American University of Beirut
Institute of Financial Economics

Lecture and Working Paper Series No. 1, 2007

Returns to Education and the Transition from School to Work in Syria

Henrik Huitfeldt[1] and Nader Kabbani[2]

1. Labour market specialist at the European Training Foundation, Torino

2. Assistant professor of economics at the American University of Beirut

IFE Lecture and Working Paper Series

This series of guest lectures and working papers is published by the Institute of Financial Economics (IFE) at the American University of Beirut (AUB) as part of its role in making available ongoing research, at the University and outside it, related to economic issues of special concern to the developing countries. While financial, monetary and international economic issues form a major part of the institute's work, its research interests are not confined to these areas, but extend to include other domains of relevance to the developing world in the form of general analysis or country specific studies.

Except for minor editorial changes, the lectures are circulated as presented at public lectures organized by the institute, while working papers reflect on-going research intended to be polished, developed and eventually published. Comments on the working papers, to be addressed directly to the authors, are welcome.

Returns to education and the Transition from School to Work in Syria*

Henrik Huitfeldt
European Training Foundation

Nader Kabbani
American University of Beirut

Abstract

Young people in Syria are facing difficulties entering the labor market. Labor supply pressures and weak labor demand from both the public and private sectors have led to persistently high levels of unemployment among the youth. Apart from tabulations of existing data, published research on the Syrian labor market is practically non-existent. This study provides unique analytical insights into the education-employment link in Syria. Using data from the 2001 and 2002 Labor Force Surveys, we describe the labor market situation, estimate returns to education, and analyze the transition from school to work for young people. We find that rates of return to education are low by international standards, but increase with the level of educational attainment. We find evidence that higher education is attractive because it increases the chances of finding a job, decreases queuing times for sought-after jobs in the public sector, and increases the opportunities for working abroad. Prior to 2001, graduates of post-secondary vocational schools (known in Syria as intermediate institutes) were guaranteed jobs in the public sector where government-set pay scales dictate wages. As a result, over 80 percent of intermediate institute graduates work in the public sector. In 2001, the Syrian government stopped guaranteeing jobs to graduates of intermediate institutes; they now have to look for jobs in the private sector that do not necessarily match the training they received. Indeed, we find that the rates of return to schooling are especially low for male graduates of intermediate institutes working in the private sector, indicating little benefit in terms of skills demanded.

* We thank Noura Kamel for helpful research assistance. The authors are grateful to Serdar Sayan and participants at the Labor Economics sessions of the 12th Annual Conference of the Economic Research Forum (ERF) for their valuable comments and feedback.

Introduction

Over the past decade, Syria has been moving from a centrally-planned to a more market-oriented economy, being referred to as a "social market economy." The role of government as employer has been diminishing since the early 1990s, when the state abandoned its policy of mandatory government service, besides military service, for university graduates. The state then began limiting the types of educational credentials, at all levels, for which it guaranteed jobs in the public sector. By 2001, the government no longer guaranteed employment for graduates of most post-secondary vocational (intermediate) institutes, which had been the main path to employment in state-owned enterprises. See Appendix 1 for a graphical representation of the Syrian education system in 2001–02. The government has been trying to limit the growth of public sector employment and openly maintains that it is up to the private sector to generate the needed jobs over the coming years.

In its efforts to reform the economy and improve the ability of the private sector to create jobs, the Syrian government is pursuing policies that are expected to lead to greater economic openness, including planned participation in two major regional free trade arrangements (the Euro-Mediterranean Free Trade Area and the Arab Free Trade Area), less protection for public enterprises, and less restrictive government regulation of the private sector. The "social" part of the reform effort highlights the goal of maintaining a central role for the state, including regulation of private sector activities and maintaining a strong network of social services. The government is in the process of preparing its tenth five-year plan, which is being touted as a blue-print for economic reform.

The government reform effort is coming at an opportune time. Syria is facing a host of internal and external pressures, including the strong possibility that it will become a net oil importer within 5–7 years. The Syrian labor market is also facing substantial pressures. The labor market is characterized by large demographic pressures, sluggish labor demand, and deeply embedded rigidities leading to high youth unemployment and migration rates, especially to Lebanon and the oil-rich Gulf states. The education system in Syria is suspected of contributing to the

situation by failing to equip students with the skills demanded in the market. In response to the current labor market situation, the Syrian government is considering a host of economic and education reforms.

In many ways, the Syrian labor market situation is similar to that of other Middle East and North Africa (MENA) countries. Similarities include demographic trends that have resulted in high shares of youth in the working-age population during the 1990s and 2000s, low female labor force participation rates compared to other developing regions, the prominence of public sector employment, and obstacles to the development of private sector enterprises (Kabbani & Kothari, 2005; World Bank, 2004a). The experience of Syria in relying on a public sector-led employment model is also similar to most countries of the MENA region (World Bank, 2004a; Boudarbat, 2004; Assaad, 1997).

Yet Syria also has unique labor market characteristics which make it interesting to study in light of research efforts to understand the linkages between poor labor market conditions, poverty alleviation, and economic growth. First, wages in Syria are low and education-earnings profiles are quite flat. Average monthly wages of full time secondary school graduates are only 20 percent higher than illiterate workers, and wages of university graduates are only 40 percent higher. Second, over 80 percent of the unemployed in Syria are young new labor market entrants. There is very little unemployment among males over age 30 and females over age 40. Indeed, a large portion of the population is clustered at or near the national poverty line. In 2003–4, an estimated 11.4 percent of the population was poor and 19 percent of the population was vulnerable to falling into poverty, bringing the share of poor and vulnerable groups to over 30 percent of the population (UNDP, 2005).

Apart from tabulations of existing data, published research on the Syrian labor market and education system is scarce. Recent studies have focused on examining the high rates of unemployment, especially among Syrian youth (Syrian European Business Center, 2003; FAFO Institute, 2005; Kabbani and Tzannatos, 2005). Labor market problems, however, may be exacerbated by low wage levels and weak returns to education. This paper studies the education-employment link in

Syria. As the Syrian government pursues educational and economic reforms, it is important to understand to what extent higher levels of educational attainment might contribute to higher wages and better employment opportunities. If the association is weak, further investments in the quantity of education may not have the desired effect on increasing employment and economic growth. Instead, policies to improve the quality of the educational content and the functioning of the labor market should take precedence. Indeed, our analysis establishes that returns to schooling in Syria are low. We also find evidence that a key benefit to obtaining additional years of schooling is shorter unemployment spells and better chances of obtaining employment in the public sector.

The article is laid out thus: Section 2 provides an overview of the labor market conditions in Syria and compares the situation to other countries in the region. Section 3 provides an overview of Syria's education system and again compares it to other countries in the region. These two sections rely on published data from Syrian Statistical Abstracts, the World Development Indicators (World Bank, 2004b), and International Labour Organization's LABORSTA databases (ILO, 2004). Section 4 describes the school-to-work transition in Syria. Section 5 describes the household survey data and methodology used in conducting the empirical analysis in this paper. Section 6 presents the results of our analysis and Section 7 concludes and discusses the policy implications of our research.

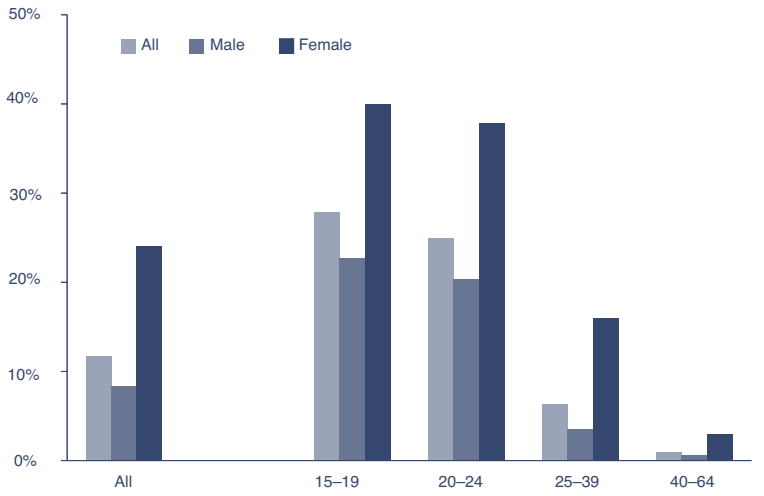
Labor Market Conditions in Syria

Like most other countries in the MENA region, Syria experienced high population growth rates of around 3.5 percent per year during the 1970s and 1980s—a combination of high fertility rates, falling infant mortality rates, and increasing life expectancy. Population growth rates eventually fell to less than 3 percent during the 1990s. As a result, a demographic wave of young people began moving through the population. This youth bulge is estimated to have peaked in 2005 and has contributed to high labor force growth rates of between 5 and 6 percent per year. The labor force is projected to continue to expand by between 250,000–

300,000 workers per year over the next 20 years. However, labor force growth rates are expected to fall steadily to under 3 percent by 2025 as the demographic wave moves into mid-career (Kabbani and Tzannatos, 2005).

Another factor behind the high labor force growth rates during the 1980s and 1990s is the increasing rates of female labor force participation, which rose steadily from 11.9 percent in 1983 to 21.3 percent in 2001, with the highest increases among the youth (ILO, 2004). We estimate that rising female labor force participation rates represented only around 15 percent of labor force growth of the 1990s. However, this increase is likely to have affected labor supply pressures in specific occupations that attract female workers and thus it may have a substantial effect on employment outcomes in these occupations. Indeed, unemployment rates for females are nearly three times as high as those for males (Figure 1). This gender differential may partly be due to labor supply pressures resulting from increasing female labor force participation rates.

Figure 1 Unemployment rates by age group (2002)



Source: 2002 SCBS Labor Force Survey

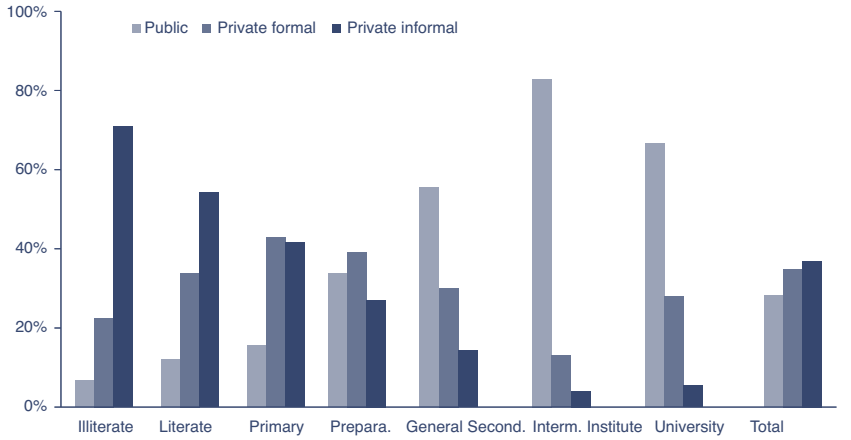
International migration has helped relieve some of the labor supply pressures in Syria. Lebanon has been a major destination for low-skilled Syrian workers – an estimated 80 percent of Syrian workers in Lebanon have six years or less of schooling and most work for only a few months of the year (Syria Report, 2004). Estimates of the number of Syrian workers in Lebanon vary from 350,000 to 1 million, with recent estimates closer to the lower figure. The number of Syrian workers in Lebanon is thought to have declined by around 40 percent since the post-war construction boom of the mid-1990s and declined even further after the assassination of former Lebanese Prime Minister Rafik Hariri in February 2005. While Lebanon still provides an important destination for Syrian workers, its future role remains uncertain. More educated Syrian workers tend to find employment in oil-rich Gulf countries and, to a lesser extent, Europe and the Americas. Specific numbers are not available. However, around 4000 Syrian students travel abroad each year to continue their studies and an estimated one half remain abroad to work.

In 2003, an estimated 28 percent of the civilian labor force worked in the public sector and 72 percent worked in the private sector (Figure 2). The size of the informal private sector (businesses not registered with the government) is uncertain, with estimates ranging from 39 percent of employment in 2001, to 24 percent in 2002 and 37 percent in 2003. This variation indicates problems in the way the question is being asked and/or responded to. Over the past four decades, the Syrian government has been a dominant force in terms of both hiring workers and regulating the private sector. In 2003, over 75 percent of workers with post-secondary education (intermediate institute or university degrees) worked in the public sector.

The allocation of workers into the public, private formal and private informal sectors follows a ranking based on educational attainment. Workers with little formal education are far more likely than others to work in the informal sector. Workers with higher education most often work in the public sector. The private formal sector represents a middle ground, attracting between 20 and 40 percent of workers across most levels of educational attainment. The Syrian government

is no longer able to absorb the incoming educated workers. It began reforming its employment policies in the early 1990s when it no longer required five years of mandatory public service from public university graduates. It is studying ways of reducing public sector employment and closing loss-making public sector enterprises. As a result, the economy must rely on the private sector to generate the necessary jobs.

Figure 2 Share of employment by sector and level of educational attainment (2003)



Source: 2003 SCBS Labor Force Survey.
Note: the distributions of workers by educational attainment across public and private sectors are similar in the 2001, 2002 and 2003 surveys. However, distributions across private formal and informal sectors are different, with 2001 and 2003 having similar distributions.

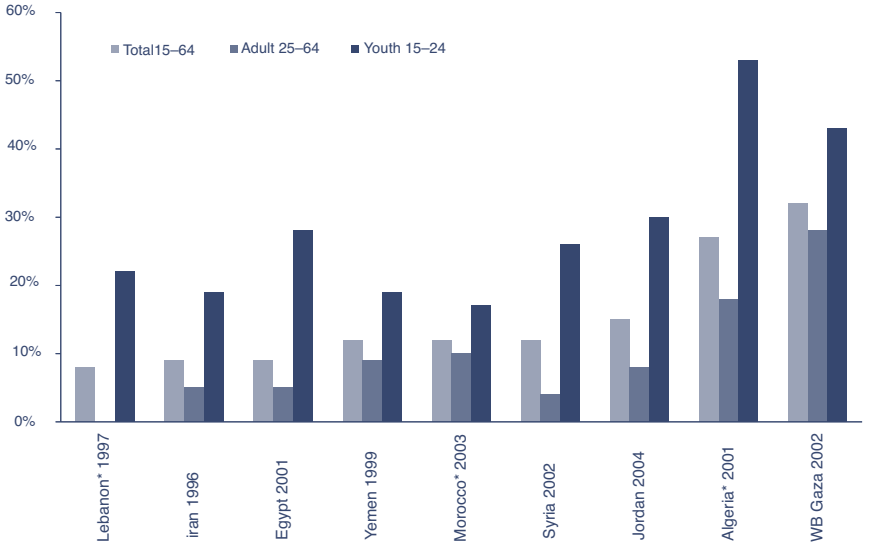
The private sector in Syria, however, has not been able to generate adequate numbers of jobs to absorb the incoming young workers. As a result, unemployment rates are high, reaching 10.6 percent in 2001 and 12 percent in 2002 among 15–64 year olds.[1] In Syria, unemployment is concentrated among the youth. The unemployment rate stood at 28 percent among 15–19 year-olds and 25 percent among 20–24 year-olds in 2002, compared to 6.3 percent among 24–39 year-olds and less than 1 percent among 40–64 year-olds (Figure 1). In fact, fully 78

1. In 2003, the unemployment rate was estimated at 11.7 percent. However, this figure was generated though an unemployment survey exceptionally conducted during the spring, a time of low levels of agricultural activity.

percent of the unemployed population in Syria is 15–24 years old. In addition, first-time job seekers represented 68 percent of the unemployed population in 2002. Thus, unemployment in Syria is very much a labor market insertion problem involving young first-time job seekers.

The Syrian labor market situation is similar to other countries in the MENA region, which are experiencing similar demographic trends and labor supply pressures from entering cohorts (Kabbani and Kothari, 2005). In most non-GCC (Gulf Cooperation Council) countries with available data, youth unemployment rates are several times higher than those for adults.[2] However, Syria stands out in terms of the sheer magnitude of the problem, with youth unemployment rates that are 6.5 times higher than those for adults (Figure 3). The large relative difference between youth and adult unemployment rates is partly the result of high unemployment rates among youth. However, it is also due to adult unemployment rates that, estimated at 4 percent in 2002, are substantially lower than in other countries in the region. For all non-GCC countries with available data, this share was between 35 and 60 percent, compared to 78 percent in Syria (Figure 4).

Figure 3 Youth and adult unemployment rates, MENA countries (most recent year)

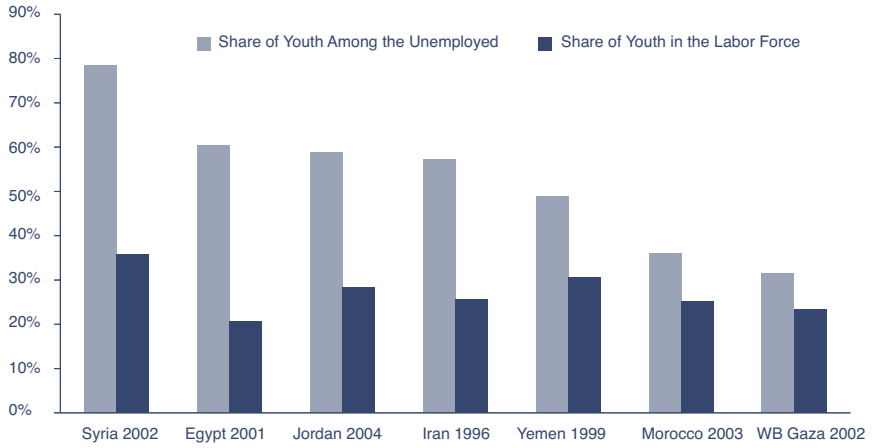


Source: ILO (2004)

2. The situation is similar among national workers in GCC countries, although these figures are complicated by the presence of large numbers of expatriate workers.

After a series of intensive data collection efforts, the Syrian government has become more aware of the labor market situation and has responded in a number of ways. It is directly addressing the unemployment problem through the creation of an Agency for Combating Unemployment with a budget of $1 billion over 5 years to fund job-creation activities. The government also introduced a number of legal and administrative changes making it easier for private sector companies to enter and expand in the market. For example, until recently, many industries were closed to private sector investment, including television manufacturing, banking, and secondary and university education; additional incentives for large scale private investment were introduced; and an extensive reform of its public education system was begun. The reforms in the public education system include curricula at all levels being revised; teachers being required to receive additional training and retraining; and the vocational education system undergoing extensive reform at both the secondary and post-secondary levels.

Figure 4 Share of youth among the unemployed, MENA countries (most recent year)



Source: ILO (2004)

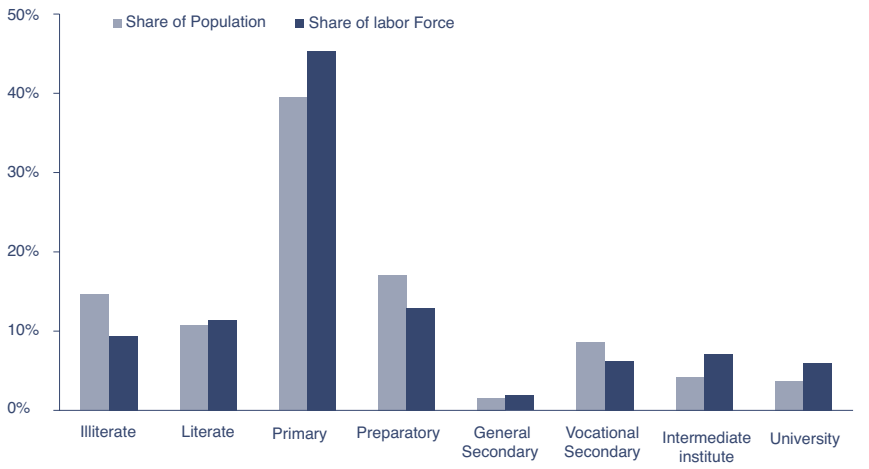
In addition, the recent signing of trade agreements with other Arab countries and the anticipated signing of a trade agreement with the European Union will put further pressure on the private sector. These changes are, in turn, expected to increase the demand for skilled workers in technical occupations and may lead to mismatches between the skills of recent graduates and the needs of the labor market, placing even more importance on reforming the country's education system.

The Educational Situation in Syria

The Syrian education system starts with pre-school education overseen by the Ministry of Education (see Appendix 1). Attendance is voluntary. In 2001–02, nine years of primary school (grades 1–6) and preparatory school (grades 7–9) were compulsory for children aged 6–15 years old.[3] Successful completion of basic school (assessed through a national written examination) is a pre-requisite for access to general or vocational secondary education for another three years. Post-secondary education includes university studies (4–5 years), vocational "intermediate" institutes (2 years) and the recently created "technical colleges" (3 years). A small number of dropouts enroll in vocational training centers mainly under the Ministry of Industry, the Ministry of Construction, and the Ministry of Agriculture. Nearly two thirds of the Syrian labor force have completed primary education or less and only 21 percent have completed secondary or post-secondary education (Figure 5).

3. The education system was modified in 2003. Primary and preparatory schooling were combined into one "basic education" category that covers grades 1–9.

Figure 5 Educational attainment (share of working-age and labor force populations)

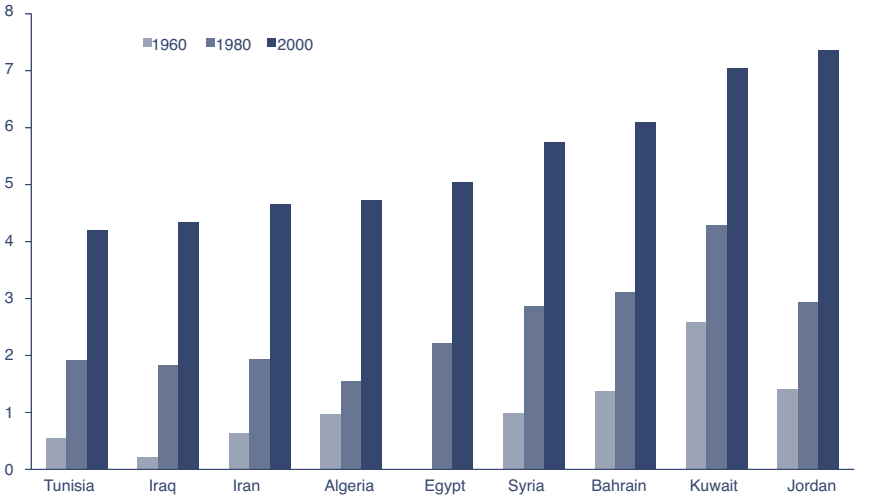


Source: 2002 SCBS Labor Force Survey

Until recently, the education system in Syria was dominated by public schools. Private schools were permitted at the primary level but had to use public school curricula. A handful of private schools associated with various foreign embassies were allowed to operate and develop their own curricula with the expectation that their students would travel abroad to continue their education and work. Only in 2000 did the Syrian government allow the development of private preparatory schools, secondary schools, and universities.

Over the past 50 years Syria experienced substantial increases in educational attainment. High amounts of public spending on education, free access to public schools, and mandatory schooling laws combined to encourage Syrian families to send their children to school and keep them enrolled longer. The average years of educational attainment increased from 1 in 1960 to nearly 6 by 2000 (Figure 6). The average years of educational attainment in Syria now surpass most other non-GCC countries. However, they lag behind educational attainment in the neighboring countries of Lebanon (not shown) and Jordan.

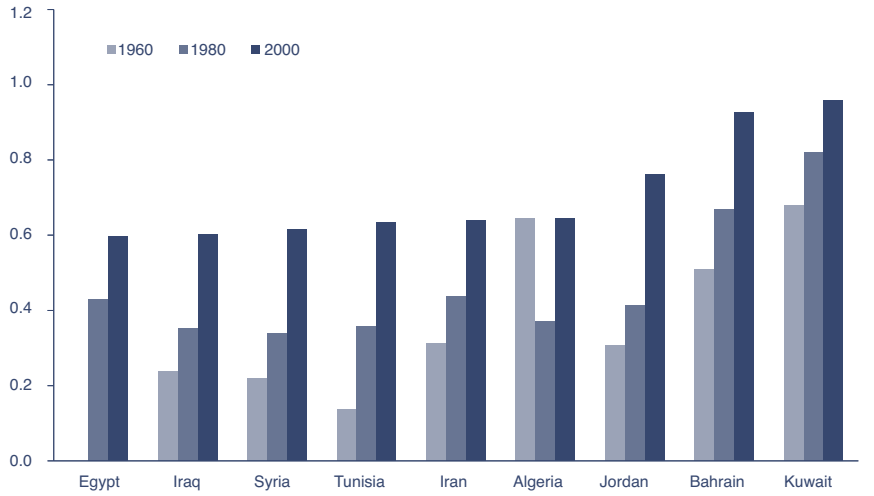
Figure 6 Average years of schooling, age 25 and over (1960–2000)



Source: Barro and Lee (2000)

Syria has also achieved marked progress in reducing gender imbalances in educational attainment. However, it still lags behind many MENA countries in this regard.

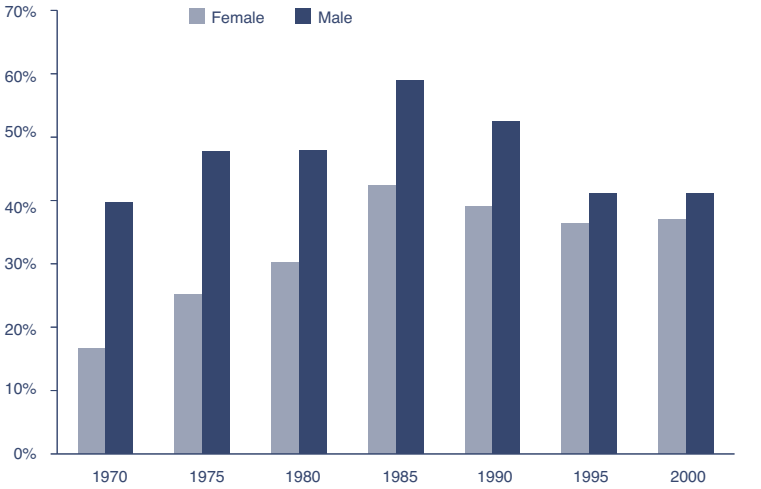
Figure 7 Average years of schooling age 25 and over, female/male ratio (1960–2000)



Source: Barro and Lee (2000)

The increases in the average years of schooling in Syria were largely driven by increases in participation at the primary and preparatory levels. At the secondary level, however, Syria experienced a substantial decline in enrolment rates between 1985 and 2000, especially among males (Figure 8). Syria is the only MENA country besides Iraq to experience such declines. Several possible reasons contributed to this trend, including the demographic composition of the student body (with larger proportions of students coming from households with lower levels of parental education), steps taken by the Syrian government during that period to direct students away from general secondary and towards vocation secondary education (which is associated with higher dropout levels), a perceived increase in the difficulty of baccalaureate examinations (in order to ease supply pressures facing the public university system), and low returns to secondary education (which also encourage student dropout). We will examine some of these possibilities in detail below.

Figure 8 Secondary school enrollment rates, by gender (1970–2000)

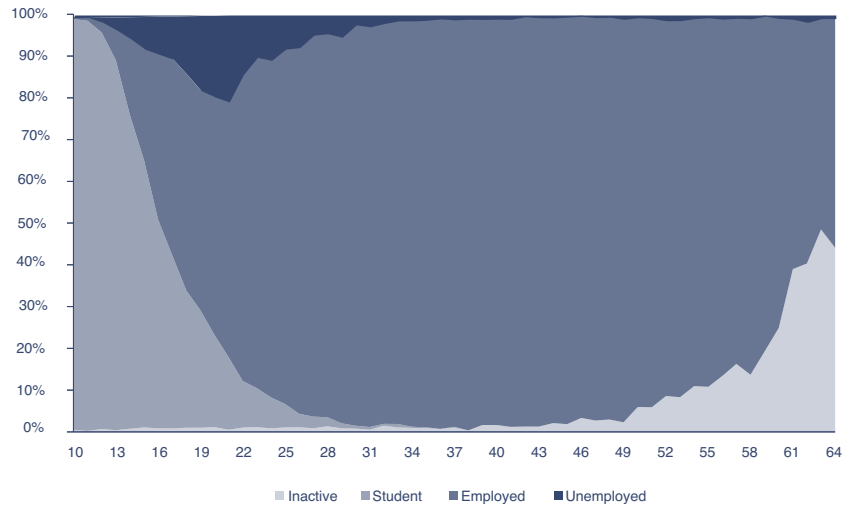


Source: WDI (2004)

The School-to-Work Transition in Syria

The school-to-work transition is quite different for males and females in Syria. There is near universal educational enrollment for both genders through age 10. Young males start entering the labor force around age 12. Around 50 percent of the male population is in the labor force by age 16 and over 80 percent by age 21. The unemployment level among male youth increases steadily as more youth enter the labor force, reaching a peak of 21 percent of youth population by age 21 before declining. The level of economic inactivity among males does not increase above 1-2 percent until the age of 46. Thereafter, the level of economic inactivity increases steadily, reaching 45 percent prior to retirement age (Figure 9).

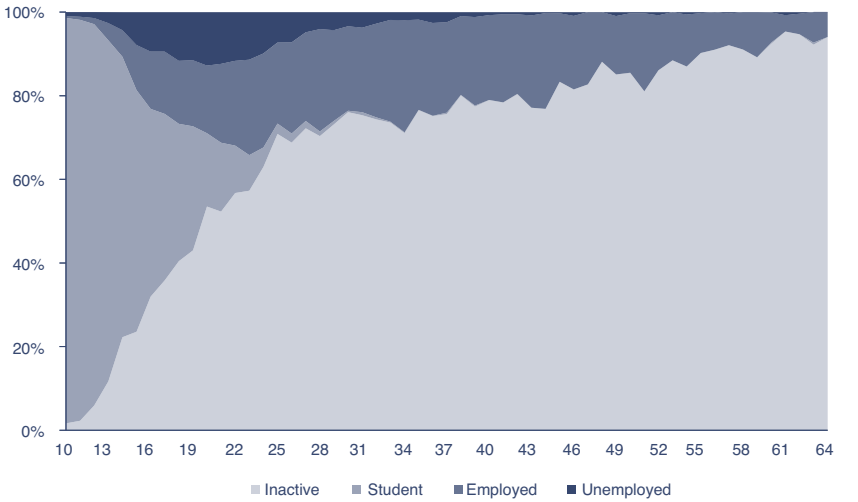
Figure 9 Labor force status by age, males



Source: 2001 and 2002 SCBS Labor Force Surveys

Females too start entering the labor force around age 12 (Figure 10). However, a larger proportion leaves school but never enters the labor force. The labor force participation rate for females continues increasing until age 23, when it reaches a peak of 34 percent. The level of unemployment also increases, reaching a peak of 13 percent (corresponding to an age-specific unemployment rate of 44 percent) by age 20. The labor force participation rate of the female population then declines steadily, reaching 6 percent just before retirement age.

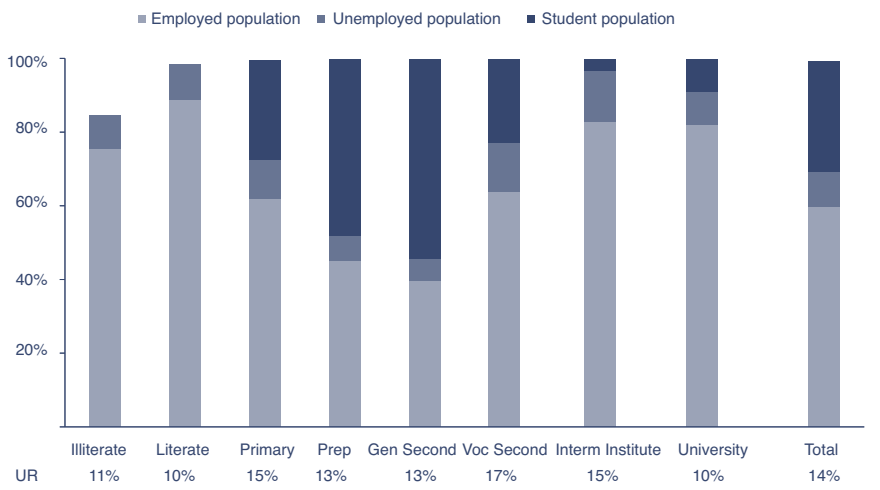
Figure 10 Labor force status by age, females



Source: 2001 and 2002 SCBS Labor Force Surveys

In order to focus more closely on the school-to-work transition, we focus our analysis in this section on those aged 13 to 34. By age 13, most youth have completed their primary schooling and some drop out of school. By age 34, most males are working and females are either working or not in the labor force. For age groups beyond 34, unemployment affects only a small portion of the workforce (around 5 percent of females and 1 percent of males).

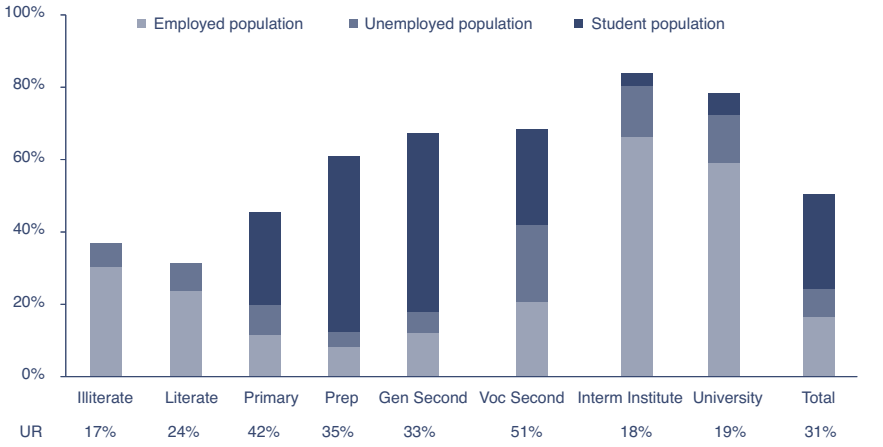
Figure 11 Labor force status by educational attainment, males age 13–34 (2001–02)



Source: 2001 and 2002 SCBS Labor Force Surveys

For males between the ages of 13 and 34, labor force participation rates are highest among those with the lowest and highest levels of educational attainment (Figure 11). However, much of the low labor force participation rates for those with mid-levels of schooling reflect high enrollment rates among preparatory and secondary school completers. Except for the illiterate group, activity (both economic and educational) is near universal across levels of schooling. For the illiterate population, the lower rates of activity may be due to the predominance of rural households with seasonal jobs among this group. The situation is quite different for females (Figure 12).

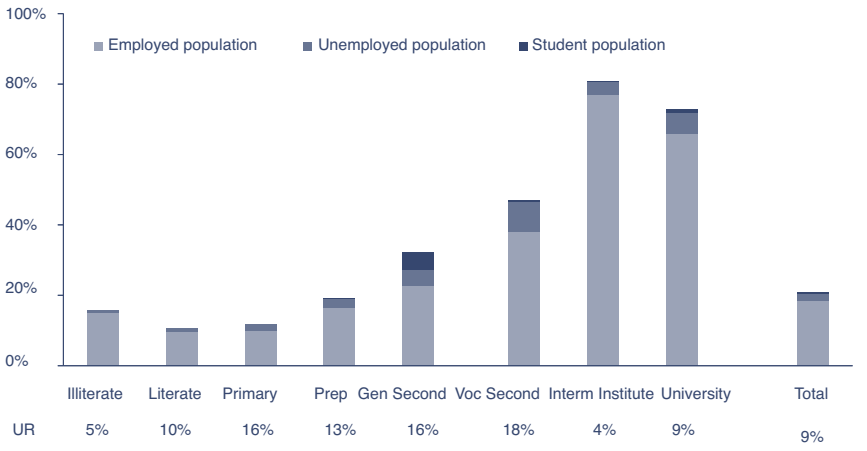
Figure 12 Labor force status by educational attainment, females age 13–34 (2001–02)



Source: 2001 and 2002 SCBS Labor Force Surveys

The level of labor force participation is also highest among those with the lowest and highest levels of schooling. However, once school enrollment is taken into account, it becomes clear that economic and educational activity increases with the level of schooling, reaching around 80 percent for intermediate institute and university graduates. This general trend is maintained among age groups that have generally completed school, i.e. ages 25–64 (Figure 13). Again, we note the large difference in female participation rates between intermediate institute and university graduates and other levels of educational attainment.

Figure 13 Labor force status by educational attainment, females age 25–64 (2001–02)



Source: 2001 and 2002 SCBS Labor Force Surveys

The figures above are somewhat complicated by the fact that other variables associated with educational attainment may be contributing to the results. For example, if younger females tend to more often complete university education, and if younger females are also more likely to participate in the labor force, then we would expect to find that university education is associated with higher labor force participation rates, but for reasons independent of holding a university degree. To address this issue, we control for various individual and household characteristics using logistic regression analysis.

Data and Empirical Methods

The data used for the empirical part of this paper come primarily from the 2001 and 2002 SCBS Labor Force Surveys. Both these two nationally-representative surveys have valid cases of 14,411 and 18,257 households respectively and primarily include data on demographic and employment characteristics of household members. To increase our sample size, we merge the data for the two surveys

to conduct our analysis. The main variables used in the analysis are: monthly wages, hours worked, educational attainment, employment status, marital status, and employment sector (public/private, economic activity, and occupation). The analysis also uses data from the 2003 SCBS Labor Force Survey, also known as the 2003 unemployment survey, a nationally-representative survey of 27,600 households. The 2003 survey does not contain data on wages, but it does contain detailed information about unemployment (duration, preferences for working in the public or private sector, etc.).

In our paper, returns to education are estimated using the standard Mincer human capital earnings function (Mincer, 1974) with log hourly wages as the dependent variable:

$$(1) \quad \ln(w_i) = \beta_0 + \beta_1 S_i + \beta_2 E_i + \beta_3 E_i^2 + \beta_4 X_i + \beta_5 H_i + \varepsilon$$

S_i is the highest level of schooling completed: illiterate, literate or primary, preparatory, vocational secondary, general secondary, intermediate institute, and university or above. The omitted category is "illiterate." We use level of education attained to estimate the level of schooling instead of actual years of schooling, information for which was not collected. E_i is potential years of experience. It is calculated by subtracting an individual's age from the expected age of school completion and the median age of first obtaining a full time job for that worker's gender and level of educational attainment. The experience term is squared to take into account the quadratic structure of the age-earnings profile. X_i is a vector of individual characteristics. H_i is a vector of household characteristics.

We wish to distinguish between employment and returns to education in the private and the public sectors. This can be done by estimating Equation (1) separately for employees of the private and the public sector using OLS.[4] While we do this, the choice of sector is likely to be an endogenous decision (van der Gaag and Vijverberg, 1988; Gyourko and Tracy, 1988). Young Syrians may pursue additional levels of schooling in order to improve their chances of securing a job in the public sector. In addition, estimates of returns to education obtained through Ordinary Least Squares (OLS) involve a number of potential biases, most notable of which are sample section and measurement error.

4. Our data do not allow us to distinguish reliably between workers in the private formal and informal sectors.

We correct for selection bias using Heckman's two-step procedure (Heckman, 1974; 1979). First, we estimate an employment equation using household composition variables as instruments. In the second step, we introduce the inverse Mills ratio estimate from the first equation into the earnings function (1). We follow Tansel (2005) by using a multinomial logistic regression model to estimate the employment equation, focusing on three outcomes: not employed ($P_i = 0$),[5] employed in the private sector ($P_i = 1$), and employed in the public sector ($P_i = 2$).[6] The first-stage labor force participation equation is thus of the form:

$$(2a) \quad \ln [\text{Prob}(P_i=1) / \text{Prob}(P_i=0)] = \alpha_0 + \alpha_1 X_i + \alpha_2 Z_i$$

$$(2b) \quad \ln [\text{Prob}(P_i=2) / \text{Prob}(P_i=0)] = \alpha_0 + \alpha_1 X_i + \alpha_2 Z_i$$

X_i includes all explanatory variables in equation (1). Z_i includes several identifiers which we argue influence the participation decision but are not correlated with the error term of the wage equation (in effect, they do not directly affect wages). These variables are marital status, the number of children between the ages of 0–5 (pre-school), and the number of children between the ages of 6–14.

The second part of our empirical analysis focuses on the correlates of unemployment. Logistic regression analysis is used to estimate the following equation:

$$(3) \quad \ln [\text{Prob}(U_i=1) / \text{Prob}(U_i=0)] = \alpha_0 + \alpha_1 X_i$$

where $U_i=1$ indicates that person i is unemployed and $U_i=0$ indicates that person i is employed. X_i is a vector of individual and household characteristics similar to those included in the participation equation above.

5. The "not employed" group includes economically inactive individuals, the unemployed, and students. We do not include business owners, self-employed, and unpaid workers, all of whom are labor force participants.

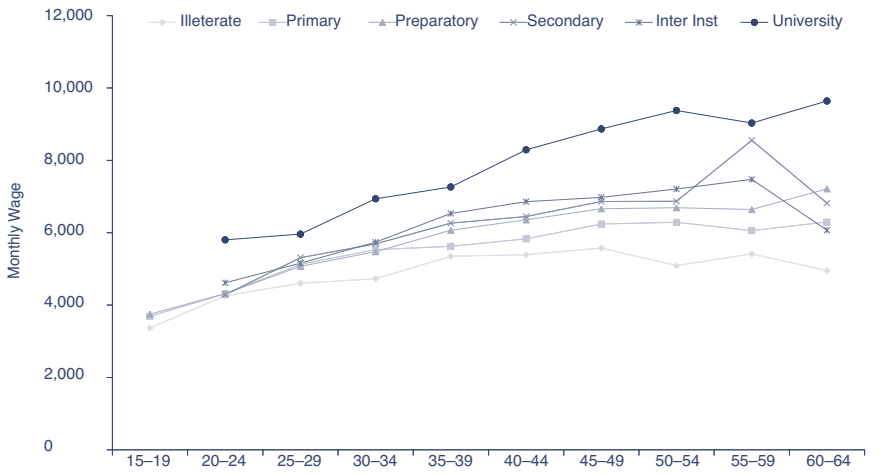
6. Pons and Blanco (2005) instead rely on a switching equation to determine whether workers select the public or private sector. They assume a sequential decision process: first whether to enter the labor force and then whether to work in the private or public sector. In the case of Syria, some employment decisions might be linked to the possibility of obtaining a job in the public sector only. The more appropriate model in this case is a multinomial logit. However, the multinomial framework makes a strong assumption about the independence of irrelevant alternatives. Future work will try to address this issue within the context of a more elaborate model.

Empirical Results

Empirical studies from across the world, including the MENA region, find that higher educational attainment is associated with positive labor market outcomes for individuals. In terms of wages, the private returns to an additional year of schooling have been estimated at 7–15 percent (World Bank, 2004a; Psacharopoulos and Patrinos, 2002; Card, 1999; Pritchett, 1999). Private returns to education tend to be higher for females than for males. In most developing regions, private returns tend to be higher for primary education than for secondary and university education (Krueger and Lindahl, 2001). By contrast, in MENA countries, returns to education appear to increase with the level of schooling (World Bank, 2004a; Psacharopoulos and Patrinos, 2002). One reason may be that public employment plays a more central role in MENA than in other developing regions (World Bank, 2004a; Boudarbat, 2004) and higher returns to education for high school and university graduates may reflect government pay scales rather than improved productivity (Pritchett, 1999; Glewwe, 2002).

Wages in Syria are low and the age- and education-earnings profiles are quite flat. Wages increase with age by around 2 percent per year for all levels of educational attainment. Wages increase with educational attainment, but not by much. Average monthly wages of secondary school graduates are only 15 percent higher than those of illiterate workers among 25–29 year-olds, rising to 40 percent higher for 60–64 year olds. The situation is slightly better for university graduates whose wages are 40 percent higher than those of illiterate workers for the 25–29 age group, rising to 80 percent higher for the 60–64 age group (Figure 14).

Figure 14 Age-earnings profile, by level of education (2001–02)

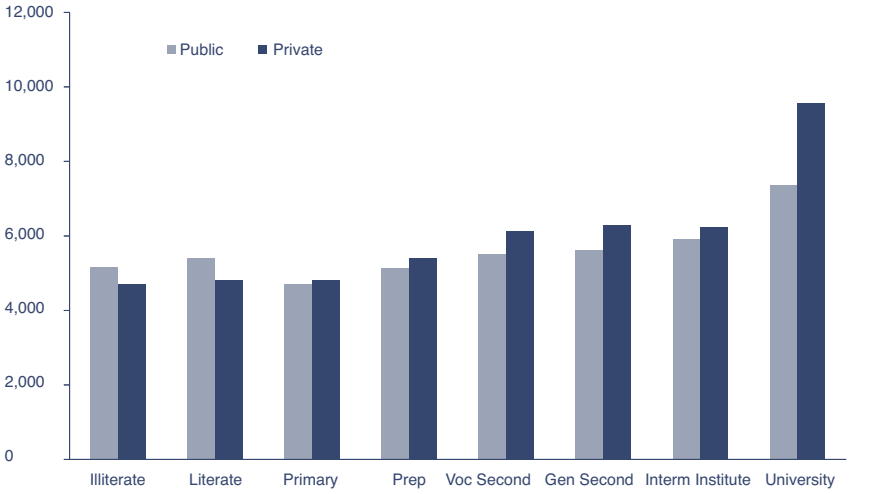


Source: 2001 and 2002 SCBS Labor Force Surveys

The wage structure is flatter in the public sector than in the private sector, probably reflecting government pay scales (Figure 15). There is little difference between monthly (or hourly) wages in the public and private sectors, with the largest difference for university graduates. However, public sector jobs have more benefits, including job security, health care, social security, opportunities for rents, and time for a second job after normal working hours. As a result, over 60 percent of unemployed workers with secondary and intermediate institute credentials desire jobs *exclusively* in the public sector.[7] The rate is less for university graduates (47 percent), who tend to have significantly higher wages in the private sector.

7. Author's analysis of the 2003 SCBS Labor Force Survey.

Figure 15 Monthly wages in the private and public sectors, by level of education



Source: 2001 and 2002 SCBS Labor Force Surveys

The low wage profiles in Syria have important implications for the returns to additional years of schooling and the levels of educational attainment sought. To estimate the returns to an additional year of schooling, we merge the 2001 and 2002 SCBS Labor Force Survey data and use regressions that control for potential experience, potential experience squared, and correct for sample selection. Table 1 presents the results of the Ordinary Least Squares (OLS) model. The results suggest that hourly wages increase with the level of educational attainment in all cases. For males and females in the public sector, the results reflect public sector wage steps that rise with higher levels of schooling. There is more variation in the private sector, especially for female wage earners. A main point to note here is that, for males working in the private sector, wages for vocational secondary school completers are not significantly different than wages for intermediate institute completers (who receive two additional years of schooling), suggesting possible skills mismatches between what is taught in technical schools and the needs of the private sector.

Table 1 OLS regression results of educational attainment on log hourly wages

Educational Attainment	Male-Private		Male-Public		Female-Private		Female-Public	
Illiterate (omitted)								
Primary	0.056	**	0.018		0.082	*	0.175	*
	(0.018)		(0.036)		(0.037)		(0.069)	
Preparatory	0.171	**	0.164	**	0.096		0.419	**
	(0.022)		(0.037)		(0.052)		(0.069)	
Vocational Secondary	0.301	**	0.335	**	0.107		0.547	**
	(0.052)		(0.047)		(0.112)		(0.078)	
General Secondary	0.261	**	0.369	**	0.274	**	0.554	**
	(0.029)		(0.038)		(0.068)		(0.070)	
Intermediate Institute	0.328	**	0.582	**	0.444	**	0.753	**
	(0.038)		(0.038)		(0.068)		(0.068)	
University	0.609	**	0.727	**	0.672	**	0.892	**
	(0.041)		(0.038)		(0.072)		(0.069)	
Experience	0.044	**	0.063	**	0.008	*	0.021	**
	(0.001)		(0.002)		(0.004)		(0.002)	
Experience, Squared	-0.001	**	-0.001	**	0.000		0.000	*
	(0.000)		(0.000)		(0.000)		(0.000)	
Rural	0.001		0.030	**	-0.030		-0.004	
	(0.009)		(0.011)		(0.032)		(0.015)	
Constant	-384.2	**	-774.0	**	-549.4	**	-642.9	**
	(18.58)		(21.83)		(53.75)		(27.32)	
Sample size	10,803		10,202		1,296		3,129	
R2	0.20		0.40		0.18		0.36	

** Significant at the 1% level. * Significant at the 5% level. Standard errors are in parentheses.

Our OLS regression results do not control for possible selection bias. We attempt to control for sample selection using Heckman's two-stage procedure. We include a number of additional variables in the selection equation, including marital status and the number of children between the ages of 0-5 (pre-school) and 6-14. Table 2 highlights the multinomial logistic regression results of the first-stage employment equation.[8] As expected, the odds of employment increase with experience for males and females. The relationship between employment and education

8. The sample size is smaller for males than for females because there are more male non-wage workers (self-employed, business owners, and unpaid workers) who are not included in the regression.

is more complex. For females, higher levels of educational attainment are associated with higher odds of working in the public sector, but only educational attainment above secondary school levels are associated with higher odds of working in the private sector. These results generally accord with our OLS findings that, for females, returns to education are higher in the public sector and for higher education levels in the private sector. For males, higher levels of educational attainment are associated with higher odds of working in the public sector but lower odds of working in the private sector. The results support the hypothesis that higher levels of educational attainment are both a way of obtaining higher wages as well as sought-after jobs in the public sector.

Table 2 First-stage (multinomial logistic regression) results – employment equation

	Male-Private		Male-Public		Female-Private		Female-Public	
Married	0.730	**	0.852	**	-1.137	**	-0.446	**
	(0.044)		(0.050)		(0.040)		(0.035)	
Number of Children ≤ 5	0.023	*	0.030	*	-0.009		-0.032	
	(0.012)		(0.015)		(0.015)		(0.017)	
Number of Children 6–14	-0.021	**	-0.037	**	-0.019	*	-0.119	**
	(0.007)		(0.008)		(0.009)		(0.011)	
Educational Attainment								
Illiterate (omitted)								
Primary	0.144	**	0.603	**	-0.144	**	0.446	**
	(0.043)		(0.058)		(0.040)		(0.066)	
Preparatory	-0.691	**	0.471	**	-0.316	**	1.362	**
	(0.047)		(0.061)		(0.054)		(0.068)	
Vocational Secondary	-0.661	**	1.136	**	0.131		2.234	**
	(0.093)		(0.091)		(0.117)		(0.096)	
General Secondary	-1.178	**	0.468	**	-0.305	**	1.785	**
	(0.054)		(0.064)		(0.068)		(0.071)	
Intermediate Institute	-0.438	**	1.567	**	0.540	**	3.380	**
	(0.077)		(0.074)		(0.080)		(0.071)	
University	-0.885	**	1.209	**	0.861	**	3.082	**
	(0.079)		(0.072)		(0.088)		(0.078)	
Experience	0.159	**	0.222	**	0.078	**	0.146	**
	(0.003)		(0.004)		(0.004)		(0.005)	

Experience, Squared	-0.005	**	-0.005	**	-0.002	**	-0.003	**
	(0.000)		(0.000)		(0.000)		(0.000)	
Rural	-0.377	**	0.029		0.449	**	0.242	**
	(0.020)		(0.023)		(0.029)		(0.028)	
Constant	115.9	**	411.8	**	-176.4	**	169.9	**
	(38.57)		(45.70)		(54.35)		(51.35)	
Inverse Mills Ratio	-0.049		-0.475	**	0.066		0.190	**
	(0.037)		(0.032)		(0.037)		(0.036)	
Sample size	23,863		22,568		44,718		45,918	

** Significant at the 1% level. * Significant at the 5% level. Standard errors are in parentheses.

Other results generally accord with expectations. Married females are less likely to work, while married males are more likely to work. The number of children in a household is associated with lower odds of employment for males and females. This is probably because we are not able to distinguish "own children," and so "children" include siblings and others.

The results of the second-stage are very close to those of OLS for the private sector. For the public sector, there appears to be negative sample selection for males and positive sample selection for females. One interpretation of these results is that males who self-select into the public sector are less productive, while females who self-select are more productive than average (Tansel, 2005). Returns to primary and preparatory education are especially low for males in the public sector and females in the private sector. Returns to education for male secondary school completers working in the private sector are not significantly different from wages for intermediate institute completers, suggesting possible skill mismatches.

Table 3 Second-stage regression results—educational attainment on log hourly wages

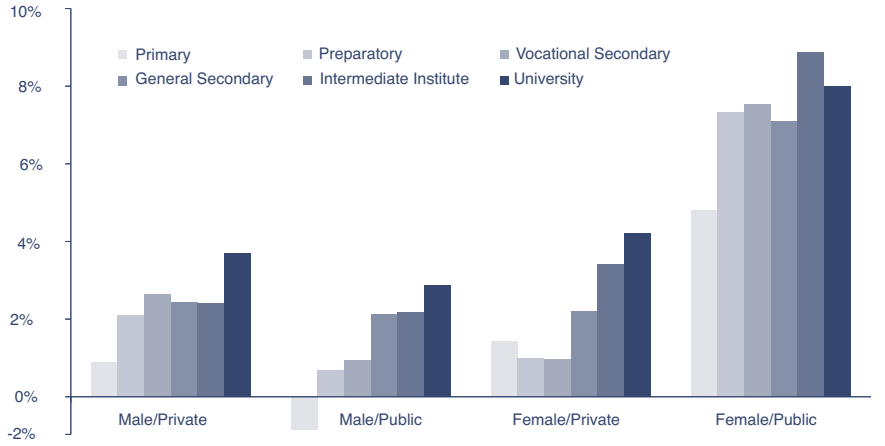
Educational Attainment	Male-Private		Male-Public		Female-Private		Female-Public	
Illiterate (omitted)								
Primary	0.053	**	-0.112	**	0.085	*	0.287	**
	(0.019)		(0.037)		(0.037)		(0.071)	
Preparatory	0.189	**	0.061		0.090		0.659	**
	(0.025)		(0.038)		(0.052)		(0.081)	
Vocational Secondary	0.317	**	0.113	*	0.116		0.904	**
	(0.054)		(0.051)		(0.111)		(0.101)	
General Secondary	0.291	**	0.255	**	0.264	**	0.850	**
	(0.037)		(0.039)		(0.068)		(0.088)	
Intermediate Institute	0.336	**	0.306	**	0.477	**	1.242	**
	(0.038)		(0.043)		(0.071)		(0.113)	
University	0.628	**	0.486	**	0.715	**	1.357	**
	(0.043)		(0.042)		(0.076)		(0.110)	
Experience	0.039	**	0.002		0.011	**	0.035	**
	(0.004)		(0.005)		(0.004)		(0.004)	
Experience, Squared	-0.001	**	0.000	**	0.000		0.000	**
	(0.000)		(0.000)		(0.000)		(0.000)	
Rural	0.009		0.025	*	-0.009		0.023	
	(0.011)		(0.011)		(0.034)		(0.016)	
Constant	-387.3	**	-836.9	**	-568.4	**	-629.4	**
	(18.74)		(23.32)		(54.61)		(27.91)	
Sample size	10,803		10,202		1,296		3,129	

** Significant at the 1% level. * Significant at the 5% level. Standard errors are in parentheses.

In terms of magnitude, these rates of return are low by international standards, implying that labor productivity is possibly quite low. The one exception is females in the public sector, who have quite high rates of return. The rates of return for an additional year of schooling tend to increase with the level of educational attainment. The highest rates of return are for additional years of schooling beyond secondary education (Figure 16). Average rates of return compare the wages at different levels of educational attainment to the wages of illiterate workers, whom we assume to have zero years of education: 6 years of primary, 3 years of preparatory, 3 years of secondary (general and vocational), followed by 2 years of intermediate institutes or 5 years of university. Average rates of return

range from -2 percent per year for males with a primary education working in the public sector to over 8 percent per year for female graduates of an intermediate institute or university in the public sector. Rates of return for females are higher than for males, a finding that is consistent with international evidence. The large differences in returns to education between females in the private and public sectors indicate larger differences between the wage rates of illiterate and literate female workers in the public sector than in the private sector, and could be the result of public sector wage scales and low productivity and/or wage discrimination in the private sector.

Figure 16 Average rates of return to schooling by sector and gender

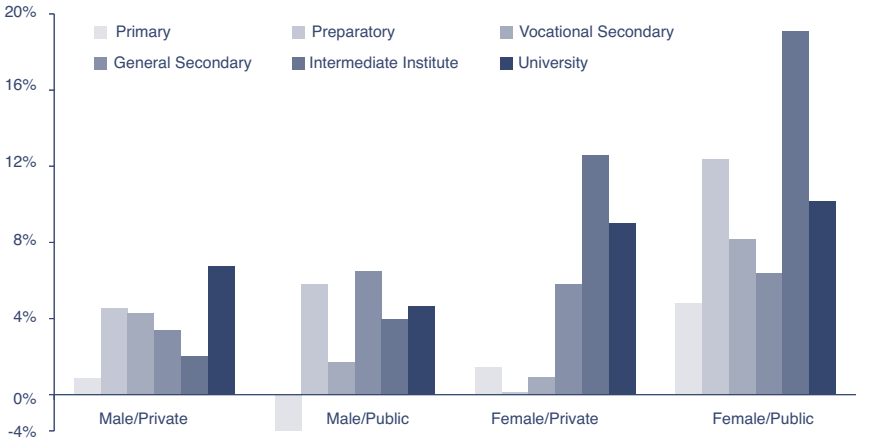


Source: Based on regressions results from Table 3

Rates of return to education can be presented in terms of marginal rates, which estimate the rates of return of going from one level of schooling to the next (for example, the additional return to a high school graduate of completing college). We compare the returns of university graduates to those of general secondary

graduates. We compare the graduates of intermediate institutes to a weighted average of the returns of vocational and general secondary school.[9] We find marginal rates of return for primary education between 0–4 percent and marginal rates of return for secondary education of around 5 percent, both of which are low by international standards, implying that labor productivity is possibly low compared to other countries. Also, rates of return in Syria tend to increase with level of education, which is counter to some international evidence that finds higher rates of return at the primary school levels. The highest rates of return are for additional years of schooling for females beyond secondary education (Figure 17). The returns to higher education are slightly higher in the private sector for men and in the public sector for women. However, this analysis is based on "reported" wages and not on "real" wages. In particular, for men working in the public sector, the reported private benefits of additional schooling may underestimate the real benefits due to unreported earnings from second jobs in the private sector and work in the informal sector.

Figure 17 Marginal rates of return to schooling by sector and gender



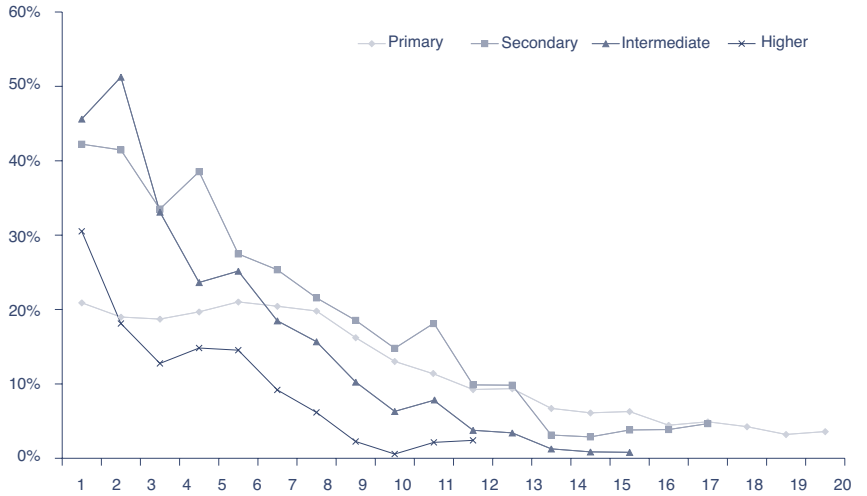
Source: Based on regressions results from Table 3

9. The weights are by number of cases by gender and sector. They roughly translate into ¼ for vocational and ¾ for general secondary across all groups.

The marginal rates of return are especially low for primary school completers, for male graduates of intermediate institutes working in the private sector, for male graduates of vocational secondary education in the public sector, and for females in the private sector with primary, preparatory or vocational secondary certification. Rates of return for female graduates of intermediate institutes are especially high, possibly because at the time only females received training in textile manufacturing, a sought-after skill in the private and public sectors.

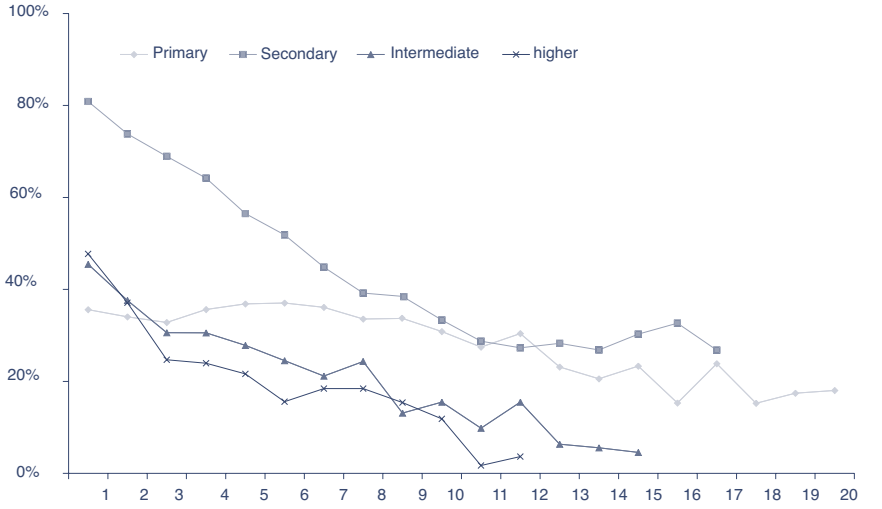
We hypothesize that higher education is attractive because it increases the chances of finding a job (especially in the public sector), reduces wait times, increases the opportunities for working abroad, and may include higher non-wage benefits. While the 2001–02 SCBS surveys did not collect data on unemployment duration, an analysis of unemployment rates by year after expected graduation shows that they decline rapidly with age, especially for university graduates. For males, the unemployment rate decreases to 20 percent in 2 years after expected graduation for university graduates, 6 years for intermediate institutes, and 8 years for secondary education (Figure 18). For females, the transition period is even longer (Figure 19). However, the difference between graduates from university and intermediate institutes is not significant: 7 years after graduation, the unemployment rate for both groups is about 20 percent. The unemployment rate for female secondary school graduates remains constant at around 30 percent after 10 years of graduation.

Figure 18 Unemployment rate by year after graduation, males 15–64 (average 2001–03)



Source: 2001, 2002 and 2003 SCBS Labor Force Surveys

Figure 19 Unemployment rate by year after graduation, females 15–64 (average 2001–03)



Source: 2001, 2002 and 2003 SCBS Labor Force Surveys

Given the expressed desire among the unemployed for jobs in the public sector, unemployed graduates are, to a large extent, queuing for public sector jobs, where queuing times decrease with level of education. In this public sector model, hiring decisions are often based on the ranking in the labor market queue and the place in the queue depends on the level of education, not the quality or type of education. Thus, higher levels of educational attainment may be sought, not primarily because of higher wages, but because of higher chances of obtaining employment, especially in the public sector.

This employment model is at risk as the private sector starts to play a greater role. One example is males who receive training in intermediate institutes. Rates of return are especially low for male graduates of intermediate institutes working in the private sector (Figure 12), indicating low levels of productivity. Until recently, graduates of intermediate institutes were guaranteed jobs in the public sector where government-set pay scales dictate wages. As a result, over 80 percent of intermediate institute graduates work in the public sector. However since 2001,

government jobs have no longer been guaranteed and male graduates have had to search for jobs that do not necessarily match the training they received.

To obtain a better sense of the unemployment conditions in Syria, we consider a logistic regression model of unemployment among labor force participants in 2001–02. As we did in Section 4 above, we limit our analysis to those between the ages of 13–34, when unemployment is most pronounced. Instead of age, we use the estimated number of years since an individual completed the highest level of education he/she attained. The reason is that age is highly correlated with educational attainment. For example, there are relatively more unemployed university graduates at age 25 than unemployed secondary school graduates simply because, at age 25, university graduates have just entered the labor force.

For males and females between the ages of 13 and 34, the odds of unemployment decline with estimated years since completing school (Table 4). For females, the odds of unemployment are highest among primary school completers and lowest among post-secondary school completers—although, we note again, we do not control for age. For younger age groups, the odds of unemployment are temporarily higher for more recent school completers. For males, the odds of unemployment are highest among preparatory and general secondary completers and lowest among university completers and illiterate workers.

Table 4 Regression— unemployment among labor force participants age 13–34 (2002)

	Females (age 13–34)			Males (age 13–34)		
Years Since Completion of Highest						
Educational Level Attained	-0.099	(0.02)	**	-0.145	(0.01)	**
Years Since Completion, Squared	0.000	(0.00)		-0.001	(0.00)	
Educational Attainment						
Illiterate	-0.280	(0.13)	*	-0.392	(0.12)	**
Literate/Primary	0.249	(0.10)	*	-0.184	(0.06)	**
Preparatory omitted						
Voc Secondary	0.278	(0.20)		-0.170	(0.15)	
Gen Secondary	-0.036	(0.14)		-0.044	(0.10)	
Intermediate Institute	-0.990	(0.13)	**	-0.112	(0.11)	
University	-1.144	(0.17)	**	-0.623	(0.14)	**
Married	-1.369	(0.14)	**	-1.424	(0.12)	**
Household Characteristics						
Kids 0-5 Present	0.087	(0.10)		-0.031	(0.07)	
Kids 6-12 Present	0.039	(0.09)		-0.026	(0.06)	
Rural Household (HH)	-0.576	(0.07)	**	0.284	(0.04)	**
Number of HH Members	0.072	(0.02)	**	0.126	(0.01)	**
Number of Kids 0-12	-0.144	(0.04)	**	-0.153	(0.02)	**
Other Household Members						
Number of Employed	-0.486	(0.03)	**	-0.351	(0.02)	**
Number of Unemployed	0.945	(0.04)	**	0.618	(0.02)	**
Constant	-262.4	(116)	*	-433.4	(78.5)	**
Sample Size	9,534			27,823		
Pseudo R^2	0.32			0.22		

** Significant at the 1% level. * Significant at the 5% level. Standard errors are in parentheses.

Marriage is associated with lower odds of unemployment among both males and females. Living in a rural area is associated with lower odds of unemployment among females but higher odds among males. Larger households are associated with higher odds of unemployment, and having more children is associated with lower odds of unemployment among both males and females. The odds of unemployment are lower for individuals living in households with other employed workers and higher in households with other unemployed workers. This finding leads to concerns that unemployment may be a household phenomenon and suggests the possibility of strong networking ties in the labor market, with members of outsider households struggling to find work.

Conclusions and Policy Discussion

The findings of our paper suggest that, in Syria, educational attainment is important for the kind of job one can find and how fast, but not necessarily for workplace productivity. Returns to schooling are very low by international standards, especially for secondary education and below. Higher educational attainment is attractive because it increases the chances of finding a job, decreases queuing times for sought-after jobs in the public sector, may increase the opportunities for working abroad, and includes higher non-wage benefits.

Labor supply pressures from new entrants combined with weak labor demand from both the public and private sectors led to unemployment rates of around 12 percent in 2002. Youth (15–24) and first-time job seekers represented, respectively, 78 percent and 68 percent of the unemployed population in Syria in 2002. Thus, unemployment is very much a labor market insertion problem involving young first-time job seekers. To ease the school-to-work transition, the government should (1) improve the quality of the education system (especially the vocation and technical education systems) and ease the functioning of the labor market by (2) improving the human resources policies in the public sector and (3) loosening labor and product market regulations to promote the development and growth of private sector enterprises and encourage firms in the informal sector to join the formal economy.

Reform of Vocational Secondary Education and Post-Secondary Technical Institutes Post-secondary intermediate institutes largely service the needs of public sector enterprises, which (until 2001) guaranteed jobs to institute graduates at wage levels established through government-set pay scales. As a result, over 80 percent of intermediate institute graduates worked in the public sector in 2001. The Syrian government recently stopped guaranteeing jobs and graduates must instead look for private sector work that does not necessarily match the training they received. Our empirical findings suggest the rates of return to schooling are especially low for male intermediate institute graduates working in the private sector, indicating possible mismatches between the education they receive and the needs of the labor market. The government

should strengthen the relevance of vocational education and training for the private sector. To be more relevant, vocational education needs (i) stronger links with the private sector and (ii) to ensure that students are being trained in relevant occupations, in part through the development of labor market information systems.

Improving Human Resources Policies in the Public Sector The full benefits of investing in the quality and relevance of the education system will not materialize unless there is adequate demand for skilled labor. Mandatory government recruitment of graduates from some post-secondary education institutes was recently abolished. This is a step in the right direction but government agencies and public sector enterprises should now be encouraged to adopt redundancy and attrition policies aimed at reducing overstaffing and improving labor force utilization through longer effective working times. These policies could be coupled with explicit salary premiums to retain key qualified personnel. The guiding principle should be "fewer but better used, better paid, and more motivated public sector employees."

Promoting Development and Growth of the Private Sector The private sector must play a primary role in absorbing new workers over the coming years and policies should be adopted to support its development and growth. Over the past two decades, the Syrian government has done much to create a healthier business environment: Private banks have been allowed to open, official exchange rates have been brought in line with international rates, and barriers to entry have been removed for most industries. Still, more can be done. The government should remove the remaining barriers to private sector entry and phase out both implicit and explicit subsidies to public sector enterprises. Private sector companies should face clear and reasonable registration requirements. The corporate tax system should be simplified and tax rates reduced. These steps might actually increase tax revenues by improving compliance. Finally, the government should follow through on proposals to reform the country's labor laws, including worker dismissal laws.

Improving Social Safety Nets An increased reliance on the private sector for generating jobs coupled with public sector retrenchment policies and more flexible labor laws will lead to greater labor mobility. Appropriate worker safety nets, therefore, should be developed. Continuing education and retraining programs can help facilitate and support labor mobility. The Syrian government should anticipate that the share of mid-career workers among the unemployed might begin to rise in the near future and should begin to prepare policies and programs that cater to the needs of the adult unemployed, including retraining programs and an unemployment insurance system.

References

Assaad, Ragui. 1997. The effects of public sector hiring and compensation policies on the Egyptian labor market. *World Bank Economic Review* 11(1): 85–118.

Agency for Combating Unemployment. 2003. *The unemployment mapping in Syria study project: preliminary findings of the unemployment mapping study*. Damascus, Syria.

Barro, Robert and Jong-Wha Lee. 2000. International data on educational attainment: updates and implications. Center for international development working paper 42. Harvard University, Boston.

Boudarbat, Brahim. 2004. Employment sector choice in a developing labor market. Working paper. Department of economics. University of British Columbia, Canada.

Card, David. 1999. The causal effect of education on earnings.In *Handbook of labor economics*, volume 3A. Eds Orley Ashenfelter and David Card. Amsterdam: North Holland.

FAFO institute for applied international studies. 2005. 2003 unemployment survey CBS Syria. Unpublished manuscript.

Glewwe, Paul. 2002. Schools and skills in developing countries: education policies and socioeconomic outcomes. *Journal of economic literature* 40(2):436–82.

Gyourko, Joseph and Joseph Tracy. 1988. An analysis of public- and private-sector wages allowing for endogenous choices of both government and union status. *Journal of labor economics* 6(2): 229–53.

Heckman, James. 1979. Sample selection bias as a specification error. *Econometrica* 47(1): 153–62.

_____. 1974. Shadow prices, market wages, and labor supply. *Econometrica* 42(4): 679–94.

Kabbani, Nader and Ekta Kothari. 2005. Youth employment in the MENA region: a situational assessment. Social protection discussion paper no. 534. Washington, D.C.: World Bank.

Kabbani, Nader and Zafiris Tzannatos. 2005. Syria country profile: chapter on labor and human resource development, presented at the Economic Research Forum for the Arab countries, Iran and Turkey (ERF). Syria country profile workshop held in Damascus on August 31, 2005.

Krueger, Alan and Mikael Lindahl. 2001. Education for growth: why and for whom? *Journal of economic literature* 39(4): 1101–36.

International Labour Organization (ILO). 2004. LABORSTA database. Geneva, Switzerland.

Mincer, Jacob. 1974. *Schooling, Experience, and Earnings.* Columbia University Press.

Pons, Empar and Juan Blanco. 2005. Sheepskin effects in the Spanish labour market: a public-private sector analysis. *Education economics* 13(3): 331–47.

Pritchett, Lant. 1999. Has education had a growth payoff in the MENA region? World Bank, Middle East and North Africa working paper series No. 18, December 1999.

Psacharopoulos, George and Harry Anthony Patrinos. 2002. Returns to investment in education: a further update. World Bank policy research paper 2881. Washington, D.C.: World Bank, September 2002.

SCBS (Syrian Central Bureau of Statistics). 2004. *Statistical abstract,* 2004. Damascus, Syria.

_____. 2003. Results of the Labor Force Survey, 2002. Damascus, Syria.

_____. 2002. Results of the Labor Force Survey, 2001. Damascus, Syria.

Syrian European Business Center (SEBC). 2003. A profile of the labor market in Syria (draft zero), September 2003. Damascus, Syria.

Syria Report. 2004. Report: annual transfers from Syrian labor in Lebanon at USD 1.5-2 bn. April 2, 2004. Paris, France: The Middle East Information and Communication Agency.

Tansel, Aysit. 2005. Public-private employment choice, wage differentials, and gender in Turkey. *Economic development and cultural change* 53(2): 453–77.

UNDP (United Nations Development Program). 2005. *Poverty in Syria: 1996–04: diagnosis and pro-poor development considerations,* by Heba El-Laithy and Khalid Abu-Ismail, June 2005.

Van der Gaag, Jacques and Wim Vijverberg. 1988. A switching regression model for wage determinants in the public and private sectors of a developing country. *The review of economics and statistics* 70(2): 244–52.

World Bank. 2004a. MENA Dev*elopment Report: Unlocking the Employment Potential in the Middle East and North Africa.* Washington, D.C.: World Bank.

World Bank. 2004b. *World Development Indicators (WDI).* Washington, D.C.: World Bank.

Appendix 1

The Education System in Syria in 2001–02

Pre-school	
Primary	1, 2, 3, 4, 5, 6
Preparatory	7, 8, 9
Vocational Secondary	10, 11, 12
General Secondary	10, 11, 12
Technical College	13, 14, 15–16
Intermediate Institutes	13, 14
University	13, 14, 15, 16–17

Note: The education system was changed in 2003 whereby primary and preparatory schooling were combined into "basic education" that covers grades 1–9.