DEMOGRAPHIC TRANSITION AND DEMOGRAPHIC DIVIDENDS IN DEVELOPED AND DEVELOPING COUNTRIES

Although age structure variables have predictive power and can "explain" (in the statistical sense) a significant portion of economic growth, the relationship between demographic variables and the economy is not deterministic. Rather, the economic outcome from demographic change is policy dependent. The experience of the Asian Tigers provides very clear evidence in support of this view. A successful export-oriented growth strategy produced more than enough jobs to absorb the rapidly growing workforce. A stable macroeconomic environment – until the financial crisis of the late 1990s struck – was attractive to investment. Large-scale pay-as-you-go pension programmes that undermine saving and work incentives were avoided. These and other policies worked in concert with demographic change to produce high rates of saving and investment, rapid growth in employment, and spectacular economic growth. In the absence of complementary economic policies, the demographic dividend cannot be counted on to produce favourable economic results.

This paper presents a formal approach to quantifying the two demographic dividends drawing on a recent paper by Mason and Lee (forthcoming). Estimates of the first and second demographic dividend are constructed for all countries of the world for which the United Nations World Population Prospects (2005) provides estimates and projections. Country estimates are aggregated into appropriate country groups and used to compare the experience of the developed and the developing world and to contrast important variations within the developing world.[2]

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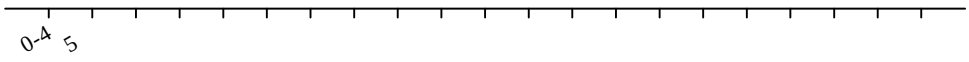
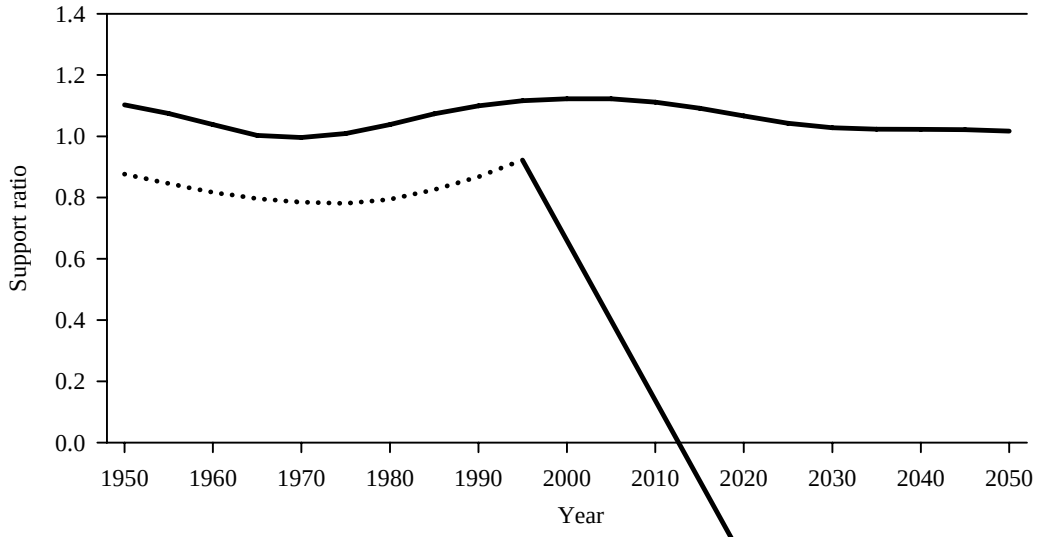
Figure 1. Age distribution of production and consumption in the United States in 2000, and age distribution of population in the United States and Mexico in 1950, 2000, and 2050

A. Age profiles of production and consumption, United States, 2000



The second demographic dividend arises to the extent that consumers and policymakers are forward-

Figure 2. Support ratio and first demographic dividend in the United States and Mexico



disadvantage. The projections for Mexico anticipate that it will eventually catch the United States by achieving a support ratio of 1.14 in 2025 as compared with the maximum United States support ratio of 1.12 in 2000. As is shown below, similar points of comparison distinguish the developed from the developing countries, but the experience of countries within the developing world is quite varied.

The comparisons presented here focus on eight country groups that have been defined to capture commonalities in economics, geography and demography. The eight groups are the Pacific Islands, transitional economies, the Middle East and North Africa, sub-Saharan Africa, Latin America and the Caribbean, South Asia, East and South-East Asia, and the industrial countries. The values presented are simple averages of the values for countries belonging to each group. The appendix provides a full listing of the countries belonging to each group.

The dividend period, that is, the period over which the first dividend is positive, began first in the industrial countries in 1970 and, soon thereafter, in the Pacific Islands, the transitional economies, the Middle East and North Africa, Latin America and the Caribbean, and East and South-East Asia (figure 3). The onset of the first dividend was substantially delayed only in South Asia – to around 1985 – and sub-Saharan Africa – to around 1995.

The duration of the first dividend was relatively short in the industrial countries (approximately thirty years), and in the transitional economies (almost thirty-four years).[4] The duration in other groups of countries varies from about forty-seven years in East and South-East Asia to more than sixty years in South Asia. Unfortunately, the durations reported in figure 3 are downwardly biased for some groupings, because the dividend period begins prior to 1950 for a few countries and extends beyond 2050 for many a t i 6

TABLE 1. COUNTRIES WITH COMPLETE AND INCOMPLETE FIRST DIVIDEND PERIODS

Region	*Number of countries*	*Started before 1950*	*Bonus Period*

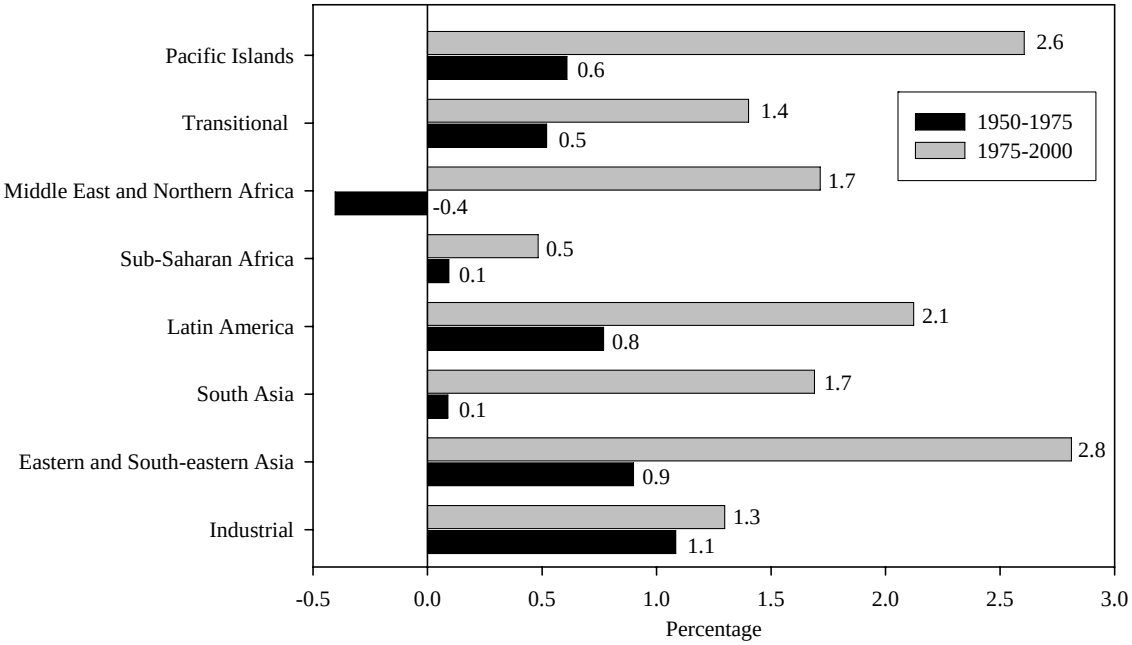
The total gain and the average annual gain for each region are plotted against the average duration for the region in figures 5 and 6. The total gain is lowest for the industrial countries and transitional

TABLE 2. ANNUAL AND TOTAL INCREASES IN THE SUPPORT RATIO: THE TOP AND BOTTOM 10 COUNTRIES

Annual increase in the support ratio (%)					
Top 10			*Bottom 10*		
1	Singapore	1.02	124	France	0.26
2	Jordan	0.94	125	Croatia	0.26
3	Viet Nam	0.90	126	Serbia and Montenegro	0.26
4	Algeria	0.85	127	Bulgaria	0.25
5	United Arab Emirates	0.83	128	Lithuania	0.23
6	Thailand	0.82	129	Belgium	0.22
7	Tunisia	0.79	130	Greece	0.20
8	Armenia	0.79	131	Hungary	0.20

of consumption is fixed and shifting upward at rate g_c, then the total consumption of the cohort born in year *b* or earlier in year *t* + *x* is equal to $\overline{c}(t)e^{g_c x}N(\quad b,t\quad x)$

Figure 8. Annual growth in the ratio of wealth at ages 50 or over to output, 1950–1975 and 1975–2000



Source: Author's calculations.

TABLE 3. ESTIMATES OF THE FIRST AND SECOND DIVIDENDS AND THE ACTUAL GROWTH IN GROSS DOMESTIC PRODUCT PER EFFECTIVE CONSUMER (GDP/N)
1970-2000

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Region	*Demographic Dividends*			*Actual growth in GDP/N*	*Actual - Dividend*
	First	*Second*	*Total*		
Industrial	0.34	0.69	1.03	2.25	1.22
East Asia & Southeast Asia	0.59	1.31	1.90	4.32	2.42
South Asia	0.10	0.69	0.80	1.88	1.08
Latin America	0.62	1.08	1.70	0.94	-0.76
Sub-Saharan Africa	-0.09	0.17	0.08	0.06	-0.02
Middle East and North Africa	0.51	0.70	1.21	1.10	-0.11
Transitional	0.24	0.57	0.81	0.61	-0.20
Pacific Islands	0.58	1.15	1.73	0.93	-0.79

Source: Author's calculations.

imes employed in this paper, and several studies relying on long-term population projections conclude that the second dividend does not turn negative to any i8(010I e)8.e22 degree (Lee, Masn

TABLE 4. SENSITIVITY ANALYSIS: DEMOGRAPHIC DIVIDENDS BASED ON TAIWAN P

Africa, for example – the dividend period is just beginning. The duration and intensity have also varied in

Transitional
Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia

effects of declining interest rates on saving. This is a drawback of the simple approach employed here, but it should also be noted that empirical research usually concludes that saving rates are quite insensitive to changes in interest rates.

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