

DEMOGRAPHIC DIVIDEND AND LABOUR FORCE TRANSFORMATIONS IN ASIA:

THE CASE OF THE REPUBLIC OF lity regimes in the Republic of Korea have changed from the typical developing-country pattern ~~to~~ characteristic of developed countries. The demographic transition began immediately after the ~~the~~ Korean War in the early 1950s, when fertility rates were still very high. Official records indicate ~~that~~ the size of the baby-boom cohort born during the 1950s was around 8 million. This baby-boom generation ~~and~~ offspring 'echo generation' have a powerful 'population momentum' that will largely shape the demography of the Korean population through the

declined dramatically, from 5.0-6.0 children per woman during the 1950s and 1960s to 1.7 in the mid-1980s.

Figure 2. Population size and growth rate, Republic of Korea, 1950-2000

The changing fertility regime has been realized both through an increasing proportion of young men and women in their 20s remaining unmarried and through lower marital fertility. For instance, figure 4 shows a conspicuous decline in marriage rates among women aged up to 25 and men aged up to 30 during the period 1970-2004. In contrast, but to a lesser extent, marriage rates of men and women aged 30 and over have gradually been increasing over that period. As shown in table 2, the average age at first marriage has consistently increased over recent decades. In 1972, it was 22.6 years for women and 26.7 for men. As of 2004, it had increased to 27.5 years for women and 30.6 for men. Delayed marriage means a shortened period for women to bear children. Thus, unless age-specific marital fertility rises, the total fertility rate is expected to decline.

In fact, some social surveys indicate that the young generation may not be giving up marriage for good but just delaying it for their work careers (Byun, 2004). The discrimination against married women that is characteristic of the traditional male-dominated corporate culture in Korea has been a major barrier so far to the extension of female labour force participation. The current trend of delayed marriage among young women reflects their behavioural adaptation to this situation in the job market.

B. DEMOGRAPHIC DIVIDEND AND ECONOMIC GROWTH

The “demographic dividend” refers to the opportunity for economic growth brought about by the increasing proportion of the working-age population during the demographic transition. According to Bloom, Canning and Sevilla (2002), while population growth has a negative effect on per capita income (other things being equal), this effect is counteracted by the positive effect of the growth of the economically active population. They argue that the demographic dividend was essential to East Asia’s “economic miracle”. Mason (2001) presents a counter-argument by proposing a reverse causal mechanism. Rapid economic development and the accompanying social change (modernization, urbanization, and changes in behaviour), might have induced or facilitated demographic transition. However, when the two processes (economic development and demographic change) take place almost simultaneously in a relatively short period of time, it may be futile to try to apportion the causal flows precisely.

Leaving aside the issue of the cause of the initial economic and demographic changes, once change began, the demographic transition and economic growth in Korea epitomize the “demographic dividend” as described by Bloom, Canning and Sevilla (2002). In Korea’s demographic transition, mortality decline preceded the fertility decline. The lag between the two generated a “bulge” in the number of births and population growth, the baby-boom generation. The baby-boomers grew up to form a large and young

of economic development. At the same time, the median age of the Korean population, which had remained between 19 and 20 years from 1950 to 1975, jumped to about 22 years in 1980, 27 years in 1990 and 32 years in 2000 (table 3).

These changes in population size and age structure certainly contributed to economic growth by supplying a growing and young labour force to the economy. Demographic transition may also have contributed to economic growth by providing women an increased opportunity to participate in the labour market. Women became more likely to enter the workforce in great part because of the smaller number of children to take care of. According to national statistics, labour force participation of women of childbearing age has increased consistently. Especially impressive was the increase in the labour force participation rate of women aged 20-29, from below 45 per cent in 1980 to almost 65 per cent in 2004. Women still remain a promising source of the future labour force as younger cohorts become more educated, more inclined to participate, and more attached to their own work career through postponed marriage. Their increasing labour force participation is expected to add to labour supply, reinforcing the effect of the demographic dividend.

Population growth and savings rate

According to Bloom, Canning and Sevilla (2002), demographic transition also contributes to economic growth by increasing savings, which improves a country's prospects for investment and growth. The young and old consume more than they produce, whereas the working-age population tends to have both a higher level of economic output and a higher level of savings (Higgins, 1998). Improved health and longevity make saving easier and more attractive: a healthy population must plan far in advance if it is to maintain its standard of living through decades of retirement (Lee, Mason and Miller, 2000). Thus, as baby-boomers reach middle age (their 40s and 50s) national savings are expected to rise and contribute to capital accumulation, provided that savings are invested into productive activities.

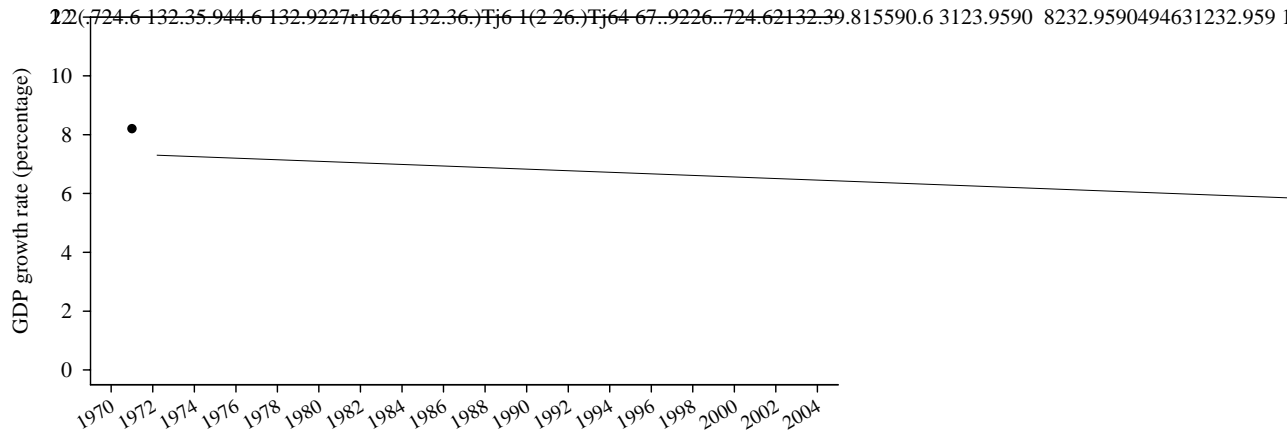
Demographic transition and investment in human capital

The demographic transition may have also a significant effect on investment in human capital. Decreased mortality and improved health cause parents to invest more in their children's human capital, as the wage premium for higher education increases and lower mortality means that the benefits last

TABLE 3: DEMOGRAPHIC CHANGES IN REPUBLIC OF KOREA, 1950-2000

Year *Population*

Figure 5. National savings and Gross Domestic Product (GDP) growth rates, Republic of Korea, 1971-2004



GDP peaked in 1987 at about 11.0 per cent and decreased thereafter. Particularly noteworthy is the parallel trend in the decreasing growth rates of the labour force and the GDP since the late 1980s.

From 1971 to 2003, the educational level of the population increased linearly from an average of less than 6 years of study to almost 12 years. According to Lee (1997), the miracle economic growth of Korea could be attributed to the rapid growth of human capital stock at least for the first 3 decades (1960s-1980s) of its economic development. Since the late 1980s, the economic growth rate has consistently fallen while the level of educational attainment has continued to increase. According to D.I. Kim (2004), while the supply of the college-educated labour force consistently rose over the past decades, its quality deteriorated after the start of the rapid yet unregulated expansion of college education. This implies a falling rate of return to investment in education due either to oversupply of highly educated labour or to declining quality of college education, as is documented in recent analyses of the Korean labour market (Lee and others, 2005). Thus, part of the falling rate of economic growth since the late 1980s may be explained by the deteriorating quality of the human capital among new entrants to the labour force as well as by the decreasing population growth rate.

In summary, the demographic changes in Korea have produced a demographic dividend, spurring economic growth during the second half of the twentieth century in the context of a favourable policy environment.² However, there remains the question of what will happen to the population and labour force in the coming decades of the twenty-first century. Even though fertility has already fallen to a level far below that needed for replacement of successive generations, the Korean population is projected to continue growing until 2020, when the baby-boom and its "echo generation" will have passed through their reproductive ages. After that, a period of negative growth is expected to begin. Thus, the population momentum created by the baby-boom cohort at the beginning of the demographic transition will last about 70 years, after which the Korean population is projected to grow older at full speed.

C. KOREAN POPULATION IN THE FUTURE: PROJECTIONS OF THE KOREAN NATIONAL STATISTICAL OFFICE AND THE UNITED NATIONS

The future of Korean population ageing, labour force, economic growth and the social welfare system depend critically on the course of fertility change. The critical question is whether fertility will stay at the current below-replacement level or will rise as many policy-makers and optimistic demographers expect. In early 2005, the United Nations Population Division issued the 2004 Revision of its estimates and projections of population. Also in 2005, the Korean National Statistical Office (KNSO) issued a revised version of its original 2001 population projections, which were based on the 2000 census. The reason for the 2005 revision was to reflect the radical drop in fertility rate since 2000. The following paragraphs compare the population projections and demographic assumptions adopted by KNSO (1996, 2001 and 2005) and by the United Nations (2005). The major demographic indicators and assumptions adopted in each population projection are summarized in table 4.

Because fertility rates are notoriously hard to predict (Bongaarts, 1998),-0.001 Tc25(KNigninSOa(lev(ze(2005t th)-7

child above the levels assumed in the medium variant. Figure 7 presents the population projections from the 2005 KNSO revision (medium-fertility variant) and the 2004 United Nations revision (low-, medium- and high-fertility variants). According to the KNSO projection, the Korean population will grow to about 50 million by 2020 and then decrease to less than 43 million by 2050. This result is similar to the medium variant of the United Nations, which projects a slightly larger population of about 45 million for 2050. What is most striking, however, is the large difference in the total population resulting from the United Nations high- and low-fertility variants. While the high variant projects that the population will increase until 2030 and then reach a plateau at around 53 million, the low variant projects a long-term decline from the current 48 million to about 37 million by 2050. Thus, depending on the future course of fertility, the Korean population could follow completely different courses during the first half of the twenty-first century. Considering that past projections have generally over-estimated fertility rates, as was the case with Japan (Atoh, 2000), it may be that the future population will be more like that projected by the low variant than that by the high variant.

TABLE 4. DEMOGRAPHIC COMPONENTS OF POPULATION PROJECTIONS
FOR THE REPUBLIC OF KOREA

<i>Variables</i>	<i>Year</i>	<i>Korean National Statistical Office</i>			<i>United Nations</i>
		<i>1996</i>	<i>2001</i>	<i>2005</i>	<i>2004</i>
Total population (thousands)	2005	47 275	48 461	48 294	47 817
	2030	52 744	50 296	49 329	49 161
	2050	-	44 337	42 348	44 629
Total fertility rate (children per woman)	2005	1.71	1.37	1.19	1.21
	2030	1.80	1.40	1.28	1.56
	2050	-	1.40	1.30	1.77
Life expectancy (Male, Female) (years)	2005	(72.3, 79.7)	(74.4, 81.2)	(74.8, 81.5)	(74.0, 81.0)
	2030	(75.4, 82.5)	(78.4, 84.8)	(79.2, 85.2)	(78.4, 86.4)
	2050	-	(80.0, 86.2)	(80.7, 86.6)	(80.8, 88.5)

Source

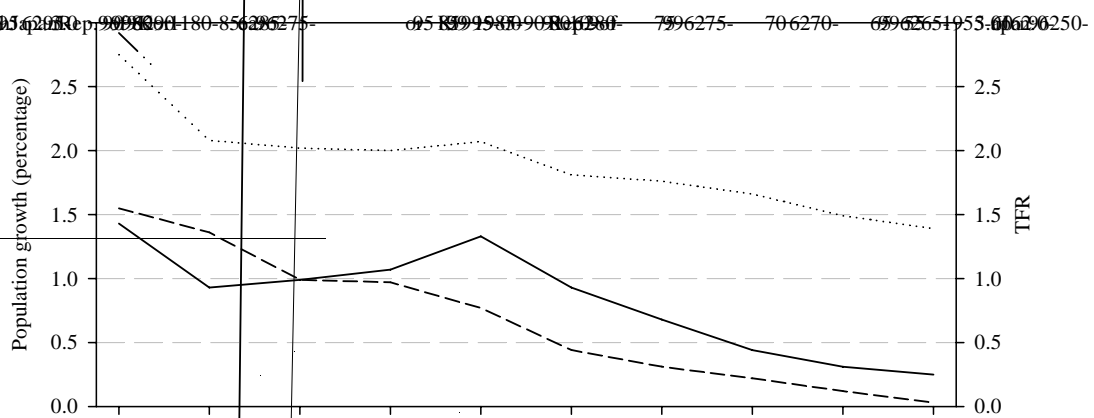
Given the lack of information on which to base predictions about future fertility in Korea, it is useful to consider the experience of other countries that went through the demographic transition earlier. In this regard, Japan would be the best reference as both countries belong to the same Asian culture of family formation and values concerning children. Japan has also been a forerunner of modern demographic transition among the East Asian countries. In fact, demographic changes in Japan and Korea during 1950-2000 have been remarkably similar in their pattern and pace with about a quarter-century time lag (table 5 and figure 8). The trend lines for Korea are below those for Japan in figure 8, because of the swiftness of Korean fertility decline during the 1970s and 1980s, from 2.92 to 1.60. Other than that, the long-term trend in both total fertility and population growth rates are approximately parallel for the two countries, except for the projected TFR in Korea. While in Japan, after reaching the below-replacement level the TFR gradually but consistently decreased to 1.39 in 1995-2000, in Korea the TFR is projected by the United Nations to increase to this same level by 2020-2025. Thus, the question is whether the steep

TABLE 5: FERTILITY AND POPULATION GROWTH TRENDS IN JAPAN AND REPUBLIC OF KOREA

Period (years)		Total fertility rate (children per women)		Population growth (percentage)	
Japan	Korea	Japan	Korea	Japan	Korea
1950-1955	1975-1980	2.75	2.92	1.4	1.6
1955-1960	1980-1985	2.08	2.23	0.9	1.4
1960-1965	1985-1990	2.02	1.60	1.0	1.0
1965-1970	1990-1995	2.00	1.70	1.1	1.0
1970-1975	1995-2000	2.07	1.51	1.3	0.8
1975-2080	2000-2005	1.81	1.23	0.9	0.4
1980-2085	2005-2010	1.76	1.21	0.7	0.3
1985-2090	2010-2015	1.66	1.28	0.4	0.2
1990-1995	2015-2020	1.49	1.35	0.3	0.1
1995-2000	2020-2025	1.39	1.42	0.3	0.0

Source: United Nations (2005).

Figure 8. Trends in total fertility rate (TFR) and population growth rate for Japan and the Republic of Korea in a time-lag framework



downward trend of Korean fertility will continue into the first decade of th

TABLE 6: TRANSITIONS FROM AGING TO AGED SOCIETY IN SELECTED COUNTRIES

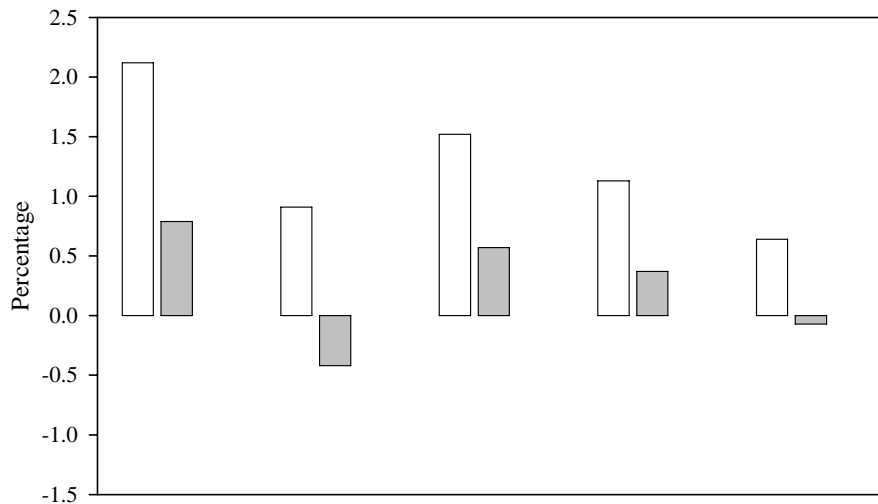
member-countries. Among workers aged 55-64, about 60 per cent are classified as self-employed. Among those aged 65 or over, 77 per cent of men and 76 per cent of women are self-employed. Since the self-employed tend to work longer than wage workers, this partially explains the relatively high rate of labour force participation of older Koreans. The relatively high participation rate of the older population can help alleviate the negative effect of decreasing labour force on economic growth in the coming decades. Thus, one of the most important and challenging policy initiatives is to create quality employment opportunities for older persons so that they can remain active in the labour market at least until normal retirement age. To achieve this, the quality of employment and working conditions of older workers need to be improved.

Future labour force projections

In a recent study, D. I. Kim (2004) simulated the growth rate of the future labour force according to six fertility scenarios. The scenarios varied from one of “very low” fertility, in which a TFR of 1.0 would be reached by 2050, to one of “very high” fertility, in which a TFR of 2.1 would be reached by 2050. The results indicate that the total labour force would grow to 24.8 million by 2019, and then start decreasing to approximately 19 to 17 million in 2050, depending on the target fertility level assumed.

Figure 9 presents an international comparison of the changes in labour force growth between 1980 and 2050 under the assumption of constant participation rates at the 2000 levels. Although labour force growth will be more rapid in Korea than in most other OECD member countries between 2000 and 2020, the slowdown compared with the growth in the previous period (1980-2000) will be especially marked in Korea. Japan and the EU may already be experiencing a decline in the absolute size of their labour forces. Over the period 2020-2050, the growth of the labour force in Korea will reverse and, along with Japan, Korea will experience one of the steepest falls in the size of the labour force.

Figure 9: Annual average labour force growth in selected periods between 1980 and 2050, for selected countries and groups of countries



In general, however, labour force projections in Korea do not properly take into account the changes in participation rates that are expected in the course of population ageing. For instance, social security programmes, especially those related to retirement pensions, tend to affect the labour force participation of older persons, while higher educational levels and smaller numbers of children could increase the participation rates of women. From a policy perspective, it is thus important to consider the possible effects of future labour force participation rates. In this respect, it is worth noting the projections for the next half century of the Korean labour force made by OECD (2002) based on alternative assumptions about age-specific participation rates. But this simulation is also limited as no fertility variation is taken into account.

In general, the OECD projections are slightly less pessimistic about the future labour force growth than most studies in this area. According to its “maximum participation” scenario, the labour force in Korea is projected to reach 24 million in 2050, whereas it does not exceed 20 million in any scenario of any other study. In all studies, however, Korea’s labour force is projected to grow at slower rates until 2020 and then to start shrinking.

E. THE IMPACT OF AGEING POPULATION ON ECONOMIC GROWTH

The Korean economy enjoyed a high growth rate of about 7 per cent on average during the last two decades. This rapid economic growth was mainly due to the size and quality of labour and capital accumulation rather than to increasing growth in total productivity (Hahn and others, 2002). The considerable drop in the economic growth rate from 8.3 per cent during the 1980s to 6.0 per cent during the 1990s, which was mainly due to the decreasing growth rate of the working population, is indicative of the potentially detrimental effects of rapid population ageing on economic growth in the coming decades.

There is still more debate than consensus among researchers regarding the effect of population ageing on economic growth. According to the pessimistic view, upheld by the majority of scholars (Bloom, Canning and Sevilla, 2002; Borsch-Supan, 2000; OECD, 1998; World Bank, 1994), population ageing driven by low fertility and longer life expectancy has negative effects on economic growth through a set of inter-related mechanisms: (i) decreasing labour input due to low population growth and ageing; (ii) decreasing savings rate and capital accumulation due to an increasing dependency ratio and the cost of prolonged care of the aged; (iii) decreasing investment into human capital of the young generation due to increasing social welfare costs; and (iv) increasing foreign debt due to falling interest rates.

In contrast, some scholars point to the possibility of positive effects of low population growth and population ageing on economic growth, such as development of labour-saving technology and increased investment in human capital. The latter is posited to compensate for the decline in economic growth arising from the quantitative decrease in labour input. Scarth (2002), for example, asserts that population ageing could lead to productivity growth by motivating increased investment in human capital as labour becomes a relatively scarce factor of production. In a cross-national comparative study using panel data, Cutler and others (1990) concluded that decreasing labour force growth results in increasing labour productivity.

Thus, one of the fundamental measures to counteract adverse effects of an ageing population and shrinking labour force will be improving the productivity of the labour force. If consistent growth in labour productivity and increasing labour force participation among women can be achieved in coming decades, then the negative effect of population ageing could be mitigated (Phang and others, 2004; Cho, 2000).

The question is whether it is feasible to raise labour productivity to a level capable of compensating for the decreasing labour force, particularly after 2020. The prospect is rather discouraging. Long-term

TABLE 9: ECONOMIC GROWTH RATE DISAGGREGGATED INTO SELECTED CONTRIBUTING FACTORS,
REPUBLIC OF KOREA, 2000-2050

<i>Period</i>	<i>Growth rate^a</i> <i>(percentage)</i>	<i>Contributing factors</i>			<i>Total factor productivity</i>
		<i>Work force^b</i>	<i>Human capital</i>	<i>Capital stock</i>	
2000-2010	5.1	0.7	0.8	1.7	2.0
2010-2020	4.8	0.3	0.6	1.9	2.0
2020-2030	3.5	-0.4	0.5	1.4	2.0
2030-2040	2.2	-0.9	0.3	0.8	2.0
2040-2050	1.5	-1.0	0.1	0.4	2.0

Source: Kim, Dong-Suk (2004).

^a Measured by real GDP growth rate.

^b Total fertility rate is assumed to increase to 1.4 by 2050.

Figure 10. Public old-age pension expenditures (as percentage of GDP) in OECD countries, 2000-2050

G. SOME POLICY CONSIDERATIONS

“More Children” policy

As previously discussed, fertility is the most critical demographic variable in determining future population and economic growth in Korea. The size and composition of the population and labour force, the status of the economy and future social well-being all depend on future fertility trends. It is thus understandable that the Government has implemented a pronatalist “More Children” policy, which has introduced new, or reinforced existing, “work-and-family-friendly” measures for working women (MOHW, 2004) and has started providing married couples with direct financial support in the form of tax breaks or cash allowances for each additional child. Underlying this policy initiative is a recognition of the high cost of rearing and educating children and the difficulty that married women with children confront in trying to combine work and family—the barriers being both institutional and cultural.

The current generation of young women seems already to have decided to pursue their work careers even if this entails delaying marriage and family formation. With effective means for controlling fertility readily available, couples can easily limit the number of children they have. On the other hand, in the Asian culture of family and kinship, remaining childless is still an unpopular option; one or two children is considered to be ideal. At the same time, with a still-ingrained preference for a son, Korean couples have successfully pursued parity-specific sex control for their additional children. The sex ratio for the third child was almost 180 boys per hundred girls in 1995 and 144 in 2000, whereas the ratios for the first and second child were 105 and 107, respectively (KNSO, 2003).

There are few who believe that the Government’s pronatalist campaign based on direct financial incentives will by itself have a sizeable impact on the demographic behaviour of the young generation. Rather, more fundamental reforms should be pursued on a long-term basis to lower the cost of rearing and educating children, to make more work opportunities available to married women with children, and to build up a social-institutional system free of gender discrimination. Sleebos (2003), on examining the effect of the pronatalist policies of many European countries, concluded that, while these policies are often very costly, they tend to fall short of affecting fertility behaviour to a significant degree. It may therefore be advisable for the Government of the Republic of Korea to invest more in the quality than in the quantity of children and the future labour force.

Immigration policy

Another important policy for dealing with an ageing population and shortage of workers is to increase the working population through immigration (Visco, 2001). Most immigrant workers are relatively young, and immigrants often have higher fertility than that of the residents, so that immigration could also contribute to increasing fertility. Nevertheless, immigration cannot solve the problem of an ageing population and low population growth (Tapinos, 2000; United Nations, 2000, Choi and others, 2003). Apart from difficult issues of social integration and border control, the number of immigrants needed to compensate for the prospective decline in labour force would be huge, and the flow would need to be sustained in order to have a lasting effect on the age structure: immigrant workers get old too.

Labour market and employment policy

The size of the Korean labour force in the future will depend not only on fertility but also on participation rates. In particular, the participation of older persons and women could be greatly influenced by institutional settings and policy initiatives. Even though labour force growth will turn negative after 2020 in all of the OECD scenarios, the magnitude of the decline will be lower if there is a general rise in participation rates. For instance, under the baseline scenario, labour force growth over the period 2000-

2020 is projected to average 0.8 per cent per year, down from 2.1 per cent per year during the two previous decades. If participation rates for the older population were to decline—in response, for example, to public pensions becoming more extensively available—then, all else constant, annual labour force growth over the period 2000-2020 would be even lower at only 0.5 per cent. Under the maximum scenario, the increase in labour force would be 1.4 per cent per year (OECD, 2002).

Policy should therefore aim to encourage participation and employment for the older work force (OECD, 2002). Up to now, participation rates of the older population, especially males, have been high in Korea. However, with limited employment opportunities in the formal sector and with the involuntary early retirement currently practiced in Korean firms, it might become increasingly difficult for older persons to find employment in the future. Rapid technological change and the demand for increased skills that will characterize the future labour market also could exacerbate the employment problem of older workers. Therefore, on the demand side, employment contracts including mandatory early retirement policies should be changed gradually to adjust to the ageing of population and of the labour force. On the supply side, workers' initiative and choice should be directed toward lowering the cost of long-duration employment contracts, such as seniority wage and retirement allowance, so that long tenure (normal retirement) with a productivity-based wage system could gradually replace a system of short tenure (early retirement) and high wages (Phang, 2004).

Women's labour force participation has been low in Korea relative to other advanced countries (see table 8), in particular for young women with higher education. In fact, women could be the most valuable resource for Korea's future labour force. In this respect, the Government should strengthen its policy to assure that entry to the labour market following school-leaving, and re-entry to the labour market after childbearing, can be achieved at low transition costs. In addition, Korean labour market institutions and practices need to be reformed to enable working women to harmonize work and family and to enhance the development of their work careers.

H. FINAL REMARKS

The Korean economy and society have benefited from the demographic transition that produced a relatively young population and growing labour force during the second half of the twentieth century. The result was rapid and consistent economic growth and social development. The baby-boom generation born in the early stage of the demographic transition conferred a demographic dividend that helped drive the nation's "miracle" economic development.

Social structural changes at the macro-level that accompany rapid economic development often induce radical changes in individuals' demographic behaviour. In Korea, there have been rapid changes in marriage and childbearing among the generations that followed the first baby-boom cohort. Recent cohorts are marrying much later and bearing fewer children. At the same time, the baby-boom generation that carried out the work of Korean economic development is getting older. These ongoing demographic changes are leading to a rapidly ageing population. Korea's population and labour force are expected to continue growing during the first two decades of this century although at a much slower rate than before. By 2020, however, the large baby-boom cohort will be almost completely retired from the labour force

for older persons as well as for youth have been curtailed due to the structural-adjustment and lean-management policies practised in many large organizations and firms. Thus, the Government of the Republic of Korea faces the need to redouble its effort to prepare for an older society while still recovering from the current economic recession. Yet the task should not be deferred. To quote Denton and Spencer (2003): “The ‘problems’ of an aging population, or ‘challenges’ if one prefers, are not going to go away in a few years, to be replaced by others. They will be with us for a long time. Short-term ‘solutions’ should be suspect. Think long.”

NOTES

¹ Before 1950, the total fertility rate in Korea was 6.4 in 1925-1930; 6.1 in 1930-1935; 6.2 in 1935-1940; 6.1 in 1940-1945; and 6.0 in 1945-1950.

² The policy environment was fundamental for the realization of the demographic dividend by increasing flexibility in the labour market to allow the expansion of the labour force, creating adequate saving mechanisms and providing good health and high-quality education.

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