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The Effects of Fiscal Policies on the Economic Development of Women in the Middle East and North Africa

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Abstract

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Statistics indicate that the economic and social development of women in the Middle East and North Africa (MENA) compares unfavorably with most regions in the world. This paper assesses the influence of government expenditure and taxation policies on the economic and social welfare of women in the region. On the expenditure side, we test the explanatory power of public social spending in the determination of key female social indicators. We find that the relatively weak social outcomes for MENA women are not explained by the amount of government social spending, suggesting the answer lies in the efficiency and reach of present spending. With respect to taxation, the main issues in the literature on gender bias in taxation are highlighted and applied in a general manner to the MENA context. Some simple policy recommendations are suggested.

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I. INTRODUCTION

Much has been written about the weak rates of economic growth in the Middle East and North Africa (MENA) over the past quarter century. Most recently, the topic was explored in the IMF's September 2003 *World Economic Outlook*, and has been the subject of many analytical papers.[2] These papers point to an array of structural causes for the region's low growth performance, with common ground usually staked around the following characteristics: large public sectors, a high level of trade protection, restrictive labor markets, weak institutions, and political instability. These factors resulted in weak investment efficiency and low and declining labor productivity.

MENA's experience with economic growth was also featured in the comprehensive and insightful *Arab Human Development Report* (UNDP, 2002), which focused on the status of human capabilities in the Arab world. The authors pointed in particular to the underutilization of Arab women's capabilities as an important factor in the region's poor economic performance. "Arab women remain marginalized and underutilized in all arenas, notably in terms of their economic, intellectual and leadership abilities."(page 98). The report stresses that efforts to mobilize the potential of half of the population of Arab countries will have a positive impact on economic growth. A new report by the World Bank drew the same conclusion, and estimated that per capita growth in GDP could have been 0.7 percent higher on average had female labor force participation reached its potential over the past decade." [3]

Indeed, the share of MENA women in the formal workforce remains well below participation rates in comparator country regions, and reflects the performance of other indicators of women's development in MENA, such as fertility rates, female education levels, and the participation of women in the political and administrative processes. Many developing countries exhibit considerable gender inequality in these areas; however, the MENA region places consistently well behind Latin America and East Asia, just above South Asia.[4] This is more noteworthy when account is taken of relative per capita output (PPP basis), where MENA outperforms East Asia and the Pacific and South Asia (and sub-Saharan Africa). As noted in the *Arab Human Development Report*, the MENA region is said to be "richer than it is developed" in terms of human development indicators, a reflection of the region's history of investing in physical capital over human resources.

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[2] Abed (2003), Dasgupta and others (2002), Keller and Nabli (2002), Sala-i-Martin and Artadi (2002), Makdisi, Fattah, and Limam (2000), and Davoodi and Erickson von Ullmen (2001)

[3] World Bank (2003).

[4] The regions included for purposes of comparison are: East Asia and Pacific, Europe and Central Asia, Latin America, and South Asia. See Appendix I for a list of countries in each region.

The point of comparison is not to rank regions by performance, but to highlight the opportunity costs of *not* exploiting the economic and human potential of women. Evidence of these costs has been documented in the literature exploring the linkages between gender inequality and economic growth, and the linkages between gender inequality and specific development goals. For instance, gender inequality in education and access to resources can prevent reductions in fertility and child mortality, and hold back the rise in education levels of successive generations.[5]

The purpose of this paper is to assess the influence of government expenditure and taxation policies on the economic and social welfare of women in MENA. On the expenditure side, we test the explanatory power of public social spending on key female social indicators. The intuitive policy assumption being tested is that the higher the social spending, the better the social outcome. However, in line with earlier research, we find that the relatively poor showing of women in this region is not explained by the amount of government social spending; hence the answer must lie in the effectiveness of existing spending. With respect to taxation, the main issues in the literature on gender bias in taxation are highlighted and applied in a general manner to the MENA context. Some simple policy recommendations based on principles of equity and efficiency are suggested.

The paper is structured in the following manner: Section II examines earlier research on the effect of gender inequality on growth and development goals, and points out the relevance of the topic for the IMF. Section III presents descriptive data on income, government social spending, and indicators of the health and education of women in MENA relative to women in comparable developing country regions. Section IV is devoted to an empirical study of the effect of government spending on certain social indicators of women. Section V reviews the main gender issues related to taxation policies and applies them to the MENA context. Section VI draws general conclusions and highlights the implications for fiscal policy and IMF policy advice.

II. BACKGROUND

The extent to which gender inequality in education reduces economic growth rates was examined by Klasen, who found sizable effects, directly in terms of lower human capital, and indirectly through its impact on investment and population growth.[6] He estimated that annual economic growth rates in MENA since 1960 could have been raised by up to 0.9 percentage point had the education of women been more advanced.

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[5] Hill and King (1995), Klasen (2002 and 1999), Murthi, Guio and Drèze (1995), Summers (1994), Thomas (1990 and 1997), World Bank (2001).

[6] Klasen (2002), Dollar and Kraay (2000), Drèze and Sen (1989), Pritchett and Summers (1996), Ravallion (2001), UNDP 1996, World Bank 2000.

Other theoretical works examine the links between gender inequality in education and earnings on fertility and economic growth. Studies by Lagerlöf and Galor & Weil showed that gender inequality in education can result in high fertility, low economic growth and ongoing inequality in education, leading to a vicious circle. Empirical studies using international panel datasets generally show that, among other things, investment in human capital is associated with higher growth, and population growth dampens economic growth.[7] A few empirical studies examining specifically the effect on income levels of low female school enrollment have found a strong positive correlation.[8]

This paper was prepared for a seminar on "Arab Women and Economic Development" hosted jointly by the Arab Fund for Economic and Social Development and the Arab Monetary Fund. In practice, this topic falls more under the purview of the World Bank and different UN agencies. That being said, the economic development of women is relevant for the IMF since it is captured under the broad sweep that defines the Fund's mandate, including "contributing ...to the development of the productive resources of all members..." (Article I (i)). In other words, the topic is important to the extent that it affects the overall growth potential of IMF member countries, and reflects the allocation and distribution of income within members.

For instance, Fund policy advice on the size of the public service wage bill or on tax reforms will have first order consequences for the employment and incomes of women, and for the incentive structure behind women's decisions about education, reproduction and labor force participation. In terms of indirect effects, recommendations regarding the size of the fiscal deficit in the context of overall fiscal sustainability will lead to decisions, for example, on the allocation of public spending on health. Research has shown that public spending on health care has a bigger impact on the poor, thus can reduce poor-rich differences in health status.[9] However, few studies have considered the effect of public spending specifically on the health or education status of women.

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[7] Whether low growth causes high fertility or vice versa is slightly controversial. Many studies can be cited supporting both views, including: Barro (1991), Galor and Weil (1996), Asian Development Bank (1997), Easterly and Levine (1997), Bloom and Williamson (1998), Lagerlof (1999), and Easterly (2001).

[8] Hill and King (1995), Dollar and Gatti (1999), Knowles and others (2002). Earlier studies by Barro and Lee (1994) and Barro and Sala-i-Martin (1995) had strange results because of econometric problems related to multicollinearity and the need for dummy variables to control for a region-related data anomaly.

[9] Gupta, Verhoeven and Tiongson (2001), Le Grand (1987), World Bank (1995), Brockerhoff and Hewett (2000), Gakidou and King (2000). This issue took on increased importance with the introduction of the HIPC initiative since the resources freed up by debt relief under HIPC were to be directed to health and education.

III. COMPARATIVE STUDY: ECONOMIC AND SOCIAL INDICATORS OF WOMEN BY REGION

A survey of data on government social spending and key health and education indicators aggregated by region is presented in Figures 1–3.[10] The aggregated data in this section comes from the World Bank's World Development Indicators on education (EDStats) and health data (HNPStats). (See Appendix for the countries in each region.) Social spending is examined since it is the most readily available policy instrument for the provision of social services to all citizens, including women (Tanzi, 1999).[11] In addition, with the new emphasis on social conditionality under external assistance programs, there has been increased focus on the productivity of social spending and its effectiveness at improving social equity and economic growth.

The overall development progress of women is assessed in terms of key welfare aspects, not just income. First, disaggregated data on the income of women is not widely available. Even if it were, typical income data would not provide a representative measure since most MENA women (and in much of the developing world) do not participate in the formal labor force, but operate in an unpaid or "care" economy which includes family care, informal sector employment, and subsistence production. It is estimated that two-thirds of female economic activities go unrecorded in developing countries, compared with one-quarter of male activities (UNDP, 1995). Thus the paper looks at indicators of health, education, and overall income. The objective is to present a fuller picture of the "economic development" of women, without departing from clearly quantifiable features of welfare.[12]

The selection of indicators presented in the charts reflects an attempt to provide a solid picture of the overall welfare of women while at the same time choosing indicators with the broadest data availability across the region. Indeed, the frequency and availability of data was an important factor in the choice of indicators throughout the paper. For an idea of the overall level of education of women, female secondary school enrollment was chosen since it also contains information about completion rates of primary school (unlike primary enrollment data which provides an output, not an outcome).[13] In addition, it is also available for earlier periods, unlike average years of schooling, which is shown for 2000 only. Illiteracy

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[10] The idea was to compare countries at similar income levels or stage of development. Thus sub-Saharan Africa was not included. OECD countries are included in some cases for interest.

[11] "Social" spending is understood to be spending on the public provision of health, education, housing and other social services (Chu and Hemming, 1991).

[12] The Arab Human Development Report pursued a much more ambitious concept of human development which encompassed human freedoms, human rights, and knowledge.

[13] For example, some countries have gross primary enrollment rates (GER) of 100 percent but have primary school completion rates of only 50 percent. In addition, GERs are biased by repeaters and over-age children.

rates are also presented since they provide information about the basic character of the educational level and are generally viewed as more reliable data than schooling measures since most governments monitor the indicator more frequently. Adult and youth female literacy rates show a strong improvement over time.

The indicators of women's health reviewed in this section include life expectancy and mortality rates. Life expectancy estimates are less reliable in developing countries since they depend on reporting of age and other information at the time of death.[14] Since the best measure of overall health should capture all causes of premature death, and since life expectancy does not reflect the extent of morbidity, female mortality rates and survival rates are provided also.

When comparing the status of women in the region with the five developing country regions examined, MENA falls generally around or just below the mean in terms of income, and second to last in terms of education and health indicators. Per capita income comparisons (not disaggregated by gender) place MENA in the middle of the group of five regions chosen, both in real terms and in PPP dollar terms (World Bank data). While the Arab achieved a respectable average annual rate of growth of over 3 percent between 1980 and 2001, the high rate of annual population growth (2.8 percent) resulted in virtual stagnation in real per capita incomes over the period. The rate of female participation in the labor force is also presented. As noted in the recent World Bank report, MENA has the lowest participation rates in the world, at just below 30 percent.

With respect to health and education indicators, MENA women place next to last (above South Asia) in most categories (youth and adult female illiteracy, average years of schooling, life expectancy, mortality rates). These results are consistent with the findings in other recent reports, although it is more striking when taken together with the data on government social spending, particularly on education. The data shows that MENA has spent more on education (as a share of GDP) since 1980 than all other regions, including the high income OECD group, except in the early years. (Data on spending in per capita terms was not available on an aggregated basis). The picture on government expenditure on health (as a percent of GDP) is slightly different: MENA spending sits in the middle at about 2.3 percent of GDP, and lower in the pack when public and private spending is included.[15]

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[14] According to the World Health Organization, the best measure of health status is "disability-adjusted life expectancy," defined as life expectancy net of the number of years expected to be incapacitated. However, this measure is not yet widely available.

[15] Private spending is defined as out of pocket payments for treatment, drugs, and supplies, and payments made by private insurance agencies and charities. In general, people with higher incomes spend a higher percentage of their income on health; as per capita income rises, private spending rises relative to public spending. (Filmer, Hammer and Pritchett, 1998)

Figure 1. Selected Economic and Education Indicators

GDP per capita, (in $US, PPP)

Labor Force, Female (% of total)

Average years of schooling, adult female, (2000)

Secondary Female School Enrollment (% of gross)

Note: Europe and Central Asia not available.
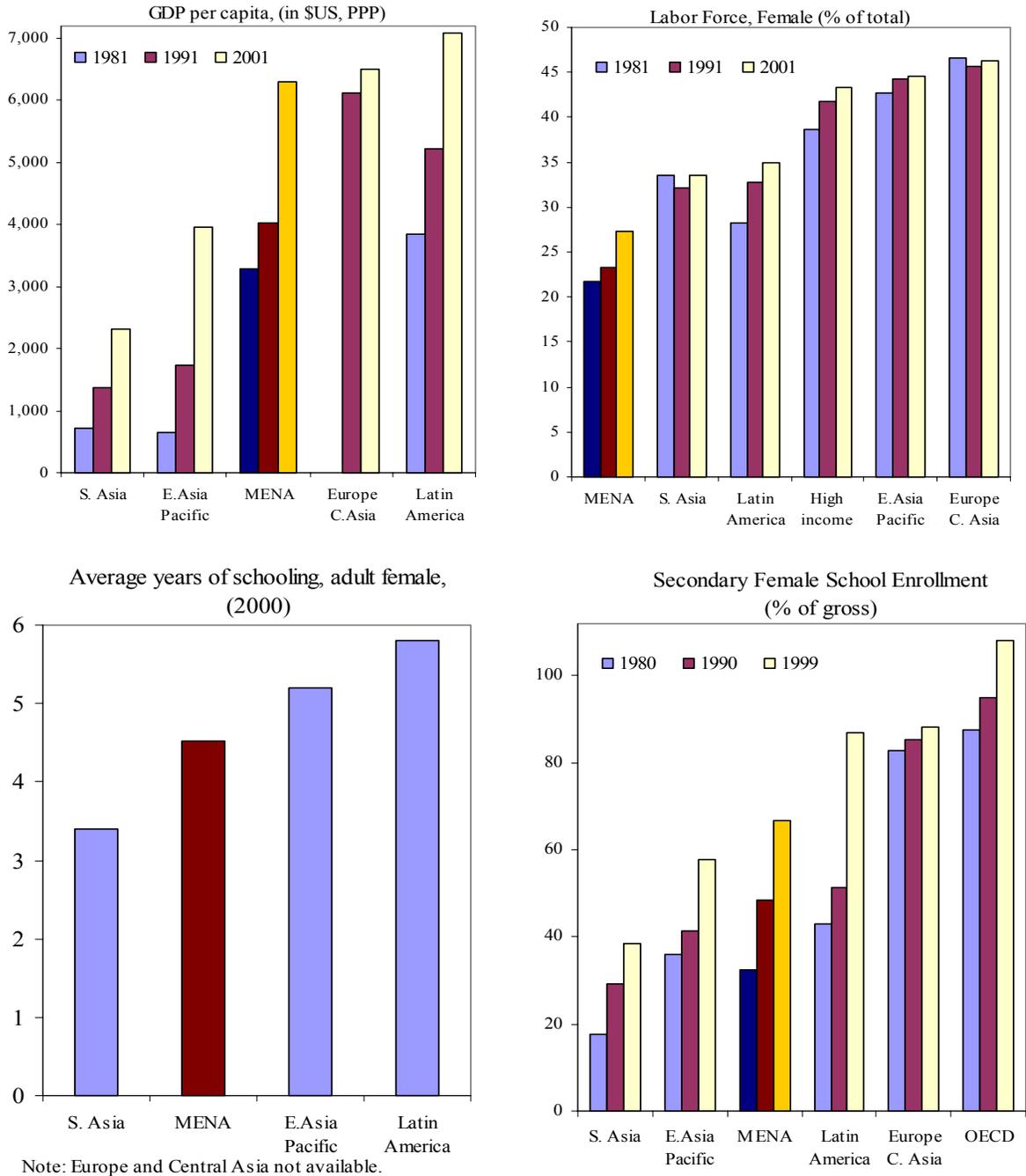
Source: World Development Indicators, World Bank.

Figure 2. Selected Government Expenditure and Education Indicators

Adult illiteracy rate, females
(% of females over 15 years of age)

Youth Illiteracy rate, female (2002)
(% of females aged 15-24)

Government Expenditure on Education, 2000
(% of GDP)

Government expenditure on education, (% of GDP)
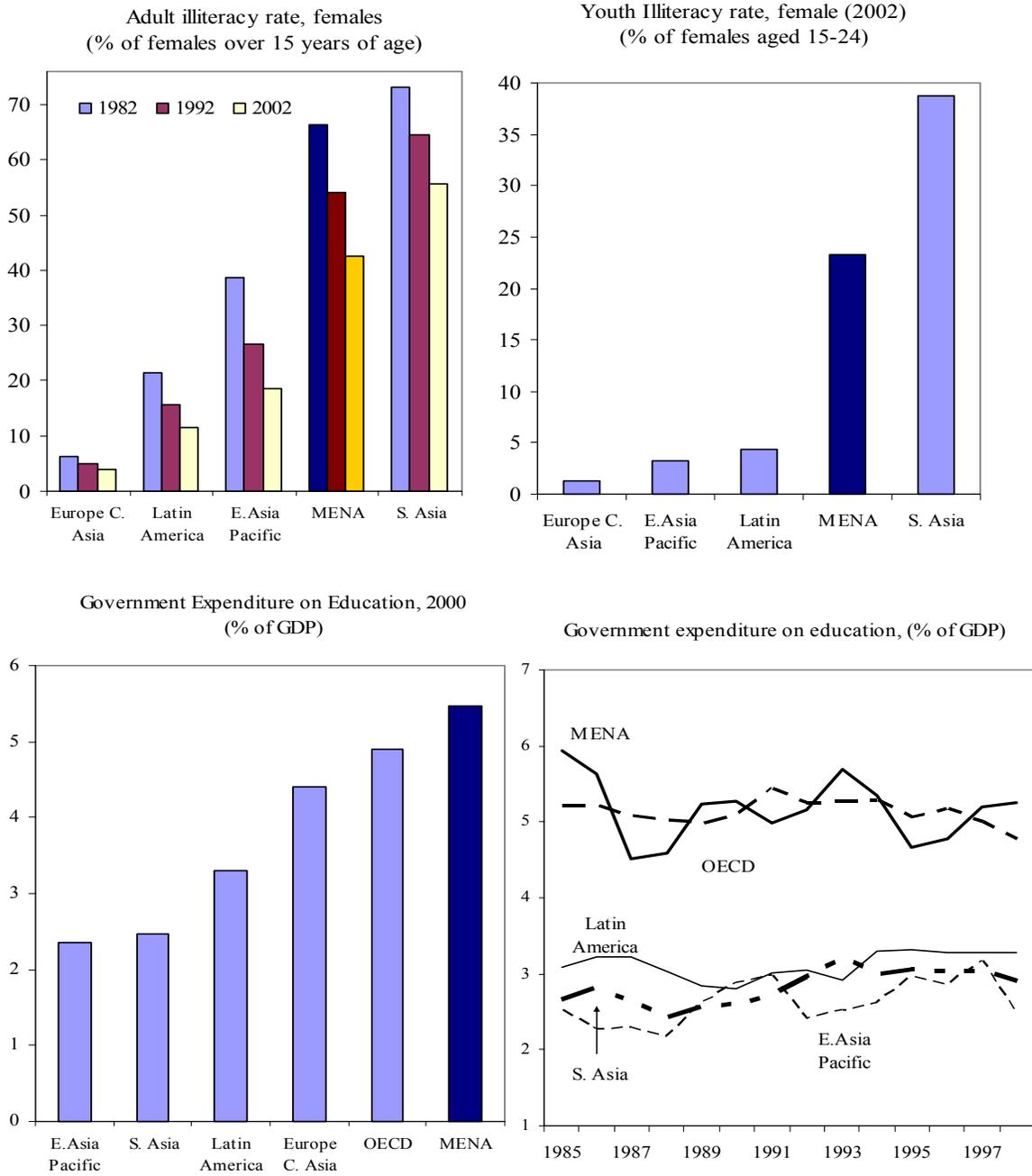
Source: World Development Indicators, World Bank.

Figure 3. Selected Government Expenditure and Health Indicators

Female Life Expectancy at birth, 2002
(in years)

Mortality rate, female
(per 1000 adult females)

Survival until age 65, 1999
(% of cohort)

Expenditure on health, % of GDP
(most recent year available, 1990-1998)
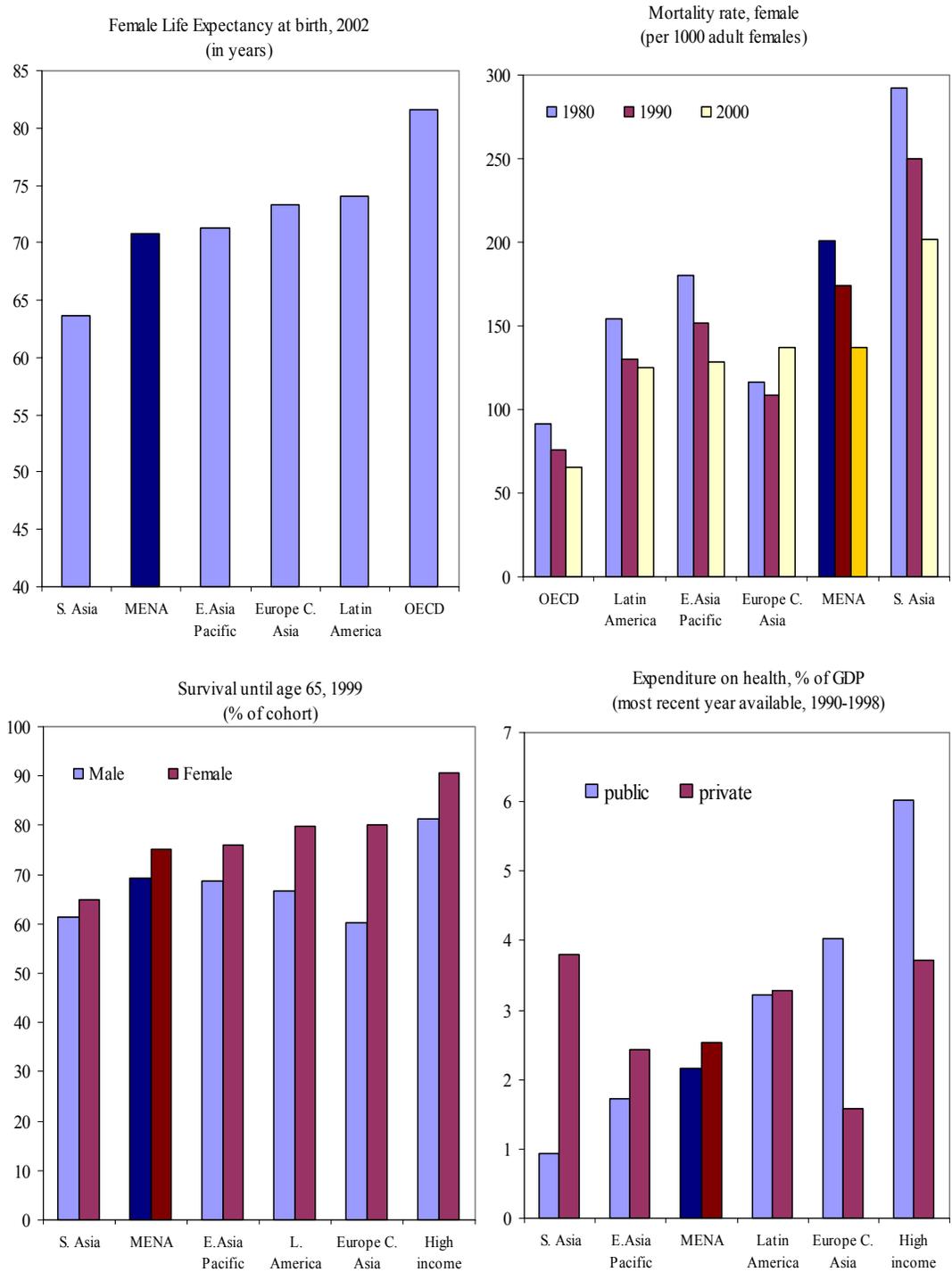
Source: World Developmen Indicators, World Bank.

These averages cover up country differences within MENA (country averages available upon request).[16] The indicators are fairly homogeneous across the region, with some exceptions. The following countries exhibit below-average social indicators: Djibouti, Iraq, Mauritania, Morocco, Pakistan, and Yemen. The better performers include Bahrain, Kuwait, Tunisia and UAE. Jordan, Lebanon, and Libya have above average education indicators. In terms of government social spending, Iran and Saudi Arabia spend considerably more on both health and education than the average.

Reviewing the time trends shows marked improvements in most social indicators in most regions, including in MENA, although some of these start from a particularly low base (years of schooling, literacy). However, it is not evident that these improvements can be attributed to more generous social spending policies by governments since the trends in social spending do not really rise in parallel over time. Spending on education actually fell between 1990 and 2000. (Comparable data on government health expenditure is not available for earlier years.)

The following observations can be drawn from the data: (i) MENA women placed second to last relative to the country regions sampled in terms of the key health and education indicators presented; (ii) time trends show significant improvements in most regions in most indicators, including in MENA; (iii) the region has the lowest female labor force participation of the groups compared, although per capita income measures (total) place MENA in the middle range of the group of five developing country regions; (iv) public expenditure on health in MENA is around the median and mean of all groups compared, as is the performance in terms of health indicators; and (v) public spending on education as a share of GDP is the highest, although the indicators of education consistently place MENA women next to last among the regions compared.

The comparative data shows that the region has made significant progress in the last quarter century, but that much remains to be done to raise the social welfare of women in the region. The data also shows, most notably, that the low levels of education among MENA women are not explained by the amount of government spending, although the evidence is not as clear for public health expenditure. These findings are in line with recent literature on the topic and will be examined empirically in the next section which tests the hypothesis that higher levels of social spending result in better social outcomes. However, the descriptive data in this section do not appear to support this hypothesis.

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[16] World Bank groups. Countries excluded are: Afghanistan, Bahrain, Pakistan, Qatar, Somalia, Sudan, UAE.

IV. EFFECT OF GOVERNMENT SPENDING ON SOCIAL OUTCOMES OF WOMEN IN MENA

A. Survey of Recent Work

Much research has been done on the effect of gender inequality on economic growth and on human development indicators. A smaller but still significant body of work has examined the impact of government social spending on trends in social indicators, although few have yet examined its effect on the economic development of women. The empirical evidence is mixed, and is summarized as follows:

- The links between public expenditure and health indicators, and public expenditure and education outcomes, is weak. Industrialized countries with higher government social spending exhibit better social indicators, although this has not generally been observed in developing countries. (WHO; Musgrove; Filmer & Pritchett).

- Income and adult literacy explain much of the inter-country variance of primary school completion rates (Colclough and Lewin); adult literacy is a highly significant variable in explaining combined primary and secondary enrolment rates (Gupta and others). Government spending on education had little explanatory power once per capita income was introduced (Colclough and Lewin; Filmer and Pritchett, Michaela; Thomas and others).

- Income explains three quarters of inter-country variation in health outcomes (Musgrove). Public expenditure on health added little to the explanatory power.

- Spending indicators appear to be somewhat better at explaining education outcomes than health outcomes (Gupta and others).

- The poor are more strongly affected by public spending on health care than the non-poor (Biding and Ravalli on; Gupta, and others).

- The relationship between public spending and the health status of the poor is stronger in low-income countries than higher-income countries (Gupta and others).

- Absolute levels of social spending (e.g. social spending per capita in us dollars) matter the most for social outcomes (both education and health) and budgetary allocations (e.g. as a percent of total expenditure) may be misleading (Lopes).

The reasons for the weak showing of public expenditure in explaining social outcomes reflects the wide variation in the efficiency and effectiveness of government spending on health and education. This leads to big differences in the performance and outputs of health and education systems. Testing the relationship between spending and social indicators is complicated by the existence of private expenditure on health and education, which varies considerably between countries. In education, the relative price of

effective inputs is high in low income countries and declines as country per capita incomes increase.[17] The low cost effectiveness of health expenditure is related to the disproportionate spending on costly outputs (like hospital-based care) and the cross-price elasticity of demand for routine health care procedures.[18]

Very little research has examined the effects of public spending on the social indicators of women. One study by Jamieson and Wang (2001) found that public spending does play a significant role in raising female life expectancy, alongside household income and other personal and environmental characteristics. The relationship strengthens when health outcomes in rural areas are differentiated from urban areas.[19] The empirical analysis in this paper attempts to estimate the effect of public social spending on health and education trends of women in the MENA region, controlling for certain social and economic indicators.

B. Data Set

While data on the social indicators of women are relatively satisfactory, a serious measurement problem is posed by the lack of data on female economic activity and income. As noted earlier, many subsistence, household and reproductive activities are not captured in systems of national accounts. Aggregated per capita income (IMF and World Bank) between 1980 and 2000 (PPP US dollars) thus serves as the proxy for the income levels of women. The rest of the dataset was built using published statistics on public expenditure and social indicators from the World Bank's World Development Indicators (WDI), UNESCO's Education Statistics, and the IMF's WEO database. The number of cross-country observations used varied on the availability of social indicators. Also, some indicators were not available on an annual basis and were interpolated.

The health indicators examined were female mortality rates and life expectancy. The education indicators included gross female primary and secondary enrollment rates (GERs), and the adult female literacy rate. GERs measure the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the primary (or secondary) level of education. While this measure is biased by repeaters and non-school aged students, net enrollment rates are not widely available yet.

Data comparing social spending across countries is complicated by varying national budget reporting standards. In addition, fiscal data may be unreliable due to omitted or misreported government spending (Lopes), and intercountry comparison biases related to

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[17] This is mostly because the ratio of teachers' salaries to per capita GNP falls as per capita income rises. Roberts (2003); Mingat and Tan (1998).

[18] Filmer, Hammer, and Pritchett (1997)

[19] Wang (2002)

exchange rates and things like disease prevalence and urbanization might cloud the accuracy of results. For practical purposes then, social spending is proxied here by total spending under the relevant government agency, e.g. ministry of health. This is a generally accepted simplifying approach that allows for working estimates. Social spending is measured both in US dollar per capita terms and as a percentage of GDP. (Earlier findings that showed stronger correlations for per capita measures are borne out by the results in this paper – see below.)

The data set covered a minimum of 14 countries and included Algeria, Bahrain, Egypt, Iran, Jordan, Kuwait, Libya, Lebanon, Libya, Morocco, Oman, Pakistan, Saudi Arabia, Syria, Tunisia, and United Arab Emirates.[20] These countries were chosen for their data consistency and availability. A few countries were left out completely because of lack of data or extreme data irregularities related, for example, to military conflict (Afghanistan, Iraq, Sudan, Yemen) or because of absolute levels of per capita spending and/or income that were substantially outside of the regional average (Djibouti, Somalia, Qatar). Since this caused the respective observations to bias the regression results, they were dropped from the regressions.

C. Estimation and Results

Bivariate Regression

Similar to the approach taken by Lopes, simple bivariate regressions were run to test the explanatory power of government social spending in MENA countries on the following female social indicators: female mortality, life expectancy, female primary and secondary GERs, and adult female literacy. The relationship was tested using panel data over the period 1980–2000 for education indicators and, because of limited data, for six years (1995–2000) for health indicators.[21] In order to better assess the raw explanatory power of the independent variables, no statistical refinement methods were applied (although side tests using linear-log specifications produced better regression statistics). The results are presented in Table 1.

The coefficients are significant for public spending in per capita terms for all dependent variables and have the expected signs, except for gross primary school enrollment rates. The coefficients for spending as a share of GDP are significant only for health. Neither measure is by itself very powerful in explaining social outcomes. Public spending per capita at best accounts for 61 percent of cross-country variation for health indicators and only 15 percent for education indicators. This is in line with earlier findings and modeling attempts, and is consistent with the descriptive data presented in Section II.A which shows below average performance in female social indicators and above average levels of

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[20] Libya was excluded from the education equation because of lack of data.

[21] Data on public spending on health was limited for MENA countries for years prior to 1995.

Table 1. Public Health and Education Expenditure: Bivariate Regressions

		Health Indicators (1995-2000)		Education Indicators (1980-2000)		
	Dep. Variables	Female Mortality Rate	Female Life Expectancy	Female secondary GER	Female primary GER	Adult female literacy rate /1
Public Spending (US$ PC)	Significant/Sign as expected	yes***/yes	yes***/yes	yes***/yes	no/no	yes***/yes
	Adj R2	0.54	0.61	0.09	0.00	0.15
Public Spending (as share of GDP)	Significant/Sign as expected	yes***/yes	yes***/yes	no/no	no/no	no/no
	Adj R2	0.12	0.2	0	0	0
Total Panel Obs.		90	90	294	294	294

Source: Authors' calculations.

Note: (*) significant at 10%, (**) significant at 5%, (***) significant at 1%.

1/ Female literacy lagged 15 years was used to proxy education of mother.

expenditure. Two additional points are worth noting: first, the results using public spending as a share of GDP are weaker than with per capita spending, confirming earlier findings (Lopes, Gupta and others) that the correlations are stronger when absolute levels of spending are used. Second, in contrast to the findings by Gupta on sub-Saharan African countries, the correlation of social spending with female health outcomes is stronger than it is with female education outcomes.

Multivariate Regressions

Expanding on the preliminary results, we estimate two separate equations in an attempt to better specify the determinants of the social outcomes in question. The first equation estimates the explanatory power of public education spending on gross female secondary enrollment, controlling for certain social and economic factors. The second equation estimates the explanatory power of public health spending on the female mortality rate, again introducing control variables to proxy differences in country socio-economic factors. In both equations, we use log-linear specification to estimate the relationships.

For education, the following regression equation is estimated:

$$(1) \quad \log(enrollment_i) = \alpha_i + \beta_j \log(X_i) + \varepsilon_{ij}$$

where enrollment is gross female secondary enrollment in country i, and X is a set of three explanatory variables for country i. The independent variables contained in X are per capita public expenditure on education in country i, per capita GDP (PPP, US dollars) in country i, and initial adult female literacy in country i. Per capita GDP is a proxy for the income of women. The adult female literacy rate is lagged 15 years to provide a proxy for the education

level of mothers. Earlier research has shown that the initial schooling level of mothers has a significant impact on enrollment.[22] In addition, lagging the literacy data helped address endogeneity problems between literacy and school enrollment.[23] Secondary enrollment (GER) was chosen as the dependent variable over primary school GER since it also contains information about completion rates of primary school (assuming completion of primary school is a prerequisite to entering secondary school).[24] In addition, it was felt that secondary enrollment rates would provide a more meaningful sample since the opportunity cost of school attendance for girls is higher after primary school, the pecuniary costs of school attendance at this age is also higher, and cultural constraints on school attendance for girls is likely to increase at this age. Data was available for 14 countries for the period 1980–2000.

In the area of health, the following regression equation is estimated:

$$(2) \ \log(mortality_i) = \alpha_i + \beta_j \log(X_i) + \varepsilon_{ij}$$

where mortality is the female mortality rate for country i, and X is a set of three explanatory variables for country i. The independent variables are per capita public expenditure on health in country i, per capita GDP (PPP, US dollars) in country i, and adult female literacy in country i (again lagged 15 years to act as a proxy for maternal education). Earlier work has also shown that the level of maternal education has a strong impact on child mortality rates.[25] The data in MENA on female health indicators was generally much less abundant, and was available for 15 countries for six years starting in 1995.

Female labor force participation had been considered as a useful explanatory variable since the potential for formal employment acts as an incentive for secondary school enrollment.[26] However, it was not included because of problems related to multicollinearity and endogeneity. This might be a useful avenue to explore in further research.

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[22] Flug and others (1996)

[23] Due to time constraints and difficulty in finding data, instrumental variables were not included. This would have been a better method of addressing the endogeneity problem.

[24] Data on primary completion rates (PCR) was not widely available for MENA countries. Also, data for average years of schooling was only available for recent years for some countries.

[25] Klasen (1999), Murthi, Guio and Drèze (1995), Summers (1994), Thomas (1990 and 1997), World Bank (2001)

[26] If employment is in low skilled sectors, this may have the opposite effect.

The results of equation (1) are summarized in Table 2. Public spending on education has a significant effect on enrollment, but this becomes statistically insignificant once per capita income and female literacy are taken into account. This result is similar to the results of other researchers highlighted earlier and is consistent with the descriptive data showing a high level of public expenditure and relatively low levels of education. The maternal literacy proxy appears to have the most significant impact.[27] This suggests the potential for improvements in education levels over subsequent generations by increasing adult female literacy. The trend data presented in Section II.A. could be said to support this result.

Table 2. Public Education Spending and the Female Secondary Enrollment Rate
(log-linear fixed effects estimation 1/)

Dependent variable:	Ln *Female Secondary Gross Enrollment Rate*				
	1	2	3	4	5
Ln Public Education Spending (US$ PC)	0.15***	-0.02	0.01***		0
Ln GDP per capita		0.77***		0.02**	0.04
Ln Adult female literacy rate /2			0.61***	0.60***	0.58***
Adjusted R-squared	0.99	0.99	0.99		0.99
Number of observations (balanced)	294	294	224	224	224

Source: Authors' calculations.

Note: (*) significant at 10%, (**) significant at 5%, (***) significant at 1%.

1/ Country-specific constants available upon request, data weighted using cross-section weights.

2/ Female literacy lagged 15 years was used to proxy education of mother.

The results of the regression on health are presented in Table 3. The effect of government spending on the female mortality rate is significant and negative, as would be expected. Again, female literacy appears to have the strongest impact. As occurred in the education regression, public expenditure loses its explanatory power after controlling for per capita income and maternal education.

Table 3. Public Health Spending and Mortality Rate
(log-linear fixed effects estimation 1/)

Dependent variable:	Ln *Female Mortality Rate*				
	1	2	3	4	5
Ln Public Health Spending (US$ PC)	-0.10***	0.03**	-0.02***		-0.01
Ln GDP per capita		-0.57***		-0.16***	-0.14**
Ln Adult female literacy rate /2			-0.44***	-0.31***	-0.32***
Adjusted R-squared	0.99	0.99	0.99	0.99	0.99
Number of observations (balanced)	90	90	90	90	90

Source: Authors' calculations.

Note: (*) significant at 10%, (**) significant at 5%, (***) significant at 1%.

1/ Country-specific constants available upon request, data weighted using cross-section weights.

2/ Female literacy lagged 15 years was used to proxy education of mother.

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[27] There might be a collinearity issue between GDP per capita and public spending per capita. This could be tested in subsequent research.

This empirical study produces a number of observations that are largely in line with earlier research in other regions (on aggregated data). First, the study confirms the established strength of the absolute levels of government spending (per capita) as a better indicator. Second, there is a link between government spending and female social indicators, although it is weak. Third, the correlation between spending and education disappears when income and/or maternal literacy are taken into consideration. Fourth, the coefficient on income is greatly reduced once the proxy for maternal literacy is introduced. This could be an indication that gender equality matters more than the level of income. Fifth, the correlation between spending and health also disappears when income and maternal education are introduced.

To conclude, the effect of government social spending on female social indicators is not statistically significant once country specific social and economic factors are introduced. A similar conclusion could be drawn in the health sector, although the evidence is less robust. Therefore, any policy efforts to raise female social outcomes, particularly in education, should first consider how existing resources are being deployed. The reasons for the weaker performance among MENA women must lie then in the effectiveness of present spending, including issues such as access by women from all backgrounds and regions to the public services and facilities provided, and the allocation and targeting of funds within the overall envelope. In addition, public spending must take into consideration private sector activities in a way that ensures their complementarity.[28]

If a public policy priority is to improve the health and education of women in the region, public spending in these sectors, particularly education, should be more effectively allocated so governments and tax payers can get a better return on their investment. How to improve the efficiency and equity of social spending in MENA is, however, beyond the scope of this paper, although there has been considerable research in that field. This has addressed ways to reprioritize spending, increase access to health and education for poor women, promote health and education for empowerment, and improve returns to health and education. The institutional basis for ensuring legal protection is also essential to maximize the benefits of female education and employment.[29]

This is a preliminary attempt to substantiate previously tested links with specific application to women, and to women in MENA. Further improvements could greatly enhance the findings. First, better data on the incomes and health status of women would be essential to increase the reliability of the results. Better data on households would be a good starting point, and data on health indicators specific to women would be useful, such as maternal

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[28] For example, the low cost effectiveness of public health expenditures is explained by the preponderance in budgets of outlays on expensive hospital-based care in urban areas for higher-income minority, and also by the public provision at low cost of treatments for which the elasticity of demand is high; this causes clients to migrate from private practitioners to public facilities. (Filmer, Hammer and Pritchett).

[29] Oxaal (1997), Baden (1997), Colclough (1994), Demery (1996), World Bank (1996) King and Hill (1993)

mortality, or births assisted by skilled professionals. Real data would also provide a better assessment of the relationships in question. Second, it would useful to find a proxy for gender equality in order to investigate the effectiveness of public spending. Third, the relationships between spending and social indicators should be explored for men in the MENA region to determine whether spending has a more significant effect on male health and education indicators than it does on female indicators. Fourth, the same links should be explored for women in other comparator regions to show how MENA women fare relative to women in other regions. Fifth, side tests proved that labor force participation had an important effect on incomes and social indicators. This could be incorporated into the empirical study with data manipulation to control for statistical complexities. It would also be interesting to examine sub-regions within MENA, and also country specific cases, since the region is comprised of a diverse range of countries. Clearly these findings would not necessarily be applicable to all countries on an individual basis.

V. TAXATION: SOURCES OF POSSIBLE GENDER BIAS AND CONSIDERATIONS FOR MENA

A. Survey of Recent Literature

Changing tack somewhat from the focus of the paper so far, this section presents a review of the literature on gender issues in tax systems. Most of the research in this field has been drawn from higher income countries, where tax systems are more developed, tax administrations are strong, and data is abundant. Research on the topic has been driven mostly by public policy analysts and academics in industrialized countries, unlike the research on the impact of public expenditure on social outcomes, which has been driven by development organizations and academics associated with them. In this respect, we attempt to highlight the key lessons in the outstanding literature with the objective of raising the region's level of awareness about the issue in general, and also to highlight its relevance to the public finance and gender challenges in MENA.

Most tax systems treat men and women differently in ways which affect decisions about work, children, and consumption and savings habits.[30] Gender bias is present in personal income tax arrangements, but can also be present in indirect taxes and benefits under social insurance programs. This bias can take either an explicit form, where actual provisions of the law discriminate against women based on gender or marital status, or an implicit form, where the economic effects of tax systems have a different impact on men and women because of social norms or attitudes about the roles of men and women. In developing countries, the implicit bias is often related to the effect of indirect taxation which has a disproportionate burden on the poor, the majority of whom are women.[31]

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[30] This introduction draws heavily from the work by Stotsky (1996 and 1997).

[31] Research in some developing countries has shown that women are generally "poorer" than men (Smith, 2000).

Explicit forms of discrimination appear in specific provisions of tax laws, and are more often found in personal income tax since it applies to individuals or family units. This creates the opportunity for the application of different treatment, including, for instance, separate tax rates for women, tax rates differentiated by the marital status of women, different primary rebates (income exempt from tax), or different tax exempt deductions. A common issue in most systems is the treatment of secondary earners in family units. Under a system of joint filing with progressive marginal rates, incomes are combined so that the income of the secondary earner is taxed at a much higher marginal rate. Since most secondary earners are women, this so-called "marriage tax" is viewed as discriminating against women, and can greatly affect women's incentives to work.

Implicit bias inherent in personal income taxes is easier to detect than with other taxes since its effects are directly visible, for instance, on labor supply. However, the implicit bias inherent in most indirect taxes, such as VAT and consumption taxes, excise taxes and import duties, is more difficult to assess since any discrimination is a function of who buys (and consumes) the goods in question. Since the poor spend a greater percentage of their income on basic goods, they spend a greater share of their income on taxes on basic goods. If women make up a large share of the poor in some countries, they can be said to be discriminated against.[32] On the other hand, excise taxes in some countries could be viewed has having an implicit bias against men since they are usually applied at high rates on products which are disproportionately consumed by men (tobacco, alcohol).

However, in many developing countries, tax administrations are generally weak and nominally progressive direct taxes are often not fully enforced. This often leads to tax evasion by rich tax payers and little effective progressivity. Indirect taxes, such as the VAT, are usually better enforced. While this would make the tax system even more regressive, the incidence of indirect taxes on the poor is often alleviated by exemptions on key goods and sectors (e.g. basic foodstuffs, the agriculture sector, small businesses). In this respect, the VAT can provide a better, more efficient and buoyant source of revenue with which to finance public expenditure. Under these circumstances, policy makers should consider both the strength of tax administrations and the tax-expenditure mix when promoting distributional objectives since, in the absence of a buoyant tax system, no pro-poor or pro-women social programs could be financed.

Many countries, including some developing countries, have taken measures in recent years to reform tax laws which explicitly treat women differently from men. Leaders in this area include the EU, Australia and South Africa. EU countries have been moving (at different rates) to reduce gender bias in tax systems, particularly as regards the marriage tax, the granting of allowances or deductions to the husband, the lack of allowances for child care

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[32] In the same vein, budget subsidies on the retail price of basic commodities benefit these groups, although they also benefit higher income levels hence do no address the regressiveness of the tax.

when both parents work, and arrangements allowing the payment of income to an "assisting wife" by a husband. In Malaysia, husbands and wives are treated as separate taxable units; Singapore actually explicitly favors women by building in child care relief into the tax system and by offering additional allowances for children based on women's education level (a provision designed to encourage well-educated women to have children); Pakistan and India have provisions in tax codes favoring women.[33] South Africa has made reforms to remove differences in tax rates related to marital status and has sponsored much deeper reviews of the tax system with the aim of addressing all aspects of implicit gender bias in public finance.[34]

Indeed, there are other public finance policy tools that may have negative secondary effects on women. First, pension and retirement fund contributions are generally regressive, but most importantly, only benefit people with sufficient income to be registered as tax payers. Moreover, women formally employed in the workforce are often involved in seasonal or part-time work which is usually excluded from pension systems.[35] Second, access to medical insurance may be available to women through their status as dependents, although income benefits from deducting contributions to these plans are not likely to go to women. Third, corporate income taxes are important for promoting private sector growth and job creation. In this regard, governments often introduce tax holidays and exemptions to attract investment, which in turn often leads to investment in capital-intensive activities. While this is generally good for economic growth over time, the near-term transition costs could fall more heavily on women since they are employed primarily in labor intensive, lower skilled industries.

B. Considerations for MENA

To assess whether some of these gender considerations are important or relevant for public finance in MENA, we review the basic profile of women in the region for an appreciation of the differential impacts of taxation. As noted earlier, women are known to be "poorer" than men in some developing countries, although, to our knowledge, there is no data or research to substantiate this view for MENA. However, the following two economic characteristics could be said to apply to the majority of the female population in MENA: (1) MENA women are less likely to be employed in the formal labor market; and (2) they are more likely to be active in low-wage activities (formal and informal). For countries with strong tax administrations, this could imply that women are unlikely to bear a large share of

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[33] Stotsky (1996 and 1997).

[34] Smith (2000)

[35] There are also unexpected consequences related to the deferred tax liabilities of pension benefits. These are often paid by surviving spouses, usually women since life expectancy of women is higher than men. Differences in average life expectancy could be used to argue for different social security tax rates or for providing different benefits. See Stotsky (1997) and Smith (2000).

the direct taxation burden, although they could be disproportionately affected by the regressive features of indirect taxation.

A review of the sources of revenue is presented in Figure 4. The data comes from the IMF data base for all countries reporting Government Finance Statistics (GFS) data, which includes most countries in each region. (See the Appendix for the countries included in each region.) The charts show direct and indirect taxes as a percentage of total tax revenues. This measure was considered to give a better metric than tax revenues as a percentage of GDP since the latter is heavily influenced by the size of the public sector. Two different definitions of direct taxes are presented to highlight the importance of specific taxes to different regions: first, direct tax revenues are narrowly defined to include only personal and corporate income taxes. The second two charts include other sources of direct tax revenues, including those related to the petroleum sector (important for MENA), payroll taxes, social security and property tax.

With the exception of the OECD, indirect taxes contribute more to total revenues than do direct taxes in all regions (not surprisingly). This is the case particularly under the first narrower definition, where the tax mix in MENA is around 60/30, wider than Asia and Pacific, but better than Latin America and non-OECD Europe. When payroll and social security are included, the tax mix improves, considerably so for OECD and non-Europe OECD, and to a lesser degree for MENA. The region's tax ratio falls to about 58/42.

This data confirms the well-known fact that higher income (OECD) countries have a more balanced tax mix, suggesting that distributional considerations are important (when supported by a strong tax administration). Most developing country regions have tax systems which lean more heavily on indirect taxes, particularly so in regions with higher income inequality, such as Latin America. However, the MENA region compares reasonably well, indicating, perhaps, that distributional objectives are also a priority (although this would have to be supported by effective tax administrations). This would appear to be consistent with available information on (although not the cause of) income distribution in the region, which shows that MENA countries have had the lowest regional incidence of extreme poverty in recent years and one of the most equal income distributions in the world.[36]

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[36] Adams and Page (2001), World Bank (2001)

Figure 4. Central Government Revenues

Central Government Revenues, 1992-1996
(% of total tax revenue)

Central Government Revenues, 1997-2001
(% of total tax revenue)

Central Government Revenues, 1992-1996
(% of total tax revenue)

Central Government Revenues, 1997-2001
(% of total tax revenue)
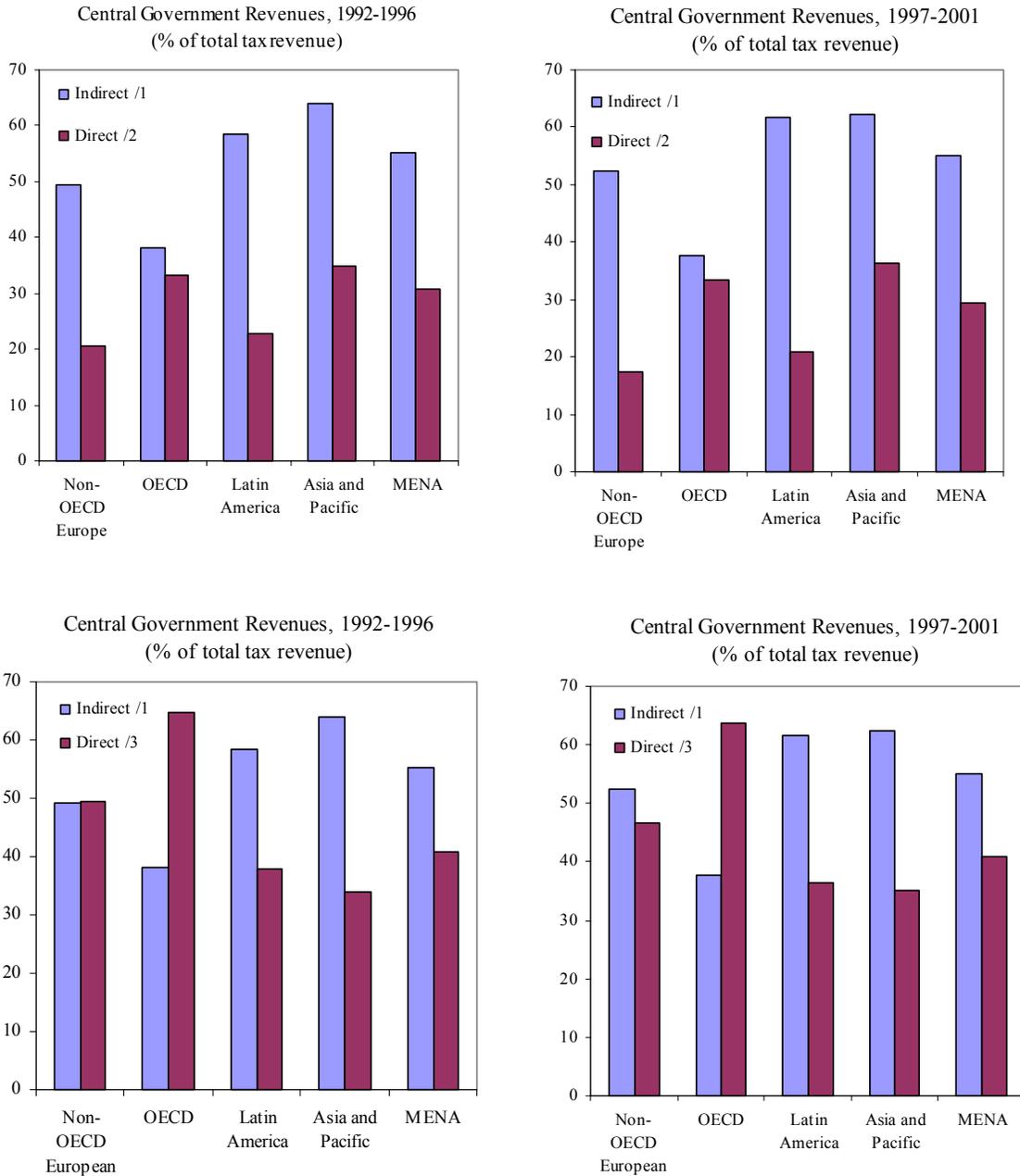
/1 Indirect tax revenues are comprised of domestic taxes on goods and services (sales, turnover, VAT, excise) and
International trade taxes (import and export duties).
/2 Direct Tax Revenue includes Personal and Corporate income taxes only.
/3 Direct Tax Revenue includes Taxes from Income, Profits and capital gains (includes payroll taxes, social security and
property).
Source: Government Finance Statistics (IMF), International Financial Statistics (IMF); and World Economic Outlook (IMF).

Consequently, it is not clear that concerns highlighted earlier about women being affected by regressive features of indirect taxation are any more relevant for MENA than for other regions. Furthermore, these forms of bias are more difficult to assess and to address. On the other hand, the relatively high level of direct tax revenue in MENA suggests that explicit forms of gender bias contained in legislation governing income taxes could be important and should be investigated. Since women are less likely to be employed in the formal labor market and more likely to be active in low-wage activities, the cost of these biases to women already in the labor force are likely to be less onerous. However, since these explicit biases are likely to impede or block the entry of women into the workforce, the associated opportunity costs could be considerable.

The objective of this literature survey was to broaden the awareness among seminar participants of possible sources of gender bias in tax systems. While none of the issues raised appear to pose problems which require urgent policy attention, there are important issues based on equity and efficiency principles that should be taken into consideration in any future tax reforms in the region. The following points could be considered for immediate review or for integration into the design and formulation of revenue reforms henceforth:

- Policy makers should reconsider both the strength of tax administrations and the tax-expenditure mix when promoting distributional objectives.

- Governments could review tax codes to identify and remove provisions that discriminate explicitly against women and other "secondary earners".

- Any forthcoming reforms in national pension systems or public medical aid plans should take into account the implicit gender issues highlighted above so that more women can be captured under the umbrella of social support provided under these programs.

VI. Conclusions and Policy Implications

The under-utilization of MENA women's capabilities has been cited as an important factor in the region's poor economic performance, with a number of studies estimating that per capita growth in GDP could have been materially higher had female labor force participation been stronger during the past quarter century. Moreover, the health and education status of MENA women are among the worst in the world.

The empirical research in this paper showed that government spending on health and education has had little effect on the welfare of women in MENA. In other words, the effect of government social spending on female social indicators is not statistically significant once country specific social and economic factors are introduced. Together with the descriptive data, we conclude that the weak performance in female social indicators, particularly in the area of education, is not explained by the amount of government spending. Consequently, any policy efforts to raise female social outcomes should consider first how these resources are

being allocated. The low levels of education and weak health statistics of women in the region must be attributed to the effectiveness of existing spending, including issues such as access, availability, efficiency, allocation, and targeting. The nature of private health and education spending is also important.

With respect to taxation, most tax systems treat men and women differently in ways that affect decisions about work, children, and consumption and savings habits. MENA has a reasonably balanced tax mix relative to comparator regions, suggesting that distributional considerations are important in the region. We could not conclude that MENA women are being affected by regressive features of indirect taxation any more than in other developing country regions. However, the relatively high level of direct tax revenue in MENA suggests that explicit forms of gender bias could be important and should be investigated, particularly as they impede the entry of women into the labor force.

If a public policy priority is to improve the health and education of women in the region and to maximize their economic potential, a number of measures could be considered for immediate review or for integration into the design and formulation of fiscal reforms henceforth. First and foremost, country authorities should increase the availability of data disaggregated by gender so as to facilitate the study of the condition of MENA women. As regards expenditure policy, the amount of public spending (as a share of GDP or per capita) should be allocated more efficiently and equitably so that governments and taxpayers can get a better return on their investment. Governments could explore ways to expand the reach of spending on health and education to women, as covered in the policy literature on the topic, including ways to reprioritize spending, increase access to health and education for poor women, improve returns to health and education, and strengthen the institutional basis for ensuring the legal protection of women.

Third, in the area of taxation, governments could begin by reviewing the tax/ expenditure mix when considering distributional objectives. They should examine tax codes to identify and remove provisions that discriminate explicitly against women and other "secondary earners." In addition, any plans to reform national pension systems or public medical aid plans should take into account the implicit gender issues highlighted in this paper so that more women can be captured under the umbrella of social support provided by these programs.

These factors should be routinely incorporated into IMF surveillance consultations and program deliberations, and in technical assistance formulation. In particular, IMF policy discussions on the overall fiscal position and the productivity of expenditure should consider the issues noted in the findings of this paper. Close collaboration with the World Bank would be essential to ensure World Bank follow-up on measures to improve the effectiveness of social spending. IMF policy advice on tax reforms should pay close attention to the problems raised by gender biases, particularly explicit biases.

Country Groups for Regions Presented in Figures

	Figures 1-3	Figure 4
East Asia & Pacific	American Samoa, Cambodia, China, Fiji, Indonesia, Kiribati, Republic of Korea, Lao PDR, Malaysia, Marshall Islands, Federated States of Micronesia, Mongolia, Myanmar, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Thailand, Timor-Leste, Tonga, Vanuatu, Vietnam.	Bhutan, Mainland China , India, Indonesia, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Papua New Guinea, Philippines, Singapore, Sri Lanka, Thailand, Vanuatu, Vietnam.
Europe & Central Asia	Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Isle of Man, Kazakhstan, Kyrgyz Republic, Latvia, Lithuania, FYR Macedonia, Moldova, Poland, Romania, Russian Federation, Slovak Republic, Tajikistan, Turkey, Turkmenistan, Ukraine, Uzbekistan, Former Federal Republic of Yugoslavia.	
Latin America & Caribbean	Antigua and Barbuda, Argentina, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, Venezuela.	Argentina, Bahamas, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, El Salvador, Guatemala, Jamaica, Nicaragua, Panama, Paraguay, Peru, St Vincent and Grenadines, Uruguay, Venezuela
Middle East & North Africa	Algeria, Djibouti, Arab Republic of Egypt, Islamic Republic of Iran, Iraq, Jordan, Lebanon, Libya, Malta, Morocco, Oman, Saudi Arabia, Syrian Arab Republic, Tunisia, West Bank and Gaza, Republic of Yemen.	Algeria, Bahrain, Egypt, Iran, Jordan, Kuwait, Lebanon, Morocco, Oman, Pakistan, Syria, Tunisia, UAE, Yemen
South Asia	Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka	
Non-OECD		Albania, Azerbaijan, Belarus, Bulgaria, Croatia, Cyprus, Estonia, Georgia, Israel, Kazakhstan, Kyrgyz Republic, Latvia, Lithuania, Malta, Moldova, Romania, Russia, Slovenia, Tajikistan, Ukraine.
OECD		Canada, Mexico, United States, Australia, Japan, Republic of Korea, New Zealand, Austria, Belgium, Czech Republic, Denmark, , Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy Luxembourg, Netherlands, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland, Turkey, United Kingdom.

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