The Demographic Dimensions of Poverty in Jordan

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The Demographic Dimensions of Poverty in Jordan

Executive Summary

The economy of Jordan suffered internal and external shocks in the late 1980s and the early 1990s as oil prices fell, the regional economy slowed, and the Gulf Crisis resulted in a sudden influx of economic migrants returning to Jordan from neighboring countries. These stresses on the economy increased the government’s interest in the extent of poverty in the country and the alternatives for poverty alleviation. One important factor in the poverty equation is population growth and structure. Based on population projections, fertility survey data, and the results of a recent poverty and employment survey, this paper presents a demographic profile of Jordan and draws out the implications of fertility, mortality and migration patterns for poverty alleviation efforts.

The analysis shows that those in the lowest income groups share some common demographic characteristics, such as young age, large family size, and a likely greater unmet need for family planning on the part of poor women. These findings are accompanied by a projection of continued high levels of population growth, despite recent declines in fertility, that will result in increasing numbers of poor, even if the incidence of poverty falls. The implications of these conclusions for efforts to help those in the lowest income levels are seen most vividly in the areas of providing services such as education, health care, housing, and water, where efforts to increase quality will be hampered by the need to expand coverage to a growing population. In addition, the need to employ ever-larger cohorts of new entrants to the labor force is likely to impact wages and unemployment rates, depending on the extent to which out-migration can continue to serve as a supplemental labor market for Jordanian workers. While a growing economy can at least keep pace with the growing numbers, efforts should be, and are being, undertaken by the government to stem rapid population growth.
La dimension démographique de la pauvreté en Jordanie

Résumé analytique

L'économie jordanienne a accusé des chocs de l'intérieur et de l'extérieur à la fin des années 80 et au début des années 90, avec la baisse des prix du pétrole, le ralentissement de l'économie de la région et la Crise du Golfe, qui s'est soldée par un brusque afflux de migrants économiques de retour des pays voisins. Ces nouvelles contraintes imposées à l'économie jordanienne ont incité les pouvoirs publics à accorder plus d'attention à l'ampleur du problème de la pauvreté dans le pays et aux diverses options qui s'offrent pour la combattre. L'accroissement et la structure de la population constituent un facteur important dans l'équation de la pauvreté. Se fondant sur les projections démographiques, sur les données d'enquêtes sur la fécondité et sur les résultats d'une étude récente sur la pauvreté et l'emploi, ce document présente un profil démographique de la Jordanie et s'efforce de déterminer l'influence que devront avoir les courbes de fécondité, de mortalité et de migration sur la lutte contre la pauvreté.

L'analyse révèle certaines caractéristiques démographiques communes aux catégories de population aux plus faibles revenus, telles que le jeune âge, l'appartenance à une famille nombreuse et un besoin plus largement insatisfait de planning familial chez les femmes pauvres. Ces constatations laissent entrevoir la persistance de niveaux élevés de croissance démographique, malgré de récents fléchissements de la fécondité, qui entraîneront l'apparition de pauvres de plus en plus nombreux, même si l'incidence de la pauvreté est moins sensible. Les conséquences de ces phénomènes pour l'action en faveur des groupes aux plus faibles revenus sont particulièrement ressenties dans la prestation de services — éducation, santé, logement et alimentation en eau — où les efforts consacrés à améliorer la qualité se heurteront à la nécessité d'élargir la couverture à une population sans cesse plus nombreuse. Par ailleurs, l'incorporation dans la population active de cohortes toujours plus grandes de jeunes atteignant l'âge de travailler ne peut manquer de se répercuter sur les niveaux des salaires et les taux de chômage, à moins que l'émigration ne continue d'offrir un complément au marché de la main d'œuvre pour les travailleurs jordaniens. S'il est vrai qu'une économie en croissance permet au moins d'absorber le surcroît de main d'œuvre, il incombe aux pouvoirs publics de s'efforcer, comme ils le font actuellement, de stopper l'accroissement rapide de la population.
الأبعاد démographique du pauvreté en Jordanie

موجز تنفيذي

عاني الاقتصاد الأردني من صدمات داخليَّة وخارجيَّة في أواخر الثمانينيات وأوائل التسعينيات، بسبب هبوط أسعار البترول، وتباطؤ اقتصاد المنطقة، والتدفق العائلي للمهاجرين اقتصادياً، والعائدين إلى الأردن من الدول المجاورة نتيجة لأزمة الخليج. أدت هذه الضغوط على الاقتصاد إلى زيادة اهتمام الحكومة بـمُقَرَّة انتشار الفقر في البلاد، والأسلوب البديل الممكن استخدامه لتخفيف حدة الفقر.

ومن بين العوامل الهامة في معادلة الفقر زيادة السكانية والتركيب السكاني، وتقدم هذه الدراسة، استنادا إلى التوقعات السكانية وبيانات مسح الحصوبة ونتائج مسح حديث العهد لأوضاع الفقر والعمالة، صورة عن الأوضاع démographique للأردن، وتستخلص مخاوف أقاط الحصوبة والوفيات والهجرة بالنسبة للجهود المبذولة لتخفيف حدة الفقر.

ويتضح من التحليل أن أدنى الفئات دخلا تشارك في بعض العمليات démographique، كصغر السن، وكبير حجم الأسرة، وكبير احتياجات النساء الفقراء من خدمات تنظيم الأسرة غير المنظمة.

وتتفق هذه النتائج مع توقع استمرار معدلات الفقر السكاني المرتفعة، على الرغم من هبوط معدلات الحصوبة في الآونة الأخيرة، مما سيزيد أعداد الفقراء، حتى وإن حُبط مُعدل انتشار الفقر.

وتتضح جلياً مكملات هذه النتائج بالنسبة للجهود الرامية لمساعدة أدنى الفئات دخلا، في مجالات تقديم الخدمات كالتعليم، والرعاية الصحية، والإسكان، وإعداد البيئ، حيث تُعبي ضرورة توسيع نطاق توفير هذه الخدمات للعديد من السكان جهود تخفيف نوعيتها. كما أن الحاجة إلى توفير فرص العمل للجماعات المتزايدة بإطراف من الداخل والخارج إلى قوة العمل يرجى أن يؤثر في الأجر و معدلات البطالة، مع توقف ذلك على مدى استمرار الهجرة إلى الخارج التي تشكل سوق عمل إضافي للعاملين الأردنيين. وعلى الرغم من أن مواصلة النمو الاقتصادي قد تستطع على الأقل مواكبة ازدياد أعداد السكان، ينبغي على الحكومة بذل الجهد - وهي تبذل فعلًا - لوضع حد لازدياد السري في عدد السكان.
THE DEMOGRAPHIC DIMENSIONS OF POVERTY IN JORDAN

The economy of Jordan suffered internal and external shocks in the late 1980s and the early 1990s as oil prices fell, the regional economy slowed, and the Gulf Crisis resulted in a sudden influx of economic migrants returning to Jordan from neighboring countries. These stresses on the economy increased the government’s interest in the extent of poverty in the country and the alternatives for poverty alleviation. One important factor in the poverty equation is population growth and structure. The following analysis presents a demographic profile of Jordan and draws out the implications of fertility, mortality and migration patterns for poverty alleviation.

DEMOGRAPHIC PROFILE OF JORDAN

Main Trends in Population Growth

Jordan’s population has grown rapidly since 1950, with average annual growth rates of well over three percent. Figure 1 shows the actual and projected growth since 1950, when an estimated 524,000 people lived in Jordan. The government estimates the population to have grown to 3.89 million by the end of December 1991; the World Bank’s estimate for mid-1991 is 3.67 million. The current annual rate of natural increase is estimated to be 3.15 percent. Population growth is expected to continue for several decades, with standard Bank projections indicating that the population will exceed 5 million by July 2000 and top 7.5 million by mid-year 2015.

A major variable in the history of the Jordanian population has been migration. Two major in-migrations occurred, the first of 450,000 refugees in 1948 and the second of 395,000 refugees in 1967. The pattern of migration changed in the 1970s and 1980s, as skilled Jordanians emigrated to work in the oil-exporting countries of the Middle East, while Palestinians, Egyptians, and other Arabs migrated into Jordan to work in less-skilled occupations. More recently, the Gulf Crisis

1 This figure is interpolated from the government’s estimate of 3.89 million for end-year 1991.

2 The rate of natural increase is defined as population growth due to a greater number of births than deaths per unit of population. This measure ignores the influence of migration on population growth.
caused many of the Jordanians working in other countries to return to Jordan; the government estimates that about 300,000 returnees entered after August 1990.

Despite Declining Fertility Population Continues to Grow

Despite Declining Fertility Population Continues to Grow

In addition to the influence of migration, Jordan remains a high-growth country because of high fertility and declining mortality. The 1990 Jordan Population and Family Health Survey (JPFHS) found that Jordan is beginning the transition to lower fertility (Department of Statistics, Jordan, et al. 1992). Recent surveys indicate that the total fertility rate for women 15-49 has fallen from 7.4 children per woman in 1976, to 6.6 in 1983, and 5.6 in 1990. The declines are due mostly to increases in age at marriage, lower rates of nuptuality, and greater, but still limited, fertility regulation. The 1990 JPFHS data show a contraceptive prevalence rate of 35 percent for any method, and 26.9 percent for modern methods. The most popular modern method is the IUD, followed by female sterilization and the pill. Overall, private sources of contraception predominate, with family planning clinics and private doctors providing 50 percent of the modern contraceptives. The source of contraceptives varies with the type of contraceptive used; for methods which require resupply, such as the pill and condoms, pharmacies are the primary source; for clinical methods such as sterilization and IUDs, government hospitals predominate.

The Government recently made the reduction of population growth an explicit goal, and in February 1992, the Ministry of Health identified increased promotion of family planning as a major goal. In addition, demographic information is widely available, with the National Population Commission established to enhance its availability and use. Although the last census was taken fifteen years ago, in 1979, another census is planned before 1995. In addition, there have been fertility surveys conducted in 1976, 1983, and 1990. A smaller, follow-up survey was also conducted in 1985 to assess husbands' and wives' attitudes and behavior.

While fertility rates have declined, they remain well above the replacement level of about 2.1 children per woman, implying continued high rates of population growth in the medium term.

3 The total fertility rate is defined as the number of children a woman would have in her lifetime if she were to experience the current age-specific levels of fertility at every age. It is a hypothetical measure of current fertility rates.
The population will continue to grow in absolute size in spite of fertility decline, as shown in Figure 2. Even with replacement-level fertility, population growth will continue because increasing numbers of women and men are entering their reproductive ages. This phenomenon is called "demographic momentum."

It should be noted that Jordan has higher fertility rates than other countries of similar educational and economic status, such as Thailand or Tunisia. In general, this higher level of fertility can be explained by religious and societal mores that value children highly. While many scholars have argued whether or not Islam prohibits the use of modern contraception, general attitudes in most countries of the Middle East continue to consider large families to be a blessing, and many believe that the exact number of children born to a woman is "up to God." These patterns are borne out in the 1990 JPFHS, in which the mean ideal number of children preferred by ever-married women was 4.4 (note that this is lower than the total fertility rate of 5.6, indicating that women are not realizing their desired family size). While this indicator does increase with age, the mean was still above four for all age groups, suggesting that even the more-educated, younger women in Jordan favor large families. Fully one-third of the women surveyed gave a non-numeric response to the question of desired family size, indicating either lack of a conscious ideal or a strong believe that God will decide family size. The latter interpretation is more likely. Further evidence of this attitude comes from the 1985 follow-on survey to the 1983 fertility survey, in which over 50% of the husbands surveyed indicated that family size is to be decided by God.

Mortality trends indicate that Jordan has lower death rates in comparison to other countries in the region or of the same economic status (see Table 1). For instance, life expectancy for both sexes is 69.6 in Jordan, while the average for the Middle East and North Africa (as defined by the Bank) is 63.1 and the average for all lower-middle-income countries is 65.8. Similarly, the crude death rate is 5.7 per thousand in Jordan, 9.5 per 1,000 for the region as a whole, and 8.2 for lower-middle-income countries. The JPFHS found that infant and child mortality have been lowered significantly in the last few decades. Mortality among infants was almost halved between the periods 1966-1970 and 1986-1990, from 61 to 34 deaths per 1,000 live births. Deaths among children under five declined even more rapidly, from 86 to 30 per 1,000 during the same period. Maternal education appears to be important in preventing child deaths, with higher rates of mortality seen among the children of less-educated women.

| Table 1. Comparison Data for Selected Mortality Indicators, 1990-1995 |
|------------------------|--------|--------|--------|
| Indicator              | Jordan | Avg. for MNA | Avg. for LMI Co. |
| Life Expectancy        | 69.6   | 63.1     | 65.8    |
| Infant Mortality Rate  | 28.1   | 69.0     | 53.0    |
| Crude Death Rate       | 4.6    | 8.5      | 8.2     |

Source: World Bank

Age Structure

High fertility and low mortality have kept population growth high and the population young. The World Bank estimates that 42 percent of the population is under 15, while less than 3 percent is 65 or over. Thus, 55 percent of the population is of working age, while 45 percent of the
Figure 3.

Growth in School Age Population Groups, 1991-2005

![Graph showing growth in school age population groups (1991-2005)]

- Basic (6-15)
- Secondary (16-17)
- Higher (18-21)

World Bank Projections

Figure 4.

Growth in Labor Force Age Group (15-60) 1991-2005

![Graph showing growth in labor force (1991-2005)]

- 1991 Potential
- 1991 "Actual"
- 1996 Potential
- 1996 "Actual"
- 2000 Potential
- 2000 "Actual"
- 2005 Potential
- 2006 "Actual"

"Actual" labor force projections imply a female labor force participation rate of 10%. World Bank Projections
population is either under or over working age, resulting in a dependency ratio of 82 percent. As fertility declines and mortality at older ages falls, the population will have lower proportions in the young ages and the number at the oldest ages will increase, shifting the burden of dependency from caring for the young to caring for the old. This process has begun, but the percent of the population below age 15 is not projected to fall below 25 percent until after 2025. Thus, in the medium term, the young population will increase demands for public services, such as schools and health facilities, and put pressure on the labor market to absorb ever-larger cohorts of new entrants. Figures 3, 4, and 5 show the increases in the school age populations, the labor force, and women of reproductive ages through the year 2015.

Geographic Distribution

As in most countries, modernization has brought urbanization to Jordan. In 1990, 68 percent of the population lived in urban areas, in comparison to approximately 42 percent in 1960. The United Nations projects continued growth of the urban areas at rates greater than the growth of the population as a whole, with the proportion urban passing 75 percent before the year 2005. Amman housed over one-third of the population (1.39 million) in 1990. Based on 1986 and 1991 estimates of the population in each governorate, the governorates of the northern and southern regions are growing more quickly than those of the central region. Table 2 shows the population estimates and growth rates of the governorates between 1986 and 1991. (Note that the average annual rates of growth appear very high due to the inclusion of the returnees in the 1991 figure.)

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4 By contrast, the average dependency ratio for Southwest Asia is 79%, while that for lower-middle-income countries is 72% and that for high-income countries is 49%, according to World Bank figures.
Fertility Preferences and Unmet Need for Family Planning

In addition to measuring current fertility, the 1990 JPFHS asked married women about the number of children they wish to have. The results indicate a future decline in fertility will most likely occur if women's stated desires to limit their fertility can be met by family planning programs. The survey asked questions about limiting fertility, or preventing the birth of any more children, and spacing fertility, or lengthening the time between births.

The desire to limit fertility is fairly common in Jordan, with 47 percent of those women surveyed wanting no more children. The distribution of these women by age and parity (the number of children already born to a woman) indicate that it is older women and women with many children who are more likely to want to stop having children. This indicator also varies somewhat by residence, with those in large cities slightly more likely to want no more children. Educational attainment, however, is negatively associated with the desire to stop having children: those with higher education tend to be less likely to want to stop having children. This particular observation is most likely due to the confounding variable of parity: less educated women have more children, on average, and are thus more likely to want to have no more. Table 3 shows the variations in desire to have no more children by residence and education.

The desire to space children was somewhat less common among the survey respondents, with almost 25 percent of women wanting to have another child "later", with later defined as at least two years into the future. This response was given most frequently by younger women and women with fewer children.

### Table 3. Fertility Preferences

<table>
<thead>
<tr>
<th>Region of Residence/ Education Level</th>
<th>% of Currently Married Women Wanting No More Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residence:</td>
<td></td>
</tr>
<tr>
<td>Large city</td>
<td>55.5</td>
</tr>
<tr>
<td>Other urban</td>
<td>52.3</td>
</tr>
<tr>
<td>Rural</td>
<td>49.0</td>
</tr>
<tr>
<td>Education:</td>
<td></td>
</tr>
<tr>
<td>No Education</td>
<td>65.9</td>
</tr>
<tr>
<td>Primary</td>
<td>62.5</td>
</tr>
<tr>
<td>Secondary</td>
<td>45.0</td>
</tr>
<tr>
<td>More than Secondary</td>
<td>36.0</td>
</tr>
</tbody>
</table>

Source: 1990 JPFHS

### Table 2. Population Estimates and Growth Rates by Governorate, 1986 and 1991

<table>
<thead>
<tr>
<th>Governorate</th>
<th>Pop. 1986 (000s)</th>
<th>Pop. 1991 (000s)¹</th>
<th>Ave. Annual Growth Rate 1986-1991</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amman</td>
<td>1,160.0</td>
<td>1,573.0</td>
<td>6.1</td>
</tr>
<tr>
<td>Zarqa</td>
<td>404.5</td>
<td>601.0</td>
<td>7.9</td>
</tr>
<tr>
<td>Irbid</td>
<td>680.2</td>
<td>950.0</td>
<td>6.7</td>
</tr>
<tr>
<td>Mafraq</td>
<td>98.6</td>
<td>156.0</td>
<td>9.2</td>
</tr>
<tr>
<td>Balqa</td>
<td>193.8</td>
<td>239.0</td>
<td>4.2</td>
</tr>
<tr>
<td>Karak</td>
<td>120.1</td>
<td>163.0</td>
<td>6.1</td>
</tr>
<tr>
<td>Tafila</td>
<td>41.4</td>
<td>62.0</td>
<td>8.1</td>
</tr>
<tr>
<td>Ma'an</td>
<td>97.5</td>
<td>144.0</td>
<td>7.8</td>
</tr>
<tr>
<td>Total:</td>
<td>2,796.1</td>
<td>3,888.0</td>
<td>6.6</td>
</tr>
</tbody>
</table>

¹Includes returnees.

Source: National Commission on Population Estimates
This information on women's desire to control their fertility was combined with information on the use of contraceptives to measure unmet need for family planning. The results indicate that, using the usual definition of unmet need, 22 percent of married women have an unmet need for family planning. Of these, two-thirds would like to have no more children while one-third is interested in delaying the next birth. Two characteristics associated with greater levels of unmet need are rural residence (28 percent of rural women have an unmet need for family planning) and low levels of education (28 percent of women with no education and 23 percent of women with only primary education). We know from the 1991 Survey of Poverty, Employment and Returnees (PER) that these characteristics are associated with greater poverty: rural residents are almost twice as likely as urban residents to be poor, while the incidence of poverty declines sharply with educational level. Using rural residence and educational level as proxies for income status, it can be inferred that poor women have greater unmet need for family planning services than their better-off counterparts.

THE DEMOGRAPHIC DIMENSIONS OF POVERTY

The implications of Jordan’s high fertility and population growth for poverty reduction efforts are multiple, working through (i) the size and growth of absolute numbers and of vulnerable groups; (ii) the relationships between large family size and economic well-being; (iii) implications for investing in human resources at both the micro and macro level; (iv) implications for the size of the labor force; and (v) demand for infrastructure and natural resources such as housing and water.

Growth In the Absolute Numbers of the Poor

The realities of a young and increasing population imply a growing absolute burden of poverty, even if the incidence of poverty remains the same or falls. While this point is only logical, a numerical illustration may emphasize its significance. The 1991 Survey of Poverty, Employment and Returnees estimates that 19.8 percent of Jordanians fall below the World Bank’s poverty line of household expenditure. Given the Bank’s estimated population of 3.7 million in July 1991, there were approximately 725,500 poor in Jordan at that time. Using the World Bank projection for mid-1995 of a population of 4.4 million, the same poverty rate, 19.8 percent, would imply an absolute number of 868,000 poor in 1995. Thus, unless the poverty rate is reduced during those four years, about 142,500 additional people would join the ranks of the poor, raising the need for and costs of health care and social safety net assistance to the poor. The average annual increment in poor people will be over 35,500. Using an alternative measure of a poor person being one in the lowest 30 percent in expenditures, the increment would be 215,000 over those four years, for an average annual increment of over 50,000. Figure 6 demonstrates the increase in absolute numbers

5 The 1990 JPFHS defines unmet need to include "women who are pregnant or amenorrheic and whose last birth was mistimed, and women who are neither pregnant nor amenorrheic and who are not using any method of family planning and say that they either want to delay having their next birth for at least two years or say that they want no more children." This figures should be seen as a measure of the potential size of the market for family planning.

6 The poverty line used by the World Bank is per capita expenditures less than $370 per annum in 1985 US$, adjusted for purchasing power and inflation.
of poor given the assumption of a steady incidence of poverty, using both the current estimate of 19.8 percent, and the measure based on relative expenditures. Looking further into the future, the World Bank's projections indicate that if the incidence of poverty remains at 19.8 percent, over 1.2 million Jordanians would be poor in 2005.

Alternatively, one can estimate how poverty must fall to prevent growth in the absolute number of the poor in the future. Given the projected rates of population growth, maintaining the same absolute number of the poor at 725,500 would require a drop in the incidence of poverty to 16.6 percent by 1995 and a continued decline to 11.9 percent by 2005. A recent World Bank poverty assessment for Jordan characterized the future rate of poverty as dependent largely on two factors, income distribution and economic growth, with economic growth providing the more likely path to poverty reduction. The World Bank analysis found that, assuming no change in the distribution of income, a 5 percent annual growth in GDP can achieve the reductions in the incidence of poverty necessary to prevent increases in the absolute number of the poor. This admirable rate of growth will not, however, lead to a decline in the absolute number of the poor (World Bank 1994).

Growth in Vulnerable Groups

A country experiencing rapid population growth due to high fertility is a 'young' country, with a high proportion of its population at younger ages. This point is easily illustrated by comparing Jordan, with an estimated annual rate of natural increase of 3.15 percent, to Sweden, with an estimated rate of natural increase of 0.11 percent. In mid-1991, approximately 41 percent of Jordan's population was under age 15; by contrast, in 1990 only 17 percent of Sweden's population was under 15. When fertility falls, the growth rate and the proportion of children at younger ages does not fall as quickly due to "demographic momentum", therefore, the Jordanian population under age 15 will continue to grow in absolute numbers even though the fertility rate is declining.

The growth of the child population is important to poverty alleviation because the youngest age groups are most likely to be poor. Using the standard World Bank definition of poverty, the 1991 PER survey indicated that 21 percent of children under age 7 lived in poor households, while 25 percent of children between 7 and 15 were considered poor. These two age groups have the
highest incidence of poverty; the next highest group is the 16 to 25 year-olds (18 percent). It should be noted that the age distribution of poverty noted here does not weight children and adults differently. Thus, in the per capita measure of expenditures, a child is assumed to consume the same amount as an adult. This assumption may, therefore, overstate the burden of poverty among children to the extent that children do in fact consume less than adults. This assumption is also imbedded in any calculations of poverty based on a head count, including those cited here. Determining the proper choice of weights is a judgement to be made by government officials; the difference in poverty by age will depend on the weights chosen.

Under the assumption that individuals of all ages consume the same amount, and given continued population growth, the number of children in poverty will continue to grow, even as fertility falls. Figure 7 shows the growth in the absolute number of poor children age 15 and under in Jordan, assuming the incidence of poverty by age group remains the same. Bank population estimates indicate that there were almost 1.6 million children age 15 and under in 1991, of which approximately 375,000 were poor. If the incidence of poverty among children remains the same, the number of poor children can be expected to increase to 435,000 in 1995 and 589,000 in 2005, while the number of children will grow to 1.9 million in 1995 and 2.6 million in 2005.

Family Size and Poverty

In addition to the high incidence of poverty among children, the link between fertility rates and poverty can be seen in the incidence of poverty by family size. A general trend has been found in developing countries that larger families are more likely to be poor than smaller families. While this relationship does not always hold for total family or household income, in a per capita measure, larger families generally have fewer resources per person. In the case of Jordan, there are no data on the incidence of poverty by family size. However, the 1991 Survey of Poverty,

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Employment, and Returnees does indicate the incidence of poverty by household size, which can be used as a proxy. In this survey, the percentage of households in poverty increases with almost every additional household member, with poverty measured by per capita expenditures. As can be seen in Figure 8, this positive relationship is very strong, with a household with 12 members being almost five times more likely to be poor than a household of six members. It should be noted, however, that, as in the case of the age distribution of poverty, these measures assume all household members use the same amount of resources.

In addition to being measured in the survey data, the positive relationship between large family size and poverty is perceived by the poor in Jordan. In the 1989 Study on Pockets of Poverty in the Hashemite Kingdom of Jordan conducted by the Jordanian Ministry of Social Development, family size was considered the most important variable in explaining why families perceived themselves to be poor (Finding 22). The same was true in the 1991 Survey of Poverty, Employment, and Returnees, in which 28 percent of those who perceived themselves to be poor considered "big family size" to be the principal cause of poverty. Indeed, large family size was felt to be a more important explanation of household poverty than unemployment, which was reported to be the most important cause of poverty by 27 percent of the poor households.

Investing In Human Resources: The Family Context

The link between children and low incomes is cause for concern not only because of the current level of poverty and public expenditures needed for poverty alleviation, but also for the future prospects of children born in large, poor families. At any fixed income level, large family size on its own tends to decrease expenditures on education and health services per capita, as resources are devoted to spending on food and other subsistence goods. Education and health care, however, would have served as an investment in the development of children, raising their human

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9 While household size does not mirror family size exactly because it sometimes includes older relations and visitors, it is the best proxy available.

10 The one exception is that households with only one member were more likely to be poor than households with two members. However, both of these groups have a very low incidence of poverty (4.4% and 3.3%, respectively) and represent a very small proportion of the sample (0.3% and 1.8%, respectively).
capital and increasing their chances of competing in the job market. This relationship between family size, income level, and human resources investments might be especially salient in Jordan, which has adopted a human-resource-based growth strategy in view of its poor natural resources.

The 1986-87 Survey of Income and Expenditures for Jordan demonstrates the link between poverty and expenditures on education and health care, regardless of family size. As shown in Table 3, poor households reported spending on average over half their income on food, while non-poor families reported spending less than 40 percent on food. Of course, the greater share of spending on food by the poor still represents a lower actual expenditure, equal to about one-half the average for non-poor households in per capita terms. Greater spending on food is associated with lower relative expenditures on other household needs, including spending on health and education. In the same survey, non-poor households reported per capita spending on education of almost ten times the per capita spending of poor households. While we do not know enough about what makes up expenditures on education as reported in this survey to say exactly what they cover, given that in 1986 only 6% of the schools were private, this difference is not likely to be explained only be the choice of better off parents deciding to send their children to private schools. Given that access to primary schooling is virtually universal and the secondary schooling system does not seem to be biased toward the non-poor, these differences may represent spending on tertiary education. They may also be picking up the fact that the majority of these who drop out of the school system, and therefore have no educational expenses, are from poor households. Similarly, spending on health care by the non-poor was almost three times greater than that of poor households.

Investing in Human Resources: The Macro Context

The government of Jordan has adopted policies to cushion the effect of poverty on investments in children's education and medical services by providing these services at low or no cost. In addition, income support programs, food coupons, price controls, waivers of school fees, and issuance of health care for the poor help to ensure these needs are met. A growing poor population implies that the burden on public resources to maintain or increase these programs over time will increase as growth in the population translates into greater demand for public services.

Table 4. Expenditures on Selected Items by Household Expenditure Level

<table>
<thead>
<tr>
<th>Expenditure Category</th>
<th>Poor Households</th>
<th>Non-Poor Households</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% of Tot. Expend.</td>
<td>Amt. per Capita</td>
</tr>
<tr>
<td>Food</td>
<td>51.4</td>
<td>118.2</td>
</tr>
<tr>
<td>Education</td>
<td>0.8</td>
<td>1.9</td>
</tr>
<tr>
<td>Medical Care</td>
<td>1.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Source: 1986-7 Survey of Incomes and Expenditures. Note that "poor" households were in the lowest 16% of the expenditures distribution.

\[11\] For a fuller discussion of this link, see Birdsall and Griffen, Op. Cit. For an account of the positive impact fertility decline had on educational investments at both the household and government level, see John Knodell, "Fertility decline and children's education in Thailand: Some macro and micro effects," Population Council Working Paper No. 40 (1992).
This reality has been noted in numerous analyses of social sector expenditures in Jordan. A 1989 public expenditure review (World Bank 1989) estimated that maintaining the level of public services will require increases in public spending of at least 4 percent per year in real terms, and this was before the returnees came back. Increasing resource requirements to meet growing demand can prevent increases in expenditure per capita, and limit the scope to improve quality. For example, in a recent Bank review of the education sector and strategy in Jordan, it was found that while Jordan has sought to increase investments in education and human resources, the performance of the education sector could be even greater were it not for increasing cohorts of school-age children demanding scarce resources (World Bank 1992a). Similarly the World Bank Poverty Assessment (World Bank 1994) estimates that a real GDP growth rate of more than 6 percent per year must be achieved to maintain spending per student constant in real terms without increasing the share of education in the Government's budget, while the document for the recent Health Management Project (World Bank 1993) recognizes the need to promote efficiency in the health sector to control costs in the face of fiscal constraints and increasing demands due to population growth.

Population Growth and Employment

As shown in Figure 4, the high fertility rate assures a growing labor force in the medium term. The average annual number of new entrants, based on the number of males in the 15 to 19 year-old age group, will be 43,500 between 1991 and 1995. A similar number of women will enter working ages. Although the rate of female participation in the labor force was about 10 percent in 1990 according to the report Social Development in Jordan, prepared by the National Center for Educational Research and Development, participation by young women in their twenties was almost 20 percent in 1987, and may increase over time (Issa 1990, Table 6). The average annual growth rate in this age group in the period 1995-2000 will be 6 percent, higher than the average for the entire population. These high numbers of new labor force entrants will lead to excess labor supply and depressed wages unless investments in human resources and capital equipment can increase the demand for labor and productivity at a rate faster than the growth of labor entrants. The extent to which the employment needs of these new entrants can be tempered by the historical pattern of excess skilled labor migrating to the oil-exporting states depends on the migration and employment policies adopted by those states in the future.

Population Growth, Urbanization, and Demands for Infrastructure

Modernization has led to increased urbanization. From a poverty perspective, this trend has both positive and negative effects. On the one hand, urbanization may reduce the extent of poverty and its effects on the individual by making employment and services more readily available. This aspect of urbanization is illustrated by the finding of the 1991 Survey of Poverty, Employment and Returnees survey that rural households are almost twice as likely to be poor as urban households (30 percent versus 15 percent). On the other hand, urbanization brings problems of increasing supply of non-agricultural employees, and demands for housing, energy, transportation, sewage and other infrastructure, and increasing residential and vehicular congestion. For example, recent studies of the housing sector in Jordan indicate crowding in the urban areas, where there are four or more persons per room, having consequences for the health and well-being of the residents. It has been estimated that the household formation rate exceeds the rate of construction of new homes, leading to further crowding (World Bank 1992b). Such an excess of demand over supply
can lead to increasing prices, constraining the availability of housing for the poor. The 1986/7
Income and Expenditure Review indicates that while poor households spend approximately the
same percent of their income on housing as the non-poor (just over 18 percent), the absolute
expenditure is one-third of that of the non-poor. The recent construction boom in Amman, spurred
by the returnees, may, however, temper the pressures of rapid population growth on the housing
sector.

Population Growth and Water Resources

Jordan is potentially facing severe water scarcity. The usual measure of water availability
is the number of flow units (one flow unit equals one million cubic meters of water per year).
Current estimates are that consumption uses 41 percent of an available 700 flow units. Domestic
uses account for 29 percent of demand while agriculture consumes 65 percent. Given the
population size, over 3,000 people compete for every flow unit. As population grows, the pressure
on water supplies will mount, surpassing 6,000 persons per flow unit by 1995 and 8,000 per flow unit
by 2005, assuming water supplies do not increase. The limited availability of water to meet
increasing demands has a macro affect, implying increased government expenditure to obtain water
from distant sources and tensions with neighboring countries over supplies. At the micro level,
water is one of many necessary purchases; one that has implications for health and sanitation. The
results of the 1986/87 Income and Expenditures survey indicate that poor household spend a greater
percent of their income on utilities, including water, than non-poor households (7.2 percent among
poor versus 4.6 percent among non-poor), although the actual expenditure per capita is less for the
poor households. Increased demand for water will lead to price increases, stressing household
budgets further. As a government utility, it is feasible for the Water Authority of Jordan to target
subsidies on water and other utilities for poor households.

PROSPECTS AND UNCERTAINTIES

The demographic outlook is one of continued growth, slowing over time. The two basic
determinants that will shape the growth trend are migration and fertility decline. As migration
patterns have influenced the past population growth they are likely to shape its future, especially
in relation to the opportunities for young, educated workers to find employment in the oil-exporting
countries. These migration patterns will affect efforts to lessen poverty through changes in
remittances and population growth.

The other uncertainty is the speed of fertility decline. While the projections presented
above show a plausible pattern, based on standard Bank assumptions, a faster or slower fertility
decline would result in different levels of growth in the population as a whole and in key age
groups, implying different levels of demand for social services and employment. Figure 9 shows the
population pyramids under three different fertility scenarios for the year 2015: the standard


Unlike the 1960s, when rapidly declining mortality enhanced population growth, future changes in
mortality, while important to individuals, will have much less impact on the total size and structure of the
population. They will tend to prolong adult life rather than lower infant and child mortality.
assumption presented above, a slower fertility decline, and a more rapid fertility decline. Placing one pyramid on top of the other shows how the different assumptions affect primarily the age groups in the medium term.

At the level of the total population, the implications of the alternative scenarios for the absolute number of poor is shown in Figure 10, which assumes a constant incidence of poverty equal to that calculated in the 1990 Survey of Poverty, Employment, and Returnees (19.8 percent). The difference between the three assumptions does not become large until after the year 2000; by 2015, there are 21 percent more poor people under a slow fertility decline scenario than there would be if there were a rapid decline. The absolute difference in the number of poor people between the two projections is 279,000. The difference between an assumption of rapid fertility decline and the standard Bank assumptions is smaller: a percentage difference of 12 percent, representing 161,000 people. Note that while the absolute numbers presented in these various assumptions are

14. The standard fertility decline projection assumes replacement level fertility by the year 2025, while the slow decline projection prolongs it until 2050 and the rapid fertility decline projection assume it is attained by 2010.
scenarios will change as the incidence of poverty changes, the percentage differences between them will not.

In the medium term, fertility decline affects only the size of the youngest age groups, as older cohorts are already born. Therefore, the percentage difference in the number of children under 15 is much greater than the difference between the size of the entire population under different fertility scenarios. As this is also the age group most likely to be poor, the distinction is important. By the year 2005, the number of children under age 15 is approximately 19 percent larger (a difference of 418,000 children) under the slow fertility decline scenario than under rapid fertility decline. By 2015, that gap increases to almost 70 percent (a difference of 1.3 million children). The comparison between the standard projection and rapid fertility decline is less dramatic, with the percentage difference being approximately 13 percent in 2005 (a difference of 286,000 children) and 39 percent in 2015 (a difference of 721,000 children). While these figures give the absolute number of children under 15, the number of children in poverty will depend both on their numbers and on the incidence of poverty for the age group. However, as discussed above, there is also some evidence that fertility levels also affect the level of poverty.

These figures show that the pace of fertility decline will affect the number of people in Jordan, and especially the number of children. The actual path of fertility decline depends on the extent to which reproductive behavior changes. Recent efforts by the government to provide a stronger family planning program should facilitate fertility decline. Whatever the future trend of population growth, the consequences for poverty alleviation will work through the paths explored above: the absolute numbers of the poor, including the size of vulnerable groups and individual families, and the ability of families and the government to meet the consequent demands for investments in human resources, employment, infrastructure, and resources.

**CONCLUSIONS AND RECOMMENDATIONS**

The above analysis shows that those in the lowest income groups share some common demographic characteristics, such as young age, large family size, and a likely greater unmet need for family planning on the part of poor women. These findings are accompanied by continued high levels of population growth, despite recent declines in fertility, that will result in increasing numbers of poor, even if the incidence of poverty falls. The implications of these conclusions for efforts to help those in the lowest income levels are seen most vividly in the areas of providing services such as...
education, health care, housing, and water, where efforts to increase quality will be hampered by
the need to expand coverage to a growing population. This is especially true in education, where
an annual real GDP growth rate of over 6 percent will be needed to maintain current levels of
spending per student without increasing education's share of the Government's budget. For a
country like Jordan, which has relied on high levels of human resource development to spur
economic growth, the increasing cost of investments in human resources is especially significant.
In addition, the need to employ ever-larger cohorts of new entrants to the labor force is likely to
impact wages and unemployment rates, depending on the extent to which out-migration can
continue to serve as a supplemental labor market for Jordanian workers.

While a growing economy can at least keep pace with the growing numbers, efforts should be, and
are being, undertaken by the government to stem rapid population growth through provision of
family planning services to those who would like to use them. Given the relatively high level of
unmet need for family planning, the government should continue its efforts in this regard. The
evidence suggests that unmet need is higher among poor women, implying that any program should
ensure that services are available to low-income groups. The scope of the family planning program
and the way it addresses the needs of low-income groups were beyond the scope of this paper.
Further study of the primary health care and family planning program are warranted to ensure that
the quality and level of services meet client needs, and are accompanied by effective information,
education, and communication programs that are culturally appropriate.
REFERENCES


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