THE PHILIPPINE REVIEW OF ECONOMICS
VOL. XLI NO. 1 JUNE 2004

The economic impact of the demographic crisis: its implications on public policy

*Felipe M. Medalla**

Abstract

The Philippines is "over-populated" not in relation to its natural carrying capacity but in relation to the performance of its economy and government. Clearly, it would be better to improve the performance of the government and the economy than to just get government involved in fertility choices of households. However, given the history of the performance of both government and the economy, population policy can clearly help improve the nation's welfare. Government must provide public goods and services, but its capability to deliver them is affected by population growth. Moreover, the impact of high fertility on government may be even more serious than suggested by the average level of total fertility rate since children's education is closely correlated with their parents' education, and poorer and less educated parents tend to have more children.

Government's ability to meet the needs of the population will clearly be improved if fertility can be brought down. Fertility can be reduced significantly without resorting to coercive policies. Poor and less educated parents have higher fertility than average, but their desired fertility is much lower than their actual fertility. Population policy can go a long way simply by helping people attain their desired family sizes.

JEL classification: J13, J18
Keywords: Demography, fertility, population policy

1. Introduction

My original assignment is to speak on "Economic Implications of the Demographic Crisis." I should explain why "public policy" was added to the title. This is best done by asking two simple questions. Is our population growth too high for the good of our country and our people? And if so, why is this the case? I have no comparative advantage in answering the first question. Indeed, every thing that I will say on the first question relies completely on research done by other social scientists. The second question, however, is related to public policy, to which I hope I can add a little to the discussion.

*Professor of Economics, University of the Philippines. This paper was read on July 9, 2003 at the Annual Scientific Meeting of the National Academy of Science and Technology (NAST). Reprinted with permission from NAST, Philippines. First published in *Transactions National Academy of Science and Technology, Philippines* **25**:209-220 (2003). Email: felipe.medalla@up.edu.ph.

To make a long story short, our country is "over-populated" not because our population is near the limit of our country's natural carrying capacity. Our country is in a demographic crisis because our economy did not grow fast enough and because our political and social institutions have been unable to respond adequately to the consequences of the rapid population growth.

I recall, for instance, that during a meeting between the cabinet and the Bishops-Businessmen Conference (BBC) near the end of the first year of the Estrada administration, the latter group pointed out many of government's shortcomings, including the failure to create job opportunities, inadequate provision of the basic social services and failure to protect the environment, and came to the general conclusion that the government performed very poorly in managing the consequences of rapid population growth. That the irony of the situation seemed to have escaped the bishops became obvious when a cabinet member asked whose fault it was that population was growing so fast in the first place. That the bishops had a different analytical framework became even more obvious when one member of the BBC panel said it was much more important for the government to perform its functions well than it is to reduce the growth rate of the population. (Which was almost tautologically true.) But what took the cake was a side remark that, even assuming it was the bishops' influence that resulted in government not having a population policy, the government was ultimately to blame since nobody forced government to give in to their lobby.

At any rate, it seemed at that time that the bishops thought that resorting to population control was a cop-out or an easy way out since significant improvements in economic growth and governance would certainly be vastly superior to having a good population policy and little else. Unfortunately, the pragmatic question that must be raised is that: given the odds against the government and the political system re-inventing themselves, isn't a sensible population policy long overdue?

As the above anecdote would suggest, the theme that I would like to develop is that government's failure to implement population control policies would not have been an obstacle to rapid economic growth if the government had done the rest of its job well. Moreover, high rates of growth of human capital formation and per capita income, together with a brisk pace of urbanization, would have resulted in significantly lower fertility, even in the absence of population policies. On the other hand, while it is true that mismanagement of the public sector, bad economic policies and weak institutions are more to blame for the economy's poor performance than government's failure to implement an effective population policy, one would be hard put to support the claim that the country would have even been worse off if, contrary to what actually happened, government had successfully promoted effective methods of family planning and population had grown at a significantly lower rate than it actually did.

Another way to put it is that a rapidly growing economy with a high saving rate and good economic management needs to reduce fertility less than a slow growing economy plagued by low saving rate and fiscal deficits. Fertility would have come down on its own at a much faster pace than what actually happened if our economy and our public sector had performed as well (or even just nearly as well) as in our high-performing Asian neighbors. However, given that economic growth and governance were not our strong suit, a much faster decline in fertility could have mitigated the negative long-term effects of bad economic policies and public sector mismanagement.

A weak state's room to maneuver is more severely curtailed by rapid population growth than a strong state's. To a large extent, this flows from the fact that poverty tends to be transmitted from one generation to the next. Poverty tends to replicate itself across generations to the extent that today's workers who have low human capital are more likely than not to be the children of parents who themselves had little human capital. Moreover, poverty would tend to grow if poorer and less educated parents had more children than average. The vicious cycle can, of course, be broken if the economy is growing rapidly and creating many job opportunities or the state is strong enough to do asset reforms (e.g., land reform) or to mobilize and manage public resources to reduce poverty. Conversely, a weak state's capability to break the cycle is eroded even further if less educated and poorer parents tend to have more children than average.

2. Long-term economic and demographic trends

Economic growth in the Philippines has been significantly lower than in most Southeast and East Asian countries. This, coupled with the fact that population growth in the Philippines was one of the highest in the region, meant that Philippine per capita income, which used to be one of the highest in Asia, is now one of the lowest among the original ASEAN member countries.

A comparison of the Philippines and Thailand gives a very stark contrast in both demographic and economic trends. Philippine population has quadrupled during the last 50 years. Growth rate of population was around 3 percent in the 1960s, falling very slowly to around 2.3 percent in 2000. On the other hand, Thailand's economy grew much faster than the Philippines and its government played a leading role in bringing down fertility rates. As a result, its population growth rate is now more than one percentage point lower than ours. On the other hand, in spite of being hit harder by the Asian financial crisis, Thailand's economic growth was on average much higher than the Philippines' during the last 40 years, with the gap in growth rates widening in the 1980s and the first half of the 1990s.

In 1960, Thailand and the Philippines had the same population. In the last census, our population was 14 million more. This is due to the fact that total

fertility rate in the Philippines is much higher than in Thailand (3.7 children compared to 2.1 children). Due to the combined effect of the wide disparity in demographic and economic trends, the per capita income of the Philippines, which was more than 50 percent higher than Thailand's in the mid-sixties, is now just slightly more than 40 percent of Thailand's. It would, of course, be both simplistic and wrong to attribute the Philippines' being left behind by Thailand to the difference in total fertility. For one thing, although Thailand's economy has been performing better than the Philippines' throughout the last forty years, it was in the 1980s and the 1990s when the gap in the per capita incomes of the two countries widened the fastest. Indeed, two factors—that the GNP of the Philippines contracted by nearly 15 percent in just two years in 1984 and 1985, and the fact that Japanese industries relocated mostly in Thailand and Malaysia and almost totally skipped the Philippines when the Japanese yen appreciated relative to the dollar almost several years after the fall of Marcos—account for a significant part of the difference in the economic performance of the two economies. In short, much of the difference in rate of economic growth is due to non-demographic factors; the failure to adopt a sensible population policy aggravated the situation. (For a comparison of the Philippine and Thai economies, see Yoshihara [1994]).

3. The relationship between population growth and progress

There are two extreme views on the consequences of the demographic crisis in our country. One extreme view is that overpopulation is one of the major causes of our country's poverty. This view grabbed the headlines, both here and abroad, when Mr. Lee Kuan Yew of Singapore said that the three things that have hampered Philippine progress were the behavior of the traditional elites (who cared very little about the suffering of the masses), the country's soft and forgiving culture, and overpopulation. The other extreme view, which is often associated with the conservative sectors of the Catholic church, is that the promotion of population control through artificial contraceptive methods is bad for economic development in the long run because it is immoral (and almost by definition it is true that whatever weakens the nation's moral fiber is bad for economic growth in the long run), with little, if any, impact on the growth rate of per capita income. (In simple algebraic terms, this view, as its proponents maintain, would mean that artificial contraception, in addition to being immoral, at best reduces both the numerator and the denominator in the computation of per capita income.)

As is usually the case with extreme positions, polemical ends, not empirical validity, are the main objectives. (On the other hand, Mr. Lee Kuan Yew could not have grabbed the headlines if he had been half as careful in his choice of words as, say, a social scientist.) A "soft and forgiving culture" is nearly all-encompassing. It covers so many things, from voters' tolerance for poor governance to the academic community's tolerance for lazy professors. On the other hand, that the

traditional elite hampered economic development is widely accepted by scholars in most social sciences such as history (e.g., our colonial history and the rise of the elite), political science (e.g., elections, corruption and governance) and economics (e.g., rent-seeking and free-rider problems). Demographic problems certainly cannot be even a close third when compared to the role of the elite and culture in explaining economic growth or the lack of it. If at all, it could easily be argued that these two broad factors were responsible for the country's low economic growth, which in turn both prolonged the demographic transition and made it harder for government to govern and supply adequate levels of public goods and services.

The moral side of the arguments purportedly supporting the other extreme view is even easier to demolish. There's very little scientific data (or even theological arguments) that support the view that people who have sex only for procreation (and therefore abstain from sex when they do not want to procreate) are more moral than those who practice artificial or modern methods of contraception. On the contrary, it can be argued the parents have the moral duty not to bring additional children into this world if they cannot give them good education, nutrition and housing. If governments that do not promote modern contraceptive methods are more moral than those that do, then we arguably have one of the most moral governments among Asian economies. It is, of course, rather sad that such morality has not given us the best government in the region.

One can, of course, argue that a country that succeeds in significantly reducing fertility solely through celibacy and natural family planning must be a truly disciplined country indeed and has a great economic future ahead, or is already a very rich country. (Norris [1996] gives an interesting personal point of view on how celibacy liberates both mind and spirit.) But how many countries have succeeded in reducing fertility solely through celibacy and natural family planning? The answer, of course, is none. (This point reminds me of Ursula Hick's put-down of tax advisers from developed countries who advocated the adoption of progressive consumption taxes in developing countries. She said that the less developed country that had the capability to follow the tax advice must be already developed.)

The claim, however, that there is a weak link or no link at all between the growth rates of per capita income and population is an empirical issue. Unfortunately, there are tremendous measurement problems. If one resorts to statistical regression using measured variables from a cross-section of countries, there is a high risk of attributing to population growth the impact variables missing from the equation (because they are hard to measure or are not measured consistently across countries) that may be correlated with both population and economic growth. Unfortunately, what we know of the theory of economic development is that some of the most important variables are either hard to measure

or hard to compare across countries (e.g., quality of governance and strength of market-enabling institutions).

At any rate, the cross-country regressions have yielded mixed results. Barro [1997] identified high levels of schooling, good health, low fertility, low government welfare expenditures, the rule of law and favorable terms of trade to be conducive to economic growth. Other research which also used cross-section data found neither significant positive nor negative impact on economic growth (Bloom and Freeman [1986]). Overall, the neutralist finding seems to be more widely accepted by the economics profession and is more widely supported by studies that employed regression analysis using cross-section data from many countries (Kelly [2001]).

It has been pointed out, however, that simply correlating demographic and economic growth rates results in specification errors on the effect of demographic variables on the economy (Bloom and Williamson [1997]; Bloom, Canning and Sevilla [2003]). To see this, consider an economy where young and old people consume but do not work. An increase in birth rates will initially reduce economic growth as investment in physical capital is reduced in order to finance the consumption and human capital requirements of the young. However, economic growth may rise after some lag when the baby boomers start working. Similarly, a drop in birth rates may initially result in high economic growth as expenditures that are needed to prepare the young for future work are reduced. Eventually, however, this may result in lower economic growth as the share of retired workers in total population rises. In short, the effects of fertility change on the economy depend on its effects on the age structure of the population. Conversely, economic growth of countries, other things held equal, will vary depending on where it is situated in the demographic cycle. For instance, a cross-section of the countries that are identical in every way except for their positions in demographic transition may depict zero, negative or positive correlation between economic and population growth depending on whether nations in the beginning, middle or ending of the demographic cycle are over-represented in the sample. (This is similar to the remark that one can easily produce a U-shaped relationship between income inequality and economic growth simply by over-representing Latin America in the sample.) The effect of the changing age structure would depend on whether the workers or dependents are increasing faster. However, over the entire cycle, which could take a very long time, demographic effects are transitional.

Another point to stress is that the drop in population growth initially creates additional funds for increasing either physical capital or human capital per worker. (It's almost like getting a loan that does not have to be repaid.) It, of course, does not necessarily follow that this will have significant long-term effects on economic growth. In countries where capital is misallocated (e.g., government tries to pick winner industries but the putative winners turn out to be losers), the demographic

dividend may not have lasting effects. In short, a reduction in birth rates frees up resources, but the gain will be temporary unless the resources that are freed up are invested well. The successful East Asian and Southeast Asian countries seem to have gotten both sides of the equation right. They reduced birth rates, generated demographic dividends, and invested the dividends wisely as well (Bloom and Williamson [1997]).

The Philippines, on the other hand, has yet to realize a demographic dividend similar to those experienced by our Asian neighbors. Still, high population growth rates alone cannot explain our *recent* mediocre economic performance. Philippine population has been growing rapidly for around fifty years. Theoretically, the economy should now be on the upside part of the demographic cycle (e.g., with labor force growth at least matching population growth). Many of the babies born at the time that population growth went on the upswing are now of working age. In short, if our *current* economic growth is low, it cannot be necessarily attributed to demographic variables because labor force growth is not lower than population growth—4.5 percent in the 1980s, 2.7 percent in the first half of the 1990s and 1.9 percent in the second half of the 1990s. (It is possible that the low growth rate of labor force in the second half of the 1990s was due not to demographic forces but to the impact of the Asian financial crisis that may have dampened employment search.) Our high unemployment rates would suggest, however, that many of the babies born more than twenty years ago are not contributing as much to economic growth as the baby boomers of Thailand and Malaysia did.

More than thirty years ago, Dr. Bernardo Villegas was asked in a forum about the negative effects of high birth rates on the economy. He simply replied that there were two hands for every mouth. Conveniently obscured was the fact that the mouths start working years or even decades ahead of the hands. But that was more than thirty years ago and many of the hands connected to those mouths are now already experienced members of the labor force. In short, the age structure should be much more favorable now than two or three decades ago. Unfortunately, high unemployment and underemployment rates may have severely dampened much of the favorable effects of the coming of age of the baby boomers.

As employment opportunities became scarcer, Filipinos found jobs abroad in greater and greater numbers. The rapid rise in the number of Filipinos working abroad resulted in GNP growth rates that were consistently higher than GDP growth rates. (The difference between GNP and GDP is net factor income from abroad, which is largely just the difference between Filipino overseas workers' income and interest and dividend payments to foreigners.) That GNP was six percent lower than GDP some 15 years ago but is now around six percent higher, in spite of the fact that interest payments on the country's foreign debt have been consistently rising, can be seen as a demographic dividend from the high birth rates.

At any rate, the widening gap between GNP and GDP growth demonstrates that rapid population growth need not result in lower per capita incomes. Ultimately, the economic implications of demographic change would depend on whether the younger generations could find jobs that pay well. In general, their ability to find jobs would depend on both the growth of the economy and the skills that they possess. The exception to the rule, of course, is overseas employment, which is a function not of domestic economic growth but of economic growth abroad. But whether the jobs are found here or abroad, the growth of human capital is very important. In particular, as will be discussed later, it is important to ask how a higher or a lower population growth rate affects human capital accumulation.

Finally, it is worth noting that the rising share of income from abroad in GNP may be seen as a safety valve. Without the rise in overseas employment, the consequence of rapid population growth could have been much more serious. Overseas employment mitigated the negative impact of rapid population growth. It is still not clear, however, what the social costs are of using overseas employment as a safety valve. For instance, what is the social cost of parents and children being separated over extended periods of time?

4. Fertility and human capital transmission

What has been said thus far about the neutrality of higher or lower population growth over the entire length of the demographic cycle depends on the assumption that the productivity difference between the younger and the older generations is not itself affected by the demographic change. As already mentioned, this is not necessarily the case, for instance, when the unemployment rate for the next generation is expected to be higher than the present unemployment rate. In addition, it matters a lot whether the children of the present poor are much more likely to be the future poor (Orbeta [2002c]) and whether the poor have higher fertility than the non-poor. The burden of the state is clearly higher if poor people beget poor people and do it at a faster rate.

On the surface, the Philippine educational system seems to be doing well. It has one of the highest growth rates of school age population in the region but this is matched by an even higher growth rate of enrollment, resulting in school attendance rates closer to those of developed countries. Average years of schooling among those who are employed rose from 6.4 years in 1976 to 8.0 in 2000.

The share of expenditures on education rises as income rises. As a result, inequality in the distribution of education is probably even greater than the inequality in the distribution of income. One reason for the inequality is the low survival rates in elementary schools. Nearly forty percent of pupils who enter grade school do not reach high school. (That the distribution of human capital is more unequal than the distribution of income should not be surprising. In many countries, wealth and assets are more unequally distributed than income.)

Children of parents who have no education or only elementary education are only half as likely to go to college as the children of those who have gone to high school or to college. Moreover, although high fertility does not affect the school attendance of younger children, it reduces the number of years of schooling among the poor. Studies have shown, for instance, that school attendance of older children is inversely correlated to the number of their younger siblings. In short, the bigger and poorer the family, the greater the likelihood that older children have to drop out of school to augment the family's resources (Orbeta [2002b]). This is quite consistent with the SWS finding that the incidence of hunger is higher among families with younger members. (A heart-wrenching story related to this is the front page news about a mother of quadruplets who had to put her children in a cage because that was the only way that she could work.)

As discussed in the previous section, the negative effects on economic growth of higher birth rates are merely transitional if the higher birth rates do not reduce the per capita stock of human capital. Suppose, for instance, that financing the human capital of the additional children comes from longer work hours and the reduction of consumption and capital accumulation. In this case, growth of human capital per capita is not reduced by higher fertility and the younger generation would tend to be more skilled than the older generation. In this case, the effects of higher fertility on per capita income growth are conflicting. In the short or medium run, economic growth declines as the growth of physical capital is reduced. As soon as higher fertility begins to increase the growth rate of the labor force, however, growth will start to increase (since the young workers are more productive than the retiring workers who are replaced).

Thus, as long as one takes a very long run point of view (which is the most meaningful way of looking at population), the crucial point is the extent to which the younger generation is more productive than the older generation and the extent to which a higher dependency ratio reduces investment in both human and physical capital. Ultimately, the impact of demography on long run growth depends on which types of families are likely to have more children—those that invest less in human capital or those that invest more.

There is substantial evidence that poorer, less educated and rural parents both tend to invest less in human capital and have more children. This means that the transmission of poverty is intergenerational and would tend to become more serious over time if the economy is not growing fast enough or the government is not capable of making up for poor parents' low capability to bequeath human capital to their children.

Data from the National Demographic Surveys (NDS) show that mothers belonging to the two lowest income quintiles have significantly higher total fertility rate (6.5 and 4.7) than the average for the entire country (3.7). Similarly, mothers with no education or only elementary education also have significantly higher total fertility of 4.9 and 5.5 respectively (Herrin [2003]). Since the difference in

mortality rates is not as great as the difference in fertility rates across classes, th part of the population which has lower human capital will grow faster. Moreove considering how fast the countries we are competing with are increasing the human capital stock, our country may lose rather quickly its much-advertise advantage in human resources. This is, of course, one area where governmer intervention can make a difference. It seems, however, that other Asian countrie are spending more on basic education than the Philippines. (Note, for instanc the recent news report that Thailand spends nearly six times more on basic educatio per pupil than the Philippines.)

Much of the Philippines' failure to measure up to demographic changes lies i the poor fiscal position of the national government (and its inability to use fund efficiently). The Philippines' tax-GNP ratio is the lowest among original member of the ASEAN. The ratio of public debt to GNP of the Philippines is the highest i the ASEAN, and growing. Not counting contingent liabilities, the ratio of publi debt to GNP was 65.5 percent in 2001, up from 53.2 percent in 1996. Includin contingent liabilities, the ratio increased from 53.2 percent in 1996 to 79.1 percen in 2001 (Manasan [2002]). In short, the government's fiscal position is close t becoming unsustainable. This means that interest expense eats up a significan chunk of the budget, leaving very little for infrastructure and basic social services (Indonesia also has high public sector debt. But the Philippines is in a more difficult fiscal position than Indonesia since the latter has oil resources and has greater access to official development assistance.)

The principal reason rapid population growth is considered a problem is that the government does not have the resources to keep up with population growth. Conversely, lower fertility, especially among households that draw resources from government but contribute little to its tax revenue, can improve the government's capability to meet the needs of a growing and poverty-stricken population. Indeed, what is scary about the government deficit is not its size alone but the fact that it is so large in spite of the fact that expenditures on basic social services and infrastructure are so inadequate. While it is true that the fiscal problem cannot be cured simply by reducing the growth rate of the population, lower birth rates can make the national government's fiscal position much more manageable in the long run.

Hardin [1968], in his classic article *The Tragedy of the Commons*, advocated coercive methods to control "freedom to breed" and put an end to "*laissez faire* in reproduction." Difficult as the fiscal situation is, there is no need for coercive methods in reducing fertility in our country. A significant difference between the fertility of the educated and the less educated mothers is due to differences in unwanted fertility. Mothers with no education or just elementary education in the 1998 NDS had total wanted fertility rates of 3.9 and 3.3 respectively compared to actual total fertility rates of 5.0 for both groups. In contrast, the wanted and actual fertility rates for mothers with college education were 2.4 and 2.7,

respectively. More educated parents plan to have fewer children and are in a much better position to achieve their plans. Government can significantly reduce fertility simply by helping poor and less educated families reduce unwanted fertility. Moreover, once such a program is under way, desired family sizes may decline as people find the contraceptive methods that best suits them as government assistance reduces the out-of-pocket cost of reducing family size.

5. Other consequences of the demographic crisis and the weak state

Hong Kong and Singapore, two of the most open and market-oriented economies in the world, intervene most actively in the use of land and the provision of housing. They also intervene most in the use of roads and ownership of motor vehicles. In Hong Kong, land reclamation is a government monopoly and more than half of the households live in housing provided by the public sector. The reason, of course, is that housing, just like use of motor vehicles, has strong externalities. Since land price goes up very rapidly with development density, the pressure to provide public housing is understandably highest in densely populated city-states. Thus, the alternatives are to use the fiscal powers of the state, tolerate sub-human housing conditions or let the urban poor take matters into their own hands. Unfortunately, a weak state would end up choosing the latter two alternatives by default. Moreover, in a democratic setting, punitive measures against squatting are either likely to be stricken off the books (e.g., the so-called Lina Law) or not to be enforced at all (e.g., the situation before the Lina Law). In a way, tolerance or even rewarding of squatting is a way of delegating the state's taxation powers directly to the squatters. Unfortunately, such result in chaos, which impinges on the environment and the transport system. How often have we read in the news that an important public infrastructure project or a flood control project has been delayed by relocation problems? Similar problems recur in matters affecting the environment. The number of people living in public forests is astonishing.

This kind of problems can be essentially classified as a "tragedy of the commons" problem. The solution entails either the use of coercive powers of the state or its redistributive powers (which is also by nature coercive). Hardin's pessimism regarding government's capability to manage the commons would probably be misplaced if the analysis were applied to China and other successful Asian countries. Unfortunately, it may be on target when applied to the Philippines.

6. Conclusion

High unemployment and underemployment are the biggest consequences of rapid population growth. The rising share of overseas workers' income in GNP only partially offsets the fact that job creation could not keep up with population

growth. One can, of course, quibble whether the high unemployment is due to low economic growth or to high population growth, but it is hard to defend the argument that the Philippines would have been worse off if it had tried and succeeded in reducing population growth. This, of course, does not mean that a good population policy is a good substitute for good governance and economic policies. But every little bit helps.

Countries with good economic policies and management have benefited the most from the demographic transition. On the other hand, countries with weak institutions, slow economic growth and large fiscal deficits would benefit the most from reductions in fertility rates. Countries that have done little by way of social and economic reforms may be precisely the ones that cannot afford not to have a population policy.

Fortunately, coercive population policies are not needed. The poor and the less educated want more children than the non-poor and the educated, but the principal reason why their fertility is high is that they do not have access to or cannot afford effective methods of contraception. Thus, non-coercive contraceptive assistance, which is targeted at poor and less educated families, can have significant impact on fertility.

However, such measures are not a panacea to our long-standing socioeconomic problems. Moreover, it would take time for their beneficial effects to be felt. That is probably why conservative religious opposition to them is quite likely to succeed. But that is another recurring story.

References

Barro, R. [1997] *The determinants of economic growth: a cross country empirical study,* Cambridge, Mass.: MIT Press.

Bloom, D., D. Canning and J. Sevilla [2003] *The demographic dividend: a new perspective on the consequences of population change*, RAND.

Herrin, A. and E. Pernia [2003] "Population, human resources and employment", in: A. Balisacan and H. Hill, eds. *The Philippine economy: development, policies and challenges.* New York: Ateneo de Manila University Press and Oxford University Press.

Bloom, D. and R. Freeman [1986] "The effects of rapid population growth on labor supply and employment in developing countries", *Population and development review* (September): 381-414.

Bloom, D. and J. Williamson [1998] "Demographic transitions and economic miracles in emerging Asia", *World Bank Economic Review* **12**: 419-456.

Kelley, A. [2001] "The population debate in historical perspective: revisionism revised", in N. Birdsall, A.C. Kelly and S.W. Sinding, eds. *Population matters: demographic change, economic growth and poverty in the developing world.* New York: Oxford University Press:24-54.

Kelley, A. and R. Schmidt [1995] "Aggregate population and economic growth correlations: the role of the components of demographic changes", *Demography* **32**(4):543-555.

Manasan, R. [2002] "Analysis of the president's budget for 2003", PIDS Discussion Paper Series 2002-24, Philippine Institute for Development Studies.

Norris, K. [1996] *The cloister walk.* New York: Riverhead Books.

Orbeta, A. [2002a] "A review of research on population-related issues: 1980-2002", PIDS Discussion Paper Series 2002-19, Philippine Institute for Development Studies.

Orbeta, A. [2002b] "Education, labor market and development: a review of the trends and issues in the Philippines for the past 25 years", PIDS Discussion Paper Series 2002-17, Philippine Institute for Development Studies.

Orbeta, A. [2002c] "Population and poverty: a review of the links, evidence and implications for the Philippines", PIDS Discussion Paper Series 2002-21, Philippine Institute for Development Studies.

Orbeta, A., J. Matro and F. del Prado [2002] "Review of the population program: 1986-2002", PIDS Discussion Paper Series 2002-18, Philippine Institute for Development Studies.

Yoshihara, K. [1994] *The nation and economic growth: Philippines and Thailand.* Kuala Lumpur: Oxford University Press.