Where Will Demographics Take the Asia-Pacific Food System?

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Abstract: Demographic changes in the Asia-Pacific region—expanded urban concentration, variability in population growth within the region, and an aging population base—will drive significant food system change. Costs associated with urban congestion will test the capacity of the region's food system to deliver a continuous flow of safe, reasonably priced, fresh and processed foods. Pressure to better connect urban areas to rural hinterlands and for trade liberalization will intensify to meet food needs of these growing urban areas. Differential rates of population growth and population aging among economies will affect the quantity and composition of foods demanded, hence private sector strategies and public policies.

Key Words: Demographic change, food system, Asia-Pacific region

The first time demographic change was connected to food demand and supply was 200 years ago when Thomas Malthus asserted that "the power of population is infinitely greater than the power in the earth to produce subsistence for man." His pessimistic view about the earth's capacity to produce food was tempered later on in the second edition of *An Essay on the Principle of Populations*, where he recognized the important future role of technological change in increasing food supply. Indeed, technological innovation has steadily increased the "power in the earth" to produce food. Thus, for the intermediate term, population growth and other demographic changes are more likely to define food markets than supply constraints.

This paper addresses three major demographic areas and related policy concerns for the Asia-Pacific food system:

- greater population concentrations in urban areas;
- variability in the size and growth of populations; and
- influences of aging populations on food demand.

Rapid Urban Population Growth

The most significant demographic change in the region in the next two decades will be the rapid growth of urban populations. Some urban areas are already distressingly large and are

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confronting poverty, pollution, and congestion. Future urban growth will test the efficiency and capacity of the region's food system to deliver a continuous flow of safe, reasonably priced, fresh and processed foods.

Asia-Pacific's urban population is projected to grow by over 590 million people between 2000 and 2020, an increase of about 45 percent, compared to overall population growth of only 16 percent. For the first time in history, the region's urban population will soon surpass the rural population. This rapid urban growth is due to high birth rates, migration from rural to urban areas, and immigration into urban areas.

Urban growth rates are expected to be the most rapid in China and Southeast Asia; at intermediate rates in Latin America, North America, and Oceania; and slowest in East Asia. The most rapid rates of growth will occur in Vietnam, Indonesia, Singapore, and the Philippines. China's urban population is expected to grow by 300 million people (67 percent) in the next 20 years, a staggering number. Alternatively, urban growth will be modest in the region's developed economies, plus South Korea, Taiwan and Russia.

In contrast, rural populations are expected to shrink in practically all of the region's countries. The largest rural population declines will occur in China, where more than 145 million people are expected to migrate from rural areas to urban centers between 2000 and 2020.

The region's rapid rate of urbanization is driven by technological, social, cultural, and economic changes. Improved efficiencies in rural and farm enterprises along with greater opportunities for gainful employment in cities explain the rural-to-urban shift. Urban development is an inevitable consequence of agricultural surpluses, economic specialization, more efficient allocation of resources, and higher incomes.

Urban diets differ from those in rural areas, largely due to higher incomes and the substitution of animal products, fruits, and vegetables for more traditional food staples. Diets in urban areas tend to be more diverse, in terms of the variety of foods consumed. Urban dwellers tend to eat away from home more frequently and consume more convenience foods. In developing and middle-income economies, access to reliable electricity facilitates greater consumption of perishable commodities that sometimes have traveled great distances.

Work and lifestyles in urban areas tend to be more sedentary than those in rural areas, leading to lower per capita energy expenditure and lower per capita caloric requirements. Higher incomes, lower food prices, and the urban consumer's propensity to consume more food than necessitated by energy expenditure leads to a greater overweight problem in urban areas. Work and lifestyle differences in rural and urban areas are more pronounced in developing economies.

Marketing food products in the Asia-Pacific region will increasingly focus on densely populated urban centers, such as the Hong Kong-Shenzen-Pearl River Delta area, Shanghai, Jakarta, Bangkok, Manila, Santiago-Valparaiso, and Lima-Callao. Many of these urban areas are coastal and have modern port facilities, making them easily accessible to foreign suppliers. In some instances, foreign suppliers are more competitive in these coastal urban markets than inland producers who confront inadequate infrastructure and cost-raising policies such as tolls.

400 Million More People to Feed

Although the population in the Asia-Pacific region is expected to grow from 2.6 billion in 2000 to 3.0 billion in 2020, this rate of growth is slower than the rest of the world. The share of the world population in Asia-Pacific member economies will decline from 43 percent in 2000 to 40 percent in 2020, as regions outside the Pacific, primarily Africa and the Middle East, grow faster. Since the 1960s, global population growth, including the Asia-Pacific region, has slowed, marking a shift from the geometric growth rates of previous decades. Currently, the number of people added to the world and the Asia-Pacific region is declining each year. The world population is projected to level off at about 9-10 billion after 2050, with the Asia-Pacific region leveling off at about 3 billion before declining in the 2040s.

Population growth throughout the region will not be evenly distributed. By 2020, the largest absolute increase will occur in China (160 million), followed by Indonesia (60 million) and the United States (50 million). In contrast, the Russian Federation's population has been declining, and by 2007, Japan's population will begin to decline.

Despite a declining rate of growth in China, the absolute increase in its population over the next several decades will remain large relative to other economies in the region. Around 2030, China's population is expected to begin to shrink, following the population declines of its East Asian neighbors—Korea in 2027 and Taiwan in 2029. The United States, surprisingly, will grow faster than some developing economies after 2020 due to immigration and high fertility of recent immigrants.

While population growth in the Asia-Pacific region is slower than the rest of the world, immigration is relatively more important to this region. In 2000, nearly 760,000 more people entered the region than exited; that number is still small relative to the region's average annual natural increase of 24.5 million. However, there is significant migration within the region. The major destinations for migrants are the economies with higher per capita income: Singapore, Hong Kong (China), Canada, New Zealand, Australia, Brunei, the United States, and Russia. Net migration to the United States alone exceeds one million annually. Although Japan's economy has high per capita income, the country's strict immigration policies keep its population homogeneous. The middle-income East Asian economies of Korea and Taiwan follow a pattern similar to that of Japan. Not surprisingly, outmigration is most common in the lower-income economies of the Philippines, Peru, Ecuador, Vietnam, Colombia, China, Mexico and Indonesia. Net outmigration from China, Mexico and Indonesia totaled 200,000 to 300,000 annually in recent years.

Population growth will undoubtedly place demands on the Pacific agri-food system; more people means more food consumption. But the changing rates and distribution of growth will also have significant implications. Japan's declining population size implies lower levels of food demand in this affluent nation, a leading importer of food and agricultural products. Russia's declining population, when combined with its social and economic restructuring, could result in major changes in its role in international agri-food markets. More rapid population and economic growth in developing and middle-income economies will increase their influence in the Pacific food system, altering production, consumption, and trade patterns.

Immigration affects food demand in two ways. First, aggregate demand in the receiving economy rises immediately. Since immigrants often have higher fertility than native residents, they can boost population growth in subsequent years. In the United States, for example, immigration plus the higher fertility of recent immigrants accounted for about 60 percent of population growth in the 1990s. Second, the rise in the immigrant share of a population can affect an economy's food preferences. This has occurred in Australia and Canada (with a rising Asian share of its population), as well as in the United States (with rising shares of Hispanics and Asians). These changes may be short-term in nature, with ethnic dietary differences becoming less pronounced over time, as immigrant progeny adopt the food preferences of their new country, and as the new country's cuisine is, in turn, affected by the influence of successive waves of new immigrants.

A Graying Population: Declining Food Demand and a Tax on the Economy

Between 2000 and 2020, average life expectancy in the Asia-Pacific region is expected to rise from 72 to 77 years, and the median age from 30 to 36 years. The population age 65 and older will increase from 200 million in 2000 to 370 million in 2020. Virtually all the economies in the region have shifted from high to low birth and death rates, leading to a projected 8 percent decline in the number of young people from 2000 to 2020, a modest 17 percent rise in the number of the working-age persons, and a very rapid rise (almost 80 percent) in the number of older persons. Japan's economy is aging the most rapidly in the region. The phenomenon of population aging is not unique to the Asia-Pacific region, but it is happening more rapidly here and in Western Europe than in the rest of the world.

The Asia-Pacific countries with the oldest age structures are in East Asia and also include Australia, Canada, New Zealand and the United States. These economies experienced the demographic transition—the decline in the fertility and mortality rates—quite a long time ago, driven by income growth, medical breakthroughs, healthcare investments, and public policy. Increased female labor market participation in these economies has also contributed to lower birthrates. According to research by Alice Goldstein, China's family planning policies in the 1970s, including later marriage, greater spacing between children, and fewer children, facilitated the country's demographic transition. On the other hand, Asia-Pacific economies with lower per capita income have younger age structures, and their modernization occurred more recently, and in some cases, may not be complete. Advantages of slower population growth (resulting from the demographic transition) include fewer dependent young people and a relatively larger productive segment of the population. The declining share of young people in the population, however, will eventually shift to a greater share of older people as the working segment ages and retires. Although older people may have savings, they may also need health and medical services, and other support from family members or society. Such support is diverted from more productive economic uses.

The changing age structure of the region's population affects food demand directly and indirectly. One direct effect is lower food demand. With an aging population, food demand declines, as activity levels and caloric needs decline. A second direct effect is change in dietary composition and the frequency of eating out. Consumption of livestock products is declining in

the developed Asia-Pacific economies, while consumption of fruit and vegetables is increasing. According to ERS research, older people eat more fresh fruit, fish, eggs, lettuce, and non-fried potatoes. The food market will feel the impact of Japan's aging population more so than other countries. Because of the country's growing share of older persons in the population, Japanese per capita meat consumption is likely to decline. Older Japanese tend to eat less meat and more fresh fruit, rice, and fresh fish due to their established eating habits. In Malaysia, the consumption of rice and wheat tends to increase until the mid-40s, and then declines. Malaysian consumption of meat, fish, and fruits, however, tends to increase until the mid-60s, and declines afterward.

Changes in food preferences among older people are often accompanied by changes in the frequency of eating out. According to ERS research, older people are more likely to consume food prepared at home than are younger people. Older Japanese persons are clearly more likely to eat their mid-day meal at home, which has important implications for lunchtime food service. In general, older people tend to prefer convenience, smaller servings, and, when they do eat out, full-service restaurants.

The indirect effects of demographic change are felt in the general economy. Changes in the relative proportion of "economically active" and "economically dependent" components of a population influence economic growth, which in turn, directly affects an economy's food demand and supply.

The *dependency ratio* measures the relative proportions of "economically active" and "economically dependent" shares of a population. This is the ratio of the younger (0 to 14) and older (65 and over) populations to the working-age population (15 to 64). In the Asia-Pacific region, the dependency ratios for most of the high-income economies are projected to rise over the next two decades due to population aging. On the other hand, the dependency ratios for the lower income economies are projected to decline, providing an opportunity for these economies to save and invest resources for other purposes. This may give these economies a "demographic bonus," or short-term economic boost. But demographers at the East-West Center are quick to point out that this "boost to development is not automatic…because there is no guarantee that governments, institutions, or individuals will spend the savings wisely." In the wealthier economies where the dependent component of the population is rising, labor shortages and higher wages may eventually lead to capital-labor substitution, with more highly productive workers supporting a relatively larger dependent segment of the population. Labor shortages, such as Japan's shortage of construction workers, may also lead to less restrictive immigration policies.

Age structure also affects the propensity to save and invest, which relates to an economy's productive capacity. Recent research suggests that population aging in Australia, Canada, New Zealand, and the United States will reduce savings and investment rates over the next 20 years, with spillover effects on growth and productivity.

Policy and Research Implications

Powerful economic forces generated by demographic changes require the close attention of food system policymakers and researchers. Some demographic changes—such as declining fertility and mortality rates and the aging of a population—take years to become clearly visible. Others, like urbanization, may have more immediate impacts.

Policymakers and the food marketing system must adjust to greater concentrations of people in urban areas.

Food system efficiency as well as agricultural productivity must be a fundamental public policy goal. Public and private investment in domestic food system infrastructure and more liberal food trade policies will be essential to ensure cost-efficient food systems.

Less centralized distribution systems may play a more significant role in overcoming the high cost of traffic congestion and other costs of conducting business in densely populated cities.

Higher incomes and greater food demand from urbanization must be balanced against more sedentary lifestyles and lower per capita caloric needs. More affluent and health-conscious consumers will demand greater quality, variety and convenience from the food system.

The variability of size and growth of different populations has important implications for food market development strategies.

Food marketing and investment strategies will, more than ever, require customization for each country. Japan is currently the largest net importer of food in the world, but its population is aging rapidly and will soon decline. Investment and marketing strategies must address an overall reduction in food consumption and changes in the types of food that consumers demand. In the United States, where immigration is expected to result in rapid population growth, strategies must target many more consumers as well as changes in the population's ethnic mix. The largest absolute growth in population across the region will be in China. This combined with rapid urbanization, requires a focus on market logistics in a densely-populated area and the changing preferences of higher income consumers.

Aging populations will generate changes in food demand that have significant implications for the food system.

The aging of the region's population will slowly lead to lower per capita food consumption and a shift in the composition of food demand. Changes in the composition of food demand are likely to include more fresh fruits and vegetables, less red meat and less eating out. This will have a direct impact on producers, processors, retailers, and food service establishments.

Policymakers must work to mitigate the adverse effects that aging populations will have on economic growth, a leading driver of food demand.

Consideration should be given to policies extending the working lives of people, raising worker productivity so that fewer people can support more retirees, reducing public obligations for pensions and health care services, and relaxing controls on immigration. Some countries may even adopt policies to encourage higher fertility rates. A younger population could have positive economic implications.

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