	2010	0.84	1	0.06	0.06
Japan	1990	0.99	1	1	0.99
	2000	0.99	1	1	0.99
	2010	1	1	1	1
Korea	1990	0.06	1	0.04	0.04
	2000	0.34	1	0.26	0.26
	2010	0.75	1	0.68	0.68
Singapore	1990	0.27	1	0.08	0.08
	2000	0.05	1	0.04	0.04
	2010	0.4	1	0.01	0.01
Taiwan	1990	0.01	0.64	0.11	0.01
	2000	0.04	1	0.3	0.04
	2010	0.78	1	0.21	0.21

6.3 Family policy (F)

Esping-Andersen's typology has been deeply criticised by scholars. One primary reason for this is its failure to consider family policy. Similar to health policy, family policies also serve both productive and protective objectives. For example, on the protective side, they can ensure the health and well-being of children and mothers (Carneiro *et al.*, 2011; Thévenon & Solaz, 2013) and can reduce poverty; whereas from the productive angle, they can also support those with caring responsibilities to work (Cerise *et al.*, 2013). In an OECD working paper, Jaumotte (2003) analysed six policy areas which might influence the female labour participation rate: family taxation, child

care subsidies and child benefits, parental leave, flexibility of working-time arrangements, anti-discrimination laws and other indirect policies. The results showed that the supply of affordable child care and the provision of parental leave have a significant impact on boosting female participation.

Especially, maternity leave[21] as an indispensable element of comprehensive work-family policies plays an important role not only in preserving the mother's and her newborn's health (Addati *et al.*, 2014) but also incentivises women's employment in the labour market (Baker & Milligan, 2008; Cerise *et al.*, 2013; Feng & Han, 2010; Misra *et al.*, 2011; Thevenon & Solaz, 2013). So in terms of consideration for females in welfare states, maternity benefit is an important indicator.

For measuring maternity benefits, according to ILO Convention 183 on Maternity Protection (2000), three key indicators were considered: the duration of maternity leave (D), the net replacement rate which reflects the generosity of the benefit (G), and the accessibility of the benefits. The detailed coding is shown in Table 6.1. The cut-off points were set in accordance with the ILO Maternity Protection Convention 2000 (No.183) (ILO, 2000). According to that convention, maternity leave should be no less than fourteen weeks (the ILO recommendation is eighteen weeks), but it should not be too long. Very long leave periods, especially in the absence of job protection, might also damage women's competitive advantages in the labour market, resulting in wage penalties (Addati, Cassirer & Gilchrist, 2014; Thevenon & Solaz, 2013). UNICEF (2013) suggested that six months (equal to 24 weeks) of maternity leave could encourage breastfeeding, healthier children and health-care savings. Therefore, the fully-out point of the duration set was set at fourteen weeks, the fully-in point at 24 weeks and the cross-over point at eighteen weeks.

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[21] Many studies have shown that child care provision also has positive impact on female participation in developed countries. However, the availability of data issue is significant in measuring child care provision, especially in the East Asian context. Hence, maternity leave is used solely in this research.

For the net replacement rate, Convention No.183 suggested that the cash benefit should be equal to at least two-thirds of a woman's previous earnings. Hence, the cross-over point was set at 66%. In accordance with Kvist (2003), the fully-out point was set at 20%. This strategy was also used by Vis (2007), who stated that if an individual's income reduces to 20% or less, it is impossible to maintain the same standard of living. The fully-in point was set at 75%. The rationale for this is that Asher (1998) summarised the pension systems of five Southeast Asian countries (Indonesia, Malaysia, the Philippines, Singapore and Thailand) and showed that for a middle-income earner, a replacement rate of around 75% is considered adequate for financial security. This figure was also cited by Wang *et al.* (2014) for comparing models of pension systems.

For the accessibility set, the conditions for qualifying were considered. As with the accessibility set of the education service, purely case knowledge was used for calibrating.

All of the six countries provide paid maternity leaves of from eight to sixteen weeks. From the 1970s, eight weeks of maternity leave was implemented in China. The period was extended to 90 days (thirteen weeks) in 1998, and from 2012, the length of the leave was extended to 98 days (fourteen weeks), according to Regulations on Providing Special Protection for Female Worker (Shin, *et al*., 2013): 100% of an enterprise's average monthly wage for the previous year is paid (SSA, 2012). Every woman working in public agencies, private companies and social organisations is qualified to receive the benefits. There are no additional conditions for qualifying.

The policy has undergone no major reform in Hong Kong during the past two decades. The maternity leave period is ten weeks.[22] The payment is equal to four-fifths of the average daily wages of the employee over the previous twelve months. But the payment

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[22] This information was extracted from labour legislation information published by the Labour Department of Hong Kong.

requires applicants to have been employed under a continuous contract for not less than 40 weeks, and to have given notice of pregnancy and presented a certificate of pregnancy. If an applicant has worked for less than 40 weeks, she is still eligible for ten weeks' maternity leave, but without pay. Therefore, for calibration, the non-pay maternity leave is also considered.

Korea has provided paid maternity leave of 60 days (eight and a half weeks) since 1987. From 2011, the length was extended to 90 days (thirteen weeks). The Labour Standard Act requires employers to provide ordinary wages for the first 60 days of maternity leave, and for the remaining 30 days, the government has provided 1.35 million KRW[23] (around £820 sterling) from 2013 (OECD, 2013a). Legally, it covers all female employee who will deliver a child.

Similarly, the maternity leave period in Japan is 98 days (fourteen weeks) and Japan's maternity leave programme is mandated by the Labour Standards Act (1947); no major reforms have since been introduced. The wage during maternity leave remained at 60% of ordinary wages, but it was raised to two-thirds of the female worker's ordinary wage from 1 April 2007, according to the OECD family database (2013). Moreover, in addition to the income replacement, a one-off maternity allowance -350,000 yen (£2300), 420,000 yen (£2750) from October 2010 is provided by the health insurance programme. Every worker has to have been employed at an enterprise or place of business and to receive wages, including non-regular employees, to be entitled to the payments.

Compared with the countries discussed above, Singapore's maternity leave system is a bit more complicated. Singapore began to provide maternity leave in the 1970s under the Employment Act. Workers who were covered under the Employment Act could have maternity leave for eight weeks for their first and second child. Maternity leave was unpaid for a third birth or subsequent birth because of the two-children policy in

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[23] KRW: South Korean Won

place at that time – this regulation was abolished in 2001. Since this abolition came into force just after the time point selected as the starting point for this study, 2000, as well as its significance, it was also considered when calibrating the accessibility of the policy for the year 2000. Hence, the accessibility score was higher (by 0.1) in 2000 than the score in 1990. In 2004, paid maternity leave was extended to twelve weeks and also extended to the birth of a fourth child. In 2008, the maternity leave period continued to expanded to sixteen weeks for all child births. The salary during maternity leave is the usual employees' monthly gross income. However, the criteria for receiving the full amount are stricter than in other countries: the child must be a Singaporean citizen; the child's parents must be lawfully married; and the applicant mother has to have served her employer for at least three months before the birth of the child. If any of the above criteria are not met, the period of paid maternity leave is reduced to eight weeks, but workers still can have four more weeks' unpaid leave.[24]

Taiwan has the shortest maternity leave across these six countries. The policy has remained the same over the past three decades. All female workers who have been hired by an employer to do a paid job for six months continuously are entitled to eight weeks fully paid maternity leave. Those who have worked for less than six months receive half pay (Ministry of Labour, 2014).

To produce the final fuzzy scores of the family policy set, the minimum principle was the initial consideration, as with all the other sets. This is better for the consistency of the research. However, the situation of this set is a little different. Looking at the duration of maternity leave, only China, Japan and Singapore reach the minimum duration proposed by the ILO. Singapore in 2010 was the only case that just passed the cross-over point of the duration set. The average level in the region is significantly lower than the OECD average.

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[24] The legislations are extracted from information published by Ministry of Manpower Singapore.

The cultural influence could be a reason for this. Recall from Chapter 2, family support has always been an important component of East Asian welfare provision. In most East Asian countries, it is a tradition that the older generation takes care of the new generation: in other words, grandparents become involved. In this circumstance, therefore, mothers might not need as long maternity leave as in Western countries. The ILO's standard might be too rigid for these states. As a result, if we were to use the minimum principle, almost all of the states would be out of the set (*see* Table 6.10). Hence, considering the special backgrounds of the six cases, the average instead of the minimum principle was used here. Table 6.10 shows the fuzzy-set score of the maternity benefit in the six countries.

Table 6.10 Maternity benefits with fuzzy set scores

States	*Year*	*Generosity (G)*	*Duration (D)*	*Accessibility (A)*	*Family policy in ideal-type analysis (Minimum of G, D, and A)*	*Family policy in ideal-type analysis (Average of G, D, and A)*
China	1990	1	0	0.6	0	0.53
	2000	1	0	0.6	0	0.53
	2010	1	0.01	0.6	0.01	0.54
Hong Kong	1990	1	0	0.4	0	0.47
	2000	1	0	0.4	0	0.47
	2010	1	0	0.4	0	0.47
Japan	1990	0.42	0.01	0.7	0.01	0.38
	2000	0.42	0.01	0.7	0.01	0.38
	2010	0.52	0.01	0.7	0.01	0.41
Korea	1990	1	0	0.7	0	0.57
	2000	1	0	0.7	0	0.57
	2010	1	0	0.7	0	0.57
Singapore	1990	1	0	0.2	0	0.4
	2000	1	0	0.3	0	0.43
	2010	1	0.66	0.45	0.45	0.7
Taiwan	1990	1	0	0.43	0	0.48
	2000	1	0	0.43	0	0.48
	2010	1	0	0.43	0	0.48

6.4 Summary

In this thesis, education, health care service, and family policy are employing for measuring the productive welfare dimension of the six states. All the three policy fields are analysed based on in-depth case studies. The examinations are relying not only on the government expenditure data, but also through detailed policies. Table 6.11 summaries the productive scores of all six states in 1990, 2000 and 2010.

Table 6.11 Membership scores of productive dimensions in 1990, 2000, 2010

States	Year	Education service (E)	Health service (H)	Family policy (F)
China	1990	0.75	0.13	0.53
	2000	0.34	0.02	0.53
	2010	0.14	0.51	0.54
Hong Kong	1990	0.69	0.02	0.47
	2000	0.82	0.15	0.47
	2010	0.89	0.06	0.47
Japan	1990	0.00	0.99	0.38
	2000	0.17	0.99	0.38
	2010	0.00	1.00	0.41
Korea	1990	0.15	0.04	0.57
	2000	0.32	0.26	0.57
	2010	0.51	0.68	0.57
Singapore	1990	0.73	0.08	0.40
	2000	0.73	0.04	0.43
	2010	0.78	0.01	0.70
Taiwan	1990	0.51	0.01	0.48
	2000	0.62	0.04	0.48
	2010	0.72	0.21	0.48

Chapter Seven

Fuzzy-set ideal type analysis of East Asian welfare dimensions: protectivism

Following the same strategy as in the previous chapter, the protective features of the welfare systems in the six states are analysed in this chapter. Three policy fields are included: old-age income protection, housing policy and passive labour market policy. As in the previous chapter, the fsITA is based on in-depth case studies. Table 7.1 summarises the empirical indicators and their fuzzy interval scores.

Table 7.1 Empirical indicators and fuzzy set interval scores

Area	Empirical indicator		Fully in the set 1.00	Almost in the set 0.83-0.99	Fairly in the set 0.67-0.82	More or less in the set 0.51-0.66	Neither in nor out of the set 0.5	Fairly out of the set 0.33-0.49	Mostly out of the set 0.17-0.32	Almost out of the set 0.01-0.16	Fully out of the set 0.00
Old age income protection	Pillar zero pension	Pension programmes	with pillar zero pension								No pillar zero pension
	Mandatory pension	Generosity measured by average net replacement rate (%)	>75 High				50 Medium				<20 Low
		Universality of old-age pension (%)	Universal 83				Selective 50				Residual <10
Housing	Public rental policy		With well-developed public rental housing				With public rental housing but under development				Without any public rental policy
Passive labour market policy	Generosity measured by monthly payment compared with minimum wage (%)		>75				50				<20
	Coverage (%)		73				50				<10
	Duration shows the total weeks paid		14.8				13				0

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7.1 Old-age income protection (P)

Old-age income protection is one of the most crucial income protections in a welfare state. It is a typical indicator in comparative welfare research studies and is also used in Esping-Anderson's typology for measuring social protection. It is particularly important in East Asian countries due to the significant demographic changes in the region.

East Asian states have achieved an impressive economic miracle in recent decades. One important reason for this is the large and youthful populations. The increased working-age population, together with adequate policies such as heavy investment in education and human capital, has helped the region to capture the 'demographic dividend' which has enabled the region to achieve high and sustained growth.

However, this situation has changed during the past three decades. The proportion of people aged 65 and above is increasing significantly in the region (*see* Figure 7.1). Japan in particular has much higher older population than other East Asian states and the OECD average, because the proportion of Japanese citizens who are aged 85 and over was 22.69% of the total population in 2010. Indeed, this aging problem is happening much more rapidly in the region generally in comparison with OECD countries. In economically advanced countries in Europe and Northern America, it has taken more than half a century to double the aging population from 7% to 14% (Fu, 2009). In East Asia, however, it has taken only thirty years for Japan, Korea, Singapore and Taiwan to achieve an even greater growth. Although the proportions of the older population in East Asian states are still lower than the average of OECD countries, a higher rate of increase is expected in the future. People are simply living longer than ever before.

Figure 7.1 Proportion of the population aged 65 and above of OECD and East Asian states, 1970-2010

Propotion of population aged 65 and above of OECD and East Asian states, 1970-2010
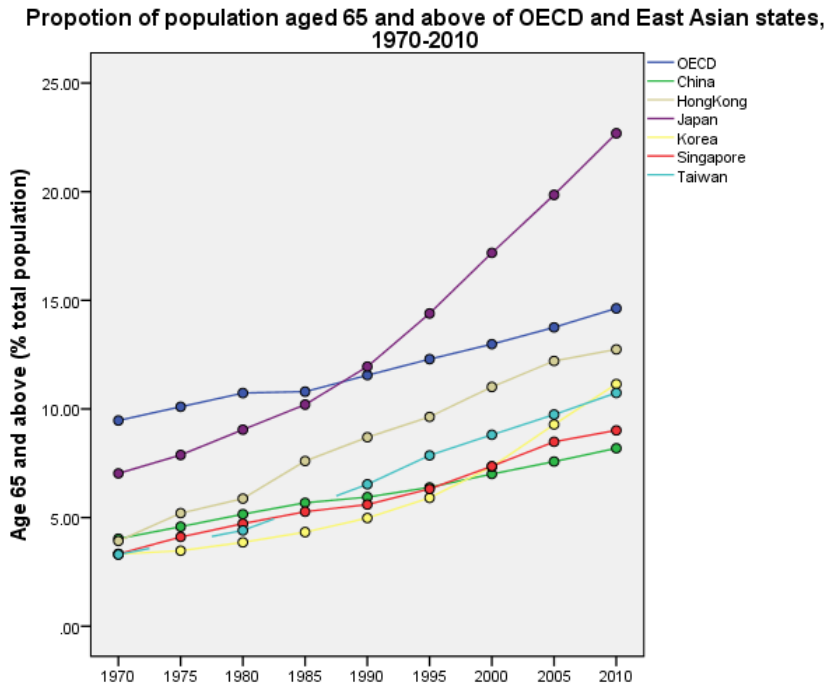
Notes: Data are missing for Taiwan in 1970, 1975, 1980 and 1985. Data of 1971, 1981 and 1986 were used instead.

Source: DGBAS (2011); The World Bank (2012)

Life expectancy is continuing to increase (*see* Table 7.2). People in Hong Kong and Japan were expected to live longest in the world with a life expectancy of 83 years in 2010. Also, the fertility rate declined dramatically in the region from 1970 to 2010 (*see* Figure 7.2). In addition, all six states have fertility rates lower than the OECD average. Indeed, Hong Kong, Singapore and Taiwan have the lowest fertility rates in the world. A rising elderly population ratio with a reducing working-age population is turning a demographic dividend into a demographic tax in the region. So in this context, the provision of financial security for the elderly population becomes increasingly critical.

Figure 7.2 Total fertility rate of OECD and East Asian states, 1970-2010

Total fertility rate of OECD and East Asian states, 1970-2010
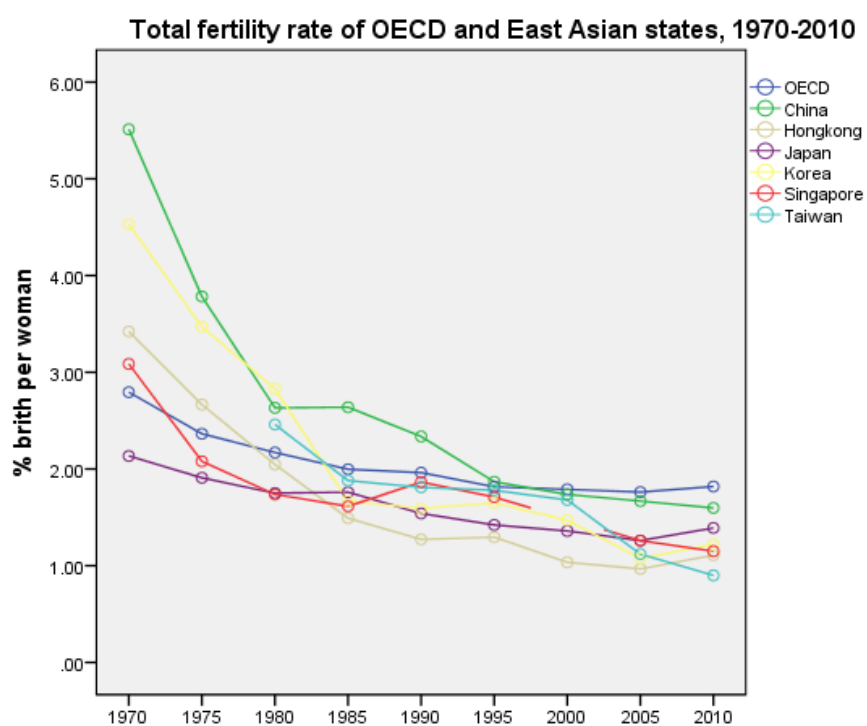
Source: DGBAS (2011); The World Bank (2012)

Table 7.2 Life expectancy at birth, total (years) of OECD and East Asian states, 1970-2010

Year	OECD members	China	Hong Kong	Japan	Korea	Singapore	Taiwan
1970	69	63	71	72	61	68	69
1975	71	66	73	75	64	70	71
1980	72	67	75	76	66	72	72
1985	73	68	76	78	69	73	73
1990	75	69	77	79	71	76	74.
1995	76	70	79	80	73	76	75
2000	77	71	81	81	76	78	77
2005	78	72	82	82	78	80	78
2010	79	73	83	83	81	82	79

Source: DGBAS (2011); The World Bank (2012)

The ultimate goal of a pension system should be to provide adequate retirement incomes to allow the elderly to maintain a decent living standard after retirement and to have economic independence (Mladen, 2012). However, comparing pension systems is not an easy task. The difficulty of making comparisons involves two aspects; first, the data availability issue is a typical problem which cannot be ignored for old-age pensions. Second, pension systems often involve multiple programmes which are sometimes difficult to analyse within the same framework. Although all pension systems share similar goals, there are different types of pension. Each state could select different pension types to best meet its needs.

For example, a defined contribution (DC) pension plan emphasizes an individual's personal responsibility for his/her chance of longevity (Park & Estrada, 2012). In DC schemes, the pension depends on the contributions deposited during a working career (Soede & Vrooman, 2008). The contribution is fixed and is usually a predetermined share of an employee's salary. But the benefit could be varied depending on the worker's age, earnings, contribution rate, investment return and normal retirement age (Wang, *et al*., 2014). In contrast, however, in defined benefit (DB) pension schemes, the whole society shares investment and longevity risks. Within these schemes, the pension benefits are known but the contributions vary depending on the amount needed to fund the benefit. Several factors are taken into account for calculating the contribution, such as years of service, earnings and so on.

In fact, in the real world, pension systems rarely rely on a single pension scheme. Instead, they are complicated, often containing different elements to meet different requirements in a society. In order to analyse pension systems, a number of international organisations have proposed different strategies, including the World Bank, the ILO and the IMF. Among these approaches, the World Bank's multi-pillar approach (Holzmann & Hinz, 2005, Pordes, 1994) is perhaps the most popular. Hence, the revised version of the multi-pillar pension approach was used in this thesis.

In the 2005 revised version of the World Bank's multi-pillar pension model, a five-pillar model replaced the original three-pillar model. According to the Bank (2008), the non-contributory 'zero' pillar is designed to alleviate old-age poverty by providing the elderly with a minimal level of protection. It ensures that people with low life-time

incomes, including those who only participated marginally in the formal economy, can have basic protection in old age.

As well as the pillar zero, the first and second pillars are two mandatory pension pillars. The first pillar is a contribution-based pension scheme which links to earnings in order to replace some portion of life-time pre-retirement income. It addresses the

> *"risks of individual myopia, low earnings, and inappropriate planning horizons due to the uncertainty of life expectancies, and the lack or risks of financial markets" (The World Bank, 2008, p. 3).*

The second pillar pension scheme is also mandatory and is typically an individual savings account. In this study, for measuring old-age income protection, only pillar-zero and mandatory pension schemes (pillars one and two) were considered.

The third and fourth pillars are not relevant because they are voluntary old-age support schemes which are mainly financed by individuals: the third pillar contains many flexible forms including individual savings, employer sponsorship and so on, and the fourth pillar is a non-financial pension pillar which includes access to informal support (such as family support), other social programmes (such as health care), and other individual financial and non-financial assets (such as homeownership or reverse mortgages).

Two-tier analysis was used in the fuzzy-set operation: a pillar-zero set and pillar-one and pillar-two sets. First, the pillar-zero set used crisp set analysis. States with pillar-zero pensions were scored as '1', and those without were scored as '0'. Fuzzy-set analysis was adopted for evaluating mandatory pension schemes.

Although some studies (Hu, 2012, Leckie, 2012) have found that China's minimum guarantee scheme (*Di Bao*) has been classified as a pillar-zero pension, this classification is still in doubt (Aon Hewitt, 2013; OECD & The World Bank, 2009; Zuo, 2014). The main reason for this is different understandings of pillar-zero pensions. If only some of the objectives of the pillar-zero pensions are considered, *Di Bao* might be included. It is non-contributory mean-tested economic support for people in fiscal

difficulties to ensure that they have a minimum livelihood. Only people with a *per capita* household income below a locally determined minimum living standard can apply. It is therefore not targeting the entire old-age population but only those people who meet the strict eligibility requirements. It is not a universal old-age income protection but is more of a social security assistance. Hence, *Di Bao* has not been regarded as China's pillar-zero pension in this thesis.

The same decision was made about Singapore's Public Assistance Scheme (PA). This is one of the Singaporean government's poverty alleviation strategies and targets

> *"Singaporeans who by reason of age, illness, disability or unfavourable family circumstances, are unable to work and have no means of subsistence as well as no one to depend upon" (MSF, 2013).*

Unlike *Di Bao*, it does not target the whole low-income population, instead, it is strictly focused on people who have a good reason for not working and have no other source of income and family support. Therefore, although Ramesh (2006) regarded the PA scheme as a pillar-zero pension, he also recognised that it is a weak classification. It is also not included in the reports of the OECD and the World Bank (2009). In this thesis, therefore, as with *Di Bao*, the PA scheme is also regarded as being out of the pillar-zero set.

Among the six states, Hong Kong, Japan, Korea and Taiwan have real non-contributory, old-age pension schemes, but of different types.

Hong Kong has had its universal old-age pension scheme since 1973. The Old Age Allowance (OAA) covers all Hong Kong residents who are aged 70 and above (Social Welfare Department, 2015). In addition, the Old Age Living Allowance covers those residents aged 65 or above who are in fiscal difficulties.

Both Korea and Taiwan established their universal pension systems in 2007, and Taiwan's was fully implemented in 2008 (SSA, 2012). Unlike Hong Kong's OAA scheme, both Korea's Basic Old Age Pension, and Taiwan's non-contributory

pension[25] only target members of the aged population who are in financial difficulties. Similarly, Japan's non-contributory pensions have also selected a specific target population: full-time housewives are automatically entitled to the flat-rate basic benefits; lower-income groups could be partly or fully exempted from the basic pension contributions; and parents during parental leave. The crisp scores of the pillar-zero schemes are shown in Table 7.3.

Table 7. 3 Crisp scores of pillar-zero pension schemes

States	*Pillar Zero*		
	1990	*2000*	*2010*
China	0	0	0
Hong Kong	1	1	1
Japan	1	1	1
Korea	0	0	1
Singapore	0	0	0
Taiwan	0	0	1

For measuring mandatory pensions, two sub-indicators were used: net replacement rate and the universality of the pension programmes. Due to the data issues, the scores were mainly based on case knowledge. The 'Pension at a Glance' report published by the OECD and the national annual year statistics book were also considered.

In terms of the generosity of a pension system, the net replacement rate – the ratio of pension benefits to individual earnings – was used. The choices of cut-off points are following the same strategy of the family policy set: the fully-out point was set at 20%, and the fully-in point was set at 75%.

The universality of the mandatory pension schemes is measured by the coverage of all mandatory pension programmes for workers, regardless of whether they are public or private. The calculation is based on the active labour force. However, setting the cut-off points was difficult as there is no official guideline. Therefore, in this thesis, the cut-off points were set mainly in accordance with the pension coverage in OECD countries. The fully-in point was set at the OECD average, which was 83% in 2005

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[25] Taiwan's non-contributory pension scheme is part of the National Pension Programme (NPP). Although the NPP is a DC pension programme, contributions for low-income employees are fully paid by the government.

(OECD, 2012c). The cross-over point of the set was 50%, which means that the mandatory pension should cover half of the working population. The fully-out point was set at 10%.

During the last two decades, China, Hong Kong, Korea and Taiwan have launched major reforms of their mandatory pension systems (SSA, 2012).

A new insurance-based pension system started to replace the old work-unit based pension in China from 1991. The coverage expanded from state-owned enterprises and organisations to the national level. Although the coverage of the old system was low, the net replacement rate was high. The ratio of pensioners to the number of workers was 15.6% in 1988. In 1991, the State Council issued the 'Decision of Reform on Pension System for Workers' (statement [1991] 33), in which the multi-pillar pension system was first mentioned in China. The guideline included a social pension and individual accounts as its main components, in addition to a basic pension. It also stated that individuals should take responsibility for their own pension payments, and should not rely on the state and their work units. In 1997, the State Council promulgated the 'Decision to Establish a Unified Basic Pension System for Enterprise Employees'; this formally identified a new contribution-based pension. The social pool and individual account formed the current first-pillar pension system in China. The social pool old-age pension worked on a pay-as-you-go (PAYG) basis and was funded by mandatory contributions by employers. The employer's contribution rate was set at 20% of the employee's wages, but may be varied in different areas, ranging from 13% to over 30%. In addition to the social pool pension, the individual account was a mandatory DC plan in pillar one. In theory, contributions of 8% of monthly salary by employees made the account fully financed from 2006. Theoretically, the PAYG portion was intended to provide a replacement rate of 35% of the employee's final salary, and the funded portion was intended to replace 24%, hence 59% in total.

In the real world, according to the '*Pension at a Glance 2011: Asia/Pacific Edition 2011*' (OECD, 2012c), the net replacement rate for average earners was 86.8% for men and 69.2% for women (78% on average). To be fully entitled to the pillar-one pension, the minimum contribution period was fifteen years. Legally, all urban workers should be covered by pillar-one schemes. The real coverage in 2012 was 230

million (active participants plus pensioners) (Leckie, 2012). According to the OECD (2013b, 2012b), in 2005 China's mandatory pension scheme covered 20.7% the total labour force, and this figure increased to 33.5% in 2010.

A rural pension scheme was introduced in 2009. This was the first time that rural areas had been fully covered in the pension system. According to the 'Guidance on the New Rural Pension Scheme' (The State Council, 2009), all agricultural-registered, permanent residents who were not participating in the basic old-age pension schemes for workers of enterprises in urban areas were entitled voluntarily to participate in this scheme. The fund was mainly financed by individual and government contributions. The basic pension benefit was fifty-five Yuan (around US$9) per month and was mainly financed by the central government. The standard of individual contributions covered five grades, from 100 Yuan to 500 Yuan per year.

Local governments contributed at least 30 Yuan per individual per year. After fifteen years' contribution, every month the participations can receive the basic pension (55 Yuan) and the result of a division of total contributions by 139. In other words, with a 500 Yuan contribution, after fifteen years, a participant can receive around 112 Yuan in pension benefits monthly. Compared with the national urban average wage which was 2687 Yuan in 2009 (NBS & MHRSS, 2010), this was extremely low. The benefits received consisted of two parts: the basic pension which was calculated as 20% of the national average wage of the previous year before retirement, and the individual contribution, which was the result of dividing the individual pension account by 120. According to an OECD report (2012b), the net replacement rate for average earners was 86.8% for men and 69.2% for women, so for the population as a whole was around 78%. However, if account of the rural and basic urban pension schemes is taken, the replacement rate will be lower. Although the real coverage is still not high, legally the new pension schemes had covered the whole of China, both rural and urban areas, by the end of 2012, as announced by the Chinese government (Wu, 2013).

Korea's first-pillar pension, the National Pension Scheme, was introduced in 1988. When it was first introduced, its net replacement rate was set at 70%, and then reduced to 60% by the end of 1998 (Kim, 2012). With a second round of reform in 2007, it

was further reduced to 50% in 2008 and then each year by a 0.5% reduction from 2009 to 40% in 2028.

However, in contrast to the replacement rate, the coverage expanded significantly. When the National Pension was first introduced, it only covered workers in firms with ten or more employees. In 1992, the coverage was extended to firms with five or more employees. In 1995, it started to cover individually-managed participants in rural areas, and then expanded to urban areas in 1999. Eventually, in 1999, legally, the scheme came to cover the whole workforce aged between 18 and 59. It had expanded about fourfold since it started. In reality, the coverage was 49.5% in 2005 (OECD, 2012c) and it increased dramatically to 79.9% in 2011 (OECD, 2013b).

Taiwan's pension system is currently undergoing a transition and reform. The old-age pension system in Taiwan is fragmented and a series of pension schemes are operating. In 1990, public sector employees were covered by the Public Service Pension Fund (PSPF) which was a mandatory defined benefits scheme for civil servants, teachers and military personnel. In 1999, a new Government Employees' & School Staffs' Insurance (GESSI) scheme was introduced. It was a defined benefit scheme which was financed by the government, employers and employees. Private sector employees were covered by the old Labour Pension Programme in 1990 which was a DC pension which required employers to contribute 2% to 15% of an employee's monthly wages to a retirement savings account. An employee was eligible to apply for the pension after having been employed by the same company for at least fifteen years.

However, at that time, Taiwan's economy was dominated by small to medium-sized companies which had relatively short life spans, so it was difficult for employees to receive the pension, since they could not stay in the same company for fifteen years. Because of all these issues, the government decided to reform the labour pension at the end of the 1990s.

The Labour Pension Act was enacted in 2004 and implemented in 2005 and a new Labour Pension Programme was introduced. It featured mandatory contributions from employers and a portable individual pension account which could transfer with employees when they change jobs. Under the contributory Labour Insurance Scheme,

companies with five or more employees aged between fifteen and sixty are required to participate in the Scheme. Companies with fewer than five employees may join the Scheme voluntarily. In addition to occupational pension schemes, the National Pension was introduced in 2007. Theoretically, it covered by any citizen aged 25 to 65 who was not covered by any other pension programme. For average earners, the net replacement rate is now around 66% for both sexes (OECD & The World Bank, 2009). The coverage of pension programmes is remarkable. According to the Statistical Yearbook (DGBAS, 2013), the coverage of the GESSI together with the LI was over 87% in 1990. In 2010, the two schemes were extended to cover 90% of the labour force.

Japan's modern pension system was created in 1985 and it has undergone no major change over the last three decades. The first pillar is the national basic pension (*Kokumin Nenkin*, or KN). This is a universal flat-rate benefit, not dependent on personal earnings. The minimum contribution period is 25 years. The full amount of pension can only be paid to participants aged 65 years or above and after forty years of contributions. The full pension amount in 2011 was 788,900 yen a year, which was 15% of the average wage in Japan (Bitinas, 2012). The average replacement rate for both men and women was around 39.7% in 2010 (OECD, 2012c). In addition to the flat-rate pension, Japan also has an occupational mandatory DC pension for employees (the *Kosei Nenkin Hoken*, or KNH). The benefit is calculated on the basis of the insured's average monthly wage over the full career. In addition to this employee's pension, civil servants have a special pension system. The coverage of Japan's pension systems (KNH and KN together) is among the highest in the world, with only 1.6% of the elderly currently not receiving any old-age pension benefits (Takayama, 2009).

Neither Hong Kong nor Singapore have first-pillar plans for retirement protection. Their main pension schemes are second-pillar plans which share the same name: Provident Fund. The difference between them is that Hong Kong's mandatory provident fund (MPF) is privately managed, whereas Singapore's CPF is a state-mandated and state-managed fund (Asher, 1999). Before the MPF, Hong Kong did not have any formal contributory pension system. Through the 1960s, 1970s and 1980s, for many elderly people in Hong Kong, the main source of income came from family support. During this period, many large companies established their own pension

schemes for employees. The MPF finally became law in 1995 and was implemented in late 2000. The objective of the MPF was to provide a cost-effective system of retirement saving for workers in Hong Kong. All full-time and part-time employees and self-employed persons aged between 18 and 65 are required to join an MPF scheme, and legally, MPF schemes are obliged to accept any eligible employee or self-employed person who wishes to join the scheme. The net replacement rate was 37.3% for men and 35.9% for women in 2010 (OECD, 2012c). The coverage of the mandatory pension in Hong Kong has not changed much after the introduction of the MPF, and was around 78% (OECD, 2013b, 2012b).

Singapore does not have a pillar-one pension scheme. In fact, it only has one real pillar, pillar two.[26] Singapore's old-age pension is also managed by the CPF, which is strong and goes beyond pension provision to include health, housing and education. In fact, withdrawals from the CPF for housing and financial investment purposes were more than three quarters of the total withdrawals in 2005, whereas the withdrawals for retirement purposes were only 14% (Ramesh, 2006). Theoretically, the CPF covers employed persons, except for foreign workers (who form a fifth of the labour force), casual and part-time workers, and some contract workers. The coverage was 62.9% in 2008 (OECD, 2012c).

Table 7.4 shows the calibrations of the mandatory pension schemes.

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[26] As mentioned earlier, although one objective of the Public Assistance scheme was to address financial difficulties for elderly people, it is too weak to be considered as a pillar-zero pension.

Table 7.4 Mandatory pension with fuzzy set scores

States	Year	Generosity of pension (G)	Universality of pension (U)	Mandatory pension system in ideal type (G*U)
China	1990	0.99	0	0
	2000	0.96	0.20	0.20
	2010	0.96	0.34	0.34
Hong Kong	1990	0	0	0
	2000	0.21	0.92	0.21
	2010	0.21	0.92	0.21
Japan	1990	0.27	1	0.27
	2000	0.27	1	0.27
	2010	0.27	1	0.27
Korea	1990	0.91	0.20	0.20
	2000	0.76	0.50	0.50
	2010	0.48	0.95	0.48
Singapore	1990	0.03	0.70	0.03
	2000	0.03	0.70	0.03
	2010	0.03	0.70	0.03
Taiwan	1990	0.87	0.51	0.51
	2000	0.87	0.65	0.65
	2010	0.87	0.75	0.75

The Table 7.5 shows the final fuzzy scores of income protection. Hong Kong in 1990 scored 0.5 in the set of old-age income protection due to its dichotomous score in the pillar-zero and mandatory pension sets. However, as already discussed in Chapter 6.1, 0.5 is the most ambiguous point in set-theoretical method analysis which is better to avoid. In addition, a pillar-zero pension is particularly important in a society as it provides a basic safety-net to all citizens. Hong Kong has the most comprehensive pillar-zero pension among the six states, so 0.5 was adjusted to 0.51 in this set.

Table 7.5 Fuzzy scores of income protection

States	Year	Old age income protection (average of pillar zero and mandatory pension)
China	1990	0
	2000	0.1
	2010	0.17
Hong Kong	1990	0.51
	2000	0.61
	2010	0.61
Japan	1990	0.64
	2000	0.64
	2010	0.64
Korea	1990	0.1
	2000	0.25
	2010	0.74
Singapore	1990	0.02
	2000	0.02
	2010	0.02
Taiwan	1990	0.26
	2000	0.32
	2010	0.87

7.2 Housing (H)

Generally speaking, a comparative study of housing policies is not very common in the field of comparative welfare studies. On the one hand, housing has always been ignored or omitted in many pioneering comparative welfare studies (see, for example, Esping-Andersen, 1990 and Wilensky, 1975). On the other hand, most studies of housing policy are not explicitly comparative (Doling, 1999, p. 61). In many 'comparative' housing policy books or papers, the authors have not really tackled the task of comparing, but rather simply listed country-by-country case studies, and left readers to pick up information to sort out a comparison. This form of research is juxtaposition rather than comparison.

Comparing housing policies is rather difficult. For example, Wilensky (1975, pp. 7-9) explained that the reason for excluding housing from the research was not because it

is unimportant but because of the measurement problems. Doling (2002) also pointed out that the interpretation of housing data is difficult. Unlike GDP or other economic variables, the measures of housing stocks and housing policy are sometimes unreliable. Although national governments have carried out national censuses of housing in different years, they each collect different variables from those of other governments and, occasionally, differ from their own practice in earlier years. So for these reasons, most scholars simply choose to ignore housing policy in their comparative research.

However, although it seems not very popular in comparative studies, most scholars accept that it is an important welfare pillar in a welfare state. Kemeny (2001) argued that housing as one of the four major pillars of a welfare state should not be excluded from welfare research. Similarly, Hill (1996) suggested that housing is a crucial method used to eliminate inequality and poverty in a society as it accounts for a large part of a household's need. It is an important aspect of a safety-net in a society, and an essential component of a welfare state.

In East Asia, due to the cultural influence, housing seems even more important. For example, in China, housing has been regarded as a prerequisite for happiness for most families. Therefore, Groves *et al.* (2007a) argued that housing becomes more crucial in the East Asian context. In addition, through their economic growth, all six states in the thesis have experienced or are experiencing an urbanisation process. Following the changes in economic structures, the labour force has moved from agriculture to the manufacturing and service sectors. Accompanying this movement, populations have moved from rural to urban areas (*see* Table 7.6). Although there are differences between these demographic changes, such as that Singapore and Hong Kong are two city states with only small rural areas and their urbanisation had already been undergone before 1990, whereas China is a country with 47% of the population living in rural areas in 2013 and has experienced the largest urbanisation process in the world (The World Bank, 2014).

Table 7. 6 Urbanisation

State	Urban population as % of total		
	1990	2000	2010
China	26	36	49
Hong Kong	100	100	100
Japan	77	79	91
Korea	74	80	83
Singapore	100	100	100
Taiwan	53.1*	55.8	59.3

Note: * 1995

Source: ADB (2012); The World Bank (2014)

At the same time, the total populations of all six states were also increasing (*see* Table 7.7). The overall growth of population together with the migration from rural to urban areas challenged the supply of housing.

Table 7. 7 Total population (million) 1990-2010

State	Total population (million)		
	1990	2000	2010
China	1135.2	1267.4	1340.9
Hong Kong	5.7	6.67	7.024
Japan	123.5	126.8	128.1
Korea	42.86	47	49.4
Singapore	3.02	4.03	5.08
Taiwan	20.23	22.28	23.16

Source: ADB (2012, 2000)

This is also one reason why housing prices have been continually increasing in most East Asian states. Housing has become a real social issue in some states. A notable example is the case of China. High and unaffordable housing prices have become a focal issue for the Chinese government during the last decade (Fang *et al.* 2015). From 2003 to 2013, more than fifty policies were launched in China by the central government in order to control rapidly increasing housing prices. The price of property is still difficult for many people to afford in many cities. The demand for public rental

housing has therefore continually increased too. As a consequence, including housing in this thesis is necessary in order to get beneath the East Asian welfare façade.

However, comparing the housing systems in East Asian states is particularly difficult. First, housing systems in East Asian states vary in terms of funding provisions and specific policies. Doling (2002) pointed out that the housing systems in Singapore and Hong Kong have "strong state providers and developers" whereas the systems in Japan, Korea and Taiwan stand in an "intermediate position" where selective support has been used to help low-income groups to meet their housing needs within a market framework. In regard to funding provision, Singapore and China both have a central provident fund (CPF) system which is unlike those of other states.

In addition, it should also be noted that promoting home ownership is an important part of housing policies in East Asian states. Indeed, for some governments, promoting home ownership is even more important than the development of social rental housing. For example, in Singapore, home ownership had expanded from 29% in 1970 to 92% by 2000 (Ronald & Doling, 2010, p. 242). In China and Korea, the situations are very similar. Both governments provide low-interest mortgages to selected working groups. So to include these different home-ownership policies into a comparative framework is very difficult to realise.

Finally, the data limitation is perhaps the largest challenge for all housing experts. This is not only because the available comparable data are limited, but also because the interpretations of the data are different. Although all these national governments carry out censuses of housing in different years, they collect different variables from one another, and even different from themselves in earlier years. All these complexities add more difficulties to comparing this indicator.

Housing policies have many different modes in the six states (*see* Table 7.8). They also play a variety of roles in these countries. Mortgage and payment subsidies are consistently used as a policy tool to support industrial development across the six countries. They often have pre-requirements for applying. For example, since 1994, a housing provident fund based on the Singapore model has become a principal housing policy in China. The fund which required both employer and employee to make a

contribution each month could only be used for housing (mostly for housing purchase, but it could also be used for rent in some cities) (Wang, 2007, p. 140). So joining the labour market is a pre-condition for the fund.

Subsidised build-for-sale schemes are almost the same. Government-supported affordable housing (*jingjishiyong fang*) is one of the key social housing policies in China. It is intended that 70% of households with low to middle income should have their own houses. The developers' investment profits are limited to no more than 3% (Wang & Murie, 2011). But as it promotes home-ownership, although compared with commercial housing the price is lower, it still requires applicants have basic funds to be able to purchase. Therefore, initially, these housing policies are not necessarily appropriate strategies to maintain public housing stock, as they are primarily tied to mortgage lending and require residents to join the labour market as a pre-condition.

However, public rental housing is different from the three systems discussed above. It is "the most direct government investment in expanding the overall supply of low-cost housing" to reach the urban poor (Brhane *et al.*, 2014, p. 27). It is also a basic safety net for families with a *per capita* income below the poverty line. Based on the conceptual framework of this research, the analysis only focuses on the social protective feature of housing policy. Esping-Andersen's (1990) de-commodification concept has been applied. According to Hoekstra (2003, p. 60), housing de-commodification can be defined as "the extent to which households can provide their own housing, independent of the income they acquire on the labour market". Based on this argument, public rental housing is a crucial element that can represent this theory. So in this thesis, housing policy only refers to public rental housing (except for Singapore).

Table 7. 8 Summary of key affordable housing policies in East Asian countries

Housing Policies	*China*	*Hong Kong*	*Korea*	*Japan*	*Singapore*	*Taiwan*
Public rental	Yes	Yes	Yes	Yes	Yes	Yes
State-related sources of down payment	Yes	Yes	Yes	Yes	Yes	Yes
Mortgage loan repayment subsidy	Yes	Yes	No	No	No	Yes
Subsidised build-for-sale schemes	Yes	Yes	Yes	Yes	Yes	Yes

Source: Chiu (2008); Groves *et al.* (2007b), summarised by the author

Measuring public rental housing is a tough task. In fact, it was almost impossible to find any comparable data which was available in all six states. So the calibration for housing was fully based on case knowledge. The overview of public rental housing policy was used as the indicator. States with relatively well-developed and fully functioning public rental housing systems were fully-in the set and states without any related policy were fully-out of the set. The cross-over point was set as a public rental system but at the initial stage with the system under development. The scores tend to show the trends of the development of public housing policies in these states rather than real evaluation scores.

China's[27] housing system has significantly changed from the end of 1978. The Chinese government has carried out a series of housing reforms. Housing provision in cities has gradually changed from a socialist welfare system dominated by public sector 'work units' to market provision dominated by commercial property developers (Wang & Murie, 2011). In 1985, China conducted a housing census which contains some valuable information about public rental housing at the early stage of the reform period. According to the survey, municipal housing bureaux controlled 11.5% of all floor areas in cities, state work units owned and managed 70.4% and urban collectives owned and managed 10.3%. In other words, almost 90% of the urban housing stock was public rental housing of various types (Wu, 2007, p.145). This high coverage was

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[27] Residents in rural China have a homestead where they are allowed to build their own houses. So the thesis only focuses on the housing policy in urban China.

also reflected in the low requirements for applying. At that time, however, most public rental houses were provided by residents' work units.

The most important housing reform policies were introduced in 1998. This was also the first time that the Chinese government announced the building of a government-assisted rented housing system (*lianzu fang*) (State Council, 1998). The initial purpose was to cover 15% of low-income urban families (Wang, 2007). According to the 2000 Population Census, at the end of 2000, public rental housing comprised only 16.3% of the housing stock in cities (Wu, 2007). However, the development of public housing was extremely slow. By 2003, only a few provinces had launched local regulations for social housing.[28] Local governments focused only on very small group of extremely poor families rather than guaranteeing 15% coverage.

By the end of 2002, the municipal authorities only paid rent allowances to 998 households (Xie, 2003, cited by Wang 2007). The requirements for applying were very strict. For example, Wang (2007, p. 148) listed the conditions for applying for public rental housing in Shanghai which included providing the household's income, housing living floor space and local residence registration status. Only local households with a *per capita* income below the poverty line and living in poor conditions could apply. As a result, the coverage of this support was very narrow at that time. For example, in Changning District of Shanghai in 2000, only 121 out of 220,000 households actually qualified for social housing (Wang, 2007, p. 148).

In order to solve these issues and strengthen the social rental housing system, in 2004, the Chinese government issued an order on *Ways to Provide Cheap Rental Housing for the Poorest Urban Residents* and renamed public rental housing as Cheap Rental Housing (CRH). However, unfortunately up to the end of the 2000s, the results were not very impressive. From 1998 to 2006, only about 550,000 low-income households had benefited from either the CRH or the formal public rental housing programme, which only accounted for about 1% of the total housing units built during the same period (Tan, 2009).

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[28] At that time, there were various practices of social housing. Some cities provided means-tested rent allowances and cash subsidies instead of public rental housing.

In 2009, the CRH system faced a great opportunity. The central government issued a new plan for CRH development which was called the *Cheap Rental Housing Guarantee Plan from 2009 to 2011*. According to the plan, China would solve the housing difficulties for 7.5 million low-income urban households in three years. Despite the fact that there were no major changes to the qualifying conditions, by increasing the supply CRH did gradually increase during these years. As a result, according to the latest report published by the World Bank (Brhane, Mason & Payne, 2014), CRH accounted for about an 8% share of the total housing stock in 2012; and 20% coverage is the ultimate goal for most local authorities in the next few years.

Compared with other East Asian countries, Public Rental Housing (PRH) in Hong Kong forms a comparatively large share of the total housing stock. It has provided an important social safety-net in Hong Kong. The PRH was introduced after 1987 by the Hong Kong Housing Authority, and was revised in 1993, but there have been no major reforms during the last three decades. According to the Hong Kong Annual Digest of Statistics (Hong Kong Census and Statistics Department, 2011, 2001), the quantity of public rental housing stock has gradually increased from 596,700 households in 1991 to 653,500 in 2000, and continued to expand to 737,900 households in 2010. But the proportion of PRH of the total housing stock reduced from 37.2% in 1990 to 32% in 2000. From 2000 to 2010, the total proportion remained steady; by 2010, there were still about 31.6% of households living in public rental housing. This figure is impressive even compared with traditional western welfare states. The average waiting time for housing is 1.9 years. The public expenditure on housing was around 4.3% of the public expenditure in 2010 (Hong Kong Housing Authority).

Public rental housing was first introduced in Korea in 1988 with the initiation of a 'two million housing units construction project'. The project included a plan to build the first public rental housing in Korea with 25,000 units of Permanent Public Housing[29] and 15,000 units for Five-Year Public Rental Housing. Public rental housing has various modes in Korea. Korean rental housing has a different qualifying requirement from rental period. From 1992, the state started to provide fifty-year and five-year Public Rental Housing for households with an income slightly higher than

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[29] It can be rented for fifty years. The rent is very low and it is mostly for households with extremely low incomes.

extremely low. From 1998, the National Public Rental Housing programme was introduced which included another two rental modes: ten-year and twenty-year public rental housing; thirty-year public rental housing was introduced later.

Although Japan introduced a Public Housing Act in 1951, public housing has always been located outside the social mainstream in Japan (Hirayama, 2007). After a major reform of the policy in 1996, the qualifying criteria, especially income, were made tighter than in the past (Hirayama, 2007, 2003). At the time of the 1951 Public Housing Act, the majority of households, or the lowest 80% of all income groups, qualified for public housing. However, this percentage dropped to 25% after the amendment. The total amount of new public housing dropped from 40,978 units in 1990 to 28,293 units in 2000, and continued to fall to 22,922 units in 2003 (Ministry of Land Infrastructure and Transport, 2003). Consequently, in 1993, about 7.1% of households lived in public rental housing. This ratio decreased to 6.6% in 2003 (Sato, 2007, p. 77). Today, the ratio of public rental housing is around 7%[30] (Hirayama, 2010, p. 177)

Singapore is a densely-populated, high-income state. The government owns 90% of the land. The welfare services, namely housing, health-care, insurance, tertiary education and retirement rely almost exclusively on a mandatory savings scheme, the Central Provident Fund (CPF) (Phang, 2007, p. 18). This is similar to the original version of the Chinese housing provident fund in that it requires contributions from both employees and employers. Public housing is completely regulated by the Housing and Development Board (HDB). The HDB is also the largest housing developer in Singapore – more than 85% of the population lived in HDB housing during the past three decades, with about 90% of these resident households owning their HDB flats.

Singapore set home ownership as a national goal in the 1960s, and the housing policy has always focused on encouraging home ownership rather than public rental housing. The Public Rental Scheme provides a minimum standard of housing (one- or two-room flats) to families with very low incomes. It was designed as a final safety-net for population in Singapore. The provisions for applying are comparatively strict. It cannot be applied for by a single applicant, and total household gross income must not

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[30] The exact data are not available.

exceed S$1500 per month in 2014, which was less than one-third of a household's gross median wage.[31] So the amount of public rental housing is relatively limited. In 2011, only about 2% of households lived in HDB rental houses (Housing and Development Board, 2011).

However, unlike other countries, Singapore also has a comparatively comprehensive payment protection programme called the Home Protection Scheme (HPS). From 1981, the HPS was implemented to ensure that HDB flat owners would not lose their homes because of a default in loan repayments or the loss of the breadwinner in the family. Because of these characteristics of Singapore's public housing, not only the public rental sector, but the whole HDB housing sector was considered in the comparison. The number of HDB flats has gradually increased during the past two decades – from 627,165 flats in 1990 to 883,896 flats under management by the HDB in 2010 (Housing and Development Board, 2011, 2010, 1990). The proportion of HDB housing reduced slightly from 87% in 1990 to 82% in 2010.

Compared with other countries, state intervention in Taiwan has been very limited. Up to 2000, the major public housing projects were public construction projects (for sale). However, unlike the social housing (for sale) in Singapore, because land was privatised and construction costs were high, public housing prices were too high for the original target lower-income families (J. M. Chen & L. R. Chen, 2011). The idea of social rented housing is very new in Taiwan: the 'Social Housing Promotion Alliance' was established on 26 August 2010. The number of public rental houses is far below that of other countries, only forming 0.08 percent of the total housing market in 2010 (Liu, 2011). Since the rent is around half of the market price, in Taipei, the capital of Taiwan, are there as many as 6493 families on the waiting list (*China Post*, 2011). The waiting time can be longer than four years.

Table 7.9 calibrates the fuzzy score of the six states based on these specific housing policies. China is used here as an example to illustrate the calibration. Before the marketization of housing market in 1990s, nearly 90% of the urban housing was public rental housing. The requirement for applying was low. Therefore, China scores '1'of

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[31] The median gross income of a full-time household was S$5000 in 2010 (Singapore Department of Statistics, 2010).

the set in 1990. Through the reforms of public housing system, the old public housing provided by working-units was abolished. As a result, the provision of public rental housing was reduced dramatically in the 2000s. In 1998, China introduced its first plan of public rental housing system with expected coverage of 15% of low-income urban families (Wang, 2007). In other words, China's public rental housing system was on the initial stage in 2000. It therefore scores fairly out of the set – 0.34 accordingly. In 2010, although the system was still relatively underdevelopment due to its low coverage and difficult accessibility, it was more developed than in 2000. Hence, the fuzzy score in 2010 was between 0.49 and 0.34.

Table 7.9 Calibration of public rental housing

States	Year	Public rental policy
China	1990	1
	2000	0.34
	2010	0.41
Hong Kong	1990	1
	2000	1
	2010	1
Japan	1990	0.53
	2000	0.39
	2010	0.36
Korea	1990	0.37
	2000	0.45
	2010	0.55
Singapore	1990	1
	2000	1
	2010	1
Taiwan	1990	0
	2000	0
	2010	0.1

7.3 Passive labour market policy (U)

Passive labour market policy has always been regarded as a prominent part of a state's social protection system in middle- and upper-middle income countries of Europe, Central Asia and Latin America (Packard & Nguyen, 2014). Unemployment benefit as a part of passive labour market policy protects individuals against the risk of job loss resulting in a period of job search. It plays an important role in helping individuals to maintain their standard of living when formal employment is lost. It has also been

used in Esping-Andersen's typology to measure an individual's degree of de-commodification in a society. In this thesis, therefore, unemployment benefits were used to represent passive labour market policy.

In terms of measurement, three dimensions were employed: net replacement rate, coverage and duration. For measuring coverage of the benefits, the cross-over points were set based on the ILO's Social Security (Minimum Standard) Convention (ILO, 1952). According to that Convention, unemployment benefit should cover not less than 50% of all employees. 50% was therefore set as the cross-over point of coverage. Similar to old-age income protection, for the fully-in and fully-out points, there are no formal guidelines. OECD unemployment benefit coverage was used as the benchmark (Esser *et al.*, 2013). The fully-in point was set at 73% in accordance with the average coverage of 27 EU member states in 2010. And the fully-out point is set in accordance at 10%.

According to the convention, the minimum duration should be thirteen weeks within a twelve-month period, and the payment should be at least half of the minimum wage. So thirteen weeks was set as the cross-over point of duration. The fully-in point of duration was set in accordance with the average unemployment benefit period in the 27 EU countries, which was 14.8 weeks in 2010 (Stovick & Turrini, 2012), and the fully-out was set at no unemployment benefits. The cut-off points for payment were set following the same strategy as for pension benefits. The fully-out point was set at 20% and the 75% net replacement rate was regarded as the fully-in point: 50% was set as the cross-over point. The calibration was fully based on case knowledge. Table 7.1 shows the detailed calibrations.

Unlike Western countries, unemployment benefits are generally underdeveloped in East Asian states. Unemployment benefits in China were introduced in 1986 following the start of the economic reforms and were called 'Interim Provisions for Workers' Job-Waiting Insurance in State-Owned Enterprises' (SOE) (Vodopivec & Tong, 2008). The reform terminated lifetime employment in the SOE sector and was expected to result in large-scale of unemployment. So the initial purpose was to build a social safety-net, providing temporary income support and re-employment assistance to laid-off workers. It only covered four categories of SOE workers: unemployed workers

from bankrupt SOEs and those on the verge of bankruptcy, dismissed workers and workers who has terminated labour contracts. Benefits were calculated using the individual worker's average monthly wage, the length of service and other criteria.

In 1993, the reform started with the adoption of the 'Provisions for Workers' Job-Waiting Insurance in State-Owned Enterprises' policy. The coverage was expanded to seven categories of SOE workers. Unemployed workers from SOEs which halted production were now covered. The payment was calculated based on social relief levels regulated by the local departments of social affairs, which were equal to 120%-150% of the social relief payment. In 1994, after the adoption of a new labour law which introduced a minimum wage, the unemployment payment was set at about 70%-80% of the regional minimum wage. The introduction of the 'Regulations on Unemployment Insurance' in 1999 marked the beginning of a major reform of unemployment benefits in China. This was the first time that the Chinese government had used the concept of 'unemployment' instead of 'job waiting'. This is also the current version of unemployment insurance.

The coverage was further expanded from workers in SOEs to all urban workers, including the self-employed but with the exception of civil servants. The regulation of the scheme, including setting benefit levels and durations, were decentralised to local authorities. Unlike in most other OECD countries, unemployment benefits in China are not earnings-related. Instead, there is a flat rate at a level higher than the local public assistance benefit but lower than the local minimum wage. The benefit is paid for up to one year for less than five years of contributions, for up to eighteen months for at least five but less than ten years of contribution, or for up to two years for with ten or more years of contributions.

To be eligible for benefits, employees must have contributed for at least one year (SSA, 2012). From 1999 to 2007, 27,020,000 residents received unemployment benefits. In 2007, there were 5,385,000 people who received different types of unemployment

benefits (You, 2008). In 2000, the unemployment insurance coverage rate[32] was 45%, and it increased to 49% in 2010 (Wang, 2014).

The Korean government introduced an Employment Insurance System (EIS) in 1995 (Kim, 2010). Before the EIS, the Korean labour market was close to full employment status with an unemployment rate of less than 3%. At the beginning of the EIS in 1997, the unemployment benefit only covered businesses and establishments with thirty or more employees. The coverage continually expanded to all businesses with one or more regular employees in 1998. The coverage of unemployment benefit increased as the coverage of the EIS expanded. From 2006, self-employed workers can also apply with an income test. The proportion of insured employees to the total numbers rose from 26.4% in 1998 to 47.1% in 2008 (Kim, 2010, p. 9). An applicant has to have contributed for at least six months during the previous eighteen months. The benefit is paid for up to 90 days for six to twelve months of contributions, or for up to 240 days for at least ten years of contributions and aged fifty or above or disabled. The replacement rate is 50% of the applicant's daily earnings during the previous three months. The minimum daily benefit is 90% of the minimum daily wage (SSA, 2012).

Japan has had an unemployment benefit since 1947 and the current employment insurance system was introduced in 1974. Employees younger than 65 are covered, with the exception of self-employed persons and workers who work less than twenty hours a week. To qualify, employees must have contributed for at least twelve months of the previous two years before unemployment. From 50% (45% if aged 60 to 64) to 80% of the employee's average daily wage over the previous six months before unemployment is paid for 90 days and up to 360 days (Machikita *et al.*, 2013). The coverage rate has gradually decreased from 30% at the beginning of the 1990s to around 20% in 2008 (Goishi, 2011, p. 112)

Although Taiwan established its labour insurance programme as early as 1950, unemployment insurance was never officially enforced (Lee, 2000). In 1998, due to the Asian financial crisis, massive unemployment was expected in Taiwan. In order to protect the livelihoods of unemployed workers, the Executive Yuan drew up Rules for

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[32] The UI coverage rate is the ratio of the number of employees covered in the programme to the total urban employment.

the Implementation of Unemployment Benefits under the Labour Insurance Programme under Articles 2 and 74 of the Labour Insurance Act to prescribe the details of unemployment benefits. The policies came into effect from 1 January 1999 and they were amended seven months later. According to the Rules, the level of the monthly unemployment benefit payment is 60% of the insured monthly salary in the six months before unemployment began. For insured people with less than five years of contributions, the entitlement period is six months in five years. For those who have paid for over five years but for less than ten years, the entitlement period is twelve months in ten years, and for those who have paid for more than ten years, the period was extended to sixteen months. All nationals above the age of fifteen and below the age of sixty who are covered by the insurance programme and have left their jobs involuntarily may apply, except for temporary workers, contract workers and part-time workers. According to the statistical book (DGBAS, 2011), by the end of 2009, the coverage of unemployment insurance was around 61.8%. At the end of 1999, this figure was about 62.1%.

Unlike the countries discussed above, neither Hong Kong nor Singapore have individual unemployment insurance, but they have different systems. Although Hong Kong does not have unemployment insurance, unemployed people in Hong Kong who face financial difficulties can still rely on social assistance – the comprehensive social security assistance system which was introduced in 1977. But as this is a universal social security benefit, it has not been regarded as an unemployment benefit in this thesis. The case of Singapore is different again. The Singaporean government believes that

> *"the best way to assist individuals who are retrenched or unemployed is to help them seek re-employment instead of handing out financial support such as unemployment benefits" (Cheung, 2000).*

Hence, Singapore does not have any unemployment benefits.

Table 7.10 briefly summarises the unemployment benefits in the six states, and the fuzzy-set scores of the passive labour market policy are shown in Table 7.11.

Table 7.10 Summary of unemployment benefits in six East Asian states 1990, 2000, 2010

States	*Year*	*Generosity (G)*	*Coverage (C)*	*Duration (D)*
China	1990	120%-150% social relief payment	four categories of SOE workers	up to one year
	2000	lower than the local minimum wage	45%	up to one year
	2010	lower than the local minimum wage	49% (2012)	up to one year
Hong Kong	1990	Non	Non	Non
	2000	Non	Non	Non
	2010	Non	Non	Non
Japan	1990	50%-80% daily wage	30%	90 days
	2000	50%-80% daily wage	Decreasing	90 days
	2010	50%-80% daily wage	20%	90 days
Korea	1990	Non	Non	Non
	2000	90%	26.4% (1998)	90 days
	2010	90%	47.10%	90 days
Singapore	1990	Non	Non	Non
	2000	Non	Non	Non
	2010	Non	Non	Non
Taiwan	1990	Non	Non	Non
	2000	60% of the wage	62.1%	6 months
	2010	60% of the wage	61.8%	6 months

Table 7.11 Passive labour market policy with fuzzy set scores

States	*Year*	*Generosity (G)*	*Coverage (C)*	*Duration (D)*	*Passive labour market policy in ideal-type analysis (Minimum of G, C and D)*
China	1990	1	0.13	1	0.13
	2000	0.45	0.44	1	0.44
	2010	0.45	0.49	1	0.45
Hong Kong	1990	0	0	0	0
	2000	0	0	0	0
	2010	0	0	0	0
Japan	1990	0.75	0.25	0.49	0.25
	2000	0.75	0.19	0.49	0.19
	2010	0.75	0.13	0.49	0.13
Korea	1990	0	0	0	0
	2000	1	0.21	0.49	0.21
	2010	1	0.46	0.49	0.46
Singapore	1990	0	0	0	0
	2000	0	0	0	0
	2010	0	0	0	0
Taiwan	1990	0	0	0	0
	2000	0.7	0.76	1	0.7
	2010	0.7	0.76	1	0.7

7.4 Summary

In this chapter, the protective welfare dimensions of the six states are examined by in-depth case studies. Three policy fields are included in this research: old-age income protection, housing and passive labour market policy.

Table 7.12 summaries the membership scores of protective dimensions of all six states in 1990, 2000, 2010.

Table 7.12 Membership scores of protective dimensions in 1990, 2000, 2010

States	Year	Old age income protection (I)	Public Housing (P)	Passive labour market policy (U)
China	1990	0	1	0.13
	2000	0.1	0.34	0.44
	2010	0.17	0.41	0.45
Hong Kong	1990	0.51	1	0
	2000	0.61	1	0
	2010	0.61	1	0
Japan	1990	0.64	0.53	0.25
	2000	0.64	0.39	0.19
	2010	0.64	0.36	0.13
Korea	1990	0.1	0.37	0
	2000	0.25	0.45	0.21
	2010	0.74	0.55	0.46
Singapore	1990	0.02	1	0
	2000	0.02	1	0
	2010	0.02	1	0
Taiwan	1990	0.26	0	0
	2000	0.32	0	0.7
	2010	0.87	0.1	0.7

Chapter Eight

Analysis of East Asian welfare systems

One of the central questions of this study is which welfare ideal type these six Asian states belong to. In order to find the answer, two essential steps have to be taken. The first step is to calibrate the cases' membership of each set of policy field. This has been done in the previous two chapters. The next step is to calculate the cases' membership of the ideal types by means of set-theoretic theory. This is also one essential part of this chapter. This chapter consists of three parts. The first part analyses the welfare ideal types of six states in the past two decades. Based on the findings in the first part, the second part presents the trajectories of welfare development of the six states. And finally, the third part summarises the reasons caused the changes of the welfare ideal types. The findings in this chapter help to answer the first and second research questions of this research.

8.1 Fuzzy-set ideal type analysis of welfare systems in six East Asian states: is there a unique East Asian welfare model?

As already discussed in Chapter 5, *minimum principle,* logical *or,* and logical *and* are the core techniques used here.

Under the previous analysis, the six welfare dimensions were transformed into six fuzzy sets (*see* Table 8.1). According to the set-theoretic method, 2^6 logical combinations or ideal types can be identified. Based on the characteristics of the combinations, the 64 ideal types could be clustered into four aggregated models: productive welfare, protective welfare, balanced welfare and underdeveloped welfare. Fifteen sub-models were identified under these aggregated models. Figure 8.1 illustrates the property space of the welfare models, and the detailed interpretations of the models are displayed in Table 8.2.

Table 8.1 Fuzzy scores of six welfare dimensions

States	Year	Education service (E)	Health service (H)	Family policy (F)	Old-age income protection (I)	Public housing policy (P)	Passive labour market policy (L)
China	1990	0.75	0.13	0.53	0	1	0.13
	2000	0.34	0.02	0.53	0.10	0.34	0.44
	2010	0.40	0.51	0.54	0.17	0.41	0.45
Hong Kong	1990	0.69	0.02	0.47	0.51	1	0
	2000	0.82	0.15	0.47	0.61	1	0
	2010	0.89	0.06	0.47	0.61	1	0
Japan	1990	0	0.99	0.38	0.64	0.53	0.25
	2000	0.17	0.99	0.38	0.64	0.39	0.19
	2010	0	1	0.41	0.64	0.36	0.13
Korea	1990	0.15	0.04	0.57	0.10	0.37	0
	2000	0.32	0.26	0.57	0.25	0.45	0.21
	2010	0.51	0.68	0.57	0.74	0.55	0.46
Singapore	1990	0.73	0.08	0.40	0.02	1	0
	2000	0.73	0.04	0.43	0.02	1	0
	2010	0.78	0.01	0.70	0.02	1	0
Taiwan	1990	0.51	0.01	0.48	0.26	0	0
	2000	0.62	0.04	0.48	0.32	0	0.70
	2010	0.72	0.21	0.48	0.87	0.10	0.70

Figure 8.1 Welfare models
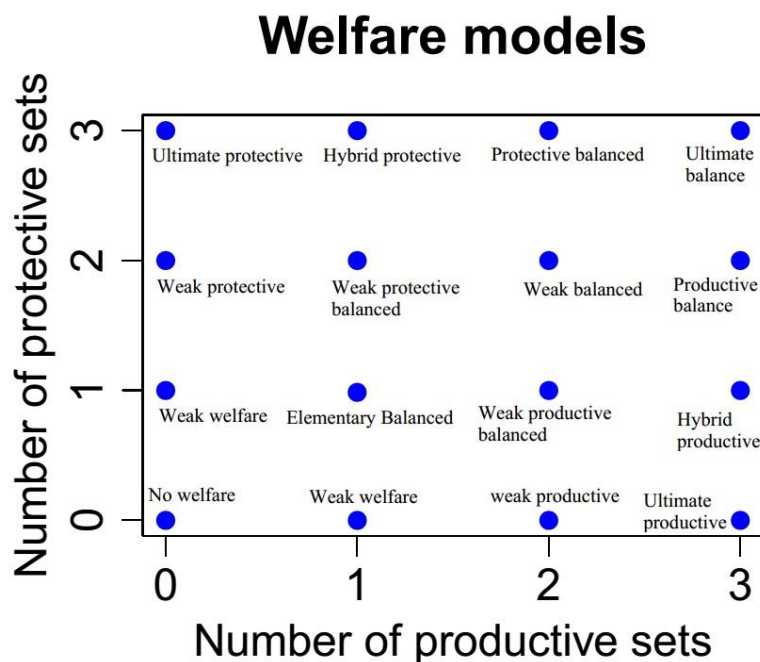
The productive welfare model denotes that a case has significant productive features, and that its protective features are vanished or very weak. In other words, within this model productivism weighs much higher than protectivism. Three sub-models are under the productive welfare model: the ultimate productive model, the weak productive model and the hybrid productive model. The ultimate productive and weak productive welfare models are two purely productive welfare models, both with strong productive features and non-membership of protective dimensions. The difference between the two is that the ultimate type has memberships of all the productive dimensions whilst the moderate type only has two of the three productive characteristics. Unlike the other two types, the hybrid productive model not only has all three productive features, but also has one protective characteristic.

The protective welfare model and its three sub-models follow the same ideology of this classification, but with more emphasis on protecting than producing. For example, the ultimate protective welfare type is similar to the ultimate productive welfare type, which has memberships of all protective sets and no membership of productive sets.

The balanced welfare model stands between the productive model and the protective model, with membership of both the productive and the protective dimensions. Based on this different emphasis, seven sub-models were identified. The ultimate balanced model is the extreme version of the balanced model with memberships of all the six welfare dimensions. The weak balanced model is a downgraded version of the ultimate one with membership of two productive sets and two protective sets. Following the same ideology, the elementary balanced model is a downgrading of the weak balanced model with membership of one productive set and one protective set. Unlike the three balanced models discussed above, both the productive balanced and the weak productive balanced models have more memberships of productive sets than of protective sets: the productive balanced model has three productive sets and two protective sets whereas the weak productive balanced model has two productive sets and one protective set. The protective balanced and the weak protective balanced models follow the same ideology.

Finally, the under-developed welfare model denotes that a country's welfare system is under-developed, with at most only one welfare dimension set.

Based on this classification, Table 8.3 shows the states' fuzzy membership scores in these 64 ideal types in 1990, 2000 and 2010. Scores in bold designate the highest membership score among the ideal types and denote a state's welfare model. Table 8.4 sums up the welfare models of the six states during the past two decades

Table 8.2 East Asian welfare model

Welfare models	Welfare sub-models	Characteristics	Models
Productive welfare models	Ultimate productive model	Membership of the education service set (E), health service set (H), and family policy set (H) only	EHFipl
	Weak productive model	Membership of two productive sets, and non-membership of all the protective sets	EHfipl EhFipl eHFipl
	Hybrid productive	Membership of all the productive sets, and one protective set.	EHFIpl EHFiPl EHFipL
Protective welfare models	Ultimate protective model	Membership of the old age income protection set (I), housing policy set(P), and passive labour market policy set(L) only	ehfIPL
	Weak protective model	Membership of two protective sets, and non-membership of all the productive sets	ehfIpL ehfiPL ehfIPl
	Hybrid protective	Membership of all the protective sets, and one productive set.	EhfIPL eHfIPL ehFIPL
Balanced models	Ultimate balanced model	Membership of all the welfare sets	EHFIPL
	Weak balanced model	Membership of two productive sets and two protective sets.	EHfIPl EHfIpL EHfiPL eHFIpL eHFiPL eHFIPl EhFIPl EhFIpL EhFiPL
	Productive balanced model	Membership of all productive sets and two protective sets.	EHFIPl EHFIpL EHFiPL
	Weak productive balanced model	Membership of two productive sets and one protective set.	EHfiPl EHfIpl EHfipL eHFiPl eHFIpl eHFipL EhFiPl EhFIpl EhFipL
	Protective balanced model	Membership of all protective sets and two productive sets.	EHfIPL EhFIPL eHFIPL
	Weak protective balanced model	Membership of two protective sets and one productive set.	IPlEhf IPleHf IPlehF IpLEhf IpLeHf IpLehF iPLEhf iPLeHf iPLehF
	Elementary balanced welfare	Membership of one productive set and one protective set only	EhfIpl EhfiPl EhfipL EhfIpl eHfiPl eHfipL ehFIpl ehFiPl ehFipL
Underdeveloped welfare	No welfare	Non-membership of all the sets	Ehfipl
	Weak welfare	Membership of one set only	Ehfipl eHfipl ehFipl ehfIpl ehfiPl ehfipL

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Table 8.3 Fuzzy membership scores of the six East Asian states 1990, 2000, 2010

Welfare models		Ideal types	China			Hong Kong			Japan			Korea			Singapore			Taiwan		
			1990	2000	2010	1990	2000	2010	1990	2000	2010	1990	2000	2010	1990	2000	2010	1990	2000	2010
Productive welfare models	Ultimate productive model	EHFipl	0	0.02	0.14	0	0	0	0	0.17	0	0.04	0.26	0.26	0	0	0	0.01	0.04	0.13
	Weak Productive model	EHfipl	0	0.02	0.14	0	0	0	0	0.17	0	0.04	0.26	0.26	0	0	0	0.01	0.04	0.13
		EhFipl	0	0.34	0.14	0	0	0	0	0.01	0	0.15	0.32	0.26	0	0	0	0.48	0.30	0.13
		eHFipl	0	0.02	***0.51***	0	0	0	0.36	0.36	0.36	0.04	0.26	0.26	0	0	0	0.01	0.04	0.13
	Hybrid productive	EHFIpl	0	0.02	0.14	0	0	0	0	0.17	0	0.04	0.25	0.45	0	0	0	0.01	0.04	0.21
		EHFiPl	0.13	0.02	0.14	0.02	0.15	0.06	0	0.17	0	0.04	0.26	0.26	0.08	0.04	0.01	0	0	0.10
		EHFipL	0	0.02	0.14	0	0	0	0	0.17	0	0	0.21	0.26	0	0	0	0	0.04	0.13
Protective welfare models	Ultimate protective model	ehfIPL	0	0.10	0.17	0	0	0	0.01	0.01	0	0	0.21	0.32	0	0	0	0	0	0.10
	Weak protective	ehfIpL	0	0.10	0.17	0	0	0	0.01	0.01	0	0	0.21	0.32	0	0	0	0	0.32	0.28
		ehfiPL	0.13	0.34	0.41	0	0	0	0.01	0.01	0	0	0.21	0.26	0	0	0	0	0	0.10
		ehfIPl	0	0.10	0.17	0.31	0.18	0.11	0.01	0.01	0	0.10	0.25	0.32	0	0	0	0	0	0.10
	Hybrid protective	EhfIPL	0	0.10	0.14	0	0	0	0	0.01	0	0	0.21	0.32	0	0	0	0	0	0.10
		eHfIPL	0	0.02	0.17	0	0	0	0.25	0.19	0.13	0	0.21	0.43	0	0	0	0	0	0.10
		ehFIPL	0	0.10	0.17	0	0	0	0.01	0.01	0	0	0.21	0.32	0	0	0	0	0	0.10
Balanced models	Ultimate balanced	EHFIPL	0	0.02	0.14	0	0	0	0	0.17	0	0	0.21	0.46	0	0	0	0	0	0.10
	Weak balanced model	EHfIPl	0	0.02	0.14	0.02	0.15	0.06	0	0.17	0	0.04	0.25	0.43	0	0	0	0	0	0.10
		EHfIpL	0	0.02	0.14	0	0	0	0	0.17	0	0	0.21	0.43	0	0	0	0	0	0.10
		EHfiPL	0.13	0.02	0.14	0	0	0	0	0.17	0	0	0.21	0.26	0	0	0	0	0	0.10
		eHFIpL	0	0.02	0.17	0	0	0	0.25	0.19	0.13	0	0.21	0.45	0	0	0	0	0.04	0.21
		eHFiPL	0.13	0.02	0.41	0	0	0	0.25	0.19	0.13	0	0.21	0.26	0	0	0	0	0	0.10
		eHFIPl	0	0.02	0.17	0.02	0.15	0.06	0.38	0.38	0.36	0.04	0.25	0.49	0	0	0	0	0	0.10
		EhFIPl	0	0.10	0.14	0.47	0.47	0.47	0	0.01	0	0.10	0.25	0.32	0	0	0	0	0	0.1

Welfare models		Ideal types	China			Hong Kong			Japan			Korea			Singapore			Taiwan		
			1990	2000	2010	1990	2000	2010	1990	2000	2010	1990	2000	2010	1990	2000	2010	1990	2000	2010
Balanced welfare models	Weak balanced model	EhFIpL	0	0.10	0.14	0	0	0	0	0.01	0	0	0.21	0.32	0	0	0	0	0.32	0.48
		EhFiPL	0.13	0.34	0.14	0	0	0	0	0.01	0	0	0.21	0.26	0	0	0	0	0	0.10
	Productive balanced model	EHFIPl	0	0.02	0.14	0.02	0.15	0.06	0	0.17	0	0.04	0.25	*0.51*	0	0	0	0	0	0.10
		EHFIpL	0	0.02	0.14	0	0	0	0	0.17	0	0	0.21	0.45	0	0	0	0	0.04	0.21
		EHFiPL	0.13	0.02	0.14	0	0	0	0	0.17	0	0	0.21	0.26	0	0	0	0	0	0.10
	Weak productive balanced model	EHfiPl	0.13	0.02	0.14	0.02	0.15	0.06	0	0.17	0	0.04	0.26	0.26	0.08	0.04	0.01	0	0	0.10
		EHfIpl	0	0.02	0.14	0	0	0	0	0.17	0	0.04	0.25	0.43	0	0	0	0.01	0.04	0.21
		EHfipL	0	0.02	0.14	0	0	0	0	0.17	0	0	0.21	0.26	0	0	0	0	0.04	0.13
		eHFiPl	0.13	0.02	0.41	0.02	0.15	0.06	0.36	0.36	0.36	0.04	0.26	0.26	0.08	0.04	0.01	0	0	0.1
		eHFIpl	0	0.02	0.17	0	0	0	0.38	0.38	0.41	0.04	0.25	0.45	0	0	0	0.01	0.04	0.21
		eHFipL	0	0.02	0.45	0	0	0	0.25	0.19	0.13	0	0.21	0.26	0	0	0	0	0.04	0.13
		EhFiPl	*0.53*	0.34	0.14	0.47	0.39	0.39	0	0.01	0	0.15	0.32	0.26	0.4	0.43	*0.7*	0	0	0.10
		EhFIpl	0	0.10	0.14	0	0	0	0	0.01	0	0.10	0.25	0.32	0	0	0	0.26	0.30	0.30
		EhFipL	0	0.34	0.14	0	0	0	0	0.01	0	0	0.21	0.26	0	0	0	0	0.48	0.13
	Protective balanced model	EHfIPL	0	0.02	0.14	0	0	0	0	0.17	0	0	0.21	0.43	0	0	0	0	0	0.10
		EHFIPL	0	0.10	0.14	0	0	0	0	0.01	0	0	0.21	0.32	0	0	0	0	0	0.10
		eHFIPL	0	0.02	0.17	0	0	0	0.25	0.19	0.13	0	0.21	0.43	0	0	0	0	0	0.10
	Weak protective balanced model	EhfIPl	0	0.10	0.14	*0.51*	*0.53*	*0.53*	0	0.01	0	0.10	0.25	0.32	0	0	0	0	0	0.10
		eHfIPl	0	0.02	0.17	0.02	0.15	0.06	*0.53*	0.39	0.36	0.04	0.25	0.43	0	0	0	0	0	0.10
		ehFIPl	0	0.10	0.17	0.31	0.18	0.11	0.01	0.01	0	0.10	0.25	0.32	0	0	0	0	0	0.10
		EhfIpL	0	0.10	0.14	0	0	0	0	0.01	0	0	0.21	0.32	0	0	0	0	0.32	*0.52*
		eHfIpL	0	0.02	0.17	0	0	0	0.25	0.19	0.13	0	0.21	0.43	0	0	0	0	0.04	0.21
		ehFIpL	0	0.10	0.17	0	0	0	0.01	0.01	0	0	0.21	0.32	0	0	0	0	0.32	0.28
		EhfiPL	0.13	0.34	0.14	0	0	0	0	0.01	0	0	0.21	0.26	0	0	0	0	0	0.10
		eHfiPL	0.13	0.02	0.41	0	0	0	0.25	0.19	0.13	0	0.21	0.26	0	0	0	0	0	0.10
		ehFiPL	0.13	0.34	0.41	0	0	0	0.01	0.01	0	0	0.21	0.26	0	0	0	0	0	0.10

Welfare models		Ideal types	China			Hong Kong			Japan			Korea			Singapore			Taiwan		
			1990	2000	2010	1990	2000	2010	1990	2000	2010	1990	2000	2010	1990	2000	2010	1990	2000	2010
	Elementary balanced welfare	EhfIpl	0	0.10	0.14	0	0	0	0	0.01	0	0.10	0.25	0.32	0	0	0	0.26	0.30	0.3
		EhfiPl	0.47	0.34	0.14	0.49	0.39	0.39	0	0.01	0	0.15	0.32	0.26	*0.6*	*0.57*	0.30	0	0	0.10
		EhfipL	0	0.34	0.14	0	0	0	0	0.01	0	0	0.21	0.26	0	0	0	0	*0.52*	0.13
		eHfIpl	0	0.02	0.17	0	0	0	0.47	*0.61*	*0.59*	0.04	0.25	0.43	0	0	0	0.01	0.04	0.21
		eHfiPl	0.13	0.02	0.41	0.02	0.15	0.06	0.36	0.36	0.36	0.04	0.26	0.26	0.08	0.04	0.01	0	0	0.1
		eHfipL	0	0.02	0.45	0	0	0	0.25	0.19	0.13	0	0.21	0.26	0	0	0	0	0.04	0.13
		ehFIpl	0	0.10	0.17	0	0	0	0.01	0.01	0	0.10	0.25	0.32	0	0	0	0.26	0.30	0.28
		ehFiPl	0.25	0.34	0.41	0.31	0.18	0.11	0.01	0.01	0	0.37	0.45	0.26	0.27	0.27	0.22	0	0	0.10
		ehFipL	0	0.44	0.45	0	0	0	0.01	0.01	0	0	0.21	0.26	0	0	0	0	0.38	0.13
Underdeveloped welfare models	No welfare	ehfipl	0	0.47	0.46	0	0	0	0.01	0.01	0	0.43	0.43	0.26	0	0	0	0.49	0.30	0.13
	Weak welfare	Ehfipl	0	0.34	0.14	0	0	0	0	0.01	0	0.15	0.32	0.26	0	0	0	*0.51*	0.30	0.13
		eHfipl	0	0.02	0.46	0	0	0	0.36	0.36	0.36	0.04	0.26	0.26	0	0	0	0.01	0.04	0.13
		ehFipl	0	*0.53*	0.49	0	0	0	0.01	0.01	0	*0.57*	*0.55*	0.26	0	0	0	0.48	0.30	0.13
		ehfIpl	0	0.10	0.17	0	0	0	0.01	0.01	0	0.10	0.25	0.32	0	0	0	0.26	0.30	0.28
		ehfiPl	0.25	0.34	0.41	0.31	0.18	0.11	0.01	0.01	0	0.37	0.43	0.26	0.27	0.27	0.22	0	0	0.10
		ehfipL	0	0.44	0.45	0	0	0	0.01	0.01	0	0	0.21	0.26	0	0	0	0	0.38	0.13

Note: Cases with membership >.5 are indicated in **Bold Italic**

Table 8.4 Welfare models in 1990, 2000 and 2010

States	Year		
	1990	*2000*	*2010*
China	Weak productive balanced model (EhFiPl 0.53)	Weak welfare (ehFipl 0.53)	Weak productive model (eHFipl 0.51)
Hong Kong	Weak protective balanced model (EhfIPl 0.51)	Weak protective balanced model (EhfIPl 0.53)	Weak protective balanced model (EhfIPl 0.53)
Japan	Weak protective balanced model (eHfIPl 0.53)	Elementary welfare (eHfIpl 0.61)	Elementary welfare model (eHfIpl 0.59)
Korea	Weak welfare (ehFipl 0.57)	Weak welfare (ehFipl 0.55)	Productive balanced model (EHFIPl 0.51)
Singapore	Elementary welfare (EhfiPl 0.6)	Elementary welfare (EhfiPl 0.57)	Weak productive balanced model (EhFiPl 0.7)
Taiwan	Weak welfare (Ehfipl 0.51)	Elementary welfare (EhfipL 0.52)	Weak protective balance welfare (EhfIpL 0.52)

It is clear that the six states have been grouped into two to three welfare models from 1990 to 2010. In 1990, two welfare models can be identified: the balanced welfare model (China, Hong Kong, Japan) and the under-developed welfare model (Korea, Singapore and Taiwan). In 2000, there are the same two aggregated models. However, unlike the situation in 1990, only Hong Kong remains a balanced model, and all the others have been classified into the under-developed welfare model. In 2010, one more aggregate model has appeared: the productive welfare model, with China as the only member. However, although some of the cases seem to be similar as they belong to the same aggregate model, they are in fact different.

Cases clearly belong to different sub-models within each aggregated model. For example, China, Hong Kong and Japan all belonged to the balanced model in 1990. However, China had a weak productive welfare model whereas Hong Kong and Japan had weak protective welfare models. Indeed, within the same sub-model, Hong Kong and Japan were still different as their welfare systems belonged to different ideal types. The situation was the same in 2000 and 2010. Five states had under-developed welfare

models in 2000, however, only China and Korea had the same welfare ideal type and the other three all had different welfare ideal types. In 2010, more diversity can be found within the region: all six states have different welfare ideal types.

Two important findings can be summarized here. First, regarding the debate on the existence of a unique East Asian welfare model, the findings show that these East Asian states have never been placed into one unique ideal type during the past two decades. The inter-diversity is significant.

Second, in terms of the productivist thesis, the findings clearly contrast with Holliday's (2000) conclusions. None of the cases have ever been clustered in the ultimate productive ideal type. Indeed, only China in 2010 shows purely productive, and most of other cases[33] have both productive and protective features. This is also at odds with Holliday's (2000) argument that protective and productive features are mutually exclusive in a welfare ideal type. However, although most of the six East Asian countries' welfare systems consist of both productive and protective dimensions, the findings also show that most states still place more emphasis on the productive dimensions rather than the protective dimensions. Eight cases (China 1990, 2010, Korea 1990, 2000, 2010, Singapore 2010, Taiwan 1990, 2000) had stronger productive features than protective features. Only Japan in 1990 and Hong Kong showed a protective emphasis rather than a productive one. Hence, it must be stated here that despite it being inaccurate to talk about a unique East Asian productive welfare model, the productive feature in East Asia is still significant.

8.2 Welfare change trajectories 1990-2010

In addition to the statistical description of welfare ideal types, another aim in this section is to explore the change in the welfare systems in the region. fsITA is particularly useful in welfare studies as a complete welfare change should consists of both quantitative changes such as increasing benefit levels and qualitative or institutional changes (Esping-Andersen, 1990; Pierson, 2001, 1996; Vis, 2007). This

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[33] Except for Korea and Taiwan in 1990 and 2000, and China in 2000.

study mainly follows Vis (2007) interpretation of welfare changes, but with some modifications. Unlike her classification of *regime-specific change* and *radical change*, three types of change have been identified in this research: *quantitative change*, *type-specific change* and *radical change*.

A quantitative change refers to a quantitative change which is a change in a case's membership of an ideal type over time, whereas a qualitative change consists of two types: *radical change* which is when a case moves from one model to another, and *type-specific change* is when a case moves from one ideal type to another but remains in the same welfare model.

For example, if China increases from 0.6 to 0.8 of East Asian productive welfare during the last three decades, this change would be a *quantitative change* because it stays within the same ideal type. However, if China shifts from scoring 0.8 of the East Asian productive welfare model to 0.9 of the East Asian protective model, this would be a *radical change*, and if China scores 0.7 of EHFIPl in 1990 and then scores 0.9 of EHFiPL in 2010, this would be a *type-specific change* because both EHFIPl and EHFiPL belong to the balanced model. Table 8.5 sums up the welfare model changes during the period 1990-2000, 2000-2010 and 1990-2010.

Table 8.5 Summary of changes 1990-2000, 2000-2010 and 1990-2010

States	*Change 1990-2000*	*Change 2000-2010*	*Change 1990-2010*
China	Radical	Radical	Radical
Hong Kong	Quantitative	None	Quantitative
Japan	Radical	Quantitative	Radical
Korea	Quantitative	Radical	Radical
Singapore	Quantitative	Radical	Radical
Taiwan	Radical	Radical	Radical

From 1990 to 2000, the welfare systems of China and Japan underwent radical changes – switching between different models, whilst the other states only had type-specific reforms – their welfare models and ideal types remained the same. Most radical reforms in the region occurred between 2000 and 2010. China, Korea, Singapore and Taiwan all had radical reforms of their welfare systems. During this period, Japan's welfare ideal type remained the same but the scores were different. Hong Kong is the only state among the six which underwent no welfare reforms. It is also the only state which has had no radical welfare reform during the past two decades.

8.3 Case-by-case analysis

8.3.1 China

China underwent two radical reforms from 1990 to 2010 (*see* Figure 8.2). This is because of China's welfare reform history. China shifted from a weak productive balanced model (EhFiPl) in 1990 to a weak welfare model (ehFipl) in 2000 and then changed to a moderate productive model (eHFipl). The shifts were mainly caused by radical reforms of the education service and the health-care and housing systems over the past three decades. Table 8.6 shows the detailed changes in the fuzzy scores of China's welfare system.

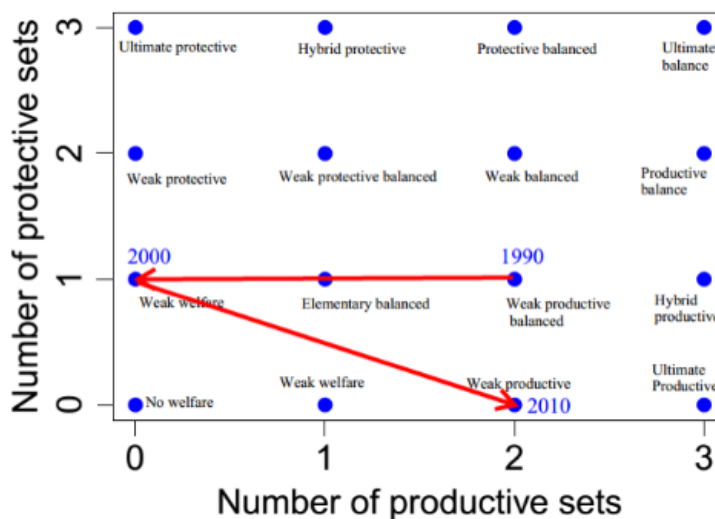**Figure 8.2 China's welfare reform trajectory, 1990-2010**

Table 8.6 Changes in the fuzzy scores of China's welfare system, 1990-2010

Welfare sectors	Measurement indicators	Changes in the fuzzy score			Change in the fuzzy set score 1990-2010
		1990-2000	2000-2010	1990-2010	
Education service	Spending	-	-0.60	-0.60	-0.61
	Generosity	-0.08	+0.15	+0.07	
	Accessibility	-0.6	-0.26	-0.86	
Health service	Spending	-0.25	+0.06	-0.19	+0.38
	Universality	-0.4	+0.9	+0.4	
	Affordability	-0.11	+0.49	+0.38	
Family policy	Generosity	-	-	-	+0.01
	Duration	-	+0.01	+0.01	
	Accessibility	-	-	-	
Old-age income protection	Pillar-zero pension	-	-	-	+0.17
	Generosity of mandatory pension	-0.03	-	-0.03	
	Universality of mandatory pension	+0.2	+0.135	+0.34	
Housing	Policy	-0.66	-0.07	-0.59	-0.59
Passive labour market policy	Generosity	-0.55	-	-0.55	+0.34
	Coverage	+0.21	+0.05	-	
	Duration	-	-	-	

Reform of the education service is one of the most important influential factors. In 1990, China scored 0.75 on the education set, which is fairly in the set of the education service. This score reduced to 0.34 in 2000 and continued to fall to 0.14 in 2010. Despite the fact that the Chinese Communist Party has never formally sought to established an education market, a series of reforms including transferring state responsibility for education provision to families and individuals, the prominence of fee-charging, and introducing the internal competition among educational institutions have practically marketised China's education service (Mok, 2000).

From 1990 to 2010, public expenditure on the education service decreased dramatically – from 25.95% of total public spending to 13.96%. In the 1990s, the CCP shifted responsibility for the education service from the state to individuals and

families by introducing fee-paying education. The providers of education services started to search for other resources such as local government taxes and subsidies and tuition fees. Therefore, the tuition fee for higher education rose from free in 2000 to nearly 1000 US$ in 2009, which was fairly high compared with the GDP *per capita*.[34] The reforms of higher education have caused China's score to drop dramatically in recent decades. The generosity of the education service remained almost stable in this period, which is fairly in the set. The increasing scores show that China has focused more on mandatory education. This is in accordance with China's high international reputation for primary and secondary education.

In addition to education, public housing is another welfare sector which is moving downhill. Compared with 1990, the fuzzy score reduced to 0.59. This retrenchment was mainly caused by the marketization of the housing market. Before the reform of housing system in 1990s, almost 90% of the urban housing stock was owned by the public sector, including state work units, municipal housing bureaux and urban collectives. Through the marketization of the housing market, the work units stopped supplying housing to employers and the housing price has increased dramatically in the past twenty years. Housing has become a social issue in Chinese society. At the same time, the development of public rental housing was extremely slow in the early 2000s. From 2009, because of the introduction of China's Rental Housing Guarantee Plan, public rental housing in China has started to face a great development opportunity. The public housing system in China is still at the development phase.

Similar to the education service, the fuzzy scores of the health service changed dramatically from mostly out of the set to fairly in the set because of two radical reforms of the health system. It moved from a government delivery model in the 1990s to relying on economic profits in the 2000s, and now stands in the middle, because it mixes universal health-care with the possibility of paying for additional services. In the 2000s, the first unsuccessful major reform moved China's health-care service to the bottom. Public expenditure on the health service dropped by a quarter from 1995 to 2000. Also, the coverage of the public health service was very limited, falling mostly out of the set, and 'out-of-pocket' spending by patients was totally out of the

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[34] In 2009, the GDP *per capita* was 2625.9 $US (constant 2005 US$).

affordability set. The Chinese government then launched the second major reform at the end of 2000s in order to solve this issue. As a result, public spending rose slightly from 11.7% of total public social expenditure to 12.1% between 2000 and 2010, although compared with public spending in 1990, this figure was still declining.

Unlike public spending on health-care, both the universality and the affordability of the health service improved sharply in the last two decades. Private health expenditure fell from 59% of total health expenditure to 35%, and the coverage of the health-care service expanded to 1.2 billion people in 2010, which was 89.5% of the total population. With these two positive changes, the fuzzy score of the health-care set increased by 0.38 from 1990 to 2010. From this point of view, China's most recent health-care reform has been successful.

Passive labour market policy also improved during the last two decades. It mainly benefited from the increase in benefit coverage. In 1990, unemployment benefits only covered a proportion of SOE workers, but from 1999 there was one basic insurance labour market benefit in China. However, although it has shown a significant improvement, because of the comparatively low coverage, China is still out of the set of passive labour market policy.

As with passive labour market policy, the sets of family policy and old-age income protection also do not affect China's welfare model in this study. They have remained in the same score category. This does not mean, however, that the policies have not changed. Especially for old-age income protection, China launched a major reform of the mandatory pension system in the 1990s. The new insurance-based pension system replaced the old work-unit based pension system. The coverage has expanded considerably whilst the net replacement rate has reduced. Because of the still comparatively low coverage, however, the fuzzy scores of the pension system in the past three decades remain out of the old-age income protection set. Passive labour market policy is similar. Although a major reform started in 1999 and expanded the benefit coverage and reduced slightly the benefits level, the final fuzzy scores remain out of the set. Family policy is different in that the only shift has been the duration of maternity leave which was extended by one week in 2012.

Overall, in the past two decades, China's welfare system has become more productive. Although the protective dimension is still comparatively underdeveloped, the developments which have taken place do demonstrate an upward tendency. This indicates that the Chinese government started to put an emphasis on social protection from the mid-2000s.

8.3.2 Hong Kong

Hong Kong is the only state which kept the same welfare ideal type, a weak protective balanced model (EhfIPl), over the past two decades. The welfare system in Hong Kong only had quantitative change with 0.51 in 1990 and 2000, and 0.58 in 2010 (*see* Figure 8.3).

Figure 8.3 Hong Kong's welfare reform trajectory, 1990-2010
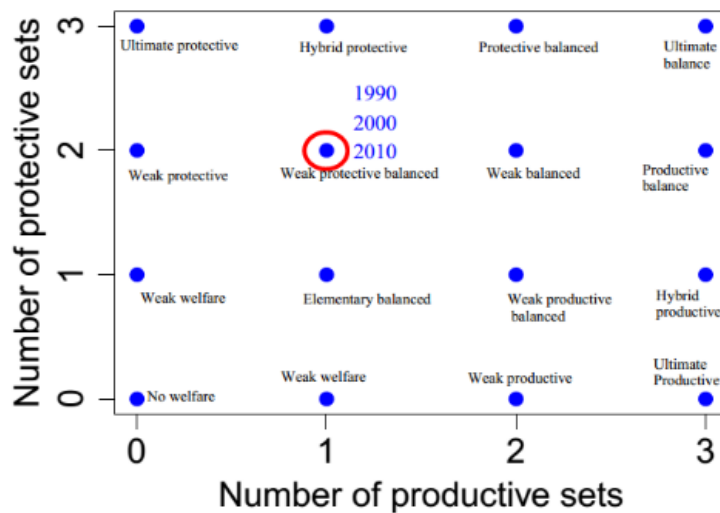
This quantitative only change indicates that one or more welfare dimensions changed during this period, however, these changes did not have enough power to shift the change of welfare ideal type (shown in Table 8.7). It is very clear that three welfare dimensions, education, health and old-age income protection, have improved during the past two decades.

Table 8.7 Changes in the fuzzy scores of Hong Kong's welfare system, 1990-2010

Welfare sectors	Measurement indicators	Changes in the fuzzy score			Change in the fuzzy set score 1990-2010
		1990-2000	2000-2010	1990-2010	
Education service	Spending	+0.11	-	+0.11	+0.21
	Generosity	-	+0.18	+0.18	
	Accessibility	+0.17	-	+0.17	
Health service	Spending	+0.41	+0.09	+0.5	+0.04
	Universality	-	-	-	
	Affordability	+0.13	-0.09	+0.04	
Family policy	Generosity	-	-	-	-
	Duration	-	-	-	
	Accessibility	-	-	-	
Old-age income protection	Pillar-zero pension	-	-	-	+0.1
	Generosity of mandatory pension	-	+0.21	+0.21	
	Universality of mandatory pension	-	+0.92	+0.92	
Housing	Policy	-	-	-	-
Passive labour market policy	Generosity	-	-	-	-
	Coverage	-	-	-	
	Duration	-	-	-	

From 1990 to 2000, Hong Kong's welfare ideal type remained stable, which indicates that there was no major policy change during this period. Public expenditure on both the education and health-care services increased over the ten years, which is reflected in the rise in the fuzzy scores. In addition, although at the end of the 1990s the tuition fees for tertiary education increased dramatically from HK$8700 (approximately £768 sterling) to HK$42100 (approximately £3720 sterling), the government started to offer non-selective student loans to cover tuition fees and, in some cases, living costs. So the accessibility of tertiary education also slightly improved. The health service was also more affordable in 2000 compared with 1990.The ratio of patients' out-of-pocket spending reduced from 57.9% to 51.3%.

Most changes occurred between 2000 and 2010. With the introduction of the contributory pension system MPF in the late 2000s, Hong Kong had its first formal mandatory pension system. This new pension policy increased the coverage rate and net replacement rate of Hong Kong's mandatory pension system dramatically. In 2008, Hong Kong extended the period of free education to twelve years. This raised the generosity of the education service by 0.18. For health-care, though the spending on health-care increased continually, the affordability of the health-care service decreased during this period. However, comparing 1990 and 2010, health-care was still slightly more affordable.

Hong Kong's welfare system remained comparatively stable over the past two decades. Although three of the six welfare dimensions improved, they were not strong enough to bring radical change to Hong Kong's welfare system.

8.3.3 Japan

Figure 8.4 Japan's welfare developmental trajectory, 1990-2010
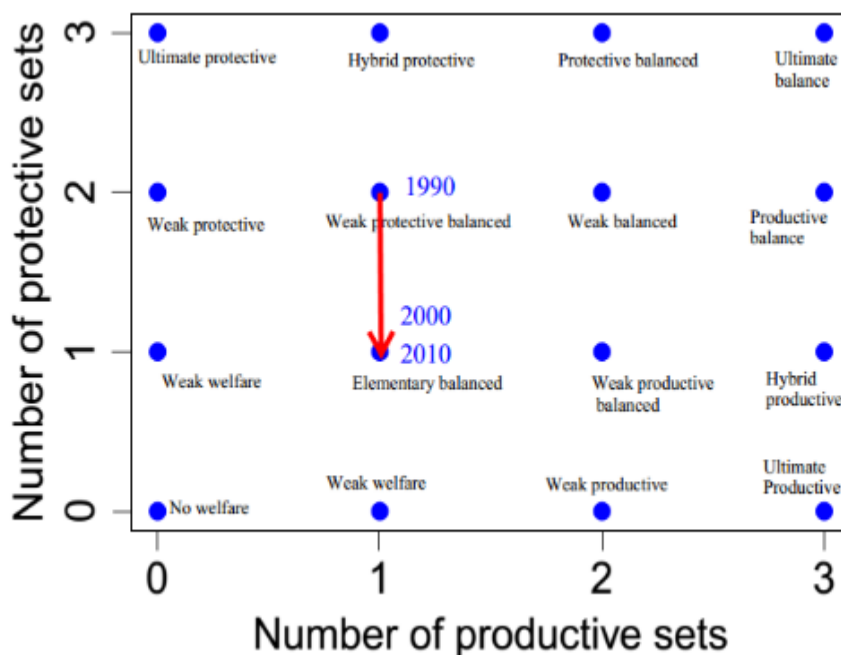
Japan is the only country in this study which had welfare retrenchment during the past two decades. In 1990, Japan's welfare system was clustered to the weak protective balanced model (eHfIPl), with more emphasis given to health-care, old-age income protection and public housing. In 2000 and 2010, it was moving down to the

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elementary welfare system (eHfIpl). Based on the difference between the two ideal types, it is clear that the retrenchment of the public housing policy was the main factor pushing Japan's welfare system to move from a more protective welfare model to an underdeveloped welfare model (*see* Table 8.8). The fuzzy scores of public housing dropped by 0.17 in 2010 compared with 1990. The reduction and privatisation of public housing provision from the 1990s could be one crucial reason for this. The requirements for applying for public housing became stricter than in the past. The ratio of public rental housing consequently dropped.

In addition to public housing policy, passive labour market policy is another diminishing welfare dimension. In fact, the policy had no major reform since it was introduced in 1974. However, the strict eligibility conditions limited the coverage of the benefits which reduced from around 30% at the beginning of the 1990s to around 20% in 2008. As a result, the fuzzy scores of this welfare dimension declined.

In addition to the retrenchment of public housing policy and the passive labour market policy, Japan's low scores on its education service are another significant feature compared with other countries. It scored 0 in both 1990 and 2000 but for different reasons. Japan's low accessibility of its higher education service was a crucial shortcoming in its higher education system from 1990 to 2010. High tuition fees together with strict selective student loans directly caused Japan's scores of 0 in 1990 and 0.17 in 2000 in this dimension. In 2010, this figure had improved dramatically due to the introduction of a tuition-free programme.

Public expenditure on education decreased dramatically during the past two decades. In 2010, the ratio of public spending on education was only around a half of that in 1990. This caused the fuzzy scores on spending to reduce to 0 in 2010. In fact, Japan has the lowest public expenditure on education among the six states. This low public expenditure on education caused Japan scores to fall totally out of the education set in 2010. This persistently low score on education policy in Japan is also contrary to Holliday's productivist thesis, which emphasized the high investment on education in East Asia.

Both the health-care service and family policy improved slightly. Japan's public health care is the most outstanding of all the aspects involving in this study. Its public health spending is the highest in the region. Furthermore, its private health-care expenditure is the lowest. It is the only East Asian state which meets the average level of private health spending in OECD countries.

For the family policy, the replacement income during maternity leave increased from 60% of the original wage to two-third from 2007. The higher replacement rate raised the fuzzy score slightly by 0.03.

Table 8. 8 Changes in the fuzzy score of Japan's welfare system, 1990-2010

Welfare sectors	Measurement indicators	Changes in the fuzzy score			Change in the fuzzy set score 1990-2010
		1990-2000	2000-2010	1990-2010	
Education service	Spending	-0.26	-0.35	-0.60	-
	Generosity	-	-	-	
	Accessibility	+0.17	+0.32	+0.32	
Health service	Spending	-	+0.01	+0.01	+0.01
	Universality	-	-	-	
	Affordability	-	-	-	
Family policy	Generosity	-	+0.1	+0.1	+0.03
	Duration	-	-	-	
	Accessibility	-	-	-	
Old-age income protection	Pillar-zero pension	-	-	-	-
	Generosity of mandatory pension	-	-	-	
	Universality of mandatory pension	-	-	-	
Housing	Policy	-0.14	-0.03	-0.17	-0.17
Passive labour market policy	Generosity	-	-	-	-0.13
	Coverage	-0.06	-0.06	-0.13	
	Duration	-	-	-	

The scores of Japan old-age income protection remained consistently high over the past two decades. It remains in the set of the old-age income set. It has a universal

pillar-zero pension together with a high-coverage mandatory pension system. The only downside is the relatively low replacement rate, which is around 39.7%, and that downgrades Japan's pension system.

Overall, Japan's welfare system was more protective in 1990. Two of the three protective dimensions have high fuzzy scores. However, because of the reforms of the public housing policy, its welfare system underwent a radical change in 2000. Only two welfare dimensions, health-care and old-age income protection, remained in the sets. Japan is the only case in this study which showed welfare retrenchment and its low score in its education service is also a significant argument against Holliday's productivist thesis.

8.3.4 Korea

As Figure 8.5 shows, Korea's welfare system moved in a positive direction from weak welfare (ehFipl) to the productive balanced model (EHFIPl) over the past twodecades. This developmental trajectory is in accordance with some literature on Korea's welfare development (*see*, for example, Kühner, 2015; Park,2008; Shin,2000; Wildling, 2008; Kuhnle, 2004).

Figure 8. 5 Korea's welfare developmental trajectory, 1990-2010
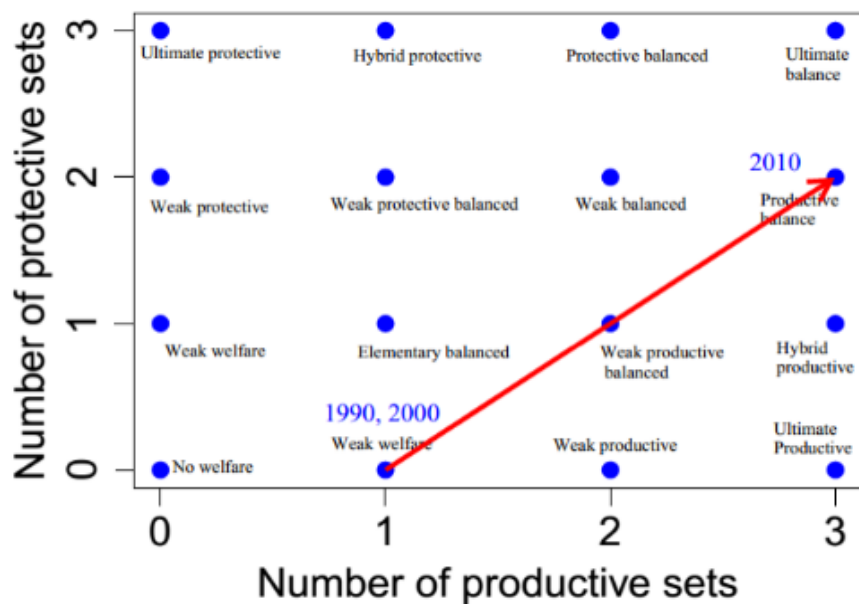
Korea's welfare system experienced a radical change between 2000 and 2010. This shift was caused by a series of major reforms in the 2000s. During the ten years, four out of six welfare dimensions significantly improved: education, health-care, income protection, and public housing. Table 8.9 describes the details of the policy changes.

For education service, the generosity and the accessibility were enhanced: free mandatory education was extended from six years to nine years in 2004, and through the introduction of more student loans especially the new income-contingent student loan in 2010, going to university became more affordable than before. However, public expenditure on education as a percentage of total public social expenditure dropped gradually from 16.97% to 15% between 1990 and 2010, which reduced the increase added to the membership score.

Membership of the health service increased the most among the six welfare dimensions. This increase was mainly influenced by the increased public spending and reduced private health expenditure. In contrast to the reduced public education spending, health expenditure rose dramatically from 7.1% to 11.8% during the past two decades. Furthermore, private health expenditure as a percentage of total health expenditure reduced from 43% in 1990 to 34% in 2010. All of these changes denote that the government today is playing a more important role in health-care provision than individuals are.

Similar to China and Taiwan, Korea's old-age income protection also underwent a major reform between 2000 and 2010. In 2007, Korea introduced its non-contributory pension programme, the Basic Old Age Pension, which provided a basic universal pension for elderly people. In addition, although the membership score of mandatory pension dropped slightly from 2000 to 2010 because of the reduced net replacement rate, the overall membership of mandatory pension increased significantly during the past two decades. This increase was benefited by the expanded coverage of the pension programme, which increased more than four-fold over twenty years.

The public rental housing system was also enhanced. More public rental programmes were introduced between 1990 and 2010 which pushed the membership of Korea's housing policy past the 0.5 threshold in 2010.

In addition to the four welfare dimensions discussed above, the membership of the passive labour market policy also increased dramatically between 1990 and 2010. This was influenced by the introduction of the EIS, the employment insurance system, in 1997. The enlarged coverage of the insurance scheme enhanced this welfare dimension. However, although the membership rose, it was still below the 0.5 threshold which makes the passive labour market Korea's welfare ideal type.

Table 8. 9 Changes in the fuzzy score of Korea's welfare system, 1990-2010

Welfare sectors	Measurement indicators	Changes in the fuzzy score			Change in the fuzzy set score 1990-2010
		1990-2000	2000-2010	1990-2000	
Education service	Spending	-0.17	-0.02	-0.19	+0.36
	Generosity	-	+0.43	+0.43	
	Accessibility	+0.36	+0.24	+0.6	
Health service	Spending	+0.28	+0.41	+0.69	+0.64
	Universality	-	-	-	
	Affordability	+0.22	+0.42	+0.64	
Family policy	Generosity	-	-	-	-
	Duration	-	-	-	
	Accessibility	-	-	-	
Old-age income protection	Pillar-zero pension	-	1	1	+0.64
	Generosity of mandatory pension	-0.15	-0.28	-0.43	
	Universality of mandatory pension	+0.3	+0.46	+0.75	
Housing	Policy	+0.08	+0.1	+0.18	+0.18
Passive labour market policy	Generosity	+1	-	+1	+0.46
	Coverage	+0.21	+0.3	+0.46	
	Duration	+0.49	-	+0.49	

Overall, at the beginning of the 1990s, Korea's welfare development was only at the initial stage. Only the membership of family policy was in the set. Mainly after the financial crisis, Korea's welfare system underwent a series of reforms. Almost all of the welfare dimensions improved, with the only exception of the family policy which continued to remain high. As a result, a radical change in a positive direction occurred

between 2000 and 2010. In 2010, Korea's welfare system was clustered into the productive balanced model, which indicates that Korea was following a more balanced developmental trajectory with an emphasis on both the productive and the protective dimensions.

8.3.5 Singapore

Similar to Hong Kong and Korea, membership of elementary welfare (EhfiPl) in Singapore was almost stable between 1990 and 2000 (*see* Figure 8.6). Only type-specific change occurred during this period. Table 8.10 shows the details of the policy changes.

Figure 8.6 Singapore's welfare developmental trajectory, 1990-2010
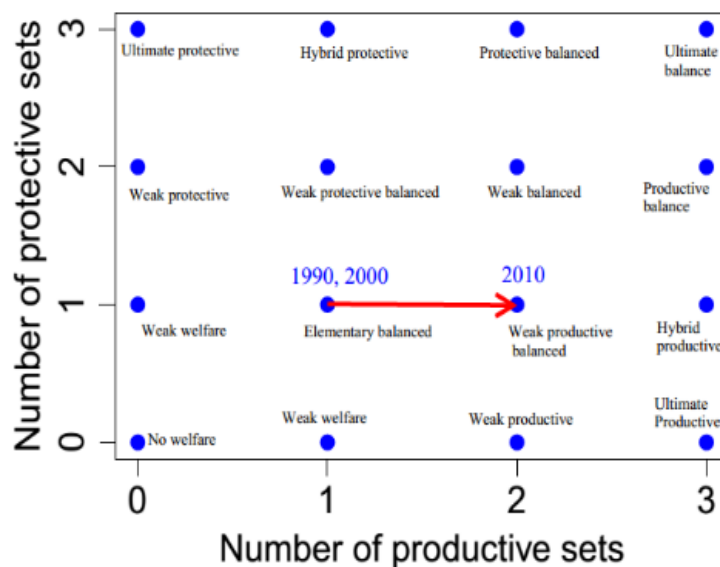
Public spending on health-care dropped significantly from 9.3% of total government expenditure in 1995 to 7% in 2010. This resulted in a dramatic change in the spending set's fuzzy membership scores. Also, the affordability of the health service reduced slightly and remained at the lowest level in the region, very close to fully out of the set. The low affordability also resulted in Singapore having the lowest membership of health-care among the six states.

In addition to low health-care, the accessibility of tertiary education also decreased slightly after the increase in tuition fees from 1991. Before 1990, tuition fees in Singapore were very stable. They then increased dramatically by 45% in 1991, and continuing to increase by 3% annualy. Although the tuition fees increased, however, they were still highly subsided, so this does not have a significant impact on the scores of accessibility, but only makes them slightly lower.

From 2000 to 2010, Singapore shifted from the elementary welfare model (EhfiPl) to the weak productive balanced model (EhFiPl). This was mainly due to the abolition of the two-children policy in 2001. This meant that paid maternity leave was available for more than two children. Also, the duration of the maternity leave policy was extended to sixteen weeks in 2008, which was the longest in the region, and Singapore was also the only state which reached the ILO standard. This huge improvement substantially raised the membership score of family policy, which shifted Singapore's membership of elementary welfare (EhfiPl) to the weak productive balanced model (EhFiPl) between 2000 and 2010. This resulted in Singapore's family policy moving from out of the family policy set to in the set.

Although the accessibility of the education service reduced slightly between 1990 and 2000, the overall memberships score of the education service increased during the past two decades. Indeed, Singapore's education system has consistently remained at a high level over the past two decades. The high public investment on education is highlighted. This matches most of the literature on Singapore's welfare system and also the productivist thesis. The score rose slightly by 0.05 during 2000 and 2010 mainly because of the improvement in compulsory education brought about by the implementation of the Compulsory Education Act from 1 January 2003. Also, public spending on education also rose slightly by 0.01 between 1990 and 2000 whereas the accessibility of tertiary education dropped by 0.02 because of the continually increasing tuition fees from 1990. However, based on the minimum principle, the membership of Singapore's education service depends on the lowest score, which is the generosity of education. Therefore, the increases in investment and tuition fees do not affect the final score of Singapore's education system.

The membership scores of the health-care system reduced slightly but remained out of the set during the past two decades. This was mainly due to the high proportion of private health expenditure which was also the highest in the region. Although public expenditure on health-care increased dramatically between 2000 and 2010, in the latter year it was almost double the amount, the out-of-pocket expenditure by patients is still the major source for funding health care in Singapore.

Table 8. 10 Changes in the fuzzy score of Singapore's welfare system, 1990-2010

| *Welfare sectors*	*Measurement indicators*	*Changes in the fuzzy score*			*Change in the fuzzy set score 1990-2010*
		1990-2000	*2000-2010*	*1990-2010*	
Education service	Spending	+0.01	-	+0.01	+0.05
	Generosity	-	+0.05	-	
	Accessibility	-0.02	-	-0.02	
Health service	Spending	-0.22	+0.35	+0.13	-0.07
	Universality	-	-	-	
	Affordability	-0.04	-0.03	-0.07	
Family policy	Generosity	-	-	-	+0.3
	Duration	-	+0.66	+0.66	
	Accessibility	+0.1	+0.15	+0.25	
Old-age income protection	Pillar-zero pension	-	-	-	-
	Generosity of mandatory pension	-	-	-	
	Universality of mandatory pension	-	-	-	
Housing	Policy	-	-	-	-
Passive labour market policy	Generosity	-	-	-	-
	Coverage	-	-	-	
	Duration	-	-	-	

Overall, Singapore's welfare system shows a strong productive characteristic. The membership scores of education and family policy are among the highest in the region. Moreover, although the score of health-care is low, public expenditure on health has continually increased. Also, even though the public housing system is a proud symbol

of Singapore's development, the absence of a passive labour market policy and non-contributory pension system weakens the protective features of Singapore's welfare system.

8.3.6 Taiwan

Like China, Taiwan is another state which underwent two radical changes over the past two decades. Generally, its welfare system improved gradually from the weak welfare model (Ehfipl) in 1990 to the elementary welfare model (EhfipL) in 2000, and continued to shift to the weak protective balance model (EhfIpL) in 2010 (*see* Figure 8.7). Table 8.11 shows the details of change.

Figure 8. 7Taiwan's welfare developmental trajectory, 1990-2010
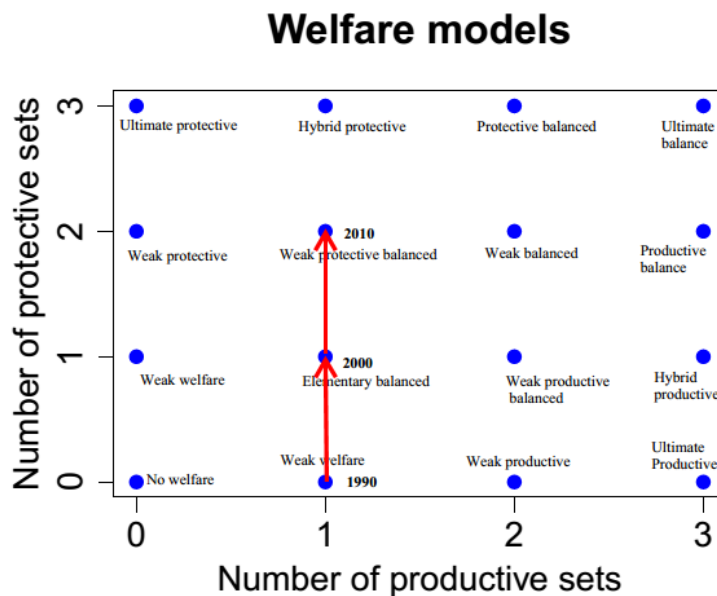
The first radical change was due to the change of membership of the passive labour market protection set. Although Taiwan has had its labour insurance programme since the early 1950s, it was never enforced before the Asian financial crisis in 1998. Hence, the official implementation of unemployment benefits in 1999 dramatically increased the fuzzy scores of the passive labour market policy set from 0 to 0.7 (*see* Table 8.11).

The second radical change between 2000 and 2010 was due to the major reform of Taiwan's pension system, including the introduction of a New Labour Pension Programme in 2004 and the national programme in 2007. The expanding coverage and increased replacement rate of the mandatory pension, together with the implementation of a universal non-contributory pension programme, dramatically increased the membership of Taiwan's old-age income protection set, which pushed Taiwan's welfare system toward a more protective rather than productive set in 2010.

In addition to the above two improved welfare dimensions which led to the radical change of Taiwan's welfare system, Taiwan's education system has always been at a high standard. The membership score of the dimension increased continually from 0.51 in 1990 to 0.72 in 2010, which was due to the improvement of the accessibility of higher education. From 1990 to 2010, more subsidy programmes and student loans were introduced. Higher education is more affordable nowadays than before. Moreover, public spending on education as a percentage of total public expenditure also increased gradually over the twenty years from 17.70% in 1990 to 20.13% in 2010. However, as the accessibility of higher education is the shortcoming of Taiwan's education system, the increase in spending did not affect the membership of the education set.

Taiwan's health care system also underwent a major reform between 1990 and 2000. National Health Insurance was introduced in 1995 and expanded the coverage and the affordability of the health service considerably. As a result, the membership of universality and affordability increased dramatically during this period. However, Taiwan's public expenditure on health as a percentage was the lowest in the region, and especially when compared with the education expenditure the difference is enormous. Therefore, the membership of health-care did not change during the past two decades and was always out of the set.

Table 8. 11Changes in the fuzzy score of Taiwan's welfare system, 1990-2010

Welfare sectors	Measurement indicators	Changes in the fuzzy score			Change in the fuzzy set score 1990-2010
		1990-2000	2000-2010	1990-2010	
Education service	Spending	+0.03	+0.20	+0.23	+0.17
	Generosity	-	-	-	
	Accessibility	+0.07	+0.1	+0.17	
Health service	Spending	+0.03	+0.74	+0.77	+0.2
	Universality	+0.36	-	+0.36	
	Affordability	+0.19	-0.09	+0.1	
Family policy	Generosity	-	-	-	-
	Duration	-	-	-	
	Accessibility	-	-	-	
Old-age income protection	Pillar-zero pension	-	1	1	+0.61
	Generosity of mandatory pension	-	-	-	
	Universality of mandatory pension	+0.14	+0.1	+0.24	
Housing	Policy	-	+0.1	+0.1	+0.1
Passive labour market policy	Generosity	+0.7	-	+0.7	+0.7
	Coverage	+0.76	-0.06	+0.76	
	Duration	+1	-	+1	

Finally, the public housing system also improved slightly in 2010 with the establishment of the Social Housing Promotion Alliance. However, the development of public rental housing is still at the early stage in Taiwan. The supply is still very limited, so this increase does not affect Taiwan's welfare ideal type.

Similar to China, Taiwan's welfare system underwent significant reforms over the past two decades. Five out of the six welfare dimensions changed to different degrees. As Table 8.11 shows, most of these changes were positive, which means that Taiwan's welfare system has become more comprehensive than before. The welfare system in 2010 was still fairly balanced between productive and protective. However, a more protective trend could be predicted. This result is clearly contrary to the productivist thesis.

8.4 The robustness of the finding

The robustness of the fsITA analysis has always been questioned by scholars. The process of calibration is perhaps the most concern part of sceptics. Especially, in this research, the calibrations are mainly based on case knowledge. It, therefore, seems to be more significant. So in this section, the robustness of the finding will be discussed.

According to Schneider and Wagemann's (2012, p277), the most important issue of the calibration is which criteria are used to determine cases membership scores. In other words, it is crucial to decide where the qualitative anchors 0, 0.5, and 1 are located. They suggest that the decisions should be made based on solid theoretic and case knowledge. If so, the results will be relatively robust. In this research, sixteen criteria are used to measure the six policy fields. And 46 cut-off points are determined by the author. Table 8.12 summarises the rational choices of these qualitative anchors. It is clear that most of the anchors are selected based on either solid theoretical arguments or international conventions. In some cases, the average level of OECD or the EU countries is used together. Only three indicators are calibrated fully based on case knowledge. The calibrations are therefore relatively robust.

Moreover, besides the robustness of the calibrations, cases scores at the margin of 0.5 need to be considered very carefully. Due to the minimum principle is used, cases score 0.51 or 0.49 could lead to two distinct results. In this research, there are three marginal scores may affect the final results. First, the share of public spending on education of Korea in 2010 was 15% which stands at the cross-over point of the set. In this case, Korea is given 0.51 of the set. It is because the actual share of spending was slightly higher than 15%. The share of 15% is due to two decimal places are used across this research. Second, China scores 0.51 in 2010 on the affordability set of health care. It is measured by the share of private health expenditure. In 2010, the private spending accounted 35% of the total health expenditure which is lower than the cross-over point - 40%. Therefore, the result is not controversial. Finally, Hong Kong in 1990 scored 0.51 in the pension set which was adjusted from 0.5. The score of 0.5 is due to Hong Kong's dichotomous score in the pillar-zero and mandatory

pension sets. Indeed, this could be a limitation to use average scores of the crispy set and the fuzzy set. Because as a crispy set only has two membership scores '0' or '1', it could easily excessive increase or reduce the case's final score. In this case, no matter the fuzzy score of the mandatory pension system, Hong Kong has at least 0.5 membership score in the old-age income protection set with 'in' the set of pillar zero pension. However, this strategy is used in this research due to the importance of the pillar-zero pension. According to the World Bank (2008), the non-contributory pension is particularly important for people with low life-time income to have basic protection in old age. Moreover, the pillar-zero pension as a social protection which is fully funded by the government could be a crucial indicator to evaluate the role of governments in welfare provision. Therefore, based on these points of view, the mean of crispy scores and fuzzy scores is employed. And Hong Kong was adjusted to 0.51 as well.

In a nutshell, the findings of fsITA analysis in this study are relatively robust. Most calibrations are based on solid theoretical knowledge. However, as some criteria are first introduced to evaluate the policies, the choices of cut-off points may be contentious. It, therefore, may be well worth to discussed and further developed in the future research.

Table 8.12 Summary of rational choices of measurement criteria

Policy fields	Empirical indicator	Rational choices of qualitative anchors	Calibration method
Education	Public spending on education	Following Hudson and Kühner's (2009) strategy, that education as one of the five most important aspects of social policy should account about one-fifth of public welfare spending.	Direct calibration by R
	free compulsory education	The cross over point is chosen based on the world average level. Fully-in is set at the longest duration within the cases.	Qualitative calibration
	Accessibility of tertiary education	Case knowledge	Qualitative calibration
Health care	Public spending on health care	Based on the average share of government spending on health across the world.	Direct calibration by R
	Coverage of health care system	Following Kvist's (1999) strategy, the benefit should cover at least 50% of the population.	Qualitative calibration
	Private spending on health care	Based on the private health expenditure in countries at different income levels. The fully-in point is set at the level of high-income country, while the fully-out is set at the level of low-income country	Direct calibration by R
Family policy	Net replacement rate	ILO Convention No. 183 suggested that cash benefit should be equal at least two-thirds of a woman's previous earnings. Hence, 66% is set as cross-over point. Fully-in point is set at 75% based on Asher's (1998) finding that 75% is considered adequate for financial security for a middle-income earner. Fully-out point is set at 20% based on the strategies of Kvist (2003) and Vis (2007) that 20% is the minimum net replacement rate for an individual to remain the same standard of living.	Direct calibration by R
	Duration	ILO Convention No.183 and UNICEF (2013)'s suggestion	Direct calibration by R
	Accessibility	Case knowledge	Qualitative calibration

Policy fields	Empirical indicator	Rational choices of qualitative anchors	Calibration method
Old age income protection	Pillar zero pension programme	According to the World Bank (2008), the non-contributory pillar zero pension is a very important basic social protection for elderly people.	Crispy set
	Net replacement rate of mandatory pension	Same strategy as net replacement of maternity benefits	Direct calibration by R
	Coverage of mandatory pension	The fully-in point was set based on the average level of OECD countries, as the social protection is an important feature of Western welfare model. And following Kvist's (1999) strategy, the benefit should cover at least 50% of the population. The cross-over point is set at 50%	Direct calibration by R
Housing	Public rental policy	Case knowledge	Qualitative calibration
Passive labour market policy	Net replacement rate	Same strategy as net replacement of maternity benefits	Qualitative calibration
	Coverage	The cross-over point is set at 50% based on ILO's Social Security (minimum standard) Convention (1952). The fully-in point is set as the average of 27 EU members states in 2010.	Direct calibration by R
	Duration	The cross-over point is set based on ILO's Social Security (minimum standard) Convention (1952). The fully-in point is set as the average of 27 EU members states in 2010.	Qualitative calibration

8.5 Remarks on the findings

The findings of the fuzzy-set ideal type analysis tell a number of stories about East Asian welfare systems. They substantiate and also challenge some mainstream East Asian welfare literatures.

As stated in Chapters 3 and 4, there are ongoing debates about the East Asian welfare systems. Holliday (2000), in his influential work *Productive Welfare Capitalism: Social Policy in East Asia*, argued that it is impossible to cluster East Asian states into Esping-Andersen's framework. He observed that the welfare systems in East Asian states share some common characteristics. He suggested that there is a fourth welfare regime found in the region which he called 'productivist' welfare capitalism, which is different from those outlined by Esping-Andersen. However, scholars have continued to question whether it is analytically correct to crudely cluster East Asian welfare systems into a single, homogeneous welfare model and overcome the differences between cases (Hudson & Kühner, 2009; Kwon, 2005, 1998; White & Goodman, 1998). This is also the first question which this study seeks to answer.
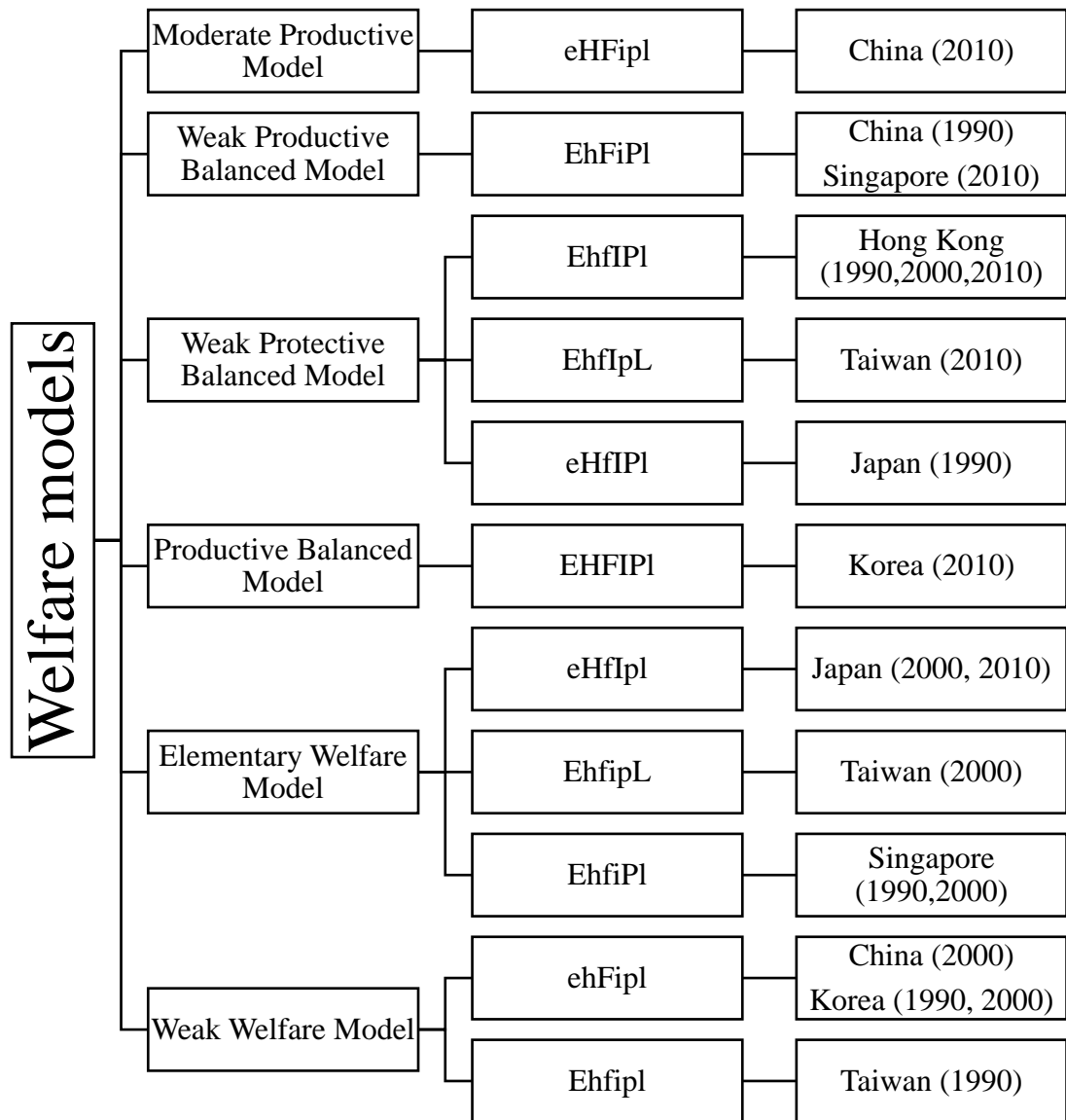
The fsITA results show that there are clear and important differences between the welfare systems of East Asian states. Figure 8.8 illustrates the classification of the welfare models and ideal types of the six East Asian states in 1990, 2000 and 2010. The eighteen cases are clustered into six distinctive welfare models based on the performance of the six welfare dimensions. Some focus more on the productive dimensions, such as China in 2010, whereas in some states the protective dimensions are more remarkable, such as Hong Kong. Moreover, even though some cases are in the same welfare model, the ideal types are diverse; *see* for example, Hong Kong in 1990, 2000 and 2010, Japan in 1990 and Taiwan in 2010. Although all five cases have been classified into the weak protective balanced model, the welfare systems have different development trajectories. The inner diversity is significant in the region. It is therefore analytically problematic to cluster East Asian states into one welfare regime regardless of all these differences between the cases.

In addition, the analysis shows that only China in 2010 had a productive welfare model. Most cases have been clustered into the balanced welfare model, which indicates that

these cases have memberships of both the productive and the protective dimensions. Therefore, simply saying that East Asian states have productive welfare systems is inaccurate. This is also contrary to the PWC thesis. This is in accordance with some scholars' arguments that the welfare systems in some states are more redistributive (Kim, 2008), especially after the Asian financial crisis in 1997. However, half of the cases in this study show strong productive features (China in 1990, 2000 and 2010, Singapore in 2010, Korea in 1990, 2000 and 2010, and Taiwan in 1990), whereas only five cases (Hong Kong in 1990, 2000, and 2010, Japan in 1990, and Taiwan in 2010) have strong protective characteristics.

Finally, most East Asian states underwent major welfare reforms during recent decades but followed different trajectories. Most states started to place more emphasis on social protection. Japan is the only state in the region which had welfare retrenchment during the recent decades.

Figure 8. 8 Classification of the welfare models of East Asian states

Welfare models			
	Moderate Productive Model	eHFipl	China (2010)
	Weak Productive Balanced Model	EhFiPl	China (1990) Singapore (2010)
	Weak Protective Balanced Model	EhfIPl	Hong Kong (1990,2000,2010)
		EhfIpL	Taiwan (2010)
		eHfIPl	Japan (1990)
	Productive Balanced Model	EHFIPl	Korea (2010)
	Elementary Welfare Model	eHfIpl	Japan (2000, 2010)
		EhfipL	Taiwan (2000)
		EhfiPl	Singapore (1990,2000)
	Weak Welfare Model	ehFipl	China (2000) Korea (1990, 2000)
		Ehfipl	Taiwan (1990)

Chapter Nine

Explaining welfare changes in East Asia by fuzzy-set qualitative comparative analysis

In the previous chapter, the findings showed that except for Hong Kong, the other five states had at least one radical reform during the past two decades but following different change trajectories. In this chapter, I shall continue the discussion of welfare change in order to explore the reasons behind these different welfare reform paths by using fuzzy-set qualitative comparative analysis (fsQCA).

9.1 The pattern of welfare development

How to establish the degree of welfare development is the first essential question in this analysis. It is crucial as almost all comparative welfare studies have suffered from the so-called "dependent variable problem" (Green-Pedersen, 2004). This discussion comprises two issues: first, how to define welfare reform, and second, how to measure it. Different definitions employed by researchers have led to different findings. Often, traditional qualitative small-N studies only focus on the theoretical definition of welfare development, not the method. Most East Asian comparative welfare studies fall into this category. However, as already discussed in Chapter 4, the lack of systematic analysis makes replication, which is crucial for empirical research, impossible. In contrast, quantitative large-N research, which is possible and relatively easy to replicate, faces different issues. Pure hard data sometimes cannot truly capture qualitative welfare changes.

With these issues in mind, fuzzy-set analysis is particularly useful for dealing with the dependent problem by combining both qualitative and quantitative sources. The dependent variable is welfare development which is defined as the degree of development of all six welfare dimensions involved in this study: education, health

care, family policy, old-age income protection, housing policy and passive labour market policy.

In the previous chapters, the six welfare dimensions were used to identify different welfare ideal types. Although these six dimensions have different features regarding whether they are productive or protective, they are all equally important in constructing a welfare system. The fuzzy-set scores of the measurements within each welfare dimension show the degree of welfare development from different angles.

Based on the analysis in Chapter 6 and 7, the membership scores of the six welfare dimensions were calculated following the same procedure, that, '1' is 'fully-in' the set and '0' is 'fully-out' of the set. In other words, if a state scores high in a welfare dimension, this indicates that the development of this dimension is comparatively better. However, rather than an fsITA analysis, for calculating the fuzzy scores of welfare development, the average of all the measuments instead of the minimum was used. The reason for this is that for calculating the degree of welfare development, the average score can better express the changes of all the measurements within each welfare dimension. The minimum principle is useful for distinguishing the characteristics of a state's welfare system as all the constituent sets are seen as indispensable for the concept. However, when measuring the degree of welfare development, it could yield lower scores by magnifying the shortcomings of the welfare dimensions.

Table 9.1 shows the fuzzy scores of all the welfare dimensions and the degrees of welfare change. The scores of each welfare dimension have been recalculated using the average of the measurements. For example, for education service, China in 1990 receives a fuzzy score of 1 in spending, 0.75 in generosity, and 1 in accessibility, hence, the new fuzzy score of the education service in China in 1990 is the average of 1.1 and 0.75, which is 0.92. If a state scores over 0.5 in one dimension which means being 'in' this dimension, this indicates that the state has performed comparatively 'well' for this welfare service.

For the welfare change fuzzy set, the number of welfare dimensions with membership score higher than 0.5 were counted to compose the set.

The following fixed seven-value fuzzy set was used:

- A score of 1 is fully in: a state is 'in' all six welfare dimensions. In other words, if the fuzzy scores of the six welfare dimensions of a state are all above 0.5, this indicates that the state has a good performance in all six aspects of its welfare system; it is therefore fully in the set of welfare development.

- A score of 0.83 is almost fully in: following the same typology as fully in, a state is 'almost fully in' the set of welfare development set when it has five welfare dimensions above 0.5.

- A score of 0.67 is fairly in: a state has four dimensions 'in' the welfare dimension set -i.e. it is 'in' the set for more dimensions than it is 'out' of the set.

- A score of 0.51 is more or less in: a state has three welfare dimension sets above 0.5.

- A score of 0.33 is fairly out: a state has two welfare dimension scores above 0.5.

- A score of 0.17 is almost fully out: a state only has one welfare dimension set above 0.5.

- A score of 0 is fully out: a state has no welfare dimension above 0.5.

For example, the case China in 1990 have four welfare dimensions with membership score higher than 0.5, which are education, health care, family policy, and passive labour market. Therefore, the membership score of welfare development for the case China in 1990 is 0.83. Following this typology, the fuzzy scores of welfare change of the six states are presented in Table 9.1.

Table 9. 1 Fuzzy scores of welfare dimensions and the welfare development, 1990-2010

States	*Year*	*Education*	*Health*	*Family Policy*	*Pension*	*Housing*	*Passive Labour Market Policy*	*Degree of welfare development*
China	1990	0.92	0.58	0.53	0.21	1	0.71	**0.83**
	2000	0.69	0.23	0.53	0.29	0.34	0.63	**0.51**
	2010	0.45	0.74	0.54	0.37	0.41	0.65	**0.51**
Hong Kong	1990	0.78	0.47	0.42	0.25	1	0	**0.33**
	2000	0.90	0.61	0.42	0.62	1	0	**0.67**
	2010	0.96	0.61	0.42	0.62	1	0	**0.67**
Japan	1990	0.47	1	0	0.67	0.53	0.41	**0.51**
	2000	0.45	1	0.38	0.67	0.39	0.39	**0.33**
	2010	0.56	1	0.41	0.67	0.36	0.40	**0.51**
Korea	1990	0.39	0.35	0.56	0.50	0.37	0	**0.33**
	2000	0.45	0.56	0.56	0.65	0.45	0.60	**0.67**
	2010	0.67	0.80	0.56	0.72	0.55	0.65	**1**
Singapore	1990	0.91	0.36	0.40	0.17	1	0	**0.33**
	2000	0.90	0.35	0.43	0.17	1	0	**0.33**
	2010	0.92	0.48	0.70	0.17	1	0	**0.51**
Taiwan	1990	0.70	0.25	0.48	0.41	0	0	**0.17**
	2000	0.75	0.43	0.48	0.44	0	0.79	**0.33**
	2010	0.85	0.40	0.48	0.79	0.10	0.79	**0.51**

9.2 The choices of causal conditions

Under what conditions do governments engage in welfare development? Drawing on the existing East Asian welfare literatures (*see*, for example, most notably Holliday's productivist thesis), at least one hypothesis could be proposed: that economic development is essential for welfare development. In addition, Ahn and Lee (2012) in their research on Korean welfare development suggested that as well as economic development, the presence of a Left-wing government, globalisation, the unemployment rate and the elderly population (aged 65 and above) are possible conditions for a government to respond to welfare needs. Similarly, Pennings (2005) also proposed that the rise and cutbacks of social expenditure could be affected by social conditions, political conditions, economic conditions and demographic conditions. Moreover, Vis (2009) studied unpopular social policy reform pursued by German, Dutch, Danish and British cabinets and proposed that a weak socio-economic situation, weak political position and rightist government could be reasons for unpopular welfare reforms. Similar to Ahn and Lee (2012), the weak socio-economic situation also involves the level and change in economic growth and unemployment. Drawing on these research studies and literatures, three possible causal conditions have been employed in this thesis: socio-economic condition (SE) , demographic condition (P) and globalisation (G).

The political influence (partisanship) has not been included because among the six states, the governments of both China and Singapore are dominated by one party. In addition, Hong Kong is another special case. As a former colony of Great Britain and a special district of China after 1997, democratisation in Hong Kong is only partial in nature (Lau & Kuan, 2000). Both Britain and China shared the anti-political party bias. They did not intend to see a strong political party dominating the Legislative Council (LegCo)[35]. As a result, regardless of whether before or after the handover in 1997, although Hong Kong has a multi-party system, there is no single party that can dominate the LegCo. In addition, the election of a Chief Executive of Hong Kong does not rely on any political party either. The Chief Executive is elected by an electoral

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[35] The decision-making institution of Hong Kong

college and is non-partisan. Hence, due to half of the cases in this research not having a mature party system, the political incluence has not been considered.

The following section contains a discussion of the three conditions in depth.

Socio-Economic Condition (SE)

The first possible causal condition is the socio-economic condition. This condition combines two important factors – economic performance and the level of unemployment.

First, economic performance is accepted by most scholars of welfare reform research. This viewpoint dates back to the pioneering work of Wilensky (1975). During the industrialisation process, traditional family structures and individuals who are very young, very old, sick, or disabled may face risk (Cowgill, 1980; Quadagno, 1987). Traditional societal insitutions are unable to meet the needs of these vulnerable individuals and, as a result, the state expands social spending more or less automatically (Cutright, 1965; Jackman, 1975; Wilensky, 1975,). Wilensky (1975, p. xiii) therefore concluded that

> *"Economic growth and its demographic and bureaucratic outcomes are the root causes of the general emergence of the welfare state".*

In addition, according to the productivist thesis (Holliday, 2000), economic growth is the ultimate goal of welfare development in East Asia. The development of social policy is thereby arguably subordinate to economic growth. Based on this, economic growth should be at least a necessary condition[36] for welfare development.

The level of unemployment is also widely used to measure the social influences on the level of welfare spending (*see*, for example Ahn and Lee, 2012; Garrett and Mitchell, 2001; Ha, 2007; Pierson, 2001;Vis, 2010). According to industrialist theories, the state needs to responds with social welfare spending to meet the needs of people affected

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[36] Based on the set-theoretic method, a necessary condition X is always present when outcome Y occurs. In other words, X is a pre-requirement for outcome Y, and Y cannot be present without X. For more details, *see* Chapter 4.2.1.

by industrialisation. Governments therefore need to spend more in response to the financial needs of such groups, including the unemployed (Wilensky, 1975). Nevertheless, a high unemployment rate also reflects poor economic performance which could also lead to the reduction of welfare spending.

In this thesis, economic condition and social condition are combined together to form the socio-economic condition. The main reason for this is the potential small-N problem. As this study involves only eighteen cases, it might face the risk of too many variables for relatively few cases. So, following Vis (2010) typology, the combined socio-economic condition was used instead of two individual conditions.

In terms of measurement, first, the economic performance and the level of unemployment were calibrated separately. Then the average of the two scores was used as the socio-economic membership score. The higher the membership, the better the socio-economic situation.

For calibrating economic performance, the trends of economic change were used instead of pure GDP growth rates. The reason for this is that the data of only one specific year might not reflect the real picture of economic growth. Especially in this study, in 2000 and 2010 the economies of most Asian states were affected by the two financial crises of 1997 and 2008. For example, as Table 9.2 shows, the growth rate of Hong Kong in 2000 was 7.7% which is comparatively high. However, in 1998, the growth rate was negative, which indicates that Hong Kong was experiencing an economic recession at that time. Therefore, three-years of economic growth trends (including two years before the target year) were used. The fuzzy-set scores were generated based on the GDP growth rates between two years before the target year and the target year. As with the welfare development set, the fixed seven-value fuzzy set was used.

Table 9.2 GDP growth rate

States	GDP Growth Rate (annual %)								
	1988	1989	1990	1998	1999	2000	2008	2009	2010
China	11.30	4.21	3.93	7.85	7.62	8.43	9.62	9.23	10.63
Hong	8.51	2.28	3.83	-5.88	2.51	7.66	2.13	-2.50	6.77
Japan	7.15	5.37	5.57	-2.00	-0.20	2.26	-1.04	-5.53	4.65
Korea	11.66	6.75	9.30	-5.71	10.73	8.83	2.83	0.71	6.50
Singapore	11.11	10.18	10.04	-2.23	6.10	8.90	1.79	-0.60	15.24
Taiwan	8.80	12.24	10.22	7.33	4.79	5.53	-1.77	-1.61	9.99

Source: DGBAS (2013); The World Bank (2014)

The calibration was based on qualitative knowledge; the trends of the economic growth and the growth rate were considered together. The higher the value, the strong the economic performance. For example, the case Taiwan 2010 is coded as having a fairly strong economic performance (with a fuzzy score of 0.67). Although it had negative growth rates in 2008 and 2009, the level of growth was increasing during that period, and a 9.99% economic growth rate in 2010 was very high in the region. China 1990, conversely, has a fairly poor economic performance (a fuzzy-score of 0.33). Although it had three years of economic growth from 1988 to 1990, the level was decreasing throughout the period, and the 3.9% growth rate in 1990 was lower than the Asian average, which made it looked not very good.

For unemployment rate, all six states had comparatively low unemployment rates (*see* Table 9.3), especially when compared with the OECD members, which had an average of 8.4% unemployment rate in 2010 (The World Bank, 2014). Therefore, as with the economic growth set, the standard set by scholars for European countries may be too generous for the East Asian cases. In this case, the fully-out point was set at 6.25%, which was the average unemployment rate of OECD countries in 2000. The fully-in point was set at 1.3%, which is the lowest rate of the eighteen cases in this study. The cross-over point was set at 4.6%, which was about the average of all Asian countries. The calibration was processed using R (R Core Team, 2014) with the QCA package (Dusa & Alrik, 2014) and the set-theoretic package (Quaranta, 2013). The higher the fuzzy scores, the better the unemployment situation.

Table 9.3 Unemployment rates (%) in 1990, 2000 and 2010

States	1990	2000	2010
China	2.5	3.1	4.1
Hong Kong	1.3	4.9	4.3
Japan	2.1	4.7	5.1
Korea	2.4	4.1	3.7
Singapore	2	4.4	2.8
Taiwan	1.7	3	5.2

Source: ADB (2012, 2000)

Finally, Table 9.4 shows the fuzzy scores of the socio-economic condition.

Table 9.4 The fuzzy scores of the socio-economic condition

States	Year	Economic performance	Level of unemployment	Socio-economic condition
China	1990	0.33	0.87	0.60
	2000	1	0.79	0.90
	2010	1	0.61	0.81
Hong Kong	1990	0.51	0.95	0.73
	2000	0.33	0.37	0.35
	2010	0.51	0.57	0.54
Japan	1990	0.67	0.90	0.79
	2000	0.17	0.46	0.32
	2010	0	0.29	0.15
Korea	1990	0.83	0.88	0.86
	2000	0.67	0.61	0.64
	2010	0.51	0.69	0.60
Singapore	1990	1	0.91	0.96
	2000	0.67	0.54	0.61
	2010	0.67	0.83	0.75
Taiwan	1990	1	0.93	0.97
	2000	0.67	0.81	0.74
	2010	0.51	0.26	0.39

Demographic condition (P)

As with the unemployed situation, according to industrialist theories, the growth of the aged population is another important reason which might urge governments to spend more on welfare. It is measured by the percentage of people aged above 65. The higher of the number, the higher the levels of welfare spending are expected to be.

The elderly populations in East Asian states are comparatively low compared with the West (*see* Table 9.5). For calibration, similar to the unemployment set, the fully-in point was set at 5%, which is the lowest rate of the eighteen cases in this study. The cross-over point was set at 7.1%, which was the Asian average rate in 2000, and the fully-out point was set at 12.98%, which was the OECD average rate in 2000. The fuzzy scores were generated by R.

Table 9. 5 Elderly populations in 1990, 2000 and 2010

States	*1990*	*2000*	*2010*
China	5.9	7	8.2
Hong Kong	8.7	11	12.7
Japan	11.9	17.2	22.7
Korea	5	7.3	11.1
Singapore	5.6	7.4	9
Taiwan	6.2	8.6	10.7
OECD members	11.6	12.98	14.6

Source: DGBAS (2013); The World Bank (2014),

Globalisation (G)

The level of globalisation reflects economic openness. Many scholars have argued that globalisation has forced states to cut back welfare spending and implement efficiency-oriented reforms of social services (Allan & Scruggs, 2004; Garrett & Mitchell, 2001; Korpi & Palme, 2003; Rieger & Leibfried, 2003, Scharpf, 2000; Strange, 1996). This view is based on the neoliberal economic theory that if there is no government intervention, the market will select the most efficient solutions. The globalised world

market limits governments to maintaining generous and comprehensive social protection (Ha, 2007). Trade openness increases the competitive pressures on states, especially for advanced industrial countries. They have to compete with less developed countries (LDCs) which have lower tax burdens, lower labour costs, less regulation and less labour-market rigidity. Therefore, the governments of open economies face pressures to reduce traditional social security to lower labour costs in order to increase the price competitiveness of exports (Gough, 1991).

On the other hand, some scholars have argued that the more open the market is, the higher the level of welfare development (Armingeon *et al*, 2002; Cameron, 1978; Rieger & Leibfried, 2003; Rodrik, 1997). According to them, an open economy might lead to economic risks which generate the need for more generous social services as compensation for those harmed by globalisation.

Although there are debates regarding the effects of globalisation on welfare spending, it is clear that globalisation could facilitate states to change (increase or decrease) their welfare spending.

In this study, globalisation was measured mainly by the KOF Index of Globalisation (*see* Table 9.6). This index includes measurements of actual flow of trade, FDI, portfolio investment, income payments to foreign nationals, restrictions imposed by import barriers, mean tariff rates and taxes on international trade and capital accounts.

Hong Kong and Taiwan are not included in this index, but their places in the index can be estimated. Based on the Index of Economic Freedom (Heritage Foundation, 2016, 2010), Hong Kong holds the position of the world's freest economy, one place ahead of Singapore. Taiwan ranked 27th in 2010, between Japan (19th) and Korea (31st). In addition, according to UNCTAD (2016), among the six states, in terms of merchandise imports and exports, Hong Kong ranked second in 1990 and 2000 (behind Singapore), and first in 2010. Taiwan held the third position in the past two decades. For Foreign Direct Investment (FDI), if compared with the GDP, Hong Kong always ranked first among the six states. Taiwan in 1990 ranked third, but in 2000 was downgraded to sixth and moved to fifth in 2010. So considering these measurements, Hong Kong should have a slightly higher score than Singapore. Taiwan can be placed

behind Singapore and Hong Kong and above Japan and Korea. The reason for this is that Taiwan's imports and exports are far greater than those of Japan and Korea, and the FDI stock is very close. Table 9.6 summarises the KOF index scores.

Table 9.6 Economic globalisation index

States	1990	2000	2010
China	31.71	41.2	51.12
Hong Kong	Slightly higher than Singapore		
Japan	41.55	44.51	44.01
Korea	44.04	53.26	59.61
Singapore	94.73	94.19	97.37
Taiwan	Lower than Hong Kong and Singapore higher than Japan and Korea		

Source: ETH Zürich (2015), summarised by the author

In terms of measurement, as this is an index, the fully-in point was set at 100, and the fully-out point was set at 0. The cross-over points were set at the median score of each year, which were 43.64 in 1990, 54.82 in 2000 and 62.12 in 2010. For calibrating, first, all the available data was calculated by R, then the fuzzy scores for Hong Kong and Taiwan were estimated based on their positions and the fuzzy scores of other states.

Table 9.7 displays the scores for the outcome and the three conditions. The results are presented in equation form using letters as abbreviations for the conditions and outcomes. W represents welfare development; E economic growth, U the level of unemployment, P the level of elderly population and G the level of economic globalization. Upper-case letters indicate the presence of a condition and lower-case letters indicate the absence of a condition – that is, E indicates a high economic growth rate and e indicates a low economic growth rate. Cases are named by the state name plus a number, for example China in 1990 is written as China1, China in 2000 is China2 and China in 2010 is China3.

Table 9.7 Summary table of all fuzzy set scores

Cases	SE	P	G	W
China1	0.6	0.16	0.31	0.83
China2	0.9	0.47	0.32	0.51
China3	0.81	0.63	0.37	0.51
HongKong1	0.73	0.69	0.95	0.33
HongKong2	0.35	0.88	0.95	0.67
Hongkong3	0.54	0.94	0.96	0.67
Japan1	0.79	0.92	0.46	0.51
Japan2	0.32	0.99	0.36	0.33
Japan3	0.15	1	0.3	0.51
Korea1	0.86	0.05	0.51	0.33
Korea2	0.64	0.53	0.48	0.67
Korea3	0.6	0.88	0.47	1
Singapore1	0.96	0.1	0.94	0.33
Singapore2	0.61	0.54	0.93	0.33
Singapore3	0.75	0.72	0.94	0.51
Taiwan1	0.97	0.3	0.67	0.17
Taiwan2	0.74	0.7	0.68	0.33
Taiwan3	0.39	0.86	0.69	0.51

9.3 Necessary conditions for the outcome 'welfare development'

Based on the set-theoretic method, a necessary condition is always present when the outcome occurs. In other words, the outcome is a subset of the necessary condition. Therefore, testing necessary conditions must be the first step for a standard fsQCA analysis. Table 9.8 shows the results of the analysis of the conditions for the outcome 'welfare development'. Both Ragin (2006) and Schneider and Wagemann (2012) suggested considering a condition to be a necessary condition only if its consistency score is very high; the threshold for a condition to be necessary has to be at least 0.9.

According to the productivist thesis (Holliday, 2000), the development of social policy is subordinate to economic growth which supposes that economic growth is the necessary condition of welfare change. Therefore, in the analysis, the economic condition was added to test the necessity to the outcome welfare development. Table 9.8 shows the results of the necessity test.

Table 9.8 Analysis of necessary condition for the outcome 'welfare development'

Condition tested	Consistency[37]	Coverage[38]	RON[39]
E	0.761	0.624	0.626
SE	0.822	0.638	0.600
P	0.836	0.666	0.637
G	0.798	0.640	0.622
e	0.641	0.835	0.906
se	0.604	0.863	0.931
p	0.526	0.717	0.858
g	0.615	0.830	0.908

Note: RON=Relevance of Necessity
Lower case denotes the negation of the corresponding condition.

The results reveal two important findings. First, for the economic condition, the consistency score is far away from the threshold 0.9; this is contrary to the basic argument of the PWC thesis. The XY plot (*see* Figure 9.1) illustrates this result visually.

Recall from Chapter 5, for a condition to be necessary, all cases should be located around or below the bisecting line (Ragin, 2000). In Figure 9.1, six cases (China1, HongKong 2, 3, Korea3, and Japan2, 3) are located above the line. Of the six cases, four are located far away from the bisecting line. Indeed, only six cases (Korea2, Taiwan3, Singapore3, Japan1, China2 and China3) are typical cases for economic performance to be a necessary condition of welfare development. It is therefore inappropriate to argue that economic growth is not a necessary condition. In addition, in this study, no single condition passed the 0.9 threshold. In this case, therefore, there is no prerequisite for the welfare development.

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[37] The consistency value is one of the most important figures in set-theoretic method analysis. Here, it assesses the degree to which the condition is in line with the statement of necessity. In other words, the higher the value, the closer the condition needs to be for the outcome. For more details, *see* Chapter 5.2.4.

[38] The coverage measure for necessary conditions measures the relevance of a necessary condition. A high value indicates relevance, whereas low values indicate triviality. This was considered only when conditions passed the consistency test. For more details, *see* Chapter 5.2.4.

[39] RON provides another parameter for assessing the relevance of a necessary condition. In some cases, a condition may have high values of both consistency and coverage measures, but is a still trivial necessary condition (for example, the outcome and the condition are skewed toward high membership). Therefore, the RON value assesses whether a necessary condition is a trivial necessary condition. Low values indicate triviality and high values relevance.

Figure 9.1 Economic growth for the outcome 'welfare development'
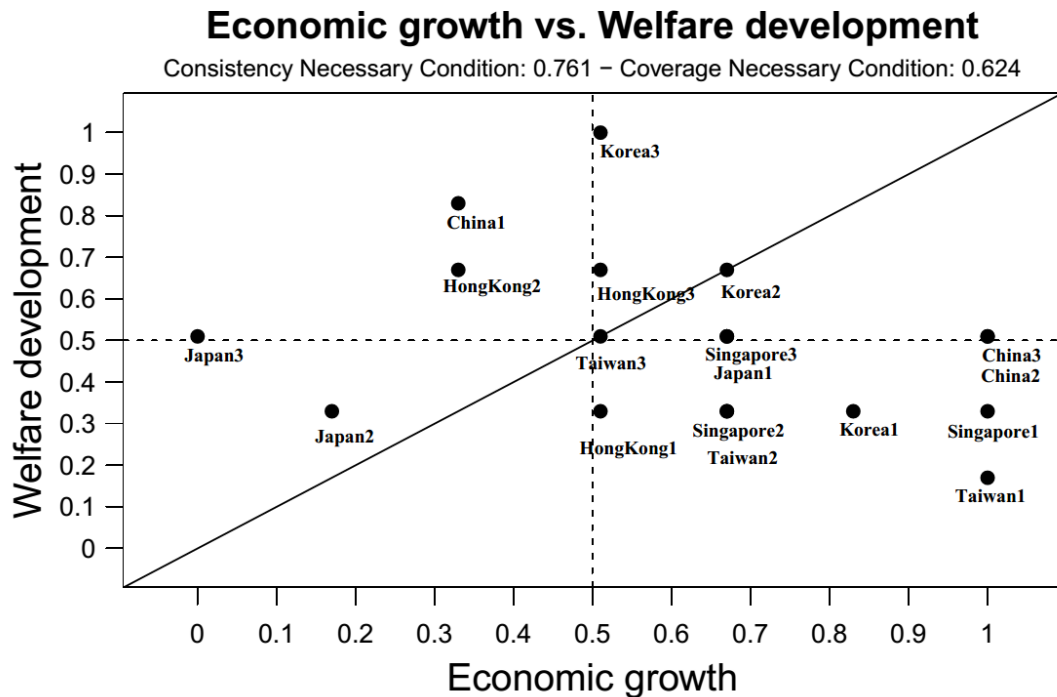
9.4 Sufficient conditions for the outcome 'welfare development'

The next stage of the fsQCA procedure was the truth-table algorithm which transforms the fuzzy-set scores into a truth table (for details, *see* Chapter 5.2). The fsQCA procedure employed here was carried out using the software R (R Core Team, 2014) with the QCA Package (Dusa & Alrik, 2014) and the SetMethod Package (Quaranta, 2013).

Table 9.10 shows the truth table based on the fuzzy-set scores for socio-economic condition (*SE*), elderly population (*P*), globalisation (*G*) and welfare development (*W*). The table also includes the sufficiency inclusion score – that is, the degree to which the fuzzy-set membership scores of all cases in combination are sufficient for the outcome, and the PRI (proportional reduction in inconsistency) scores show whether there is a simultaneous subset relation between outcome and non-outcome. A cut-off point of the sufficiency inclusion score was used to determine whether a configuration set should receive a positive (1) or negative (0) score on the outcome. According to

Ragin (2008), the cut-off point should be over 0.75, and the gap between the consistency scores could help to determine the cut-off point.

Table 9.10 shows that the consistency scores dropped dramatically from 0.866 to 0.822. So the consistency threshold was therefore set at 0.85. Consequently, the first seven rows have a positive outcome and the eighth row has a negative one. The last eight rows with no empirical cases are logical remainders; these configurations do not have a score for the outcome (indicated by '?' in Table 9.9).

Table 9.9 Truth table

Row	SE	P	G	Outcome	Incl	PRI	N	Cases
4	0	1	1	1	0.961	0.818	2	HongKong2, Taiwan3
6	1	1	0	1	0.939	0.731	4	China3, Japan1, Korea2&3
5	1	0	0	1	0.910	0.676	2	China1&2
2	0	1	0	1	0.866	0.474	2	Japan2&3
8	1	1	1	0	0.822	0.408	5	HongKong1&3, Singapore2&3, Taiwan2
7	1	0	1	0	0.746	0.225	3	Korea1, Singapore1, Taiwan1
1	0	0	0	?	1	1	0	
3	0	0	1	?	0.978	0.817	0	

Notes: Incl= sufficient inclusion score; N= the number of cases with membership in the respective configuration higher than 0.5; Cases = the list of these cases; ? denotes that the configuration is a logical reminder in the analysis; Row=the number of truth table row. The truth table was generated by R.

In the next stage, Boolean algebra was used to minimise the truth table to identify the causal conditions that are sufficient for producing the outcome. The most complex solution was generated without 'simplifying assumptions'. Simplifying assumptions are statements about the hypothetical outcome of logical remainders. That is, only truth-table rows with a positive outcome are involved in making the most complex solution. For example, in this study, the most complex solution was generated by using

the first four truth-table rows. In contrast, the most parsimonious solution of fsQCA is attained if the positive cases are 'true', the negative cases are 'false' and the remainders are 'don't care' in the minimisation procedure. Here, the solution was generated by including all the truth-table rows except for row 8 and 7 at 0 in outcome into the minimisation. As there was no clear direct interpretation, the intermediate solution was not involved in this study.

This study focuses more on the most complex solution as this is the most conservative approach (Schneider & Wagemann, 2012). The most parsimonious approach is described in a footnote.[40]The results of the analysis of the sufficient conditions for the outcome 'welfare development' are displayed in Table 9.10.

Table 9. 10 Analysis of sufficient condition for the outcome 'welfare development'

Solution	*se*P*	+	*SE*g*	→	*W*
Coverage of cases	HongKong2, Japan2&3 Taiwan3		China1&2&3 Japan1 Korea2&3		
Consistency	0.855		0.889		
Raw coverage	0.567		0.564		
Unique Coverage	0.251		0.247		
PRI[41]	0.514		0.654		
Solution consistency: 0.830		**PRI: 0.530**			
Solution coverage: 0.814					

The fsQCA found that the outcome 'welfare development' was the product of the conditions (weak socio-economic condition AND high level of elderly population) OR (strong socio-economic condition AND low degree of globalisation). In the fuzzy-set

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[40] The fsQCA analysis found that the most parsimonious soloution of the outcome 'welfare development' was a low degree of globalisation (denoted as g) or weak socio-economic situation (denotes as e). That is, high levels of elderly population or a low degree of globalisation can lead to high levels of welfare development.
In fuzzy-set notion, the result is
$g + se \rightarrow W$ (consistency: 0.830, coverage:0.824, PRI: 0.542)

[41] PRI stands for proportional reduction in inconsistency (Schneider & Wagemann, 2012). A low PRI value suggests the triviality of the sufficient condition.

notion, in which the upper case refers to the presence of a condition, and the lower-case to the absence of one, and '+' denotes logical *or*, '*' denotes logical *and*, the result is:

$$se * P + SE * g \rightarrow W$$

This reveals several important findings. First, it is clear that there are two paths towards welfare development: 1) a weak socio-economic situation in combination with a high level of elderly population (*se*P*); and 2) a strong socio-economic situation in combination with a low degree of globalisation. The consistency value[42] of the solution term (0.830) is satisfactory. In addition, both paths pass the consistency threshold of 0.75, suggesting that either of the paths is sufficient but not necessary for the outcome.

It should be noted that no single condition is individually sufficient for the outcome. This means that for these eighteen cases, welfare development cannot occur under just one condition, and among these three conditions, the condition of socio-economic situation appears in both paths but in opposite directions. This indicates that welfare development can occur in both a weak socio-economic situation and a strong socio-economic situation. So although a strong or weak socio-economic situation is not a sufficient condition for welfare development, socio-economic change plays a crucial role in influencing welfare developments.

In addition, a low degree of globalisation can also facilitate welfare development, but only when the socio-economic situation is good. This finding does not support any current arguments regarding the effect of globalisation on welfare spending[43].

A weak socio-economic situation in conjunction with high levels of elderly population can also improve welfare development. This is in accordance with the industrialist

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[42] Recall that consistency measures the degree to which the solution is sufficient for the outcome, and coverage measures the proportion of membership in the outcome that is explained by the solution term (Ragin, 2000).

[43] Detailed explanations are discussed in Chapter 10.5.

thesis that a government should respond to the social needs of the elderly and the unemployed.

The coverage of the solution term (0.814) is also high. Table 9.11 presents the cases' membership scores of the three paths and the outcomes.

Table 9.11 Membership scores of cases in the sufficient path

Cases	Outcome welfare development	SE*g	se*P
China1	**0.83**	**0.6**	0.16
China2	**0.51**	**0.68**	0.11
China3	**0.51**	**0.63**	0.2
HongKong1	0.33	0.05	0.27
HongKong2	**0.67**	0.05	**0.65**
HongKong3	**0.67**	0.04	0.46
Japan1	**0.51**	**0.54**	0.22
Japan2	0.33	0.32	**0.69**
Japan3	**0.51**	0.15	**0.86**
Korea1	0.33	0.49	0.05
Korea2	**0.67**	**0.52**	0.36
Korea3	**1**	**0.53**	0.4
Singapore1	0.33	0.06	0.05
Singapore2	0.33	0.07	0.4
Singapore3	**0.51**	0.06	0.25
Taiwan1	0.17	0.33	0.04
Taiwan2	0.33	0.32	0.26
Taiwan3	**0.51**	0.31	**0.62**

Note: Cases that are 'in' a specific set are indicated in **bold**.

Nine (of the eleven) cases' welfare development can be broadly explained by at least one of the two paths. For two cases, the solution paths do not present when the welfare development presents. Specifically, the cases HongKong3 and Singapore3 have welfare development, but the combination of causes cannot explain the reason. These two cases are deviant cases in terms of coverage (Schneider & Wagemann, 2012, p. 308) and are located in the upper left quadrant of the XY plot (*see* Figure 9.2) of the solution term. This suggests that although there are two clear paths towards welfare development, they are not the only ones, other (combinations of) factors may also have caused the outcome. Comparing these two cases with cases on the same truth-table row (HongKong1, Singapore2 and Taiwan2) might provide the answer as they have similar membership scores of the three conditions, but with different outcome values.

Figure 9.2 Sufficient conditions for the outcome 'welfare development'
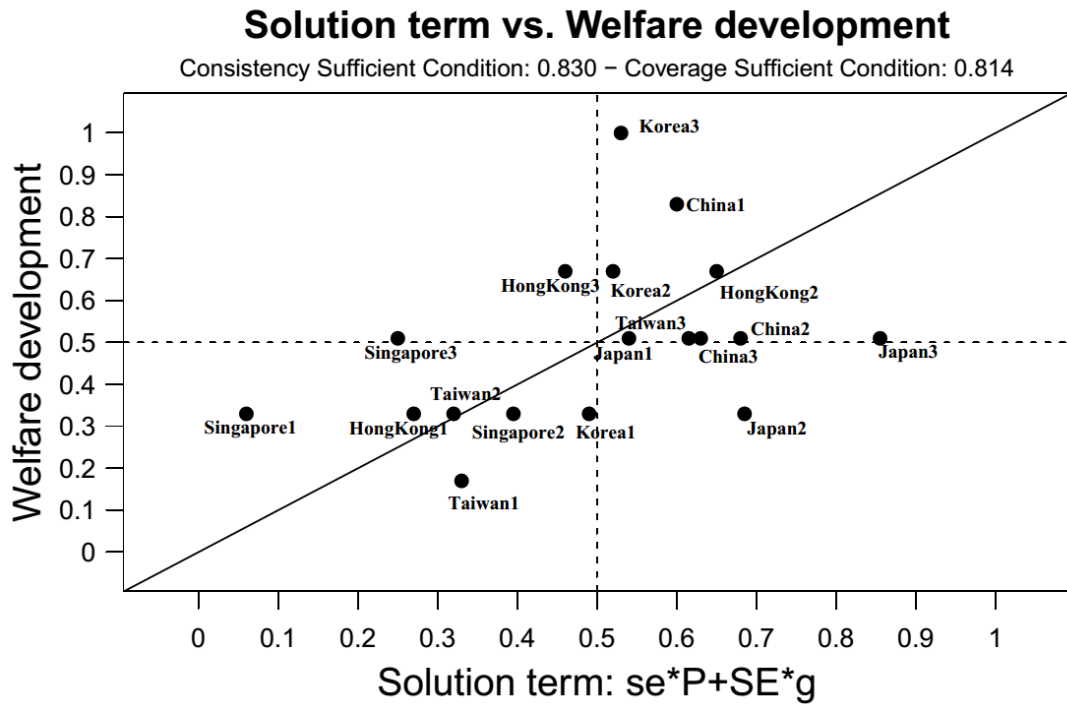
In the case of Singapore, the improvement of the family policy between 2000 and 2010 caused the difference in the welfare development set. The reason for this could be Singapore's low fertility rate. In 1990, the fertility rate in Singapore was about 1.87 per woman and it decreased to around 1.48 in 1999 (The World Bank, 2014). Consequently, the two-child policy was abolished in 2001 in order to solve this demographic issue. However, the situation did not improve – the fertility rate continued to fall to 1.15 per woman, the lowest level in Singapore's history. This forced the government to implement more comprehensive policies to boost fertility growth. As a result, compared with 2000, Singapore extended the duration of maternity leave and expanded the benefits to cover the third and the fourth child in a family.

In the case of Hong Kong, political influence might be the reason. Comparing HongKong1 with Hong Kong3, the pension and health-care service had improved in 2010. This was especially true for the pension system through the implementation of the MPF pension scheme in 2000s, when the fuzzy score of pension has increased significantly. In fact, debates about pension reform in Hong Kong started in the 1970s

and lasted for years. It was not changed until the introduction of the MPF. So why was it so difficult? What was the difference of Hong Kong between 1990 and after?

Examination of the history of the establishment of the MPF in Hong Kong suggests that political influence and democratisation may be the answer. Before the 1980s, Hong Kong's political powers were dominated by the Governor and the Executive and Legislative Councils. The Governor's power was similar to that of an absolute monarch (Miners, 1995, p. 69). Until 1985 when Legislative Council members could be indirectly elected, all the members of the two Councils were either officials or were appointed by the government (Kwon, 1998, Lo, 1997). The Hong Kong government was highly autonomous during that period; social policies were introduced based on their own preferences. The power to influence the decision-making process was very limited in Hong Kong before the 1980s (Chow, 1998), and for a long time, the Hong Kong government adopted a minimalist approach to social policy, until direct elections were introduced for the LegCo (Ho, 2001).

In 1966, an inter-deparmental working party had suggested the introduction of public assistance and a contributory social insurance scheme to cover short-term risks. This was only partly adopted by the government, which rejected the idea of establishing a contributory social insurance scheme, as the administrative cost was too high (Ho, , 2001). In the following three decades, there were several proposals for establishing a contributory social insurance scheme but all of them were rejected by the LegCo. For example, the government rejected social insurance in the White Paper on Social Welfare published in 1973 for three reasons: compulsory contributions would not be accepted by the people of Hong Kong, employers might have financial difficulties affording it, and it might take a long preparatory time to establish the necessary administrative machinery (Hong Kong Government, 1973).

In 1977, the government refused again in the Green Paper on Social Security to establish a compulsory social insurance scheme (Hong Kong Government, 1977). In 1987 the government again rejected a proposal for a contributory social security scheme. The main reason for these rejections during this period was the reluctance of the British colonial government to establish any compulsory retirement scheme. The

LegCo during this period was dominated by members of the business sector who did not intend to see Hong Kong become a welfare state (Kwon, 1998).

In addition, whilst education, the public housing system, health-care and other social welfare services influenced the lives of the majority of Hong Kong's residents, most people still did not realise that the government should be responsible for providing welfare services, and, as in other states in the region, the family played an important role in welfare provision (Kwon, 1998, Lau, 1982). It is difficult to put pressure on such a political attitude to achieve social goals.

This situation really changed in October 1991. Through the Sino-British negotiation for Hong Kong at that time, democratic reform was also stimulated. The elections for the Urban Council in 1982 and for the LegCo in 1985 marked the beginning of Hong Kong's democratic development. In 1991, the government added eighteen directly elected seats to the LegCo, and nearly all of the councillors supported the introduction of a Central Provident Fund (CPF) to provide old-age income protection (Hong Kong Government, 1991).

However, as the CPF required the government to share in the scheme, the government again rejected the proposal giving the reason of expensive administrative burdens (Chow, 1998). Instead, the government introduced a new old-age income protection scheme, the Old Age Pension Scheme (OPS) (Secretary for Education and Manpower, 1994). The OPS proposed a pay-as-you-go system by which the elderly could receive immediate benefits from the contributions of the current working population. This scheme was also rejected by the Chinese government, as it feared that it could be a heavy financial burden after the handover, as the aging population was increasing (Ho, 2001, Kwon, 1998). Consequently, the Hong Kong government decided to drop the scheme before it was submitted to the LegCo. Finally, in 1995, after decades of debate, the Mandatory Provident Fund office was established, and a new system for protecting old-age incomes was put into practice.

This long history of pension reform in Hong Kong reflects the development of democratic progress and the political influences in welfare development. In this case,

therefore, the political factor could be the extra condition for explaining the case of Hong Kong.

The case of Japan2 should have shown positive welfare development because of its high membership of the solution path (*se*P*), but it did not. This case is located in the lower right quadrant in Figure 9.4. This is a deviant case in terms of consistency of outcome and is a true logical contradiction (Schneider & Wagemann, 2012, p. 307). According to Schneider and Wagemann (2012), comparing deviant cases for consistency is only meaningful when the cases are typical. Typical cases are those that are both in line with the statement of sufficiency (above the bisecting line) and good empirical instances of the outcome and conditions.

In this thesis, such cases are Korea2 and 3, HongKong2 and China1. This finding suggests that there may be factors which prevent the development of a welfare system. The relatively worst economic condition may be the reason. Japan's economic performance is the worst within the six states. It was hit hard by the two financial crises of 1997 and 2008. After the first Asian financial crisis, Japan took longer to recover as it was the only state among the six in this study which was still suffering from the economic recession in 1999. Even using a comparatively generous benchmark (for example 2% of GDP growth rate) to measure Japan's economic performance, Japan still underperformed from the beginning of the 1990s for more than ten years.

Kuttner and Posen (2001) referred to this period as the "great recession". Public money was spent on numerous stimulatory packages to revitalize the economy during this period, but the combined debts of the central and local governments rose to 7.0 trillion yen at the end of March 2004, over 150% of the GDP (Tang, 2007). To address this dramatically increasing debt, the government reduced the funding for public housing. As a result, the construction of public housing went into decline. In addition, the Publicly Operated Housing Act was amended in May 1996 to abolish the classification of the public housing. The income criterion for public housing eligibility was lowered to only cover the lowest 25% of the population in 1996 compared with 33% in the 1970s (Tiwari & Hasegawa, 2001).

The standard of the rent for public housing was also changed. It used to be based on construction costs, but after the reform it depended on the income of tenants and the location of the housing. Consequently, households with an income over the criterion had to pay the market rent. In 2005, the government decided to terminate the five-year housing construction plan and no new public rental houses were built. The new public housing policy after the financial crisis ended the Japanese government's involvement in the direct provision of housing services to the poor. This downgraded the fuzzy score of Japan's public housing policy significantly in the 2000s.

In addition, despite there being no single condition which can be regarded as a sufficient condition for the outcome, the fsQCA finding shows that there are four INUS conditions (*se, SE, P, g*) for 'welfare development'; they are insufficient but necessary parts of a solution path which itself is unnecessary but sufficient for the outcome. It means all these conditions cannot on its own lead to welfare reform. They have impact only when combine with other elements.

Finally, the slightly higher unique coverage values of the path *se*P* (0.251) indicate that compared with *SE*g*, it is slightly more important. This could be because of the aging population issue in the region. The elderly population has become a principal challenge for East Asian governments today.

9.5 The robustness of the finding

Although set-theoretic methods have had numerous advantages in this study, it is a technique which has frequently been challenged by scholars, especially in recent years. Most concerns have been raised by simulation studies. For example, Lucas and Szatrowski (2014) tested 70 different solutions and only on three occasions did QCA find the correct causal mechanism. Similarly, Hug (2013) produced unstable findings using drop-one and drop-two tests. So in this section, the robustness of this study will be tested.

Schneider and Wagemann's (2012) suggest the robustness test should include changes in consistency levels, case selection and calibrations.

First, in the analysis of sufficient conditions, the decision about where to set the raw consistency threshold was difficult. This study originally chose 0.85 as the threshold. Consequently, the truth table (*see* Table 9.9) row *SE*P*G* with a raw consistency value of 0.822 and containing five cases was excluded from the logical minimisation. In this test, this row is included from the logical minimisation. This approach led to the following most complex solution: $SE * g + P \rightarrow W$ (consistency 0.667, coverage 0.920). One of the two paths is identical to the original solution ($SE * g + se * P$). The second path now is P which is a superset of the original path $se * P$. Hence, the solution is robust in terms of using different parameters of fit. In addition, as expected, the new solution was less consistent but achieved higher coverage.

The second test regards the effect of dropping cases. There are three possible results. First, theoretically, dropping a case which contradicts a statement of sufficiency increases consistency and slightly decreases coverage. In this study, Japan2 is a deviant case in terms of consistency. If this case is dropped, the solution is $SE * g + se * P \rightarrow W$ (consistency 0.859, coverage 0.807). Second, theoretically if a dropped case is uncovered, the solution path should have higher coverage and slightly lower consistency. HongKong3 and Singapore3 are two deviant cases for coverage in this study. If both are dropped, the solution is $SE * g + se * P \rightarrow W$ (consistency 0.811, coverage 0.822). Finally, dropping a typical case should leave both consistency and coverage almost unaffected. In this test, China1 was dropped. The solution is $SE * g + se * P \rightarrow W$ (consistency 0.818, coverage 0.824). Hence, the solution paths remain the same in this test regardless of dropping cases. Only the consistency value and coverage value changed slightly. The result is therefore robust in terms of dropping cases.

Finally, the test of the effects of changing calibration. In the fsQCA, the choice of the 0.5 qualitative anchor was the most important decision in the calibration process (Schneider & Wagemann, 2012). This test recalibrated the demographic condition by setting the cross-over point at 8% instead of 7.1%, then the solution term was $SE * g + P \rightarrow W$ (consistency 0.693, coverage 0.916). As P is a superset of *se*P*, the solution is robust.

In addition to above standard robustness tests, one more test regarding the socio-economic condition has been done. In this research, the average score of economic performance and the level of unemployment has been employed for measuring the socio-economic condition. This approach may raise a question regarding the use of average score. China1 in particular, it scores 0.33 on the set of economic performance, and 0.87 on the set of unemployment. With the average approach, the fuzzy score of China1's socio-economic condition is 0.6 which is 'in' the set of socio-economic condition. However, if employ the minimum principle for calculating this condition, China1 will score 0.33 which makes it out of the set. Therefore, this test will separate the two measurements of socio-economic condition to test the robustness of the result.

By including economic performance (E) and unemployment population level (P) in the logical minimisation, following the same procedure of analysis, the result is $e * P + u * P + E * U * g \rightarrow W$. After logical minimisation, the equation is $P * (e + u) + (E * U) * g \rightarrow W$. This indeed presents the same paths to the finding in Table 9.10 as $e*u$ is a subset of $e+u$. In other words, there are two paths towards welfare development: 1) a high level of elderly population together with weak economic performance or high unemployment rate; and 2) a strong economic performance and low unemployment rate in conjunction with a low degree of globalisation.

In summary, despite there are serious considerations regarding the robustness of the QCA, the four tests discussed in this section demonstrate that the solution in this study is very robust.

9.6 Remarks on the findings

In this chapter, I have explored the causal conditions for welfare development in East Asia. The fsQCA analysis of the welfare development of six East Asian states from 1990 to 2010 demonstrates that economic growth is not a necessary condition for East Asian governments to provide better welfare services. This finding is in contrast to most East Asian welfare literatures. Indeed, there are no clear necessary conditions for

welfare development in East Asia. This means that there is no pre-condition for East Asian governments to pursue welfare reform.

The analysis of sufficient conditions has revealed two paths to welfare development (equifinality): the demographic challenge together with a weak socio-economic situation or with a strong socio-economic situation together with a low degree of globalisation can encourage governments to pursue welfare development. It should be noted that any of three conditions – socio-economic situation, elderly population and globalisation, cannot on its own lead to welfare reform. In addition, through the case studies of Hong Kong and Japan, political influence and serious economic recession could also have affected welfare development.

Finally, this analysis provides a starting point for a discussion on welfare development in East Asia by fsQCA. It could also be expanded to cover more countries and more possible conditions.

Chapter Ten

Discussion

This chapter will critically discuss the findings of this research. Recall that the aim of this thesis is to re-examine the East Asian welfare systems in the last two decades. The thesis consists two parts of the analysis. First, six key policy fields including education, health-care services, family policy, old-age pensions, housing and the protective labour market policy of six East Asian states in 1990, 2000 and 2010 have been re-examined by employing the fsITA analysis. Six welfare models were identified accordingly. The reasons of the diverted development trajectories in the region were explored in the second part of the analysis by employing the fsQCA analysis. Two solution paths were identified as sufficient for welfare reforms. Three cases were selected for in-depth case studies after the QCA analysis based on Schneider and Wagemann (2010)'s case selection strategy.

This chapter will begin with a critical discussion of the factors caused the divergence of East Asian welfare models. It will then move to summarise the common features of the models. And lastly, the chapter will conclude the direction of the development of East Asian welfare models. Finally, the limitation and future research will be discussed.

10.1 The divergence of East Asian welfare models from 1990-2010

The welfare models of the six East Asian states in the past two decades are very diverse based on the FsITA analysis. Eleven welfare ideal types have been identified which have been clustered into six welfare models in this research. The six states were never clustered into one welfare model in the past two decades. In addition, the results also show that the levels of welfare development in the region were different. Therefore, the finding provides limited support for East Asian welfare model thesis. How could we explain these divergences? It was rather difficult to point out one simple factor. However, based on the empirical analysis in Chapter 6, 7, and 9, some possible reasons could be summarised as follows.

First, historical legacy matters. Hong Kong and Singapore as two formal British colonies both emphasize on housing policy as an instrument of economic growth. The

Housing Authority of the colonial governments built numerous public rental and homeownership estates. As a result, the public housing systems of Hong Kong and Singapore are outstanding in East Asia.

Also, similar to Britain, Hong Kong established a series of public-funded social assistance programmes including universal old-age pension programme. These programmes were not financed by common contributory insurance funds. The government is the main provider instead. This is very rare in East Asia, especially before the 2010s. In addition, Singapore's welfare provision – the CPF also has clear British colonial characteristic. Since the provident fund has been regarded as an essential tradition of British colonies. Including Singapore, 20 National Provident Funds exist in formal British colonies in Asia, Africa, and the Caribbean (Dixon, 1999).

Second, the type of economic strategy is important in shaping policy making. Huber and Stephens (2001) argue that there is a clear link between production strategy and the welfare regime. East Asia is not an exception. The export-oriented economic strategy of Korea and Taiwan shaped their social policies to focus more on core industrial workers. This is why major social insurance programmes started with large-scale firms such as National Pension Programmes in Korea. Meanwhile, most welfare programmes are social insurance based that minimise the state provision. Family plays a major role in social protection provision.

China was undergoing a fundamental economic reform in the 1990s and early 2000s from centrally planned economy to market-oriented economy. This change also reflects its policy making. Under the centrally planned economic strategy, public ownership was dominated in the economic system, and labour mobility was restricted and discouraged (Leung, 2005). The welfare system was employment-centred, and based on each work unit. SOE industrial workers and civil servants received heavily subsidised benefits and services, such as housing, food, education and social security benefits for sickness, maternity, work injury, invalidity and death, and old age (Leung, 2005). Therefore, as the finding shows, China in 1990 had the overall most generous welfare policies with high membership scores of education policy, family policy and public housing policy. However, though the benefits were very generous with

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'enterprise welfare', its coverage was very limited. This is also the reason why China is out of the set of old age income protection in 1990.

Through the economic reform from the late 1980s, market-oriented economic strategy has broken the welfare system established by Mao. A series of welfare reforms have been implemented, including the marketisation of the teritary education system and housing system, and built insurance-based pension and health care systems. Consequently, China's welfare model has changed accordingly. The details of these reforms are discussed in Chapter 6 and 7.

The economic strategy of Singapore is very different to Korea, Taiwan and China. The goal of the People's Action Party (PAP) is to build Singapore as an international entrepôt that provides generous tax incentives and allow international capital to own their business operations completely (Chua, 2005). The CPF is very selective that only covers those employed. As the CPF is fully funded by contributions, the welfare system does not involve redistribution mechanism in Singapore, which is a significant competitive advantage for Singapore as an international platform for business.

Third, in addition to economic strategy, the economic performance can also influence the welfare models. In fact, economic performance as a part of the socio-economic condition is a key factor for welfare development. The findings in Chapter 9 show that the socio-economic condition presents in both two causal mechanisms, but in opposite directions. It indicates that the welfare model in the region can shift with both robust and weak economic performance. However, it should also be noticed that the significantly worse economic performance can have a negative impact on welfare development. For example, as discussed in Chapter 9, the case of Japan in the 2000s as a deviant case of consistency should have positive welfare development, but did not. The great recession of Japanese economy could be the reason. Due to the significant underperformed economy, Japan launched a series of welfare reforms to save public spending on welfare. For instance, the pubic housing reduced dramatically during this period. This is also one crucial reason why Japan is the only state in this research has welfare retrenchment in the past two decades.

Fourth, politics have an impact on policy making. The history of pension reform in Hong Kong offers a good example. From the 1970s to the 1990s, several reform proposals have been rejected by Hong Kong colonial governments because the government adopted a minimalist approach to social policy. Consequently, the pension reform took about two decades to finally realised in Hong Kong in 1995.

The influence of partisanship is not involved in this research due to the political systems of China and Singapore are dominated by one party. However, some scholars also argue that partisanship not have strong impact on welfare development in the region. For instance, Yang (2012) compared social policy responses during two economic crises in 1997 and 2008 under Korean center-left Kim Dae-jung government (1998-2002) and the conservative Lee Myung-bak government (2008-2012). The finding shows that welfare expanded under both two ideologically different governments. He, therefore, suggests that the partisanship could have the welfare development, but does not determinant power during the financial hard time.

Fourth, there is no clear evidence that economic globalisation promotes welfare development. States with different levels of globalisation could be in the same welfare model. For example, the level of globalisation of China 1990 and Singapore 2010 are very different. However, both of them have the same welfare ideal type (EhFiPl). Also, cases with high membership scores on economic globalisation such as Singapore and Hong Kong (shown in Chapter 9) do not have a more comprehensive welfare system. Indeed, the finding in Chapter 9 shows that low level of globalisation is a INUS condition for welfare development. That means low level of globalisation combines strong socio-economic condition could lead to welfare development. This finding is to some extent similar to Katzenstein (1985)'s and Park and Jung (2007)'s claims. They both claim that globalisation can have effect for welfare development, but only when combines with other factors.

Fifth, the demographic change is important for policy making. Low fertility rate and ageing population has become a serious social issue in East Asia. In response to these challenges, a number of reforms have launched in East Asian states. For instance, Singapore has abolished two-child policy in 2001. The maternity leave benefits were expanded to cover more than two children. And the duration of the leave has extended

to the ILO standard in 2008. This reform has shifted the welfare model of Singapore from the elementary balanced welfare model to the weak productive balanced model. Similarly, China has abolished one child policy and allowed all couples to have two children in 2015. In dealing with aging population, Japan has raised the official retirement age from 55 to 60 in 1998, and has decided to further raise to 65 in 2025. Moreover, the fsQCA analysis also shows that the aging population has positive impact on welfare development when combines with weak socio-economic condition could enhance welfare development.

Finally, there is no clear evidence show that financial crisis could affect welfare development in the region. Although the welfare models of most cases in this research are changed after the two economic crises, it is not simply because of the worse economic performance. Indeed, the two causal mechanisms of welfare development in Chapter 9 show that socio-economic condition cannot shape the welfare development by itself. It had an impact only in conjunction with other conditions. In a nutshell, there is no single and simple force can urge welfare reform, all the changes of welfare models are resulted from a number of combined influences.

10.2 Are there common characteristics of East Asian welfare models?

Although it is clear that intra-diversity is significant in East Asia, each state has its own path of development in welfare, being influenced by various factors, it is undeniable that there still exist some similarities among these welfare systems.

First, the productivism is still an important feature in East Asia. In fact, it is striking that all the cases possess relatively high degrees of membership of at least one productive welfare dimension. In addition, some classical productive features are significant. For instance, the development of education policy in the region is outstanding. Four of the six states are 'in' the set of education. The public spending on education is especially highlighted. All of the states spent more than 15% of the total government expenditure on education. The low scores of Japan's and Korea's education policy are mainly due to the high tuition fees of tertiary education. Both of them have been classified by the OECD into the group with high tuition fees and less-developed student support systems (OECD, 2012).

In addition to the education, the public expenditure on health care in the region is also on a comparatively high level, especially in 2010, all the six states spent more than 10% public spending on health care. Meanwhile, the coverage of public health care system is also very high in the region.

Second, despite the productivist features are significant, the protective features of the welfare systems are also substantial in some cases. In particular, the welfare systems of Hong Kong from 1990 to 2010, Japan in 1990, and Taiwan in 2010 were more protective than productive. Among the eighteen cases, only five did not show any protective characteristics, and the majority of cases were clustered into the balanced welfare model indicating memberships to both productive and protective dimensions. Although some protective social policies are still under development in the region, it is worth to attention that most cases began to emphasis on social protection. The pension systems of China, Hong Kong, Korea and Taiwan have major reformed towards more protection in 2000s. Especially, Korea and Taiwan have introduced the universal non-contributory based pension programmes. Moreover, the public housing systems are continuing improving in the region as well. Building public rental housing system has put on the agenda of East Asian governments.

Third, intervention is still limited in welfare provision. Most welfare programmes are insurance based, and funded by individual contributions. For instance, despite all the cases achieved high coverage of public health care system, only Hong Kong's is non-contributory based. As a result, the overall private health expenditure in the region is also on a high level. Moreover, the non-contributory pension system is still under development in the region. Though Hong Kong, Korea, Japan and Taiwan achieved non-contributory universal pension protection in 2010, the benefit level is limited. The old-age income protection is still largely relying on social insurance pension programmes. Especially, for Singapore, the CPF which always lies at the heart of Singapore's welfare system, is fully funded by employers and employees. The state intervention is therefore very limited.

Fourth, culture is an important factor to help understanding the welfare ideology in the region. Recall that the Chapter 2 discussed the cultural differences between the East and the West. One significant distinction is family and kin play an important role in

providing social support in traditional Chinese cultural society compared with the religious philanthropy of the West. Based on these arguments, Jones (1990) proposed East Asian Confucian welfare model. Family instead of the government acts as an important provider of welfare. Social policy is limited and is only used for preserving social stability. Therefore, a key assumption of Confucian welfare model is the underdevelopment public welfare system (Chau & Yu, 2005). This viewpoint is proved by the finding. The fsITA result shows that the overall welfare development in the region were laggard. Only one case (Korea 2010) has four policy fields with high membership scores. Nine cases only have no more than two policy fields with high membership scores. This is especially significant in 1990s and 2000s.

In addition, culture also acts as a contextual factor for policy making. The significantly shorter duration of maternity leave in the region is a good example. As discussed in Chapter 6, family takes more welfare responsibility, especially for family policy in East Asia. It is very common that older generation involves in raising a child. As a result, only China, Japan and Singapore meet the minimum duration proposed by the ILO. And Singapore in 2010 is the only case passed the cross-over point of the duration set.

And finally, there is development. The welfare systems are continuing developing in the region. Most East Asian states experienced some major welfare reforms in recent decades. The finding shows that seven (of twelve) changes in this research are radical change. In other words, cases move from one model to another through reforms of some policy fields. China and Taiwan, in particular, had two radical changes. Among the six states, only Hong Kong kept the same welfare model over the past two decades. However, even though, Hong Kong has a major reform of mandatory pension system with the introduction of the contributory pension system MPF in the late 2000s. This reform did not change Hong Kong's welfare model due to its relatively well-developed pension system. The development trajectories of the six cases show that Japan is the only state in the region which had welfare retrenchment during the recent decades. The welfare systems of other five all have been improved, but in different degrees.

In the last, it is important to reiterate again, despite above similarities that exist, the East Asian welfare systems are featured by both similarities and diversities. There is no homogenous, unified East Asian welfare model.

10.3 Where is the next direction?

So where is the next direction of welfare development in East Asia? Would East Asian welfare models move towards the Western welfare models, which generally characterised by emphasis on social protection programmes and state intervention in welfare provision in the future? Or would East Asian welfare models move towards productive welfare, as Holliday stressed.

Apparently, there is no simple answer for this question. The following Table 10.1 summarises the major improvements of social policies of the six states in the past two decades. It is clear that the developmental paths of the welfare systems are complex in the region. States have different emphasis of the development. The productive social policies have been improved in various degrees among the six states in the past two decades. Especially, China, Korea, and Taiwan have launched some major reforms of productive policies, which significantly raised their membership scores of the productivism. Meanwhile, the state interventions are generally weak in the region. Most social welfare are relying on social insurances. If from this point of view, East Asian welfare models stepped more productive in 2010 than in 1990.

On the other hand, the improvements of social protection in the region are also remarkable. Korea and Taiwan, in particular, have introduced a number of new protective policies, including universal non-contributory pension programme which is common in the West, but rare in East Asia. In addition, the increased public expenditures indicate the states strengthened its role in welfare financing and provision. The role of governments are gradually changed from welfare regulator to welfare provider. Hence, from this point of view, Korea and Taiwan, together with Japan and Hong Kong which have well-developed protection policies from 1990 have stepped towards a more inclusive welfare models.

However, it should be noticed that most of these states have improved its welfare service on both productive and protective dimensions. As Korea, while its protective social policies have been largely improved, its improvement of productive social policies are also significant. Therefore, simply say states like Korea have moved towards Western welfare model is inaccurate.

Instead, East Asian states present the divergence of developments due to different historical backgrounds and economic and political strategies. At the same time, the different economic performance could reinforce such divergence. And it is clear that most states choose to put emphasis on both productive and protective dimensions which stands on the middle of Western model and classical East Asia productivist model.

Table 10.1 Summarise of major policy improvements in the region 1990-2010

States	*Productive social policy*	*Protective social policy*	*The role of government*
China	✛ Achieved free 9-year compulsory education ✛ Largely expanded the coverage of health care system and reduced the private spending, benefited from two major reforms of health care system ✛ Slightly prolonged the duration of benefits	✛ Expanded the coverage of mandatory pension system and unemployment income protection ✛ Built a new public rental housing system	Weak state intervention, mainly based on social insurance
Hong Kong	✛ Prolonged free compulsory education to 12 years ✛ Freezing the tuition fees of tertiary education and non-selective student loans are available	✛ Introduced MPF pension	The government has provided some non-contributory universal benefits, but the benefit level is limited.
Japan	✛ Slightly increased affordability of tertiary education by introducing new student loan programmes ✛ Slightly increased the benefit level of maternity leave		The government has provided some non-contributory universal benefits.
Korea	✛ Extended free compulsory education to 9 years ✛ Non-selected student loans are introduced ✛ Dramatically increased the public spending on health care. Meanwhile, private expenditure reduced significantly	✛ Introduced the non-contributory universal pension programme ✛ Dramatically expanded the coverage of mandatory pension ✛ Introduced more public rental housing programmes ✛ Introduced the EIS	State is gradually increasing intervention on welfare provision. Some non-contributory universal welfare programmes were introduced. However, most others are still based on social insurances.

States	Productive social policy	Protective social policy	The role of government
Singapore	✚ Abolished two-child policy, and extended the duration of maternity leave		State intervention is very limited. Welfare is largely relying on the CPF.
Taiwan	✚ Introduced new National Health Insurance ✚ More subsidy programmes and student loans for tertiary education were introduced	✚ Introduced new Labour Pension Programme and universal non-contributory pension programme ✚ Implemented unemployment insurance programme ✚ Started to put emphasis on public rental housing	State is gradually increasing intervention on welfare provision. Some non-contributory universal welfare programmes were introduced. However, most others are still based on social insurances.

10.4 Limitations

A major limitation of this study was data availability. Although the set-theoretic methods overcame some data issues by allowing comparison of the qualitative cases quantitatively, the data limitation was still significant.

The first challenge is the cases of Hong Kong and Taiwan. As neither of them is a sovereign state, they are not included in some databases (such as the KOF index). In particular, for the case of Taiwan, it is excluded from almost all the datasets (and only included in the ADB ones). This makes comparison difficult to some extent, as different data sources may cause the results to be imprecise.

Moreover, because this study is dated back to 1990, more than twenty-five years ago, some data were unavailable. For example, for examining the coverage and net replacement of pension systems, there were no good quality quantitative data, so the researcher has to acquire limited available information from OECD reports and journals to estimate the situation. This may have affected the accuracy of the calibration for welfare dimensions.

The second limitation was the case of China. Unlike the other states, China's welfare development generally followed the approach of 'one country, separate systems' (Wong, 1998). Instead of providing one universal system for all citizens, many different systems were implemented in parallel. For example, the health-care insurance and pension systems which were examined in this study were different in rural and in urban China. It was difficult to combine them to allow them to be compared nationally. Hence, in this case, the research mainly focused on the welfare services in urban China. The case of rural China was considered as an additional condition to increase or decrease the fuzzy scores of the case.

In addition, this study only covered six welfare dimensions which may not reflect the whole picture of the welfare development of these states. It is well worth adding more indicators in future research.

Similar issues may also affect the findings of casual mechanism of welfare reforms. Only three independent variables were included in the analysis process. This was

primarily due to the relatively small size of the cases. There may be other influential factors which could lead to welfare development. For example, through the case analysis of the development of mandatory pension systems, the research also found that political influence was important for welfare development in Hong Kong.

And lastly, as already discussed in Chapter 4 and 9, there are ongoing debates regarding the set-theoretic methods in recent years. However, considering its advantages on East Asian welfare research, the set-theoretic methods is still comparatively more appropriate for this research.

10.5 Future research

What steps could be taken next? The first step could be to include a wider range of cases in the comparative analysis. The important reason for this is that this thesis did not answer an argument of the PWC theory – whether the productivist welfare model is unique to East Asia. It is therefore worth going beyond East Asian cases to consider, for example, Southeast Asian countries and OECD members to test this argument.

In addition, in response to the limitation regarding to the choice of welfare services, more welfare dimensions could be added to the fsITA analysis. For example, the productive dimensions could also involve active labour market policies.

Also, in addition to the set-theoretic methods, future research could also employ a mixed methodology in the study of welfare reform. In this thesis, by dealing with small-N issues, only three conditions were chosen based on the literature and on previous research studies. However, future studies may also pick up all possible conditions, and use another technique such as regression to choose the most possible relative condition to the outcome. Then the fsQCA could be used to explore the solution path.

Finally, in this study, the dependent variable was welfare development. The study did not explore the reasons why some states have a more productive or a more protective welfare system than others? A recommended research direction would therefore be to examine the conditions which lead a state towards a more productive or a more protective welfare system.

Chapter Eleven

Conclusion

In this final chapter, the thesis is summarised. The main findings and the contributions are discussed

11.1 Summary of the thesis

Although scholars have argued over Esping-Andersen's (1990) *The Three Worlds of Welfare Capitalism* from its ideology to the methodological issues, it has to be admitted that his work has cast a long shadow over comparative social policy debates for over twenty-five years now. Generally, his typology relies on Weber's (1949) methodological essay which provides a bird's eye view of the world of the welfare state, rather than focusing on an individual state or individual cases. By drawing on a range of early comparative social policy studies (Flora 1986; Marshall, 1981, 1965; Titmuss, 1974; Wilensky, 1975), he identified three models or ideal types of welfare state which he named the conservative, the liberal and the social democratic regime types. Esping-Andersen clustered eighteen OECD countries by their respective degrees of decommodification and stratification. Japan was the only East Asian state which was included in his work. According to Esping-Andersen (1999), the Japanese welfare system was found to have the characteristics of both the conservative model in terms of familialism and fragmented social security programmes, and the liberal welfare model in terms of its limited social expenditure. This was the first time that East Asian states had been combined with western comparative welfare research studies.

Although Esping-Andersen's work had an enormous impact on comparative social policy research, it also stimulated major debates in this field of study. The details of the debates were reviewed in Chapter 2.

In short, scholars have argued about how many welfare types exist, where particular countries should be placed in typologies and whether some key welfare elements are omitted (*see*, for example, Bambra, 2004; Bonoli, 1997; Castles & Mitchell, 1993; Ferrera, 1996; Leibfried, 1992; Lewis, 1992; O'Connor, 1993; Orloff, 1996; Sainsbury,

2000, 1994) and the appropriate methodological issues (*see*, for example, Bambra, 2006; Castles & Mitchell, 1993; Clasen & Sigel, 2007).

Since Esping-Andersen's original typology covered only eighteen high-income OECD countries, it left space for more countries to be assessed. The expansion of Esping-Andersen's typology was started in 1992 by Leibfried in order to encompass Southern European countries. It was further expanded to examine antipodean cases (Castles & Mitchell, 1993), Latin American cases (Franzoni, 2008; Rudra 2007;), Eastern European cases (Bohle & Grekovits, 2007; Fenger, 2007), African cases (Seekings, 2008) and East Asian cases (Holliday, 2005, 2000; Holliday & Wilding, 2003; Kwon & Holliday, 2007).

Typologies of East Asian welfare research have been directly influenced by debates in western comparative welfare studies. Some scholars have tried to use these mainstream western theories to explain the welfare development in East Asia (*see*, for example, Esping-Andersen, 1997; Ku, 1997; Kwon, 1997; Lee & Ku, 2007), whilst others have argued that the differences between the East Asian countries and the west make it inappropriate to cluster East Asian states to the western typology (*see*, for example, Holliday 2000; Jones 1993,).

The most influential thesis of East Asian welfare was proposed by Holliday (2000), who argued that social policy in East Asia is different from that in the West. He therefore suggested a fourth welfare regime which he called the 'productivist' world of welfare capitalism (PWC). The key characteristic of this welfare regime is that social policy is primarily driven by economic goals in East Asian states (Kim, 2008). However, scholars have continued to question this typology and the debates are mainly focused on two viewpoints. The first argument is about whether it is analytically useful to talk about a homogenous East Asian welfare type that covers differences between cases (Goodman *et al.*, 1998; Kwon, 2005, 1998) and the second is that the PWC theory may not capture recent welfare development in East Asia when the democratic influence in some territories and the impact of economic crises in East Asia since 1997 are taken into consideration (Kim, 2008; Lee & Ku, 2007; Peng & Wong, 2004; Wilding, 2008).

In addition to these theoretical debates on East Asian welfare literatures, scholars have also argued that Holliday's analysis lacks quantifiable, systematic indicators (Kim, 2008). Indeed, compared with comparative social policy research studies, the methodological issue is one crucial weakness of East Asian cases. Most works rely heavily on various unsystematic analyses which are based on selective case evidence. They are consequently impossible replicate. In addition, China has always been absent from the mainstream comparative welfare research studies of East Asia. As it is the largest economy in the region regardless of its geographic size or economic volume, it is incomplete to talk about East Asian welfare regimes without including China.

Taking these issues as a starting point, this current research study has therefore focused on six East Asian states, China, Hong Kong, Japan, Korea, Singapore and Taiwan, and their welfare systems from 1990 to 2010 have been analysed. Chapter 3 contained a summary of the reasons for the case selection: it was mainly due to their popularity in existing East Asian welfare research, except for China, especially since the PWC thesis is also built on the case analysis of these cases. The research period chosen was from 1990 as this was the year in which Esping-Andersen proposed his milestone work. The choice of 2000 was because that was the year in which the PWC theory was published. The research period ended in 2010 because this period contained two financial crises in the region.

The study was designed to find answers to three main questions. First, does East Asia have a homogenous productivist welfare model, especially after suffering from two financial crises? Second, if reforms did occur in these six states, what were their reform trajectories? Have they followed the same paths of development? Finally, under what conditions have governments implemented the reforms?

In order to assess the six welfare systems, following Hudson and Kühner's (2012) and Rudra's (2007) typology, the proposed conceptual framework was described in Chapter 3. The welfare systems were measured in two welfare dimensions: the productive welfare dimension and the protective dimension. Each dimension contains three social policy areas. Following the ideology of Holliday, the productive dimension focuses on investment in human capital including education, health-care services and family policy, whilst the protective dimension includes old-age income

protection, public housing policy and passive labour market policy. Based on the weighting of the productive and protective dimensions, welfare systems were classified into four aggregate models: productive, protective, balanced and underdeveloped. A further fifteen sub-models were identified in Chapter 8.

On the practical level, the methodology employed was the set-theoretical approach. Two methods were used in this study: fuzzy-set ideal type analysis (fsITA) and fuzzy-set qualitative comparative analysis (fsQCA). The basic ideas of the methods were presented in Chapter 4. The term 'set-theoretical method' was proposed by Schneider and Wagemann (2012) but it often comes under different labels, such as 'Boolean methods' (Caramani, 2009), 'logical methods' (Mill, [1843], 1974) or the well-known term 'Configurational Comparative Methods' (CCM) proposed by Rihoux and Ragin (2009). Basically, a set-theoretical method is employed to identify relationships between social phenomena as set relations by working with the membership scores of the cases in sets. The data used in this method were membership scores in sets which represented social science concepts.

By means of a comparison between the traditional research methods including regression, case study and standardised measurement, Chapter 4 contained a summary of the rational choice of this method. The choice was made not only because of the specific characteristics of East Asian research, but also because of the incomparable features of the set-theoretical approach. It connected the quantitative and qualitative methods. Consequently, similar to case-study research, it allowed in-depth analysis of cases, but in a more systematic way than is possible with conventional qualitative research. By using this method, the qualitative case studies were compared quantitatively. This key feature helped to overcome the data issues in this research. Its specific set-theoretical features helped to classify welfare systems more precisely. As it allows for the complexity of causal relations, it cannot be denied that the set-theoretical approach was the most appropriate method for this thesis.

In Chapter 5, the basic rules and crucial techniques of the method were presented. The initial step of this study was to calibrate the set. Two calibration methods were employed: direct calibration and qualitative calibration. The choice was made based on the quality of the data. For some sets (for example, education expenditure, public

and private health expenditure sets) which had relatively good quantitative data, direct calibration was used. The results were generated by R (R core team, 2014) using the QCA package (Dusa & Alrik, 2014) and the SetMethod package (Quaranta, 2013). Otherwise, qualitative calibration was employed; in particular, all the case studies were calibrated by qualitative calibration. The details of the calibration used for each factor were presented in the procedure of the data analysis in Chapters 6, 7 and 9. In addition to the calibration, the truth table is another core concept of fsQCA. A truth table lists all logically possible combinations of causal conditions and the outcome of each configuration (Ragin, 2008). The goal of a truth table is to analyse the relationship between combinations of causal conditions and outcomes. The procedure of forming a data matrix into a truth table in this study was achieved by using R (R Core Team, 2014) with the QCA package (Dusa & Alrik, 2014) and the SetMethod package (Quaranta, 2013). In order to make it more clear, the whole process of calculation was also presented in Chapter 5.

The productive and protective welfare dimensions for welfare ideal type analysis were calibrated in Chapters 6 and 7. The six policy areas were reviewed through in-depth case studies. The welfare services were assessed not only by using social expenditures, but also other elements such as net replacement rate, coverage of the benefits and so on.

Based on the six welfare dimensions, 2^6 welfare ideal types were identified in Chapter 8 and they were clustered into fifteen sub-models. The membership scores of the ideal types were calculated based on the minimum principle. The highest membership score (>0.5) among the ideal types denotes a state's welfare model. The welfare systems of the six states in 1990, 2000 and 2010 were analysed in that chapter. The results helped to answer the first and second research questions in this study.

Finally, in Chapter 9, the causal mechanisms for welfare development were examined, addressing the third research question of this study. Following the existing literatures on industrialism (Wilensky, 1975), post-industrialism (Pierson, 2001) and the crisis literatures (Kuipers, 2005; Rodrik, 1996) and previous research studies in this field, three independent variables were identified: socio-economic condition, demographic condition and globalisation. The outcome variable, welfare development, was

calculated on the basis of the calibrations in Chapters 6 and 7. The detailed findings on the three research question are summarised in the following sections.

11.2 Does East Asia have a homogenous productivist welfare model?

In fact, this question contains two sub questions: does East Asia have a homogenous welfare model; and is this model productivist? Based on the analysis carried out in this study, the shortest and simplest answer for both questions is 'no'.

To find the answers, analyses of the welfare systems were carried out from two aspects; the productive dimensions and the protective dimensions of the six states in 1990, 2000 and 2010, primarily based on the fundamental arguments of the PWC thesis, that productivist social policy is for "securing political and social stability, ensuring the smooth operation of the labour market and so on" (Wilding, 2008: 22), and the three welfare dimensions were used to measure the productive dimension: education service, health-care and family policy (which refers to maternity leave in this study). The choice of the protective welfare dimensions was based on Esping-Anderson's decommodification ideology, and old-age income protection, housing policy and passive labour market policy were used in this study.

The basic typology is that states with high scores on the productive welfare dimensions but not on the protective dimensions have productive welfare systems. Similarly, protective welfare systems only score high on the protective welfare dimensions but not on the productive ones. Balanced welfare systems score high on both the protective and the productive dimensions, and underdeveloped welfare systems score low on both the productive and the protective dimensions.

There are several remarkable findings based on the ideal type analysis in Chapter 8. First, although several researchers have argued for a homogenous East Asian welfare model (for example, Holliday, 2000), the findings provide limited support for that thesis. Despite the fact that East Asian welfare systems share some common characteristics, the intra-diversity between the states is also significant. In fact, the six states were never clustered into one welfare model. For 1990, six welfare ideal types were identified in the region and these were grouped into three welfare models. For

2000, the ideal types in the region had reduced to five, which belonged to two welfare models. This change was caused by the welfare retrenchment which took place in China and Japan, and the positive progress of Taiwan. For 2010, the intra-diversity seems more deeply entrenched; the ideal types of welfare system increased to six which belonged to five welfare models. This was mainly the beneficial result of improvements in the welfare services in China, Korea, Singapore and Taiwan in the 2000s.

The results also show that the levels of welfare development in the region were different. In 1990, Hong Kong and Japan had relatively the most comprehensive welfare systems among the six states, with high scores on three welfare dimensions, whereas Taiwan and Korea had weak welfare systems with only one dimension with a high score. In 2000, the welfare developments in the region were mostly on the lower level. Both China and Korea had weak welfare systems with only one welfare dimension with a high score. Korea, Singapore and Taiwan were slightly better with two welfare areas with high scores. Hong Kong's welfare services maintained the same level as in 1990, which enabled it to become comparatively the best welfare system in the region in 2000. In 2010, the welfare systems in four states (China, Korea, Singapore and Taiwan) had made positive progress. No state was clustered into the underdeveloped welfare model in that year. Among the six states, Korea had relatively the most comprehensive welfare services. Japan's welfare system had retrogressed to become the worst in the region.

To sum up, in the last twenty years, the welfare systems in the region have been diverse: not only in terms of the different emphases of their welfare services, but also in the different levels and paths of their welfare development. It is therefore analytically wrong, or at least it is not supported by the findings of this study, to cluster all the East Asian states into one welfare model.

The findings show that productivist is an important feature of East Asian states. In fact, it is striking that all eighteen identified welfare systems possessed relatively high degrees of membership of at least one productive welfare dimension. Indeed, the welfare systems of China and Korea were consistently more productive than protective in the last two decades. Singapore in 2010 and Taiwan in 1990 also had more

productive welfare systems, but the protective features of their welfare systems can also not be ignored. In particular, the welfare system of Hong Kong was more protective than productive during the last two decades. Similarly, the welfare systems of Japan in 1990 and Taiwan in 2010 also had more emphasis on protective elements. Indeed, among the eighteen welfare systems, only six did not show any protective characteristics (China 1990, 2000 and 2010; Korea 1990 and 2000; and Taiwan 1990). In fact, most cases were clustered into the balanced welfare model which indicates that these cases have memberships of both the productive and the protective dimensions. The findings of this study therefore demonstrate that it is inaccurate to conclude that East Asian states have productive welfare systems.

11.3 What are the development trajectories?

For analysing the welfare changes in the region, this study mainly followed Vis's (2010) classification of welfare reforms, but with some modification. Three welfare changes were identified: quantitative change, which refers to changes in the fuzzy scores of the same ideal type; type-specific change, which refers to changes in the welfare ideal types; and radical change, which refers to changes of the welfare models.

The findings discussed in Chapter 8 also show that from 1990 to 2010, welfare changes occurred in all six states, but to different degrees and of different kinds. First, three distinct reform trends were identified in the region: retrenchment, stability and progress. If we look at the overall reform trends during the last two decades, Japan was the only state which had welfare retrenchment; all the others underwent positive progress. This is in accordance with the findings of several Japanese experts (for example, Peng 2002; Shinkawa 2004, 2003; Takao 1999). Compared with the welfare systems of 1990 and 2000, however, China also underwent welfare retrenchment during this period. Hong Kong had the most stable welfare system in the region; it was the only state in the region which did not have any radical reforms. All the other states had positive progress in their welfare systems.

In addition to these different reform trends, the ideologies of welfare development were also varied in the region. Among the six states, only China had reforms moving towards being a purely productive welfare model with no emphasis on protective

dimensions, whereas all the others preferred balanced welfare models. Even within the balanced model, different preferences of development can also be identified. For example, Hong Kong and Taiwan were found to place more emphasis on protective rather than productive welfare, whilst Singapore and Korea were the very opposite. Japan was different from all the other states, with a balanced emphasis on both productive and protective welfare services.

11.4 Under which conditions have governments implemented welfare reforms?

There are very few existing studies which have examined the reasons for welfare reforms in East Asia in a very systematic way. Most studies have been based only on various isolated case studies. For example, scholars have argued that welfare reforms which occur after a financial crisis are due to the change in the socio-economic situation; evidence from case studies has shown that a decline in economic growth and the rise of unemployment are the causes. However, these studies have not told the real causality between the socio-economic situation and welfare reform. Neither have they shown which condition is more important for the outcome which occurs. This leaves open the question of under which conditions governments pursue reform.

Drawing on the existing East Asian welfare studies of welfare reform and on the industrialist thesis, this thesis proposed three possible causal conditions for welfare development in East Asia: socio-economic condition, demographic condition and globalisation. The socio-economic condition comprises two parts: economic performance and the level of unemployment. The reason for combining these two conditions was because of the small-N problem. As this study only involved eighteen cases, it might face the risk of having too many variables for relatively few cases. Demographic change was measured by the older (aged above 65) population, and globalisation referred to economic openness. Welfare development was the dependent variable which was measured by the welfare dimensions analysed in Chapters 6 and 7.

The findings show that current theories such as the PWC theory, the industrialist theory, the post-industrialist and the crisis literatures cannot fully explain the East Asian cases. The first important finding of this research is that there is no pre-

requirement for welfare developments in East Asia. Of the eighteen cases examined, three cases (China in 1990, Hong Kong in 2000 and Japan in 2010) had positive welfare development, but with poor economic performance. This indicates that although economic growth is an influential condition, it is not a determining factor for boosting East Asian welfare development. This finding is clearly in contrast to the PWC thesis and the industrialist theory.

In addition, the fsQCA analysis discussed in Chapter 9 identified two equifinal paths towards welfare development in East Asia: a weak socio-economic situation in combination with a low degree of globalisation, and a strong socio-economic situation with high levels of elderly population. An important finding here is that socio-economic condition appeared in both paths, which indicate that it plays an important role in welfare development. It should be noted, however, that as an important INUS condition (an "insufficient but non-redundant part(s) of an unnecessary but sufficient combination of conditions" (Mahoney & Goertz, 2006)) in this study, socio-economic condition could not force welfare development by itself. It had an impact only in conjunction with other conditions. In addition, socio-economic condition appeared in both paths but in opposite directions. This indicates that in East Asia, welfare development can occur in both weak socio-economic situations and strong socio-economic situations. This finding is therefore partly in accordance with Pierson's (2001) post-industrialist theory and various crisis literatures (such as Kuipers, 2005; Rodrik, 1996), as both of them only emphasized the effect of weak socio-economic changes in welfare reform. Moreover, that welfare could have positive development in a weak socio-economic situation is again in contrast with the PWC theory that social policy development is subordinate to economic goals.

As well as the socio-economic situation, the findings also show that a low level of globalisation, as another INUS condition, has an impact on welfare development in conjunction with a strong socio-economic condition. This finding does not support any of the scholars' arguments regarding the effect of globalisation on welfare spending.

Similarly, the final INUS condition, the elderly population, also had an impact only in conjunction with a weak socio-economic situation. This path is in accordance with

some mainstream welfare reform literatures. For example, it supports the industrialist theory (Wilensky, 1975) that the government should respond to the social needs of the elderly and the unemployed. In addition, it is also in accordance with the post-industrialist theory (Pierson, 2001) and crisis literatures which claim that slower economic growth, population ageing and a slowdown in de-industrialisation could lead to welfare development.

In addition to these two solution paths which could lead to welfare development, the analysis also found that there are other factors which might affect reform. For example, although partisanship has not been considered in this study because half of the cases (China, Hong Kong and Singapore) do not have a mature party system, political influence did play an important role in Hong Kong's pension reform. Moreover, the case of Japan shows that although a weak economic situation with a high level of aging population may lead to welfare development, very weak economic performance might also prevent welfare development. The case of Singapore shows that demographic change might affect welfare development not only because of an aging population, but also a low fertility rate.

11.5 Contributions to existing theories

This study enhances the current theories of both the East Asian welfare model and welfare reform.

First, for the theories of East Asian welfare models, by drawing on the PWC theory and Esping-Andersen's typology, this study developed a framework for assessing the balance between productive and protective welfare. The findings show that the PWC theory is only partly correct, as the welfare systems in East Asian states showed a productive characteristic. However, there is no clear evidence to show that they placed emphasis more on productive rather than protective welfare. Particularly in recent years, the welfare systems in some states (for example Korea and Taiwan) have become more redistributive than before.

In addition, the findings suggest that it is not possible to define an East Asian welfare model. This is in fact in contrast to some mainstream East Asian welfare literatures

(*see,* most notable the PWC theory and Gough's classification). The findings discussed in Chapter 8 show that the diversity between cases is very clear. These differences refer not only to the emphasis put by different governments on the productive or protective welfare dimensions, but also to the level of welfare development. Indeed, this diversity between cases was more significant in 2010 than in 1990. Therefore, a homogenous East Asian welfare model does not exist. It is important to realise the differences between the welfare systems in the region.

In addition to the inappropriate classification of the PWC theory, this study also found that its fundamental argument that social policy is developed to boost economic growth is wrong. The study of welfare development in East Asia in Chapter 9 shows that economic growth has not been a dominant factor that affects welfare reform in the region. In fact, the findings show that there is no precondition to force welfare reform. This finding is also in contrast to Midge (1986)'s statement that social policy is designed for promoting economic growth in East Asia.

The findings discussed in Chapter 9 also reveal that current literatures on welfare reform such as the industrialist theory (Wilensky, 1975), the post-industrialist theory (Pierson, 2001), the crisis literature (Kuipers, 2005; Rodrik, 1996) and the effects of globalisation (Allan & Scruggs, 2004; Garrett & Mitchell, 2001; Korpi & Palme, 2003; Rieger & Leibfried, 2003; Scharpf, 2000; Strange, 1996) cannot fully explain the welfare development in East Asia. They are not wrong, but incomplete.

In this study, two solution paths have been found that lead to welfare development: a weak socio-economic condition with a high elderly population and a strong socio-economic condition with a low level of globalisation. The first path is in accordance with the claims of the industrialist school, the post-industrialist theory and the crisis literatures, which emphasise the effect of a weak socio-economic situation on welfare reforms.

The second path partly responds the debates regarding the effect of globalisation on welfare spending. According to the current debates, the globalisation may have dichotomic effects on welfare development. In the set-theoretic notion, these effects are: $G \rightarrow W$ or $G \rightarrow w$.

In this research, neither of these two paths have been found in East Asia. While $G \rightarrow w$, that is high level of globalisation could reduce the welfare spending, seems very close to be a superset of the second solution path $SE*g \rightarrow W$, that is low level of globalisation is an important factor of welfare development. It is not. Recall from Chapter 4 that the solution of set-theoretic analysis is asymmetrical. Therefore, though condition low level of globalisation g is a INUS condition of welfare development W, the high level of globalisation G does not contain any information on the welfare retrenchment w.

Therefore, this finding raises a new interest research topic regarding the effect of globalisation on welfare retrenchment to discuss in the future research.

Finally, it is important to note that socio-economic condition, the elderly population and the globalisation cannot lead to welfare development by themselves; they have an impact only when combined with other factors. In fact, an important contribution of this study is that it provides a guideline to the conditions in which these influential factors lead to welfare reform.

11.6 Methodological contribution

The methodological contribution is a highlight of this research. Data availability has prevented the inclusion of East Asian cases in many previous comparative studies. This is also one of the main reasons why most existing research has been based on unsystematically organised qualitative case studies.

In Chapter 4, it was argued that set-theoretic methods have several advantages which make them particularly suitable for examining East Asian countries. An important advantage is that they overcome the data availability issues in East Asian welfare research.

In addition to the data issue, the policy itself is a difficult notion to be measured quantitatively. Especially for East Asian states, the structures and provisions of some policy fields are complex. Therefore, by allowing the simultaneous assessment of quantitative data and qualitative cases, qualitative concepts can be compared

quantitatively. Using this method enabled the comparative social policy research of East Asian states to be both systematic and replicable – two main shortcomings in current comparative East Asian welfare research. This is probably the first time that set-theoretic methods have been used for analysing East Asian welfare regimes and reforms over the last two decades.

Two set-theoretic methods were employed in this study. The fuzzy-set ideal type analysis (fsITA) described in Chapter 8 allowed the findings to capture the diversity of the cases. Especially in this research, it allowed the productive and protective features of the welfare systems to be compared in one framework. It also enabled the examination of both quantitative changes (for example, differences in one welfare dimension) and qualitative changes (for example, differences in welfare ideal type).

Finally, benefiting from the advantages of set-theoretic methods, this study is also one of the very few research studies to explore the reasons for welfare reforms in East Asia in a very systematic way. It overcame the 'dependent variable problem' in East Asian welfare research by combining both qualitative and quantitative sources. Moreover, the fuzzy-set qualitative comparative analysis (fsQCA) analysis also revealed the complexity of the causation, such as equifinality, a scenario in which alternative conditions can produce the same outcome. This study's fsQCA described in Chapter 9 showed that welfare development can be attained in two different ways. Another advantage of this approach is that the fsQCA could reveal both the necessary and the sufficient conditions. Hence, as one main argument of the PWC theory is formulated in terms of necessity, fsQCA was particularly appropriate for using to test this theory.

Abbreviations

ADB	Asian Development Bank
AFI	Adjusted Family Income
ALMP	Active Labour Market Programmes
CCP	Chinese Communist Party
CEL	Compulsory Education Law
CPF	Central Provident Fund
CRH	Cheap Rental Housing
DB	Defined Benefit
DC	Defined Contribution
DGBAS	Directorate-General of Budget, Accounting and Statistics, Executive Yuan, Taiwan
DPT	Diphtheria, Pertussis and Tetanus
EIS	Employment Insurance System
EOI	Export-Oriented Industrialisation
fsITA	Fuzzy-Set Ideal Type Analysis
fsQCA	Fuzzy-Set Qualitative Comparative Analysis
GCSLS	General-Commercial Student Loans Scheme
GESSI	Government Employees' & School Staffs' Insurance
GDP	Gross Domestic Product
GNI	Gross National Income
GNP	Gross National Product
GSSLS	Government-Subsidised Student Loans Scheme
HDB	Housing and Development Board
HPS	Home Protection Scheme
IMF	International Monetary Fund
ILO	International Labour Organisation
JASSO	Japan Student Services Organisation
LegCo	Legislative Council, Hong Kong
MEXT	Ministry of Education, Culture, Sports, Science and Technology, Japan

MHRSS	Ministry of Human Resources and Social Security of the People's Republic of China
MOE	Ministry of Education, Taiwan
MPF	Mandatory Provident Fund
MSF	Ministry of Social and Family Development, Singapore
NBS	National Bureau of Statistics of China
NCMS	New Cooperative Medical System
NHI	National Health Insurance
NHIC	National Health Insurance Corporation
NIE	Newly Industrialised Economies
NUS	National University of Singapore
OAA	Old Age Allowance
OECD	Organisation for Economic Cooperation and Development
PRH	Public Rental Housing
PRI	Proportional Reduction in Inconsistency
PSLE	Primary School Leaving Examination
PSPF	Public Service Pension Fund
PWC	Productivist Welfare Capitalism
RON	Relevance of Necessity
SE	Social Economic Condition
SLS	Student Loans Scheme
SOE	State-Owned Enterprises
SSA	The United States Social Security Administration
TGS	Tuition Grant Scheme
TSFS	Tertiary Student Finance Scheme
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Emergency Fund
WHO	World Health Organization

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