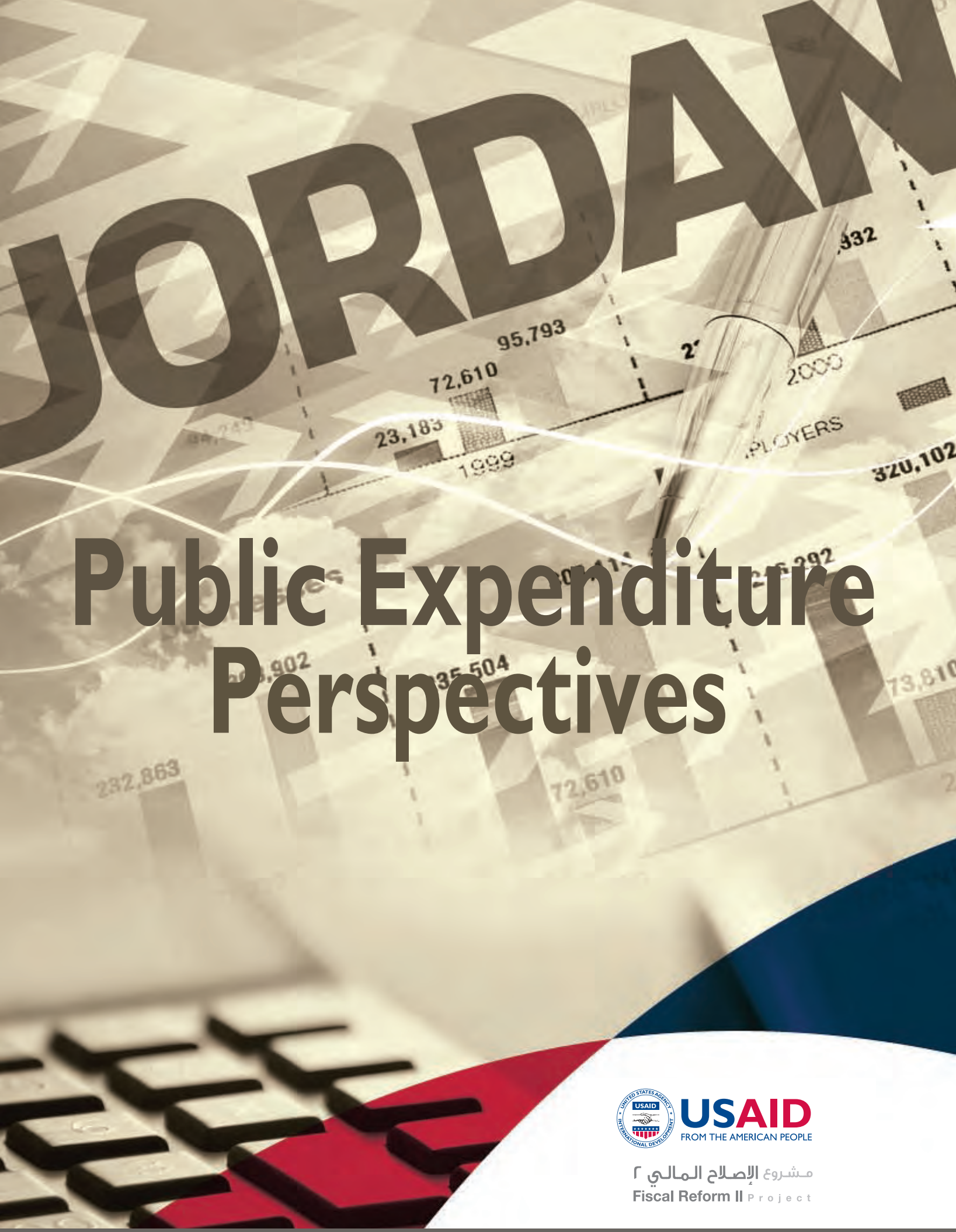

Public Expenditure Perspectives

USAID
FROM THE AMERICAN PEOPLE

مشروع الإصلاح المالي ٢
Fiscal Reform II Project

Public Expenditure Perspectives

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Acronyms

ADC	Aqaba Development Corporation
AFDE	Armed Forces Department of Education
ALOS	Average Length of Stay
APC	Aqaba Port Corporation
ARC	Aqaba Railway Corporation
ASEZ	Aqaba Special Economic Zone
ASEZA	Aqaba Special Economic Zone Authority
AZLRS	Amman-Zarqa Light Railway System
BOO	Build-Own-Operate
BOT	Build-Operate-Transfer
BRT	Bus Rapid Transit
CARC	Civil Aviation Regulatory Commission
CBJ	Central Bank of Jordan
CCSS	Coordination Commission for Social Solidarity
CCT	Conditional Cash Transfer
CHI	Civil Health Insurance
CSB	Civil Service Bureau
DOS	Department of Statistics
DPT	Diptheria, Pertussis and Tetanus
EDP	National Executive Development Plan
ERfKE	Education Reform for Knowledge Economy Project
E-TVET	Employment-Technical and Vocational Education and Training
FDC	Faculty Development Center
FDI	Foreign Direct Investment
FRP	Fiscal Reform Project
FTA	Free Trade Agreement
G8	Group of Eight
GAM	Greater Amman Municipality
GBL	General Budget Law
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GFMIS	Government Financial Management Information System
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German Agency for International Cooperation)
GOJ	Government of Jordan
GST	General Sales Tax
Ha	Hectare
HEAC	Higher Education Accreditation Commission
H.E.	His Excellency
HHC	High Health Council
IBT	Increasing Block Tariff
IDARA	Instituting Water Demand Management Project
IMF	International Monetary Fund
ISSP	Institutional Support and Strengthening Project
JAC	Jordan Airports Company
JD	Jordanian Dinar
JFDA	Jordan Food and Drug Administration
JHRC	Jordan Hijaz Railway Corporation
JICA	Japan International Cooperation Agency
JMA	Jordan Maritime Authority
JPD	Joint Procurement Department
JRF	Jordan River Foundation
JRSP	Jordan Red Sea Project
JVA	Jordan Valley Authority
KG	Kindergarten
KHCC	King Hussein Cancer Center
LEMA	A consortium of Suez Lyonnaise des Eaux and Montgomery Watson Arabtech Jardaneh
LMI	Lower Middle Income
LTRC	Land Transport Regulatory Commission
MCC	Millennium Challenge Corporation

MCM	Million Cubic Meters
MDG	Millennium Development Goal
MENA	Middle East and North Africa
MFA	Multi-Fiber Agreement
MOA	Ministry of Agriculture
MOE	Ministry of Education
MOF	Ministry of Finance
MOH	Ministry of Health
MOHESR	Ministry of Higher Education and Scientific Research
MOPIC	Ministry of Planning and International Cooperation
MOSD	Ministry of Social Development
MOT	Ministry of Transport
MPWH	Ministry of Public Works and Housing
MTEF	Medium-Term Expenditure Framework
MWI	Ministry of Water and Irrigation
NAF	National Aid Fund
NEP	National Executive Program
NEPCO	National Electric Power Company
NER	Net enrollment ratio
NGO	Non-Governmental Organization
NHA	National Health Accounts
NPO	National Post Office
NRW	Non-Revenue Water
NWMP	National Water Master Plan
NZF	National Zakat Fund
OECD	Organization for Economic Cooperation and Development
OFDC	Orphans Fund Development Corporation
OMS	Operations Management Support Project
O&M	Operations and Maintenance
PEP	Public Expenditure Perspectives
PER	Public Expenditure Review
PISA	Program for International Student Assessment
PMU	Project Management Unit
QIZ	Qualified Industrial Zones
RIAL	Reuse for Industry, Agriculture and Landscaping Project
RMS	Royal Medical Services
SEPD	Studies and Economic Policies Department
SPEP	Special Protection Enhancement Project
TIMMS	Trends in International Mathematics and Science Study
USAID	United States Agency for International Development
UN	United Nations
UNDP	United Nations Development Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNRWA	United Nations Relief and Works Agency
USA	United States of America
VAT	Value Added Tax
VTC	Vocational Training Corporation
WAJ	Water Authority of Jordan
WDI	World Development Indicators
WEPIA	Water Efficiency and Public Information for Action Project
WHO	World Health Organization
WSD	Water-saving device

CHAPTER 1

Introduction and Summary

In the past, public finance systems were judged effective if they were successful in controlling and reporting on financial resources. Modern public finance systems have expanded well beyond traditional controlling and reporting, with functionalities that enable decision makers to allocate publically available resources to the most important social goals of society. In Jordan, these goals have been clearly articulated in the *National Agenda: The Jordan We Strive For: 2006–2015*. To achieve the objectives and targets of the National Agenda, the Government must raise revenues and financing from taxation, non-tax fees, grants, and debt financing and then allocate these financial resources along with the government's capital assets and its human resources in ways that will most effectively serve the national good.

Over the past five years, the Government implemented a number of important financial management reforms. The Ministry of Finance operates a computer model of the economy that it uses to forecast where the economy is heading and for plotting the overall course of the country's public finances for the coming three years. The General Budget Department has implemented a country-wide system of "results-oriented budgeting," a methodology that attempts to link public spending with public policy goals. The recently concluded new bylaw on internal financial control promises to lead to better control over budget execution and strengthened financial oversight. The Audit Bureau is in the process of introducing "performance auditing" to supplement its traditional financial audits, a process that will help close the loop on results-oriented budgeting and government performance. Finally, after several years of design and development, the Ministry of Finance rolled out its new Government Financial Management Information System (GFMIS), a financial and accounting system that automates many aspects of budget planning, execution, accounting, treasury operations, and reporting. All of these advances promise better control over public finances and more efficient and effective use of public resources.

To support the design and implementation of these modernization efforts, donors and others have undertaken numerous evaluations and diagnostic studies. The United States Agency for International Development (USAID), the French Government, and the European Commission have provided financial assistance to encourage the timely implementation of these modernization efforts. The International Monetary Fund (IMF), World Bank, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), and USAID, especially through its Fiscal Reform projects, have provided technical assistance to support implementation of these reforms. GIZ and the USAID-funded Fiscal Reform Project II (FRP II) have provided on-the-ground technical assistance, while USAID-FRP II has provided training, organizational design, equipment, systems development and rollout, and all round capacity building assistance, to ensure that these modernization efforts achieve their objectives and serve the people of Jordan well.

To date, almost all efforts to improve the public finance system have focused on improving processes, enhancing capabilities, and building capacity. The overall intent is to improve how government resources produce the services that the people of Jordan most desire and need from their government, and in the most effective and efficient ways. There has been actually very little concerted effort toward assessing how resources are used. Since a Public Expenditure Review conducted in 1991, there has been no overall assessment of how the government's resources are used and how efficiently and effectively public finances produce the services needed.[1]

The USAID Fiscal Reform Project II has been working with the Government on building capacity to improve its public finances and create a more results-oriented government. Most FRP II work has focused on strengthening institutional capacity to make policy and to strengthen capacities to implement that policy. In the area of budget, most of our work to date has been to strengthen budget processes. This *Public Expenditure Perspectives* project

[1] The World Bank initiated a Public Expenditure Review in 2003, but this was never concluded or published.

reaches beyond processes to the more advanced stage of introducing greater analytic content into the budgeting system.

The *Public Expenditures Perspectives* study aims to take both a broad and a detailed look, to assess where we are in 2011, and to focus on opportunities into the future.

PURPOSE AND AUDIENCE

The purpose of this study is to help chart the course ahead for the public finances of Jordan. This study provides useful analysis and recommendations that can result in a variety of improvements in the public finances. It will help develop a path of government finance and spending that leads to fiscal sustainability, improved efficiency of spending and taxing, more effective programs that better meet the needs of the growing economy and population, and that help to spur jobs creation, especially for younger people, while reducing and ameliorating poverty throughout the country.

Jordan's public expenditure policies and the programs funded through the budget affect both the macroeconomic environment and the country's sectoral development. Consideration of both these macro and micro concerns is central to our analysis of public expenditure policies and five key sectors—social assistance, education, health, transportation, and water.

This study is meant to help policymakers, academics, and civil service professionals in their dialogues about the best ways to generate public resources and how these resources can best be allocated. Policymakers will benefit from our holistic approach that combines macroeconomic policies and expectations, with revenue and other funding choices, and combines them with in-depth analysis of the various sectors.

Practitioners, interested members of academia and of civil society are encouraged to review this report, critique and comment on it, and to build on it. We hope that in great part, our study will form the basis of an improved national dialogue about the role of the state in Jordan, the future of its public finances, and prioritization in the use of public resources.

International donors, such as the United States Government and the European Union, as well as international financial institutions, such as the IMF and the World Bank, play important roles in the country's development, whether in terms of macroeconomic growth and stability, or in supporting health, education, and poverty alleviation. This *Public Expenditure Perspectives (PEP)* study provides ample food for thought in terms of areas for project and financial support, whether in the funding of studies to better target poverty alleviation efforts or to invest in capital programs that rationalize the use and allocation of water.

METHODOLOGY

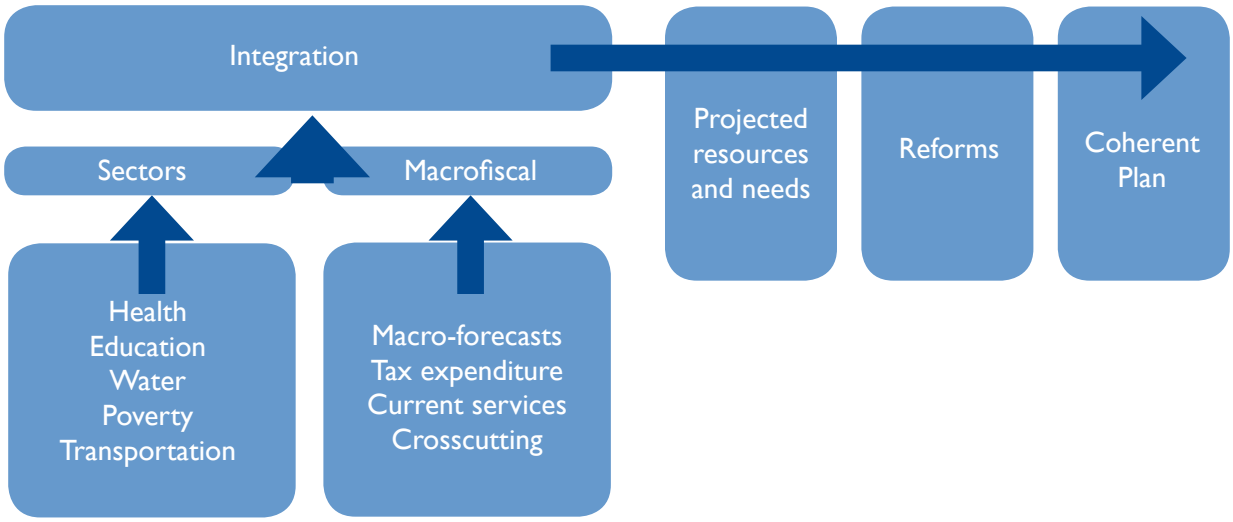
This study was prepared based on a series of working papers. These working papers were prepared by USAID-FRP II staff or consultants in collaboration with partners in the General Budget Department, the Ministry of Finance, and various sector ministries, general departments, and other organizations. Each working paper was presented during its preparation phase in workshops at the General Budget Department. Some of the working papers were also presented or discussed in workshops within the respective sector ministries or other organizations.

The team produced working papers on the following topics:

1. Mezzo-fiscal analysis of health and education
2. Social assistance
3. Education
4. Health
5. Transportation
6. Water
7. Tax expenditures

The mezzo-fiscal analysis uses statistical methods to compare Jordan to the entire world. The analysis is based on a number of specific characteristics, such as level of economic development and size of government, to assess the demand for spending, the supply of services, and outcomes in terms of benefits to society. The results of this working paper were incorporated into the health and education sector analyses. The mezzo-fiscal analytical structures used for health and education were not applied to the water, social development, and transportation sectors because of the lack of reliable international statistics for these sectors. However, all five of the sector working papers make active use of international comparisons to keep the Jordanian situation in perspective of what can be achieved.

FIGURE 1.1. *PUBLIC EXPENDITURE PERSPECTIVES* STRUCTURE AND RESULTS



A variety of methodologies are used throughout these working papers. That said, the study teams investigated each sector, relying on prior studies, where available, collecting spending and other data from all sources possible, aligning needs with strategies, programs, and budgets, and investigating opportunities for strengthening performance. Such opportunities include, for instance, improved allocation of budgetary resources, policy reforms, better targeting, and use of innovative methods, often those that have been successfully applied elsewhere.

Our work at the sector level has been evidence based, i.e., all recommendations are based on carefully gathered data and knowledge of international best practices. At the same time, we try to focus on worthwhile but feasible approaches; approaches that could accord well with cultural norms and national aims.

The working paper experts for each sector developed a set of estimated "current services budgets." These estimates are briefly explained in Chapter VIII, but in short, are estimated budget requirements based on current policies, whether we are talking about the student-teacher ratio in public schools or simple demographic and economic changes that will necessitate future social assistance spending, without improvements in targeting or innovations in how such assistance might be provided.

At the sector level, the study team compared the adequacy of public spending from a variety of perspectives, such as: international comparisons and norms, the National Agenda and social welfare goals, Jordan-specific requirements, and others. Within this context we considered the appropriate role of the state in the provision of these public services and considered whether other, perhaps superior, methods for ensuring goals and objectives can be applied. These can include innovative financing, contracting out, further corporatization, funding or financing demand, such as providing student loans versus directly providing university funding, or output subsidies, among others.

The study assesses overall budgetary performance, macroeconomic and fiscal environment, adherence and contribution to attaining the goals of the national policy agenda, and expenditure trends. It assesses budgetary performance in terms of the level of public expenditures and incentives for aggregate fiscal discipline. At the sector level, we analyze the composition of public expenditure to answer the question of whether resources are allocated in accordance with the developmental priorities of the country.

The tax expenditures analysis, summarized in the final chapter and available in full in the working paper, lays out the tax system in terms of estimating, based on current tax policy, law, and regulations the amount of revenue that the Kingdom's treasury forgoes due to special treatment, exemptions, exonerations, and preferential rates that deviate from the base structure of the particular tax. The analysis was conducted before June 2011, so the most recent round of Value-Added Tax (VAT) exemptions,

are not treated. This tax expenditure analysis is appropriate for this *PEP* study, because it indicates the cost of decisions that have been taken that result in lower revenue availability to fund important programs that build the physical and human capital and infrastructure and provide the public services necessary for economic growth, job creation, and rising living standards.

In the final chapter we provide a multi-year macro-fiscal framework for macroeconomic performance, revenues, spending, balances, and financing, to provide the overall annual resource availabilities for the budget sector.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

There have been important economic and fiscal changes that have been occurring in the Kingdom over the recent past. Beginning about eight years ago, the Jordanian economy started experiencing very rapid economic growth, growing faster than most economies in the world and certainly growing more quickly than neighboring countries. The reasons for this growth are several and often related. Conflict in the region led many persons of wealth from other countries to invest in Jordan, in its businesses and its real estate and stock markets. Jordan was and continues to be a safe haven for regional capital.

Efforts by the Government to spur economic growth by supply side measures, such as privatization of public enterprises, corporatization of many functions, such as water distribution, and better regulation of business have resulted in the more efficient use of capital and a better business environment.

Foreign assistance came along with instability and war in the region. The inflow of foreigners fleeing war and unrest in their home countries was accompanied by upticks in funding from international assistance agencies and foreign bilateral donors.

However, by the end of the last decade, with the onset of the global financial crisis, and the slow return to peace in neighboring Iraq, economic growth began to decelerate. Indeed, though 2009 was still a year of growth, it was slower than in the previous five years, and by 2010 growth had slowed to one-third the pre-2009 growth rates. Prospects for 2011 are gloomier even than performance was in 2010, and without the influx in generous economic assistance from neighboring countries, GDP may have even experienced an absolute decline this year.

It is noteworthy to point out the radical adjustments in the major fiscal accounts that accompanied this period. Both during the rapid growth years and the ensuing slowdown of 2009 and 2010, and even into 2011, the size of the central government with respect to the rest of the economy was on a steadily shrinking path. Government spending dropped from 40 percent of GDP to nearly 30 percent of GDP in 2010, a transformation almost unheard of elsewhere in the world and one that must be heralded.

This reduction in the size of government does not seem to have been fully planned. For instance, the National Agenda, while it includes many references to fiscal targets and improvement in fiscal performance, it includes no specific guidance for the size of government. The National Agenda does, however, provide some guidance as to specific targets to be accomplished, and some of these have been achieved, ahead of time even, such as the reduction in the ratio of public debt to GDP.

So how did this reduction in government come about? In several ways. Payrolls were controlled, and in 2010 a hiring freeze in most sectors of government was in place. Salaries were also contained. But perhaps the biggest change in government spending was the great reduction in unproductive transfers and subsidies. For instance, subsidies for food, gas, petrol, and other consumer items declined from fully 20 percent of the budget to only 6 percent of the budget in 2010. The danger in 2011 is the rise in these product-related subsidies.

The reduction in government spending was matched by cuts in taxation, either *de jure* or *de facto*, as well as reduced receipts from public or state-owned enterprises that were sold off.

The privatization of public enterprises had an important impact on public debt; where to some extent the receipts from these privatizations were used to lay off outstanding debt, an important and sound use of such receipts.

2011 has been a very difficult year for the economy and for the fiscal system. With the onset of the Arab Spring and accompanying instability in some neighboring countries, Jordanian businesses have suffered from lost trade and relations with partners in countries such as Syria, Egypt, and Yemen. The cut offs of gas supplies coming from Egypt have had an important, negative impact on the economy and on the public finances, raising the costs of producing electricity and raising requirements for sub-

sidies and guaranteeing of debt of the National Electric Power Company. In addition, international tourism, an important source of foreign exchange, has dropped off drastically as a direct result of regional instability.

As mentioned, economic growth in 2011 has been below Government expectations, as have revenue receipts. Add to this the rise in demand for subsidies and special programs to respond to street protestors' concerns, and the fiscal system has seemed to be skittering along. Were it not for inflows of new financial assistance from Gulf partner countries, both the economy and the fiscal system would face the most difficult times since the late 1980s.

There are many challenges ahead, as well as many opportunities. The next sections summarize many of these challenges in health, education, social assistance, water, and transportation. These discussions are followed by a look ahead for trends as well as risks facing Jordan's public finances.

Social assistance

The Kingdom has a comprehensive social assistance system that provides cash assistance and services to the most vulnerable persons in the country. These social assistance programs clearly have had an impact in both helping to alleviate poverty and addressing the multidimensional aspects of poverty during the last several years of rising food and fuel prices and weakness in economic growth. The costs of this system are moderate and fall somewhere in the middle of countries across the international spectrum of social safety net programs.

The majority of social assistance programs are administered by the Ministry of Social Development (MOSD), the National Aid Fund (NAF), and the National Zakat Fund (NZF). They provide cash assistance to poor families as well as assistance with rehabilitation of disabled family members, assistance with sudden and urgent needs, assistance to orphans, and with health care and many other basic needs. Together, these programs spend approximately JD 110 million (2010), comprise about 1.8 percent of total government spending and remain well under one percent of Gross Domestic Product (GDP).

Given the requirement to reduce budget deficits each year, there will be ongoing constraints on such discretionary spending as social assistance programs. However, this presents an opportunity for making the social assistance programs more efficient and cost-effective. A combination of program administrative and policy changes can be implemented over the next two to four years that will result in more efficient program administration, eliminating persons from benefit roles who are not truly needy or vulnerable and directing program benefits to persons who have "slipped through the cracks" of the social safety net system.

The NAF, which currently uses the post office system to deliver cash assistance, should consider following the example of the NZF in using the national banking system for providing cash benefits. Neither the NZF nor beneficiaries pay any fee for using the National Islamic Banks.

While estimates vary widely, there is general agreement that a large number of cash assistance recipients are not vulnerable and should not be receiving benefits. The World Bank Poverty Update for 2009 indicates that as many as 30 percent of NAF recipients are in middle to upper income groups. Greater use of common databases, ongoing research and analysis throughout the Government, sampling of benefit awards for accuracy, and use of better targeting mechanisms currently under development, will help to eliminate persons who should not qualify for benefits.

As savings are gained in greater program efficiency, program coverage can be better targeted to those in need. A proxy means test currently under development by the MOSD and the World Bank will help to identify those who really are in need of assistance.

Conditional cash transfers, a mechanism where beneficiaries must meet specific requirements in order to receive assistance has been shown to be a successful mechanism for moving families, and especially children of poor families to brighter and independent futures. Indeed, conditional cash transfers have been shown to be very productive means of helping the poor in places as diverse as Mexico and New York City. MOSD should develop such pilot programs and, as mentioned above, perhaps the first conditionality that should be imposed is that families ensure that their children go to pre-school and kindergarten.

The largest spending on social assistance is not through the social assistance programs discussed here, but rather through the subsidization of foods, fuels, and water. Our work has shown that these forms of subsidy are highly counterproductive, incentivizing inappropriate consumption and providing assistance

to rich and poor alike, often with the rich, those who need it the least, being the biggest beneficiaries. The Government must reorient its support to the poor away from such general product subsidies and more to direct assistance. Indeed, one analysis shows that if the amount currently spent on product subsidies were converted to cash assistance and given to the poor, everyone who is now considered poor would be lifted out of poverty.

Education

While the performance of Jordan's education system exceeds expectations for a country at similar income levels or in the Middle East and North Africa region, it is a weak performer when compared to countries that have achieved the "knowledge economy" status to which Jordan so earnestly aspires. If the country is to attain the status of a knowledge economy, it can only do so by vigorous efforts to take advantage of numerous opportunities to reduce costs, improve efficiency, and invest in the critical policies and priorities that improve education results, especially quality.

There are too many teachers, with salary costs exceeding 93 percent of the recurrent budget, and overall student-teach ratios are too low. Improvements can be made in selecting new teachers and teacher utilization so that savings can be invested in other education quality improvements and in student performance.

Jordan's numerous small and inefficient schools result in double to triple the cost per student of large schools. At the same time, many Ministry of Education schools have surplus seats available and are located within one kilometer of an overcrowded school. We recommend reducing the number of small schools; the use of efficiency criteria to locate new schools; and a modern maintenance management system to avoid costly repairs and unnecessary replacement costs.

Under-enrollment has been a persistent problem for Jordan's kindergarten and primary levels. This calls for the creation of a transportation system to provide student transportation between home and school and for making cash payments through the National Aid Fund conditional on age-appropriate family members being enrolled in kindergarten and basic education.

Secondary vocational education, the Vocational Training Corporation, and community colleges provide vocational and technical training and education. The Ministry of Education should evaluate the effectiveness of the 2008 E-TVET initiative in leading the development of the technical and vocational education structure; increase private sector involvement in vocational and technical education; and provide more awareness and guidance related to vocational education and training. Investments in vocational training could be important tools in the effort to reduce unemployment, especially among the youth. Job seekers aged 15–19 are unemployed at a rate of 36 percent while those aged 20–24 are 28 percent unemployed.

The Ministry of Education has responsibility for an extensive system of schools, buildings, facilities, land, and other fixed assets, some of which are not fully utilized and could generate additional revenues through sale, lease, or other business arrangements. The proceeds could be used to provide direct educational benefits.

The national budget trend has been to reduce direct support to institutions of higher education and its policy trend is to plan for tuition and fees to recover the total cost of higher education. At the same time, government will increase the availability of financial assistance for financially disadvantaged students. There is a need and opportunity to explore options for the participation of international donors, such as use of the USAID Development Credit Authority, in addition to private banks, in subsidizing or guaranteeing student loans for higher education; and hold the Ministry of Higher Education and Scientific Research (MOHESR) accountable for monitoring the restructuring of higher education support from institutions to students.

The Council of Ministers recently approved a proposal to create a separate department within MOHESR, to nurture the institutional culture necessary to provide graduates with employment-linked knowledge, skills and abilities based on continuous and close institutional relationships with the employer community. The results of the solution currently being implemented will not be clear for several years. Nevertheless, we fully support the initiative but recommend that key performance indicators be established and closely monitored to confirm whether expected results are accomplished.

Health

Jordan's health sector is costly, but produces a wide variety of services that result in excellent levels of health. A model, using cross-country data and regression analysis, suggests that in many areas of health care Jordan is performing better than would be expected, given

its economy and demographics. Nevertheless, there are many opportunities to improve efficiency, effectiveness, and reduce costs.

Interviews with Ministry of Health (MOH) officials, analyses of health status indicators, and reviews of government policy documents, related private and other government health activities, and historical expenditure trends and projections have identified a number of issues and resulted in major recommendations for the short- and medium-term.

The most important findings that cover the entire MOH are the needs for decentralized management of the hospitals and centers and the development and application of data and evidenced-based analyses in the program, planning, and management. The high degree of centralization in the hospitals and centers programs undercuts management accountability and leaves little flexibility and incentives for the managers of large units to operate effectively and efficiently.

The MOH should expand its data system to collect program relevant data and to use that data in analysis, management, and decision-making. Hospital and center directors should be given individual budgets to manage, within the flexibility allowed by the General Budget Law, and be held accountable for effective management.

There are very many MOH hospitals and centers. There are inadequate data and little planning upon which to rationalize the number of individual hospitals and centers and the services they provide. The need for the large number of hospitals should be reviewed, in light of occupancy rates and numbers of beds in both the public and private sector, and opportunities should be explored for contracting out more inpatient care.[2] The almost 700 health services centers and the over 700 specialized centers within them need to be streamlined in light of costs and utilization.

The MOH should develop five-year plans for hospitals and centers that implement reforms to make its delivery system more efficient and effective and to improve the patient friendly nature of Ministry facilities.

The MOH must make greater efforts to attract and retain clinical care physicians, particularly qualified specialists. The Ministry's approach has been to compensate all its physicians as if there were shortages in all categories. In effect, it has applied an entitlement approach, based on academic training, rather than a market approach based on documented needs to attract physicians for the delivery of care.

The MOH should develop data that documents its needs and distinguishes between clinical care physicians, as opposed to physicians occupying administrative positions. For undergraduate medical students, it should prepare a program of tuition and stipends, and perhaps other incentives, in return for service commitments in MOH facilities. For qualified specialists the MOH should contract for extended commitments, coupled with generous signing bonuses.

There are a number of reforms that would make the Civil Health Insurance program more equitable and effective and relate premiums to the costs of care. For example, even though public employees pay the same proportion of their compensation for health care, their benefits are different, by grade. Civil Health Insurance also transfers part of the funds received for care to Ministry employees as longevity payments, a compensation benefit limited to Ministry of Health employees.

Civil Health Insurance should allow grade 2 and 3 government employees the same choice for care that grade 1 has and develop a premium structure related to the costs of care. The Civil Health Insurance should start reimbursing Ministry hospitals and centers for the costs of care received by public employees—and as Civil Health Insurance implements cost-based reimbursements to Ministry facilities—the Ministry should ask the government to share in the costs of premiums; these two steps would allow Government to eliminate direct funding of Ministry hospitals and centers over time. Finally, the incentive payments that Civil Health Insurance now makes to Ministry professional staff should be dropped and the costs of any needed incentive payments reflected in the costs of care charged to Civil Health Insurance.

Too many Jordanians die young from smoking. The Ministry of Health should investigate possible approaches to combat smoking, especially among men. The approaches should be to discourage young people from starting, encouraging smokers to quit, and prevent the spread of health risk by reducing the problems of second hand smoke. Social marketing is needed. In addition to this softer side, there is ample evidence around the world

[2] There are more than 33 hospitals in the Kingdom.

that despite issues concerning contraband, that taxation can have a very beneficial impact on reducing the incidence of smoking. Indeed, the World Bank (1999) recommends taxes equivalent to two-thirds or more of the value of the cigarettes.

Transportation

The Kingdom's transportation structure has adapted in line with its economic growth and, relative to other countries at comparable development levels, compares well. Nonetheless, there is still a long way to travel if the country is to achieve its potential contribution to National Agenda objectives.

Given the relatively small internal market, and the potential for increased benefits from a fuller integration in the global economy, a potentially promising avenue for the country's development is a model of trade-driven economic growth. This is the tack of the National Agenda and it involves revamping the transportation infrastructure.

Jordan's National Transport Strategy indicates that mobility is constrained and that the poor are not able to satisfy basic transportation needs. Accordingly, Jordan has to decide how best to strengthen its transportation infrastructure, balancing concerns for efficiency and equity. In light of these conditions, and binding budget constraints, it is essential that Jordan raises resource-use productivity.

To address these development objectives, the Government is working on several fronts. The *PEP* study reviewed the following initiatives and issues: the national railway system, the Amman-Zarqa light rail system, traffic in Amman and close proximities, and road aspects. The national railway system involves an investment of some JD 2.4 billion. While the economic rate of return estimated for the national railway program oscillates around 16 percent for a base scenario, the report raised issues concerning some of the assumptions underlying the estimates. Another mega project, the Amman Zarqa light rail system, has been estimated to involve an economic rate of return fluctuating around 12 percent but it was deemed a financially risky project.

To ameliorate traffic conditions in the Amman metropolitan area, the authorities are contemplating bus and rail rapid transit activities involving investments of some $2.6 billion. The economic analysis for such initiative reports economic rates of return of around 11 percent. While the analysis seems well grounded, it is worth noting that the implications of competition between current transport operators and the new systems may have not been fully considered.

Several other challenges remain; such as ensuring an adequate level of road maintenance funding, improving inter-city passenger bus service, and improving road safety. According to one study, close to one third of the country's roads are judged to suffer from poor or very poor pavement conditions and, although road ride-ability may not be bad, most roads have significant maintenance backlogs. A likely cause is constrained funding for road maintenance. Left unattended the problem is likely to worsen and a first priority is to execute a pavement recovery program. Moreover, data on road safety are worrisome because both the number of accidents and fatalities are increasing yearly and at very high rates.[3]

The Ministry of Finance and Ministry of Transport should consider a number of changes that could ensure more adequate funding and help better rationalize road use, including:

1. Raise the proportion of revenues from road user and related charges allocated to cover road maintenance expenditures;
2. Broaden the scope of fare-related and similar market-based congestion mitigation programs to address traffic needs in the Amman metropolitan area;
3. Discard the practice of treating road maintenance as capital expenditures and instead deal with road maintenance as a recurrent expenditure;
4. Possibly create road funds as done in other countries;
5. Establish regional transportation planning bodies in relatively populated areas;
6. Adopt a closer alignment of price for services with the full costs of transportation services with some adjustment for positive or negative effects on third parties;
7. Review the adequacy of levels of subsidization and the use of alternative means to the price system to provide for subsidies;

[3] Traffic accidents have risen dramatically over just a few short years, and road-related fatalities have risen even more rapidly. Indeed, according to the World Health Organization, fatalities with respect to number of inhabitants is three times higher in Jordan than in the U.S., and apparently worsening.

8. Open to scrutiny and frequent review the process of improving the transportation database;
9. Expand, enhance and indigenize the use of economic benefit-cost analyses and other due diligence procedures; and
10. Set up a mechanism that brings together all transportation agencies and the private sector to produce and periodically update a comprehensive integrated analysis of transportation which the country lacks.

An Infrastructure Development Fund could serve as a medium- to long-term tool to support capital projects, especially projects with significant capital expenditure needs. In principle, it would be similar to a reserve fund in the sense that seed capital (and any additional future injections) could either come from user charges or taxes related to transportation or other public works, such as excises on petroleum products or tires.

Participation from regional economies should be welcome, indeed, sought. The fund could be divided into say three tiers. One would be for Gulf Cooperation Council partners who mainly would be seeking to help ensure stability and development in the region and in Jordan, specifically. This tier would not be expected to generate a financial return. The next tier would be for private investors interested in normal returns from worthwhile capital project financing. A third tier would be for participation from outside the region from donors and other international financial organizations seeking to maintain the capital value of their participation.

The fund's capital would accumulate over a number of years and could be very useful to cover *contingent liabilities* that could turn into actual *liabilities* in the future should any forecasted cash flows not materialize for one reason or another.

The fund would be seen by policy makers as a good substitute to the never-ending subsidy issues and sovereign guarantees. The fund organization could create a pilot program, given the current capital projects in the pipeline (national railway, light rail system, bus rapid transit in Amman, and probably another BRT between Amman and Zarqa).

Although there would be many options to allocate moneys, the fund should be focused on new capital projects, not maintenance or rehabilitation, and these would need to go through a strict due diligence check-list for value for money and other concerns, including environmental impact assessments, to be eligible for financing.

The fund would have a simple board of directors (stakeholders) chaired by the Minister of Finance, and with memberships coming from sovereign ministries and sector-based ministries, including the Minister of Transport and the Minister of Public Works.

Water

Jordan performs well in providing basic water and sanitation services and is making excellent progress towards its UN Millennium Development Goals in these areas. This no doubt contributes to the strong performance in the health sector. This *Public Expenditure Perspectives* study points out many opportunities for improving performance in providing continuous water supply, making groundwater withdrawals sustainable, reducing non-revenue water loss (leaks, illegal connections, undermetering), expanding sanitation services and wastewater treatment capacity, and promoting agricultural water efficiency.

The net cost of the water sector to the government in 2010 was approximately JD 300 million, equal to 20 percent of the combined deficit of ministries, departments, and government units. This deficit is scattered throughout the budget, including the Water Authority of Jordan (WAJ), the Jordan Valley Authority (JVA), the Ministry of Water and Irrigation's (MWI) subsidies to WAJ, and MWI's direct payments to the Disi project contractor. The water sector deficit is projected to remain above JD 200 million once the Disi water supply project comes online.

The benefit transferred by the government to consumers through quotas and artificially low prices is estimated at JD 38 million for irrigation from surface water in the Jordan Valley and JD 213 million for domestic water. If the government stopped this transfer, consumers would likely be willing to pay a price for water that would allow full cost recovery. The sad irony is that very little of the benefit is transferred to the poor, either in domestic water or in agricultural water.

To incentivize more efficient water use and improve economic returns on agricultural water use, agricultural water tariffs should be raised for those users who can afford to pay (the medium and higher quantity users) and the quantity of water subject to the lowest tariff should be decreased. We recommend a tariff premium for farmers with banana and citrus quotas for irrigation water, since these are the least water-efficient crops in terms of water.

No more land rights should be allocated to people with illegal wells. The authorities should reduce taxes on domestic agricultural products and tariffs on agricultural imports. Subsidies for investment in water efficient agricultural technologies and crop insurance should only be provided for water efficient crops.

To reduce non-revenue water losses, WAJ should cease providing subsidies in the form of below-cost bulk water sold to the water companies, and similarly for the water JVA sells to WAJ. Instead, the subsidy should be provided on a per connection, per population, or per meter of pipe basis, or simply through a negotiated flat sum.

The sector needs an asset management plan to guide expenditures on operations and maintenance (O&M) and capital investments. This can help plug the non-revenue water from physical losses.

To increase revenues, subsidization of the cost of water for middle and upper income families should be reduced or eliminated, by instituting a flat tariff for all but the highest block water use. The poor can be protected either by targeting water subsidies based on real estate prices (e.g. land use categories in Amman), or through increased support from the National Aid Fund. Legislation should be enacted to automatically increase water rates according to an inflation index. Tariffs should be increased for neighborhoods receiving continuous supply. The water sector would benefit from the creation of an independent economic regulator to set retail and bulk prices for domestic water.

To maximize health benefits from expenditures in water and wastewater, the planned funding shift from water to wastewater should be sustained and continued. Focus for water supply expenditure should be on expanding areas with continuous supply.

Budget allocations and capital expenditure projects can be improved by using systematic, quantitative cost-benefit analysis to inform design and selection of capital projects.[4] Sector authorities should also continue programs that reduce water demand and promote water efficient technologies, especially implementation of the *Water Use Efficiency* plans at the water companies.

Facing fiscal risks

The biggest fiscal risks include the growing burden of interest obligations, the current policy of subsidizing the price of oil and derivatives, burgeoning water sector spending, and the downward drift in tax and other non-tax domestic revenues. We can add to this the continuing rise in pension obligations. Spending on defense has outpaced most other spending for the past several years, and indeed, has crowded out much of the current budget.

Foreign grants have been very important in the fiscal system, and this is likely to continue. While these grants are a true boon to the economy and maintaining fiscal balances, they carry a risk to the fiscal system. The amount of these grants is subject to many, many forces external to the country and out of the control of Jordan's leaders.

The Government has been providing credit guarantees to the National Electric Power Company (NEPCO) in order for it to hold down consumer tariffs, in response to cutoffs in gas supplies from Egypt. At the moment, estimates are that these guarantees have risen from about JD 700 million in early 2011 to over JD 1.1 billion by October 2011. This is a very large fiscal risk and unless security is returned to the Sinai, it is likely that this risk will increase steadily over the next year.

In addition to these fiscal risks is the risk of rapid indebtedness growth of the Water Authority of Jordan. WAJ's debt had risen to about JD 700 million in 2011 and based on current estimates it is planned to triple to about JD 1,900 million by 2016. In the absence of real changes in how water is priced, non-revenue water is captured or reduced, and other efficiencies, such as in allocation and operations, the GOJ very likely would be forced to take on this debt, just as it was forced to in 1999. This debt would come to almost 10 percent of GDP.

[4] Indeed, this same recommendation is valid for infrastructure and all other capital expenditure projects, whether mega projects or more regular capital investment. The cost-benefit analyses for some other projects are inadequate, such as the National Railway Project and the Amman-Zarqa Light Rail System.

CHAPTER II

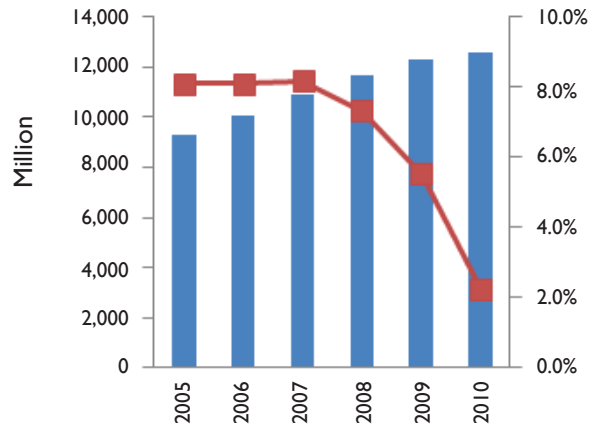
A Look Back

OVERVIEW

This chapter reviews macroeconomic and budgetary performance from 2005 to 2010.

The most salient points from this chapter are that after a period of rapid growth the economy abruptly decelerated in 2009 and 2010.

FIGURE 2.1. GDP AND GROWTH, 2005–2010



What fueled the Kingdom's economic growth earlier is also what slowed it. The major engines of growth are inflows of foreign direct investment, increases in economic assistance, especially grants, and rising remittances from Jordanians working abroad. With the maturation of the conflict in neighboring Iraq, the worldwide great recession, and particularly economic slowdown in Jordan's trading partners, direct foreign investment, economic assistance, remittances and export revenues have all slowed.

Despite the earlier rapid economic growth, leaving aside the later deceleration, both poverty and unemployment have remained stubbornly high and unchanged, both at about 13 percent of population and labor supply, respectively.

Over this same period, there was considerable fiscal consolidation. Indeed, the relative size of the central government budget declined almost by one quarter, from about 40 percent of GDP in 2005 to only about 32 percent in 2010. This fiscal consolidation included lower tax rates, declining fiscal deficits, and, as mentioned, rapid reductions in spending relative to GDP. The single most important factor in bringing down government spending was the arrest and then paring of subsidies and transfers, which in 2005 came to 20 percent of budget, but by 2010 were only 6 percent.

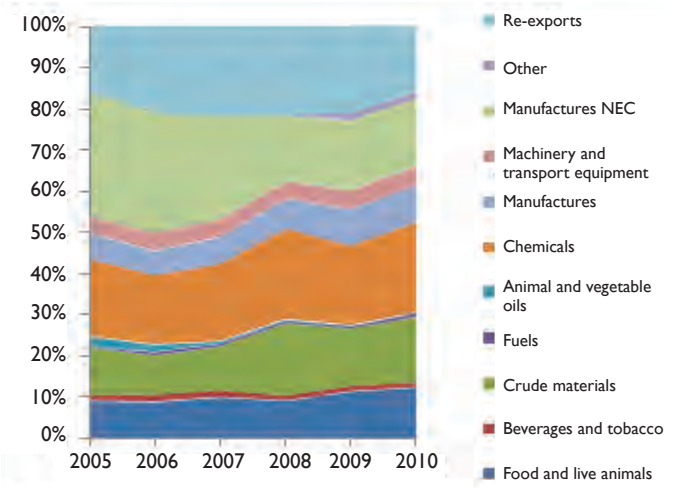
THE ECONOMY

Figure 2.1 presents as blue bars the level of GDP in terms of prices from 2000, along with the annual rate of economic growth, presented in the dotted line. GDP growth was quite strong growth from 2005 to 2008, indeed rising in real terms by about one third over the entire period. The leading sectors were mining, manufacturing, and construction. However, in the aftermath of the global economic meltdown coupled with high food and oil prices, the economy slowed significantly. The slowdown in overall activity is reflected in the slowdown of the trade, manufacturing, and finance sectors which collectively contribute 43 percent of GDP. On a per capita basis, Jordanians were experiencing more than 5 percent growth in incomes for several years, but by 2010 per capita GDP stagnated.

In the external sector, the trade deficit as a percentage of GDP declined from 41 percent in 2005 to 21 percent in 2010. Trade openness, calculated by the sum of exports and imports relative to GDP, also declined from 146 percent in 2005 to 113 percent in 2010.

Exports of goods, including re-exports, constituted 64 percent of total exports of goods and services in 2005. This share however declined to 57 percent in 2010. As detailed in Figure 2.2, the major goods exports were manufactures, at 22 percent of total exports from 2005 to 2010. Next come chemicals, at about 20 percent. Third are re-exports with an average share of 19 percent. Crude materials came fourth with an average share of 13 percent, followed by food and live animals with an average share of 10 percent.

FIGURE 2.2. EXPORTS BY COMMODITY, 2005–2010



Jordan exports first to the Arab world with a share of 32 percent of total exports of goods, benefiting from the Greater Arab Free Trade Agreement (FTA) and other bilateral trade agreements. Exports to the United States (U.S.) comprised about 23 percent of the total but this declined in 2006, after the expiration of the Multi-Fiber Agreement (MFA) that had given preference to textile exports of Jordan and a number of other countries around the world. Exports to Asia were about 17 percent, while Europe has been a very smaller purchaser of Jordanian exports, buying only 1.4 percent.

As mentioned, the regional importance of Jordan's exported goods has changed drastically over the past five years. In 2005, the U.S. and the Arab world both had equal shares of 30 percent of Jordan's exports. By 2010, the U.S. dropped significantly as a destination of Jordanian goods exports to reach 16 percent, whereas, the Arab World increased to 36 percent of total goods exports. Jordan had been benefiting from the Qualified Industrial Zones (QIZ's) to export to the U.S. quota-free and tariff-free; there was a flourishing of apparel exports from these zones. The full abolishment of the MFA in January 2005 had a significant impact on Jordan's exports to the U.S. as the main exports, in this case apparel produced at the QIZs, were no longer competitive. Figure 2.3 shows the regional distribution of Jordan's exports of goods during the period 2005–2010.

Jordan's largest import category has been machinery and transport equipment, with an average share during 2005–2010 of 25 percent of total imports of goods. Fuels came second with an average of 22 percent. Third came manufactures with a share of 18 percent, followed by food and live animals with an average share of 13 percent.

By region, most of Jordan's imports came from the Arab world with an average share of 35 percent. This is again attributed to the ease of trade between Arab countries due to proximity and the Greater Arab FTA. The second source of imports was Asia with an average share of about 25 percent. Next are Europe and the U.S. with average shares of 17 percent and 6 percent, respectively.

The fall in Jordan's trade deficit as a percentage of GDP from 42 percent in 2005 to 21 percent in 2010 was reflected in the current account balance. The current account deficit as a percentage of GDP fell from 18 percent in 2005 to 5 percent in 2010. Jordanians working abroad, mainly in Gulf countries, and investment inflows, also from the Gulf, had important implications in financing the external account deficit. The external account deficit had been mainly financed by the strong foreign direct investment and worker remittances during the period 2005–2010 reaching as high as 23 percent and 18 percent of GDP, respectively (see Figure 2.4). These cash inflows not only serve to finance the external current account but also play an important role in igniting Jordan's economic recovery and creating job opportunities for Jordanians. Furthermore, official reserves increased from JD 4,083 million in 2005 (5.8 months of imports) to a record high of JD 8,722 million in 2010 (8.3 months of imports).

Foreign direct investment (FDI) as a percentage of GDP decreased from 11 percent of GDP in 2000 to as low as 2 percent in 2002. FDI then soared afterwards, to reach

FIGURE 2.3. EXPORTS BY REGION, 2005–2010

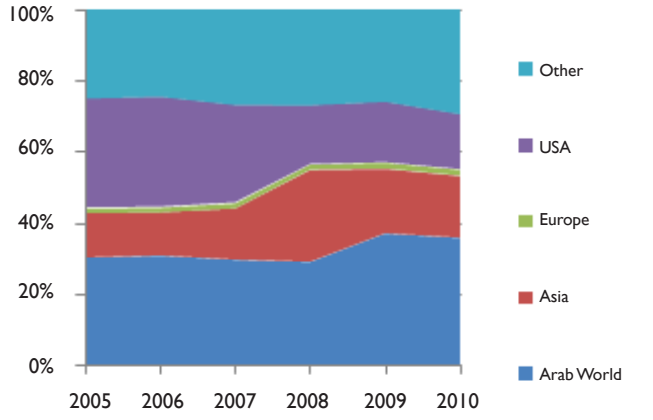
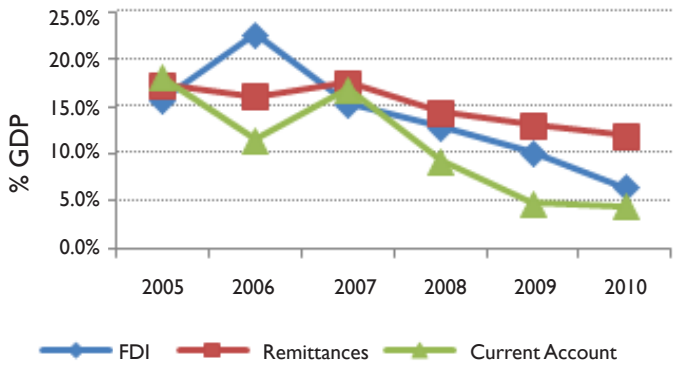


FIGURE 2.4. FDI, REMITTANCES, AND CURRENT ACCOUNT

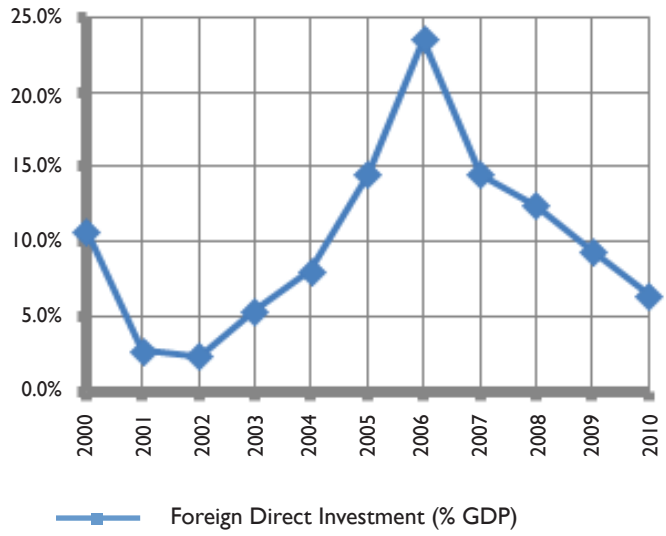


24 percent in 2006. That spike however, soon fell off and by 2010 had reached only 6 percent of GDP (see Figure 2.5).

During the decade, foreign direct investment mainly targeted the financial sector including real estate. In 2000, 47 percent of total foreign direct investments for the year went to that sector. This share decreased in 2004 to 39 percent and then increased to 51 percent in 2006.

In 2010, the share of the financial sector in FDI was 48 percent. The mining sector also received a significant share of foreign direct investment throughout the decade. The third major recipient of foreign direct investments was manufacturing.

FIGURE 2.5. FDI OVER THE DECADE



EMPLOYMENT

The Kingdom's population was approximately six million by end of 2010, with a distribution of 51.5 percent males and 48.5 percent females. When compared to other countries, Jordanians are relatively young. During 2005–2010, on average, 37 percent of the population were 14 years of age and younger, 59 percent were between 15 and 64 years, and only 3.3 percent were older than 64. This young age distribution is, on the one hand, an advantage given that it provides the economy with a young workforce. On the other hand, it constitutes a serious challenge to job creation. If the economy of Jordan fails to absorb the entrants into the working age and job market, unemployment could easily increase significantly.

For the past five years, and despite the strong economic growth rates, unemployment rates have stayed stubbornly high, hovering around 13 percent and most jobs created have been concentrated in the capital, Amman. Furthermore, Jordan continues to suffer from high female unemployment, reaching 21 percent, despite the high female enrollment in tertiary education (exceeding male enrollment). The Jordanian labor force constitutes around one quarter of the population. Among those employed, 36 percent were in the public sector and 63 percent were in the private sector. About half of all working women were employed in the public sector. Surprisingly, according to the Department of Statistics, in 2009, the average monthly wage in the public sector was JD 412 and in the private sector it was JD 338.

Most jobs between 2005 and 2010 were in the trade sector: about 20 percent. Manufacturing jobs followed at about 14 percent of the labor force. Education came next with an average share of 13 percent, followed by public administration with an average share of 8 percent. Interestingly, transport and communications contributed 14 percent to GDP but employed only 2.6 percent of all workers.

POVERTY

Similar to the stubbornly high unemployment, poverty has remained relatively unchanged at around 13 percent during the past six years, with the poverty line estimated at around JD 680 per capita per annum.[1] The poverty incidence is highly concentrated among governorates outside Amman, reaching as high as 32 percent in Mafraq to as low as 8 percent in Amman.

[1] Department of Statistics, *Report of the Poverty Status in Jordan*, July 2010

Both high poverty and unemployment rates have created additional pressure on the Government's budget. Official policy makers seem to be allocating government capital expenditures to governorates with the greatest need in an attempt to create jobs and alleviate poverty.

Figure 2.6 shows the distribution of capital expenditures per capita in each governorate and their corresponding poverty rates.

A trend line was fitted into the scatter plot, which shows a positive slope implying that as the poverty rate increases the allocation of capital expenditure per capita increases, and vice versa. This intuitively suggests that fiscal policy decision-makers in Jordan are prioritizing capital expenditures to governorates with the highest poverty incidence as a strategy to alleviate poverty.

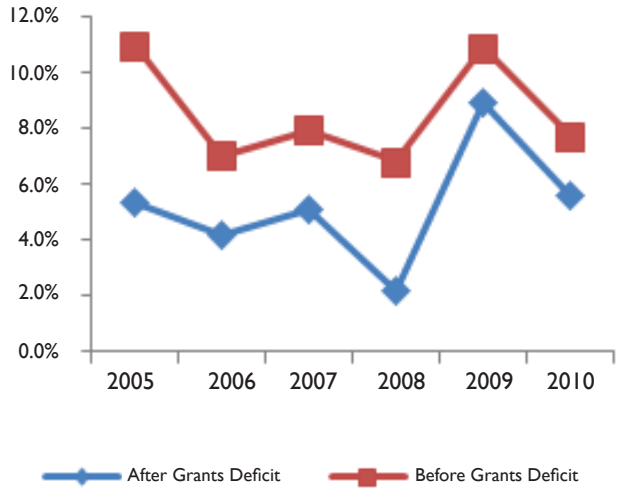
Although in general it is true that per capita capital spending by the Government tends to be higher in poorer governorates, two cases are called to the reader's attention. Aqaba, the third richest governorate, benefits from the highest per capita capital spending, while Mafraq, where poverty is worse than any of the other governorates, receives a somewhat meager per capita capital spending allocation.

FIGURE 2.6. POVERTY AND CAPITAL SPENDING IN THE GOVERNORATES

FISCAL DEFICITS AND DEBT

The overall fiscal deficit, including grants, has averaged around 5.2 percent of GDP during the period 2005–2010. Excluding budgetary grants, the fiscal deficit averaged about 8.5 percent of GDP during the same period, (see Figure 2.7). This shows the importance of external grants for the government of Jordan in financing its expenditures. The two largest external budgetary grants receipt years were 2005 and 2008 with totals reaching JD 501 million and JD 718 million, respectively.

FIGURE 2.7. DEFICIT AS A PERCENT OF GDP, 2005–2010

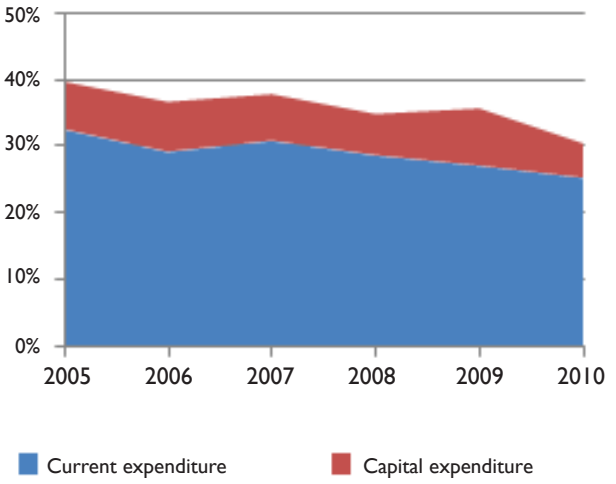


The year 2008 registered the lowest deficit as compared to other years, with a deficit after grants of 2.2 percent of GDP and deficit before grants of 6.8 percent of GDP. Despite the unprecedented rise in food and oil prices in 2008, the Government was able to control its fiscal deficit and debt. Not only did the Government receive large amounts of grants in 2008, but other factors played an important role to strengthen the fiscal stance. First, the Government took a bold decision in early 2008 to remove fuel subsidies and create a price adjustment mechanism reflecting changes in world oil prices. Second, the Government bought back $2.1 billion of non-concessional Paris Club debt in early 2008,[2] thus reducing interest outlays. Coupled with the large amounts of grants received in 2008, these decisions helped to control both deficits and debt.

Figure 2.9 shows the net debt-to-GDP ratio for the period 2005–2010. The dashed lines indicate the debt ceilings required by the Public Debt Management Law, initially set at 80 percent in 2001, and later amended to 60 percent in 2008. Jordan exceeded the thresholds required by law

[2] The buyback was financed by Aqaba Port land sale of $500 million and privatization proceeds held in government accounts of $1.6 billion.

FIGURE 2.8. GOVERNMENT SPENDING AS PERCENT OF GDP

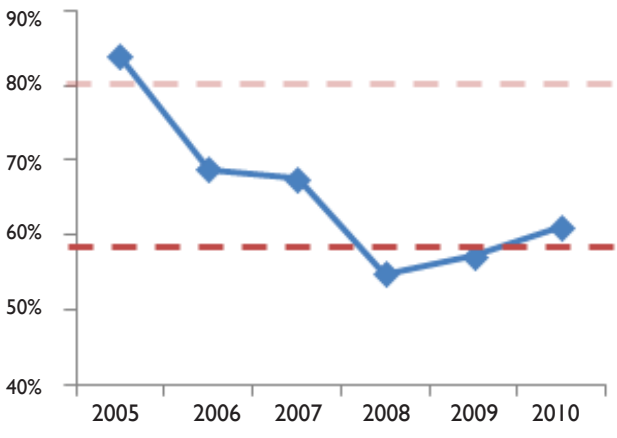


in 2005 and 2010, when debt-to-GDP ratio stood at 84 percent and 61 percent, respectively. [3]

GOVERNMENT SPENDING

Over the past several years there has been a large structural change in government spending. As noted above, overall spending by the central government declined from 40 percent of GDP in 2005 to about 30 percent in 2010. Much of this decline came about through the reduction of spending on subsidies and transfers, which went from 20 percent of the budget to only 6 percent over the same time period. These two changes are important because this means that the overall burden, in terms of claims on resources by the government instead of the rest of the economy, has declined. At the same time, because of the reduction of spending on subsidies, remaining funds could be still available for useful purposes, such as to build roads or educate children.

FIGURE 2.9. DEBT TO GDP RATIO, 2005–2010



Total government spending came to 40 percent of GDP in 2005, falling to 35 percent in 2008 and further to about 30 percent in 2010. Current expenditures formed the major part of total spending with an average share of 81 percent during the period of analysis. Capital spending, on the other hand, made up an average 19 percent of total spending, (see Figure 2.8).

Capital spending has been quite variable. Measured by its percentage of GDP, capital spending stood at 7 percent in 2005, almost 9 percent in 2009, and about 5 percent in 2010. By comparison, current expenditures had a rather stable but declining trend over time.

Capital spending tends to be considered as a residual in public expenditure policy making, based on available "fiscal space." Whenever revenue collections and foreign grants fall short, capital expenditures tend to be cut accordingly, which explains the sharp decline in capital spending in 2010. Given that capital spending is a major contributor to economic growth, it is important to maintain this type of spending at sufficiently high and stable levels. Moreover, given that budget practices in Jordan classify some operations and maintenance as capital expenses, capital spending is crucial to preserve the value of existing capital stock.

Current expenditures are classified into compensation of employees, purchases or use of goods and services, interest payments, subsidies, grants, social benefits, military spending (most of which is current) and other miscellaneous expenditures.

As a percentage of total current spending during 2005–2010, military has had the largest share, on average, at 31 percent. Military spending soared by more than double the rate of overall government spending. As a percentage of GDP, military spending increased over the five year period from 7.8 percent to 9.1 percent.

[3] To be fair, at the end of 2010, the Ministry of Finance was quite certain that debt had not crossed the 60 percent of GDP threshold. However, when the Department of Statistics redid all the national accounts reporting for the past several years, in mid-2011, the "goal post" had been moved and the target was no longer met.

The next greatest share of current expenditures was spending on social benefits, at 21 percent over the period 2005–2010, and a range of 5 to 7 percent of GDP.

Social benefit spending includes two major expenditure items: 1) pensions and compensations, and 2) social assistance programs including social safety net. Pensions and compensations comprise about three-quarters of social benefit spending. While pensions grew over this period at an average annual rate of almost 13 percent, this growth rate is expected to decline in the medium-to-long term as the number of public employees who are under the pension system starts to decline.[4]

Employee compensation comprises an average share of 17 percent of total current expenditures, and grew by 74 percent over the five year period. On a per employee basis, compensation in real terms rose about 3.3 percent per year. This average compensation growth rate is less than half that enjoyed by private sector workers, whose average annual pay, in real terms, increased by 7.3 percent during the same period.

Figure 2.10 clearly shows the decline in public subsidies in nominal terms during the period. As a percentage of the overall budget, subsidies declined from about 40 percent to only 6 percent, a remarkable decline. Unfortunately, due to a confluence of circumstances related to the Arab Spring and demands for reform and support on the street, indications are that subsidies in 2011 may once again be approaching the share of budget that they were in 2005.

Interest payments formed, on average, 9 percent of total current expenditures between 2005 and 2010. As a percentage of GDP, interest payments declined from 3 percent in 2005 to about 2 percent in 2010, reflecting the Government's increased capability to service the public debt. The share of external interest payments decreased as the government altered its debt mix in favor of more domestic borrowing. In 2010, external interest payments fell to JD 87 million, while internal interest payments rose to 311 million.

Purchases of goods and services comprised about 5 percent of total current spending between 2005 and 2010 and in relative terms, increased from 1.2 percent of GDP in 2005 to 1.6 percent in 2010. Goods and services are acquired by the government in order to provide the supplies, services, and materials for government employees to do their jobs. In relation to the government wage bill, goods and services spending increased from about 22 percent in 2005 to 36 percent in 2010. This means that for every JD 100 spent by the government in wages, an additional JD 36 of goods and services was spent in 2010. This growth in the ratio of spending on goods and services per spending on salaries helps to enable greater productivity of civil servants, though it does not guarantee it.

As shown in Figure 2.11, the largest share of total government spending by function was in social protection,

FIGURE 2.10. OIL AND FOOD SUBSIDIES (MILLIONS OF JDs)

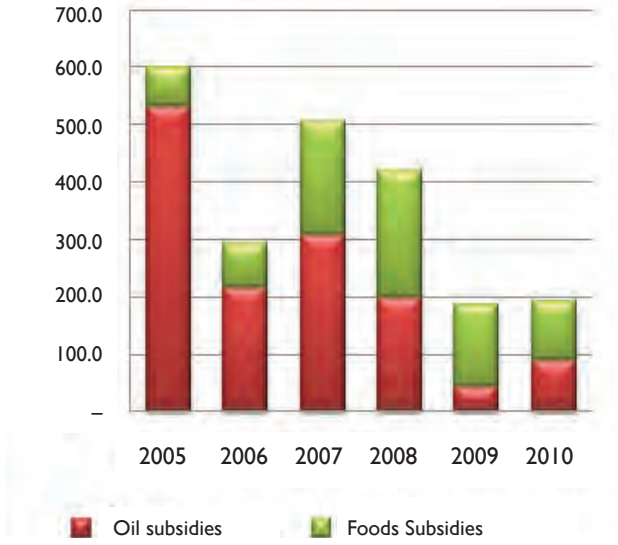
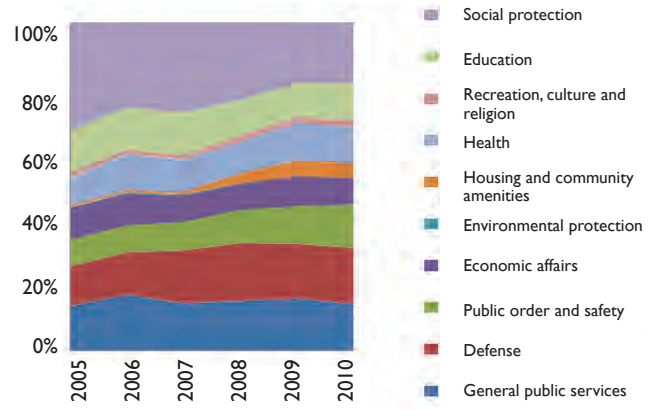
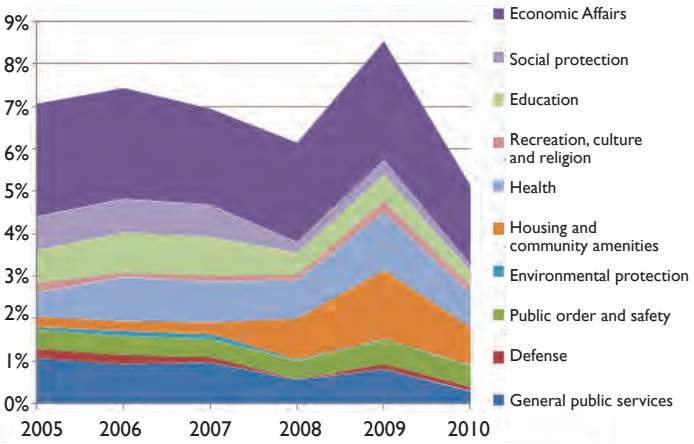


FIGURE 2.11. GOVERNMENT SPENDING BY FUNCTION



[4] Public employees hired prior to 1994 are eligible to participate in the public pension fund. All others participate in the social security system.

FIGURE 2.12. CAPITAL EXPENDITURES AS PERCENT OF GDP



but declining throughout these years. The lowest share was on environmental protection programs, accounting for 0.2 percent of the budget.

Security spending is the most rapidly growing area of public spending. Spending on public order and safety combined with spending on defense rose from 21 percent of the budget in 2005 to 30 percent in 2010. Meanwhile, the share of social spending, that is, health and education, in the budget remained at about 22 percent throughout the period, although the portion on health rose and that on education declined. This is supplemented by housing and community amenities expenditures rising from only 1 percent of the budget to about 5 percent.

Figure 2.12 shows government capital spending as a percentage of GDP from 2005 to 2010. There are a number of important observations that can be drawn from the figure. First, capital expenditures have not been a steady spend, instead ranging from only about 5 percent of GDP in 2010, admittedly a tough fiscal year when strict spending controls were in place on all spending, but especially capital spending, to almost 9 percent of GDP just the year before, that is, 2009.

Defense spending plays almost no role in the capital budget, as almost all defense spending is reported in the current expenditure budget.

The largest category of capital spending is on "economic affairs". This spending category encompasses most of the spending that we see on physical infrastructure, such as new roads and highway improvements, bridges, operations and maintenance of recently completed infrastructure project, as well as funding for water and irrigation projects.

While analysts may bemoan the instability of the overall capital expenditure program, "economic affairs" spending has held fairly constant, at about 2.5 percent of GDP throughout the period.

When capital expenditures were cut back in 2010, the biggest cuts came from spending on housing and community amenities, which had been soaring the prior two years.

Capital expenditure in education have been slowly declining as a percentage of GDP over the period. Considering that there are many schools with few teachers and classrooms, and that our chapter on education recommends that schools be consolidated and that alternative means for providing school access to rural children, such as providing minibuses and multi-grade classrooms, a steady winding down of this type of spending should be lauded.

Capital spending in the health sector has remained quite steady, rising slightly from its almost 1 percent of GDP rate in 2005. Our chapter on the health sector indicates the possibility of over capacity in terms of health facilities around the country and recommends that this type of spending be thoroughly reviewed and objectives be reconsidered.

It is interesting to note the almost steady decline in capital expenditures on "general public services" a category that includes construction of government facilities, their rehabilitation and modernization. This can include investments in information and communications technology (ICT), new building construction for operating the basic apparatus of government, and similar spending needed to ensure adequate infrastructure.

The reader is invited to move on to the next chapters, where more in-depth analysis of government spending and services is presented and discussed.

CHAPTER III

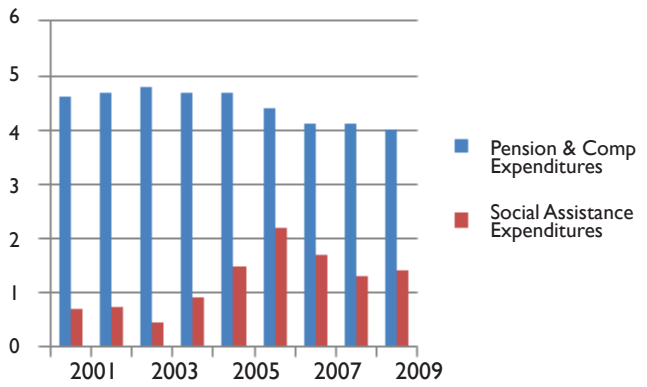
Alleviating Poverty through Social Assistance

OVERVIEW

This chapter examines some of the most important spending programs that are within the social assistance sector.[1] International organizations define social assistance with various terminologies, but in the context of this study social assistance is cash benefits and service programs designed to assist the most vulnerable individuals and families meet a certain level of subsistence (generally the absolute poverty level) and to improve their living standards. These are tax-financed (for the most part) transfers to those with very low or no income. These programs are not contributory, i.e., the beneficiaries do not pay a monthly or annual payment or premium to become eligible to benefit at a later date. At the same time, these are targeted programs, meant for specific persons with particular needs. This differs from other social programs, such as subsidies for food or other goods that we all consume, or pensions that are funded, at least in part, by employee contributions. The majority of these programs are administered by the Ministry of Social Development (MOSD), the National Aid Fund (NAF) and the Zakat Fund. Other programs which are not as large but still share the objective of helping to alleviate poverty are part of the Royal Court or within the Prime Minister's office.

The social assistance programs discussed in this chapter are meant to address the impact of poverty on women, children and families. These are ameliorative programs rather than programs designed to reduce poverty.

FIGURE 3.1. SOCIAL PROTECTION SPENDING, % GDP



Indeed, all the other sectors covered in this book are more likely to have some impact on poverty, both by creating greater growth and jobs, as well as by better targeting programs to ensure their more appropriate use of scarce public resources.

In addition, it should be pointed out that our overall discussion of poverty in Jordan is treated in Chapter II: Looking Back, which sets the overall stage for the entire *Public Expenditure Perspectives* study.

Using an international measure of social safety net spending as a share of GDP in Figure 3.2, Jordan, at about 1.4 percent of GDP, ranks somewhere close to the mid-

TABLE 3.1. SOCIAL ASSISTANCE SPENDING FROM 2001 TO 2010

	JD Millions									
	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
MOSD Total Spending	10.2	9	8.2	9	8.6	10.9	13	23	28.8	23.2
NAF Total Spending	34.4	43.9	54.3	60.8	59.7	57.8	57.2	79.0	87.2	81.1
NZF Total Spending	na	.62	.9	1	1	1.1	1.8	2.6	2.4	5.6
Total Spending	**44.6**	**53.5**	**63.4**	**70.8**	**69.3**	**69.8**	**72**	**104.6**	**118.4**	**110**

Note: National Zakat Fund expenditures are for national spending only and do not include spending by local committees.

[1] Detailed notes on methods and sources can be found for most of the tables and figures in this chapter in Wartonick, Dan (2011) *Social Assistance Sector Public Expenditure Perspectives Working Paper*, USAID-FRP II.

dle of 73 countries surveyed. In the region, Jordan ranks lower on spending than the Middle East/North African regional average (about 2.2 percent of GDP) which ranks third highest as a region in social safety net spending in the world and just slightly lower than OECD countries (about 2.5 percent). Jordan spends a greater share of GDP than Yemen (about 1.1 percent) and less than Egypt (about 1.7 percent). While this indicator provides a useful relative comparison, it is always difficult to define adequately all the programs in a country's social safety net and taking a snapshot of expenditures in an earlier period of time (before 2008) does not take into consideration new programs, the current economic environment and other factors that affect decisions on social safety net spending.

Spending on social assistance over the past decade has averaged about 3 percent of government spending annually. Social assistance spending as compared to growth has been quite variable over time, rising and falling with changing conditions, as opposed to meeting specific obligations. Basically, social assistance spending, along with general capital spending, is probably about the most discretionary of all government spending categories.

For the purposes of this study, the analysis of social assistance expenditures focuses only on the programs under National Assistance Fund (NAF), Ministry of Social Development (MOSD) and the National Zakat Fund (NZF). The level of spending on these three programs is less than half the spending on the line item in the Annual Budget called "social assistance". The remainder encompasses expenditures on certain programs of health and medical care for the poor. These are not addressed in this report.

As shown in Table 3.1 total expenditures for all of these programs equal approximately 118 million JD in 2009. If total expenditures by Zakat local committees were added to National Zakat spending (JD 21 million), then total social assistance spending for 2009 would increase to JD 139 million.

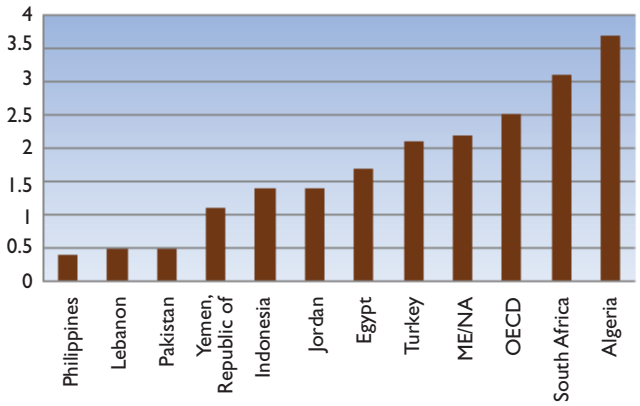
Total actual spending levels for all three programs increased sharply in 2008, and remained at higher levels in 2009 and 2010 as the world-wide economic crisis began and economic growth began to slow. The period from 2008 saw increasing fuel costs and some subsidies, such as bread and fuel, were lifted. Part of the Government's response was to increase spending in social assistance programs.

TABLE 3.2. MOSD PROGRAMS DATA

Program	**Data** (2010)
Handicapped Affairs – Provides and supervises care, rehabilitation, and diagnostic centers and shelters to disabled youth as well as adults. Operating a total of 27 centers and affiliated with over 100 centers in the private sector.	- 1,800 persons - JD 6,710,000
Community Development & Combating Poverty – Works with local charities, societies and individual families to provide micro to medium-size loans, help with housing and income-generating projects.	- JD 5,440,000
Family & Childhood – Provides and supervises care facilities for orphans and children from broken homes or abuse. Also licenses and supervises nurseries for children and newborns. Operates care centers and supervises nurseries.	- 1,400 children - JD 2,900,000
Social Defense – Provides care and protection facilities and services to abused children, battered women or from broken homes, and juvenile offenders in reform and rehabilitation centers. Provides assistance through its 56 centers and offices.	- 18,000 persons - JD 2,640,000

In 2010, the National Zakat Fund received a very large single donation and was able to increase expenditures dramatically on in-kind assistance for foodstuffs. It is useful to note that spending levels for social assistance programs did not keep up with economic growth from 2004 through 2007, as measured as a percentage of GDP. Since 2007, program spending levels grew slightly until 2009 and then declined again in 2010 relative to GDP. Looking at total program spending under each organization (examined under each section below), it appears that actual spending levels also peaked in 2009 and were down slightly in 2010. Overall, total social assistance spending for these programs remains substantially under 1 percent of GDP.

FIGURE 3.2. SOCIAL SAFETY NET SPENDING AROUND THE WORLD, % GDP



PROGRAMS AND EXPENDITURE POLICIES

Ministry of Social Development

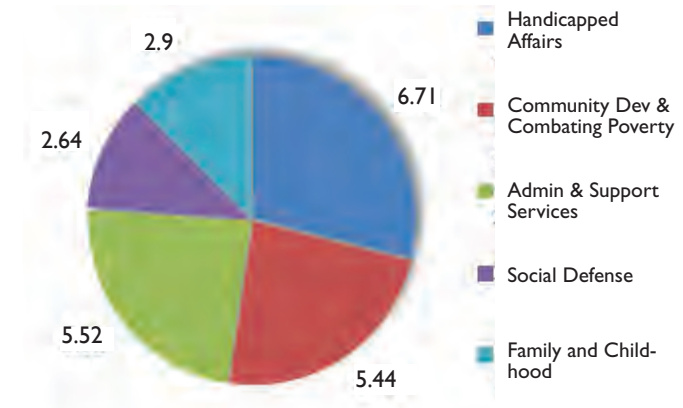
The Ministry of Social Development (MOSD) administers a range of social assistance services and benefits to poor disabled, unemployed, elderly, battered women and children, orphans and children of broken families, babies in nursery care and juvenile offenders. The Ministry manages four major programs and additional directorates that are part of a fourth program which coordinates the work of most program directorates. The managing directorates are discussed below.

The four principal programs within MOSD are Handicapped Affairs Program, Community Development and Combating Poverty, Family and Childhood Protection, and Social Defense (see Table 3.2). Three of the four programs are managed by a specific administrative directorate, but the Community Development and Combating Poverty program encompasses the efforts of all directorates, including several (described below) that exist under this program. Coordination of the programs under this large umbrella program is provided through a weekly meeting of the Minister of Social Development, program managers, and field representatives.

Specific actual program expenditures and a comparison of relative expenditures by program from 2010 are shown in Figure 3.3.

Total expenditures for 2010 came to approximately JD 23 million, with current expenditures of JD 12 million and capital expenditures of 11 million JD. All programs have large shares of the MOSD budget, but the two largest programs are Handicapped Affairs and Community Development and Combating Poverty. The latter program has expenditures related to other departments as well, so it could be that the budget reflects these expenditures.

FIGURE 3.3. MOSD SPENDING, 2010, JD MILLIONS



Community Development and Combating Poverty were two separate programs prior to 2009 and have been combined here for purposes of illustrating total expenditures in the program over the last five years.

Administrative and Support Services consume a large proportion of the budget, at about 24 percent of expenditures. This is a relatively high percentage for administrative services of a program and should be under 10 percent, according to international standards, and ideally closer to 2 to 3 percent. Apparently, a great deal of these expenses are for projects in other departments or even subsidies for such institutions as the Jordan River Foundation, which makes accounting for these expenses rather complex and difficult.

Handicapped affairs. This program provides and supervises day care facilities (centers or schools) to help educate, rehabilitate, and train disabled youth from 4 to 18 years of age, vocational rehabilitation centers for disabled of 14 years of age and older, additional physical care and community support in diagnosis centers and shelters and day care facilities for disabled in need of food and shelter. Some 27 centers are under the operation of MOSD, while 48 centers are licensed and supervised by the program in the private sector, 81 centers are working with local and international organizations and NGOs providing care and training for the disabled.

Operating costs of the centers and agreements in place with private vendors and providers, plus staffing costs, determine a large portion of the expenditures. Economic conditions, from year to year, also are evaluated, such as with the recent economic crisis and downturn. Spending in 2010 amounted to JD 6.7 million covering approximately 1,800 beneficiaries.

Community development and combating poverty. This umbrella program acts as a coordinating organization for several directorates at MOSD including Handicapped Affairs, Family and Childhood Protection, Social Defense, Production Enhancement and Associations and Buildings and Housing Directorate. The main thrust of this program is to organize and work with the private sector associations and local societies to combat poverty and insure income-generating projects and an adequate supply of homes is available.

The Production Enhancement and Associations Directorate implements its program through grants to societies for lending to individuals with project plans; loans to associations for commercial, industry, utility or agricultural use; and loans to families to make them more productive. Grants are given to local organizations for lending out approximately JD 5,000 to JD 10,000 to individuals. Some 32 association projects in 2010 received one-time lending of JD 10,000 to JD 20,000 to establish businesses. Under the productive families program, small loans in the amount to JD 1,000 to JD 4,000 are provided for agricultural usage. Collection success is about 80 percent overall. For the Productive Families program, if the borrower dies during the first year, the repayment may be forgiven.

In terms of overall expenditures for the directorate, during the period of 2005 to 2010, about JD 702,000 were lent to 418 projects. The Building and Housing Directorate has the largest share of total Community Development and Combating Poverty programs, but no information was available at this writing.

Family and childhood protection. This program provides and supervises care facilities for orphans and children who are abused or come from broken families; oversees the adoption of abandoned children according to Islamic tenets (Kafaleh); licenses and supervises elderly homes and clubs (the Royal Court covers the cost of long-term health insurance for the elderly, but MOH covers the operating and administrative costs of the homes); licenses and supervises nurseries for children from newborns up to five years of age; and evaluates the need to grant health insurance cards to the poor who are receiving cash assistance and other services from MOSD and NAF. About 1,400 children are part of the program over the past year. The program provides services through 32 centers for children and 11 centers for the elderly that are affiliated with the program.

The Family and Childhood Protection Program formulates expenditure targets based on the past three years. This year's increase (2011) will be the same as last year's increase. No new projects have been started in at least three years and most projects are being completed this year as a result of the economic crisis.

Social defense. One of the largest programs in scope, but not in expenditures, at MOSD, is the Social Defense program. It provides facilities and services to abused children and battered women and those from broken families, including juvenile offenders. The programs range from care and protection centers for abused children and women and orphans (4 centers), to assistance for juvenile offenders (5 centers), to social services in Reform and Rehabilitation Centers and assistance to families of residents of the centers to combating begging by both children and adults (1 center). Through its centers and services, the MOSD program assists some 18,000 beneficiaries throughout the country in a total of 10 centers and 13 offices in facilities.

National Aid Fund

The National Aid Fund (NAF), established in 1986 under Law no. 36, administers a recurring cash assistance program, along with other programs that provide services and emergency aid to the poor, including disabled and unemployed. The NAF manages six major programs, as indicated in Table 3.3. In addition to cash assistance benefits, they provide support for increasing employment opportunities through vocational training and physical rehabilitation at institutions or with relevant authorities, and paying for health insurance for fund beneficiaries in cooperation with the Ministry of Health. As a percentage of total expenditures for the NAF program, recurring

FIGURE 3.4. NAF OUTLAYS, 2001 TO 2010, JD MILLIONS

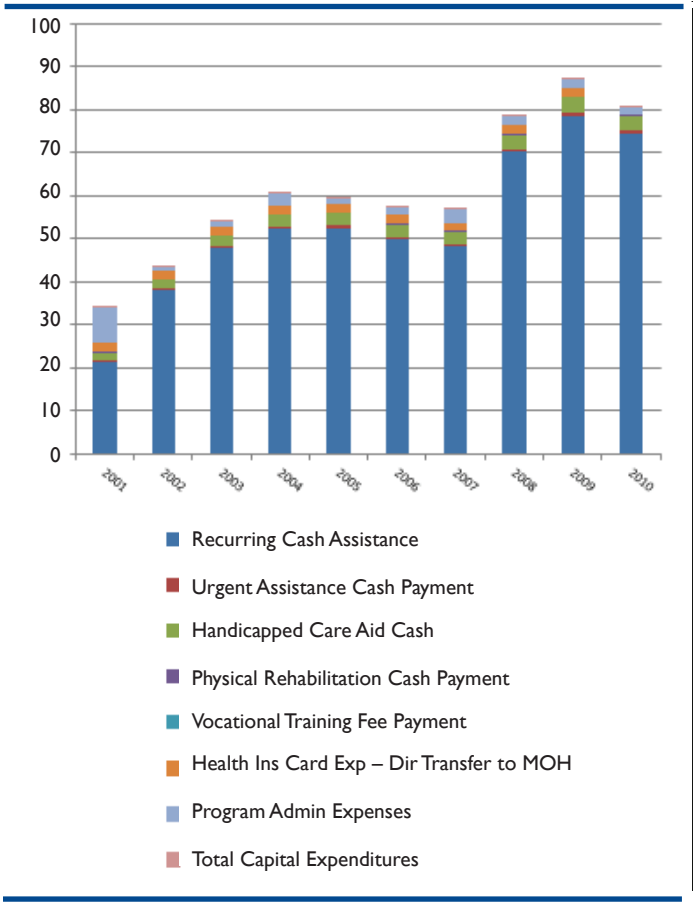


TABLE 3.3. NAF PROGRAMS DATA

Program	Data (2010)
Recurring Cash Assistance – Persons or families with income below the abject poverty line and no or few assets, widows, orphans, families with disabled (16 categories). Monthly payments of 40 to 180 JD.	- 74,300 families - 194,900 persons - JD 74,400,000
Handicapped Care Aid Cash – Poor families who provide constant care to disabled children. Monthly payments of 20 to 80 JD.	- 7,100 families - 8,000 persons - JD 3,300,000
Health Insurance Card Fees – For health insurance cards to beneficiaries of the cash assistance programs.	- JD 2,000,000 - Direct transfer to MOH
Urgent Assistance Cash Payment – Poor families in need of help as a result of home fire, head imprisonment or acute illness. One-time payment up to 1,200 JD.	- 1,500–2,000 families - JD 880,000
Physical Rehabilitation Cash Payment – Poor families with disabled to cover costs of medical devices. One-time cash payment up to 600 JD.	- 500 families - JD 140,000
Vocational Training Fee Program (pending) – NAF covers the fees for vocational training of children of NAF beneficiaries. The program was suspended from 2007 to 2010, but is due to restart in late 2011.	- 300–400 ben/year (2000–06) - 10,000–13,000 JD/year from 2000–06)

cash assistance is by far the largest program at about 92 percent to total NAF expenditures and it also is the most costly program in the social assistance sector (see Figure 3.4). Total administrative costs for the NAF programs, at 2.3 percent, are well within the international norm as a percentage of expenditures. This is primarily due to the fact that the NAF administers mostly cash assistance programs and some staff are on loan from the MOSD (which is next door to the NAF). The NAF administrative costs also compare favorably with the National Zakat Fund as discussed below.

Recurrent cash assistance. The NAF provides monthly cash benefits to poor elderly, divorced, disabled, and families of prisoners, among others. The monthly payments range from JD 40 up to JD 180, depending on income, assets and family circumstances. Individuals are eligible if income falls below the national abject poverty line (JD 24 per person per month or JD 139 per family per month, 2008). However, it should be noted that generally, only persons without current income will qualify for the program. The exception may be an elderly breadwinner with many children and low income of just over the family abject poverty line. Also, such family assets as a car (except if used by a disabled person or for transporting a family member with a chronic illness), arable land and income-producing property may disqualify a family for cash assistance. Income received by any family member will decrease the cash benefit by 25 percent of the income amount up to the elimination of the benefit. As of 2011, some 74,000 families are receiving the cash assistance benefit at an annual cost of approximately JD 74 million.

Urgent assistance cash payment. Cash assistance is provided to poor families suddenly in need of help as the result of, for example, a fire in a dwelling, imprisonment of the head of a household or acute disease of a family member. Eligibility is based on a maximum level of income of JD 250 per month and their circumstances of need. Amounts from JD 100 to JD 1,200 may be provided as a one-time payment on a case by case evaluation, but no more than one payment for the incident is allowed in the year. Some 1,500 to 2,000 families, on average, receive these payments per year at an annual cost to NAF of about JD 880,000.

Handicapped care cash assistance. A regular cash payment may be made to poor families who must provide constant care to disabled children suffering from a chronic mental condition, such as mental retardation or palsy. Family income levels may not exceed JD 450 per month. A monthly benefit from JD 20 up to a maximum of JD 80 may be paid, according to specific bands of income. Some 7,100 beneficiary families receive this benefit annually, costing approximately JD 3.3 million per year.

Physical rehabilitation cash payment. A one-time cash payment is made to poor families with disabled household heads or disabled children to cover the cost of physical rehabilitation equipment, such as artificial limbs, hearing aids, dentures among others. The family may not have more than JD 250 in income per month and must not be receiving other services or assistance. An evaluation of need is made by a committee of the Ministry of Health and a recommendation is made for what type of medical device assistance should be provided. The maximum cash payment is JD 600. Some 500 families receive this aid annually at a cost to NAF of approximately JD 140,000.

Vocational training. This program was suspended at NAF from 2007 to the present, but NAF has said that it continues in some form and the payment of fees will be reinstated toward the end of 2011. The program covers

fees for vocational training institutions to provide access to job opportunities. Between 2000 and 2006 when the program was operational, some 300–400 beneficiaries graduated and found jobs each year. Costs for the program during that period averaged between JD 10,000 and JD 13,000 per year.

The percentage of successful job placement by the program is very low, due in some instances to the "culture of shame" or unwillingness of trainee to accept low-paying or perceived low-esteem jobs (according to NAF officials). Other reasons cited for low job placement include job offers are outside of the home area or the jobs are for females. Incentives are being provided in the form of continuing cash assistance benefits for the first six months that the trainee is receiving wages.

Health insurance cards. The NAF program helps to provide health insurance cards to beneficiaries of its programs. The program is implemented in coordination with the Ministry of Health. NAF pays about JD 1 million annually to MOH to have health insurance cards issued to qualifying families.

The Zakat Fund

Jordan's Zakat Fund is one of the oldest funds in the region. It is said that it has been used as a model to set up other funds in the region and throughout the world. The Zakat Fund is organizationally under the Ministry of Awqaf and consists of a National Zakat Fund (NZF) with headquarter operations in Amman and 210 Voluntary Zakat Committees throughout the country. According to the tenets of Islam, each member has a duty to tithe 2.5 percent of income to the poor. One way of doing this is through the Zakat Fund, either the National Fund or to each local voluntary committee. The donations provided to the committees must be used in that community to help the poor, disabled, widows and orphans.

The headquarters of the NZF consists of nine directorates that include an internal control directorate, administrative support office and managers to run seven major programs. The programs are aimed at helping those in need through recurring cash assistance, for incidental needs from a loaf of bread to vouchers for food and clothing, cash for emergency situations, for orphans and students and to assist with medical care and medicine expenses. The programs are summarized in Table 3.4 and described in more detail below.

TABLE 3.4. NATIONAL ZAKAT FUND PROGRAMS DATA

Program	**Data** (2010)
	JD
Cash Assistance – Persons or families, of any nationality, with income near the abject poverty line and no or few assets, widows, orphans, families with disabled (in accordance to categories of religious law).	1,275,000
Occasional In-Kind Assistance – Poor families or persons provided with loaf of bread, school bags (with books & stationary) or tokens for clothing or food.	3,370,000
Orphan Cash Assistance – Orphans who are adopted by the Fund (Kafaleh) which opens a bank account on his or her behalf to provide for needs.	425,000
Rehabilitation Assistance Projects – Poor persons with some experience or skill in need of assistance to become more productive or relocate to other areas.	245,000
Urgent Cash Assistance – Poor persons or families, of any nationality, who need urgent cash as a result of home fire, disaster, divorce or other sudden need, can come to the fund for a small request.	210,000
Medical Care Programs – Poor persons in need of assistance with cost of medicines or in care from mobile medical units visiting rural areas or through charitable deeds hospital (Amman) or medical centers (four).	10,000
Student Cash Assistance – Students of poor families in need of help with educational expenses such as tuition or some form of rehabilitation.	8,000

One of the most important functions of the NZF is to ensure that auditing and accounting practices are in place to maintain the trust of donors. Audits are performed by the Audit Bureau and the Ministry of Awqaf, while the Ministry of Finance has a financial controller working in the Fund.

Administrative costs of the NZF are covered through transfers from the Ministry of Awqaf because the fund administrators believe that no donations should be used to cover the costs of staff salaries, benefits, building infrastructure and rent, and utilities. (As discussed later, this is another subsidy that should be transferred directly from the Treasury, rather than the Ministry of Awqaf). The 210 committees are voluntary and receive support for their activities from local government, so there are no administrative costs of the committees to be paid from the NZF.

Set by the 1944 Law on Financial and Administration Costs, administrative costs for the NZF cannot exceed more than 10 percent of expenditures (which is rather generous by international standards). Administrative costs in 2010, as seen in Table 3.4., stayed well within that level at JD 91,000 or 1.6 percent of total expenditures. Administrative costs in 2009 also were well within the spending limit at JD 56,000 or 2.4 percent of total expenditures. Administrative costs of the NZF were about the same as the NAF for 2010 and 2009 at 2.3 percent and 2 percent of expenditures, respectively.

Figure 3.5 shows the proportion of expenditures per program from 2002 to 2010. The largest programs of the NZF continue to be Cash Assistance, Orphan Cash Assistance, Occasional In-Kind benefits, and Rehabilitation Assistance. A one-time donation to the NZF of JD three million for the in-kind assistance program made it the largest program at NZF in 2010.

Only total expenditure data for four years, 2006–09, for the 210 voluntary committees were available, but it is clear that spending by the local committees on Zakat is much greater than the National Zakat Fund. Figure 3.6, shows that by far, expenditures of the voluntary committees are more than five times the level of the NZF. The size of total expenditures for the Zakat Fund, including local committees, is about the same as total expenditures for the MOSD over the past several years. It is not clear, however, how they relate to the national

FIGURE 3.5. NZF OUTLAYS, 2002 TO 2010, JD MILLIONS

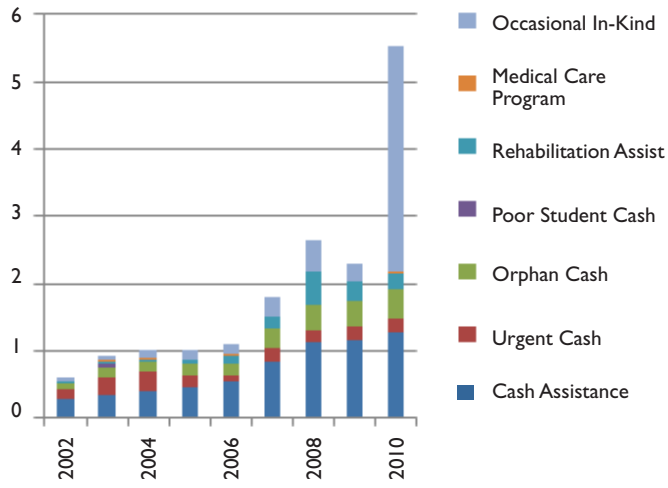
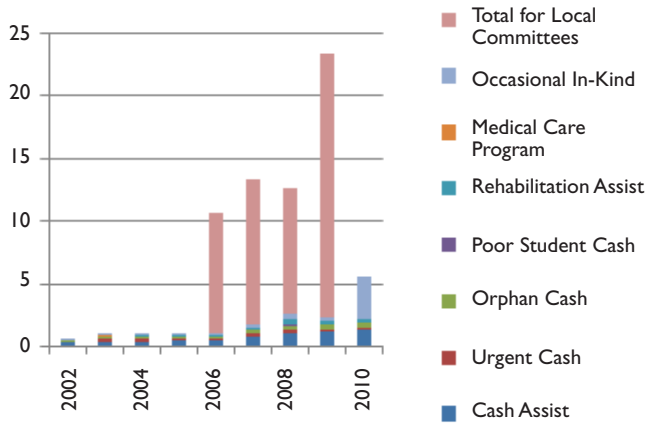


FIGURE 3.6. NZF OUTLAYS WITH LOCAL COMMITTEES IN JD MILLIONS



program because they establish their priorities according to the community environment and must use their donations locally.

Seven major programs of the NZF cover the following areas:

Cash assistance. Recurring monthly cash benefits are paid to very poor people who are not receiving any assistance and have no visible means of support or income. The program is open to all poor people, either Jordanian or foreigners. Generally, if a poor person receives NAF recurring cash assistance, the person would not be able to receive Zakat assistance. The amounts are very low, from JD 30 to JD 50, and are meant only for the severely poor persons. The Zakat cash assistance is paid on a monthly basis through the Islamic Bank.

This program is the largest program that the NZF administers with current total expenditures at JD 1.3 million. From 2005 to 2010, the program helped 2,411 families at a total cost of JD 6.9 million.

Occasional in-kind assistance. This is the second largest program that the NZF administers and provides in-kind assistance in several different areas. It provides a coupon book for bread which the family can redeem at stores, JD 30-100 worth of tokens for food and clothing regularly, school bags filled stationary, books, pencils one month before the school year starts (11,000 families received school bags last year). Last year, JD 3.4 million was spent on the program, due to a generous donation of JD 3 million. Over the five-year period, about JD 5 million was spent.

Orphan cash assistance. Another major program of the NZF is helping orphans with the cost of daily living by opening bank accounts and paying for expenses anywhere from three months to the full year. Orphans are adopted by the Fund under the Islamic program (Kafaleh) to help with their costs while they remain in the orphanage. Expenditures in 2010 were JD 425,000.

Rehabilitation assistance project. The Fund helps persons who have lost jobs, but have a craft for which they can demonstrate experience and a will to succeed in their craft or another area that is feasible. The NZF conducts a feasibility study to determine the chances of success and provides financial support to help the craftsman get started. This could be in any area from fish farming to embroidery. The Fund spent JD 245,000 last year and JD 1.5 million helping over 1,700 families start businesses.

Urgent cash assistance. For persons or families who need urgent help because of a sudden tragedy or urgent need, such as a home fire, divorce or death in the family, the Fund provides small amounts of one-time cash payments. The NZF will examine the need and make a decision whether the request is reasonable. The program is open to poor people, including foreigners. Last year the NZF spent JD 210,000 and for the five-year period some JD 925,000 helping 60,000 families and individuals.

Medical care programs. The Fund provides several forms of medical care, from a Charity Deeds hospital in Amman to several medical centers, to mobile medical days for routine care and assistance, to four rehabilitation centers for disabled men, women and children who will received education, food and treatment. On mobile health days, medicines can be provided in addition to routine medical assistance to poor communities that do not receive much medical attention. The NZF spends about JD 10,000 per year for this program, but also has built medical facilities and a hospital which we understand cost about JD 8 million. Total expenditures for the last five years amount to JD 1.4 million helping some 12,000 beneficiaries.

Student cash assistance. For students who come from poor families, the NZF will provide assistance with the costs of tuition or rehabilitation and remedial education. Expenditures in the last few years are very low, at about JD 7,000 to JD 8,000 per year.

RESPONDING TO CHALLENGES

After reviewing the social assistance program expenditures, several opportunities for improved performance are highlighted along with findings and recommendations to address these areas. The issues and recommendations are prioritized and listed in two groups: budget process and program administration and program policy. The recommendations are designed to address concerns as soon as possible in the next budget cycle.

Budget process and program administration

Reconciling data between line ministries and the General Budget Department

The MOSD actual expenditure numbers for 2008 and 2009 are different from the actual expenditure numbers carried in the budget for the 2010 proposed budget and the 2011 proposed budget, respectively. Various explanations have been provided for these discrepancies, but the reasons seem to be relevant only for current years, rather than past years which should be more closely reconciled, if not exact. It should also be noted that this is not the case solely for the social assistance sector.

Recommendations. It is expected that the final implementation and rollout of the Government Financial Management and Information System (GFMIS) should eliminate this problem. However, in the meantime, MOSD and GBD should meet on an ongoing basis to reconcile past actual expenditures that appear in the Annual Budget to ensure that their data agree and there is consistency throughout the Government finance system. These meetings also will provide an opportunity to explain MOSD program activities, goals and objectives to ensure that GBD understands the line ministry's budget requests and can provide greater support for their funding needs.

Eliminate pass-throughs that serve no useful purpose

The MOSD has been tasked with paying funds from the Treasury to other institutions, some of which it licenses. The NAF, for example, is one institution that the MOSD does not license or is hard pressed to even monitor. A monthly check is written by the MOSD to give to the NAF to cover the recurring cash assistance program. Several years ago, the NAF received its funding directly from the Treasury. There seems to be no supporting argument to continue the practice of funding from the Treasury through the MOSD to other institutions and it

creates an additional burden on the administration of the MOSD programs.

Recommendations. The pass through of funding from the Treasury through the MOSD to other institutions should be eliminated and funds should go directly to those institutions. If program monitoring is a concern, then this should be addressed separately by putting in place proper monitoring and evaluation systems that will review program financing and effectiveness on a regular basis. Although funding may go through other line ministries for use by institutions, these procedures also should be reviewed with the purpose of finding out if these practices could be made more efficient and cost-effective.

Use the banking system to deliver NAF benefits

The NAF provides cash benefits to program beneficiaries through the National Post Office at a cost of JD 45,000 per month. The National Zakat Fund provides cash benefits through the Islamic Bank at no cost to the National Fund and no cost to the beneficiaries to open an account and receive the cash payments. The National Zakat Fund is able to reach beneficiaries both in urban areas and rural areas with this system and they have had no problems or concerns with using the bank system.

Recommendations. The NAF should work with the Islamic Bank and other private banks to negotiate favorable terms (which should be without cost to the NAF) for paying beneficiaries through the banking system. If some beneficiaries live in areas distant from bank branches, consideration should be given by both NAF and the banks on how branchless banking could be used. Alternatively, NAF could explore using new technology to allow beneficiaries to access accounts and receive cash payments such as smart cards, mobile banking or other innovative programs being used in other developing countries.

Program policy changes

Social assistance not product subsidies

The Government's response to rising food and fuel prices, starting in 2007–2008, included increasing expenditures in the cash transfer programs of the MOSD, NAF and the NZF. This was effective in providing resources to programs that are better targeted and provide greater distributional impact than regressive, price commodity subsidy programs.

There are essentially two ways that most of the government's subsidies are provided to consumers: either through direct cash subsidies paid as transfers to distributors, or as tax expenditures, such as exemption from the General Sales Tax (mainly, VAT). In 2008, the GOJ decided to exempt 13 products from the GST. More recently, the GOJ announced that another 93 products would be exempt from GST. An unpublished study estimates that the benefits of these subsidies are much larger for the rich than for the middle class or even less the poor. Still, eliminating these subsidies in one fell swoop would result in large price increases that would hurt the poor more.

Still, one estimate calculated before these additional 93 products were exempted, shows that total product subsidies of both kinds, result in costs of about JD 500 million per year. Cash transfers totaling JD 500 million paid directly to the 11 or 12 percent of the population classified as poor would virtually eliminate all poverty in Jordan, at least for a while.

Recommendations. The Government needs to make the results of this and other analyses publically known and to develop a strategy to accelerate the move from subsidies of goods and services to more direct social assistance. Government policies should focus on making the social assistance programs more effective and efficient (as recommended in other sections for this sector). The focus of scarce public resources should not be on regressive commodity subsidy programs. Programs designed to support the vulnerable and have the greatest distributional impact—the social transfer programs—should be a priority. Over the medium to long-term, greater social assistance program efficiency and effectiveness will provide better targeting, greater coverage and more efficient use of resources to help the vulnerable in society than commodity price subsidies.

Targeting benefits

Data from the 2009 World Bank poverty update, indicates that about half of the cash benefits go to the poor, about 20 percent are near-poor and the rest are better off. This is an improvement over the situation in 2004 and should improve in the future. A challenge is that qualifying conditions are not always clear and strictly enforced. Targeting benefits just to the poor continues to be a problem and, if left unresolved, will undermine confidence in the program. The summary agenda for better targeting, already mentioned throughout this chapter, includes:

> ***"Moving From Subsidizing Products to Protecting People:***
>
> ***Because universal price subsidies are typically poorly targeted, their cost-effectiveness as a social protection instrument is highly questionable. For example, the poorest 40 percent of the population in Jordan receives less than a quarter of total spending on fuel subsidies. Food subsidies generally perform better, but even for them, leakages to the better-off are still quite large. The longer-term objective for (Middle East and North African) countries should be to design and introduce more cost effective social safety nets and replace price subsidies."***
>
> **– "Regional Economic Outlook: Middle East and North Africa," International Monetary Fund, April 2011.**

- Minimizing subsidies to products, such as water, electricity, and food, and diverting some of these monies instead to the poorest of the poor.
- Implement the conditional cash transfer program.
- Undertake the measures indicated below to better identify the poor.
- Strengthen databases and social research to better understand the poor, their characteristics, needs, and what has led them into or kept them in poverty, and what prevents them from exiting poverty.

These are discussed in some more detail below.

Expanding coverage through Conditional Cash Transfers (CCT)

NAF has improved coverage of its recurring cash assistance benefit and more people hear about the program every year. Some conditions are placed on receipt of the cash assistance benefit to encourage families to keep children in school, but the monitoring is occasional and it is difficult to show compliance because proper data bases are not yet in place to provide timely data on participation in the program and success in education efforts. A well-designed CCT program would have strict criteria, close monitoring and disqualification of benefits if there is non-compliance at any time.

CCT programs are an innovative approach to providing cash benefits for the needy to assist in such ways as keeping children in primary and secondary school and providing nutrition to young children and prenatal care to women. CCT programs have demonstrated successes in increased rates of targeting, take-up, and compliance, particularly in a number of Latin American and African countries. They also have been used effectively in Turkey and Yemen and such Asian countries as Bangladesh, Cambodia, India and Indonesia.

Well-planned and implemented CCT programs can lead to successful assistance not just to the poor but also to vulnerable groups through education, health, nutrition, or help to the elderly and disabled. The conditions that are required for continued payment of benefits provide positive incentives for building human capital and lifting the needy and vulnerable out of the cycle of poverty. Experiences of CCT programs show that programs that are carefully designed, well implemented, closely monitored, and regularly evaluated have the highest rates of success in helping those in need.

Recommendations. The Government should review the experiences of countries in the region, such as Yemen and Turkey, to develop well-designed pilot CCT programs that would be directly applicable to the situation in Jordan. If the education programs are successful among the poor, then emphasis could be placed on helping mothers and children with nutrition, pre-natal care, vaccinations, and good health and wellness care programs. Well-designed programs will help to expand coverage of the poor in cash assistance programs and provide the opportunity to build human capital and lift persons out of poverty.

Identifying the poor and proxy means testing

The statistical measurements used by both the Department of Statistics and NAF for defining who is poor and who should receive cash assistance benefits are wide apart and difficult to judge who is being helped by the Government's efforts to alleviate poverty. It is understandable that the measurements are not the same because each organization has different purposes in identifying poverty. A strict means test is notoriously hard to implement, costly (if precise and well-monitored) and may not be helping the people it should help while helping others who do not qualify.

Recommendations. The proxy means test under development with the support of the World Bank's Social Protection and Enhancement Project (SPEP) will be a better indicator of whom and where the poor are for receiving cash assistance benefits. We encourage the Government to refine the measurement under development and implement this test as soon as possible because we believe it will better target expenditures and ensure that the cash assistance benefit is more effective in reducing poverty and more efficient in spending limited resources over the long run.

Use of databases and analysis

Data sets in NAF, for a variety of reasons, are not always accurate in reflecting poverty and consistently applied in reviewing applications for benefit eligibility. The NAF database does not provide information on all benefits or services being provided and MOSD feels that it is very important to be comprehensive, especially for benefit qualification purposes. Other data sets that are being developed and being used by government organizations, such as the database under the Coordination Commission for Social Solidarity (CCSS), collect a wider range of data on beneficiary income and status.

Recommendations. The NAF should work with both the MOSD and the CCSS to determine whether the CCSS database serves its needs and how it can be expanded to include any missing relevant data and how it can be accessed by those in the field reviewing applicant eligibility for all assistance programs. A coordinated database accessing data from government organizations that collect relevant data used in making eligibility determinations will be of great use to NAF in targeting benefits to only those who are eligible.

Coordination and use of research studies and data gathering

A large volume of information and data gathering, research and analysis on poverty programs and poverty alleviation is being conducted in Jordan and internationally. While many organizations are involved in these activities, there seems to be a lack of commitment to share information and data and, as a result, few policy makers and program implementers are benefiting.

Recommendations. The Government, working with all organizations that collect relevant data on poverty alleviation programs or for use in poverty studies, should formulate a usage and dissemination policy that will benefit policy makers and program implementers in improving poverty alleviation program efficiency and effectiveness. The data must be stripped of identifiers and confidentiality agreements must be developed to ensure the confidentiality of program beneficiaries. The CCSS would seem to be the logical body to coordinate a usage and dissemination policy, develop confidentiality provisions for data usage and help to ensure greater coordination and use of research data, information and findings.

Recommendations. The NAF should review qualifying conditions and make appropriate changes where necessary to ensure consistent application and results. The NAF also should review carefully a representative sample of benefit awards to determine enforcement of qualifying conditions for cash assistance benefits and determine exactly what percentage of the cases have accurate decisions. This accuracy measure should be used as a benchmark to judge effectiveness of targeting and eligibility criteria. At the same time, the NAF should work closely with the World Bank Social Protection Enhancement Project, MOSD and the CCSS in identifying its needs in a proxy means test to ensure that the test will approximate, as closely as possible, the location and other characteristics of the poor.

CHAPTER IV

Building a Knowledge Society

OVERVIEW

This chapter presents perspectives and makes recommendations for the education sector, from pre-school through the university level.[1] The perspectives are presented in three sections and are derived from a variety of sources including interviews of education officials, the study of past reports, analyses of current situations and trends over time, and comparisons with other countries.

This first section describes education in Jordan with a broad brush—the big picture. Jordan is one of the world's youngest countries. With two-thirds of its population aged 30 years or younger, education is a very large enterprise. Of Jordan's 2009 population of six million people, almost two million or about one-third were enrolled as students in kindergarten through university doctoral studies. In support of these two million students, about 165,000 people were employed in the education sector, both public and private, in 2009.

Over the last 10 years, the country has witnessed significant changes in its economy and its population, and public expectations for improvements are significant.

What results in education can be reasonably expected? Typically, expectations for Jordan are governed by comparisons to middle income countries, 22 Arab countries, and 13 developing MENA countries.

In addition to such traditional comparisons, Gallagher (2011) compared the education sector to other countries by using World Development Indicators data maintained by the World Bank. Regression analysis of the cross-country data demonstrates how Jordan is performing relative to what can reasonably be expected. The model, which looks at education spending, education services delivered, and education outcomes and compares Jordan's results to what would normally be expected, yields results that are generally positive.

Classic Perspectives?

- **Close to one-third of Jordan's population is enrolled as students**
- **Three out of four students completing secondary school go on to tertiary education**
- **Education spending is 13% of total government spending**
- **Teacher qualifications and education quality are major policy concerns**
- **Public schools are over-staffed, with 92 percent of the recurrent budget spent on salaries**
- **Student teacher ratios need to be increased to improve efficiency**
- **Resources are needed for education quality investments like classroom materials, teacher training, and school maintenance**
- **Spending on higher education, through the Ministry of Higher Education is very low, equal to 0.3% of GDP**
- **Community colleges need to focus on vocational and technical education more relevant to the labor market**

The above perspectives, though originally presented in a 1991 World Bank Public Expenditure Review, remain accurate reflections of Jordan's education system 20 years later.

Using quality-weighted variables (net enrollment, student-teacher ratios, and school completion rates), the model suggests that the quantity of Jordan's primary education is above the expected value. Similarly, when using an efficiency index as part of the model (student persistence to the fifth year, elementary completion, progression to secondary school, primary repetition, secondary repetition), Jordan is found to be very efficient relative to the expected value. Finally, and perhaps the most comprehensive proof of positive outcomes from primary

[1] Detailed notes on methods and sources can be found for most of the tables and figures in this chapter in Chapman, Regis (2011) *Education Sector Public Expenditures Perspectives Working Paper*, USAID-FRP II.

education, Jordan claims a young adult literacy rate of 99 percent, exceeding the expected value of 95 percent.

Net secondary school enrollment, spending, and progress rates also outperform the expected values.

These greater than expected outcomes would appear to come at a lower than expected cost. The model predicts that public education spending would come to about 5.4 percent of gross domestic product (GDP), given Jordan's per capita income level and size of government. Instead, public education spending only averaged about 4 percent of GDP over the past few years. However, considering the presence of private schools, primary and secondary education spending are more than what would be expected. In sum, Jordan spends more than expected on education, but also achieves more than expected.

However, when other measures of education quality outcomes are considered, e.g. scores on international exams as discussed later in this chapter, it becomes clear that Jordan provides a high quantity of education, but there is a long way to go yet to improve quality.

About two million students, or about one-third of Jordan's population, were enrolled in Jordan's education system in 2009. They were enrolled in:

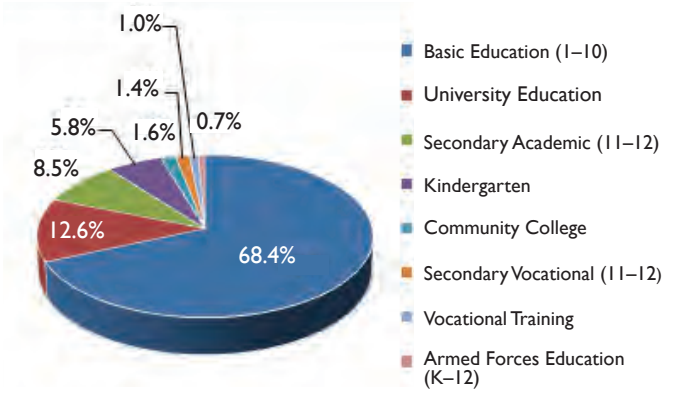
- 5,853 schools (3,600 public; 2,253 private) providing kindergarten through grade 12 education (K–12);
- 42 public Vocational Training Centers;
- 49 Community Colleges (25 of which receive support from Jordan's annual budget); and
- 31 universities (10 public; 21 private).

Figure 4.1 shows the percent distribution of the two million students in each of the eight principal areas of the system.

System enrollment divided between public and private enrollment is presented in Table 4.1. Over 70 percent of total enrollment is supported through the national budget. The lowest public support is for kindergarten, with only 12 percent of kindergarten students at public schools.

At the United Nations Millennium Summit in September 2000, leaders of 189 states, including Jordan, adopted the Millennium Declaration—a common vision for the future, consisting of eight Millennium Development Goals (MDGs), including education, to be achieved by 2015.

FIGURE 4.1. TWO MILLION STUDENTS ENROLLED IN 2009



The MDG goal for education is to achieve universal basic education and its target is to ensure that by 2015, children everywhere, boys and girls alike, will be able to complete a full course of basic education. Indicators for these purposes include:

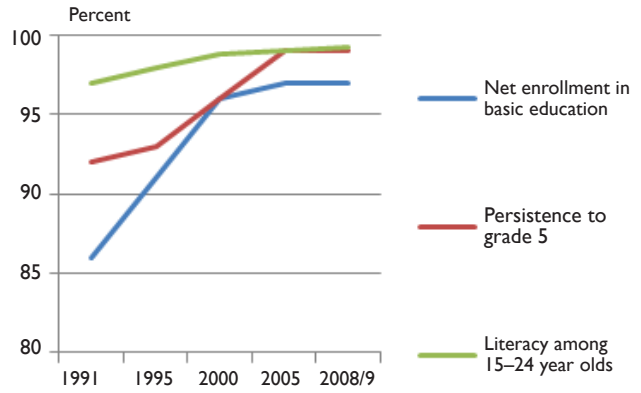
- Net enrollment ratio in basic education;
- Proportion of pupils starting grade one who reach the last grade of basic education; and
- Literacy rate of 15–24 year-olds.

TABLE 4.1. ENROLLMENT IN 2009—PUBLIC AND PRIVATE

	Public	Private	Total	% Public
Basic Education (1–10)	1,084,988	250,589	1,335,577	81%
University Education	63,391	181,905	245,296	26%
Secondary Academic (11–12)	144,593	21,199	165,792	87%
Kindergarten	13,956	99,668	113,624	12%
Community College	18,120	12,843	30,963	59%
Secondary Vocational (11–12)	27,450	302	27,752	99%
Vocational Training	19,000	unknown	19,000	unknown
Armed Forces Education (K–12)	13,361	0	13,361	100%
Total	1,384,859	566,506	1,951,365	71%

Subsequently, the Government took action to achieve the MDGs by incorporating them into national development plans and programs. In 2010, Jordan's *Second Millennium Development Goals Report: Keeping the Promise and Achieving Aspirations* demonstrated progress towards achieving the indicators and highlighted future education challenges.

FIGURE 4.2. BASIC EDUCATION ACHIEVEMENTS



Of the eight MDG goals, education is the only one achieved to date. Almost all pupils, who enroll in grade one complete grade five. Illiteracy among the 15–24 year old age group has been almost eradicated with equal gender enrollment, retention, and literacy rates.

Net enrollment ratio (NER) in basic education. NER is the number of children of official age (6–15 years) enrolled in basic education, as a percent of the number of children of official basic school age. Basic school NERs in Figure 4.2 indicate substantial increases since 1990, from 87 percent to 98 percent. This demonstrates that considerable progress has been made in providing universal basic schooling and ensuring completion of a full course of basic education.

Persistence is the proportion of pupils starting grade one who successfully complete grade five. This "persistence rate" shows remarkable improvement, from 92 percent in 1990/91 to 99 percent during 2007/08.

Literacy rate among (15–24) year-olds. Jordan reduced illiteracy with well-defined policies and effective literacy education, as well as enforcing compulsory education and reducing school dropouts. Despite its general decline, overall illiteracy is more prevalent among females than males and more common in rural than urban areas.

As the *Second Millennium Development Goals Report* concluded, Jordan enjoys education policies and programs that rank it well on the regional and international education map. It has made significant progress on all education indicators. Going forward, the next step is to move towards an advanced developmental level where the focus will be on providing universal quality education in line with the needs of a modern knowledge-based economy.

PROGRAMS AND EXPENDITURE POLICIES

This section presents financial and performance information about the education system. It describes the education programs funded in the annual budget and examines levels of spending, services provided, and results accomplished, where data are available. Trends are examined and comparisons are made to averages for comparison groups including:

- Worldwide, all countries for which data are available;
- MENA (developing), 13 countries;
- Arab, 22 countries;
- OECD, 33 countries; and
- Lower Middle-Income, 56 countries.

Budget appropriations for *publicly funded* education programs total JD 836.5 million in 2011, or 12.7 percent of the total government budget. This share is low compared to other countries of the Middle East and North African (MENA), which spend between 18 and 20 percent of their budgets on education.

At 3.8 percent of GDP, Jordan's public education spending is less than one-half its level of military spending. This 3.8 percent figure is also below the worldwide average (4.6 percent), as well as that of Organization for Economic Cooperation and Development (OECD) member countries (5 percent).

As depicted in Figure 4.3, appropriations for education programs are spread among six budget entities: the

FIGURE 4.3. JORDAN'S EDUCATION BUDGET FOR 2011

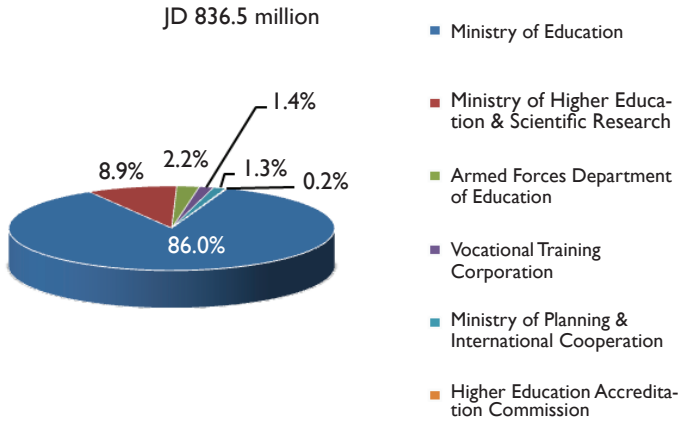


TABLE 4.2. EDUCATION PROGRAMS FUNDED IN THE 2011 BUDGET

	2011 Budget Law (JD)	% of Education Budget
Ministry of Education		
1 Administration and Support Services	49.1 million	5.9%
2 Kindergarten Education	9.8 million	1.2%
3 Basic Education	535 million	63.9%
4 Secondary Education	93 million	11.1%
5 Special Education	3.6 million	0.4%
6 Illiteracy and Elderly Education	601,000	0.1%
7 Social, Sport, Educational Activities	6 million	0.7%
8 Vocational Education	23 million	2.8%
Dept of Defense Education Services		
9 Educational and Social Services	18.6 million	2.2%
Vocational Training Corporation		
10 Administration & Support Services	2.1 million	0.3%
11 Training and Habilitation	9.6 million	1.2%
Ministry of Higher Education		
12 Administration & Support Services	4.1 million	0.5%
13 Government Colleges, Universities	70.7 million	8.5%
Ministry of Planning & International Coop		
14 Basic Education	10.5 million	1.3%
15 Government Colleges, Universities	108,000	<.1%
Higher Education Accreditation Commission (3 progs)	1.3 million	0.2%
Total Education	836.5 million	100.0%

Ministry of Education (MOE), Ministry of Higher Education and Scientific Research (MOHESR), Armed Forces Department of Education (AFDE), Vocational Training Corporation (VTC), Higher Education Accreditation Commission (HEAC), and Ministry of Planning and International Cooperation (MOPIC). MOE consumes by far the largest share of the education budget (86 percent), followed by MOHESR (8.9 percent); with the remaining 5 percent appropriated to the AFDE Education Services program, VTC, MOPIC, and HEAC.

Education expenditures have grown at a slightly higher rate than total government expenditures over the past 10 years. Growth in education spending grew 170 percent compared to 164 percent for the total budget.

During the 2001 to 2009 period, public education employment from preschool through university followed the overall trend in government employment. While total public employment grew about 21 percent, public education employment grew 23 percent (Table 4.3). Education sector employees have represented a stable 40 percent of total public sector employment over time.

Table 4.3 summarizes the education system by budget entity and program, including the approved 2011 appropriations for each program in the General Budget Law and estimates of appropriations for the Government Units budget, which had not been approved by June 2011.

Collectively, six budget entities are responsible for 18 programs funded in the 2011 annual budget, which includes the General Budget Law and Government Units Budget Law.

TABLE 4.3. TREND IN PUBLIC EDUCATION EMPLOYMENT AS % OF TOTAL PUBLIC EMPLOYMENT

	2001 Employment	2009 Employment	% Increase
Public Education Employment	99,218	121,830	23%
Total Public Employment	247,405	300,507	21%
Education as % of Public Employment	40.1%	40.5%	

Ministry of Education

With a 2011 budget of JD 719.3 million the Ministry of Education consumes, by far, the largest share of funds dedicated to the education system (86 percent). For 2011, the Ministry's total appropriation for capital projects is JD 71.4 million, or 10 percent of its total appropriation.

In recent years, the Ministry has registered numerous accomplishments, including enhanced decentralization to the directorate and school levels, adopting Results-Oriented Budgeting methodologies, developing the Education Management Information System, and providing the International "Computer Driving License" credential to all teachers. In quality assurance, MOE participated in international studies, such as the Program for International Student Assessment (PISA) and Trends in International Mathematics and Science Study (TIMSS). In pre-school education, MOE conducted workshops and courses to enhance parental awareness and participation and to provide kindergarten teachers with pre-school education courses. The Ministry also made strides in connecting all schools to the internet and enacting new legislation to strengthen compulsory education and increase

basic education enrollment rates. In basic and secondary education, the main accomplishments are within the framework of the Education Reform for Knowledge Economy Projects (ERfKE I and ERfKE II). These accomplishments have been in the areas of education and education governance reforms, transforming programs and practices to meet the needs of the knowledge economy, providing safe school buildings and improved learning environment, and early childhood education. MOE also strengthened vocational education by improving administration, curricula, employment after graduation, and enhancing teacher and trainer capabilities.

The next section summarizes MOE education spending for its major programs.

Administration and support services. Seven percent of Ministry spending supports all activities to improve administrative capacities at the Ministry and at the Education Directorates, and to enhance the efficiency of programs and project management.

Kindergarten education. Representing 1 percent of the MOE budget, the kindergarten program objective is to increase overall enrollment in kindergarten, especially in the rural and poor areas that are less developed and have higher concentrations of needy. The Ministry's program performance indicators for 2011 include achieving an overall pre-school enrollment rate of 37 percent in rural and poor areas. In 2009, the average annual program cost for a public kindergarten student was JD 265.

The benefits of pre-primary education are significant, especially for disadvantaged children, whose kindergarten participation is associated with future higher verbal and mathematics achievement, less grade repetition, and higher graduation rates. Although Jordan outperforms MENA countries, its pre-primary gross enrollment rate is only 36 percent, which underperforms the average of the 56 lower middle income countries and is less than half the OECD rate.

Kindergarten education includes Kindergarten (KG) I (ages four and five), which is almost exclusively private sector, and KG II (ages five and six). The private sector dominates the provision of kindergarten education. In 2007/08, it accounted for 90 percent of kindergarten enrollment. Public kindergarten enrollment in KG II has been an important priority in recent years. To its credit, enrollment in MOE-funded KG II programs more than doubled between 2003/04 and 2007/08. Despite recent improvements, low enrollment in pre-school education remains both an education and an equity issue, particularly for poor and rural areas.

Basic education. The Ministry's largest program, Basic Education consumes 74 percent of its annual budget. It provides education for grades 1 through 10 and its objective is to expand overall enrollment opportunities in basic education and eliminate inequities in education opportunities. The Ministry's program performance indicators for 2011 include keeping the basic education dropout rate at 0.6 percent and reducing the percentage of students attending two-shift schools to 7.6 percent.

Following are some comparisons between Jordan and comparator groups on key basic education indicators.

- *Spending*. Jordan currently spends an amount equal to 13 percent of per capita income for each primary school student. This is significantly less than the OECD rate of 20 percent and represents a modest decline from Jordan's 13.7 percent level in 1999. For 2009, the average annual program cost for a basic school student was JD 394.
- *Enrollment*. Jordan is not a strong performer in basic school enrollment. According to the UNESCO Institute of Statistics, Jordan has over 50,000 primary school age children who either never entered or have dropped out of school. Jordan's 2009 gross enrollment rate in primary school (gross enrollment may be above 100 percent as it includes children who are younger or older than normal) was 101 percent, lower than both LMI and MENA countries, that average 107 percent. Nevertheless, Jordan's primary enrollment outperforms MENA and LMI countries in male/female equity. Jordan's gross intake rate in grade one is 99 percent (including grade repeaters). This is above Arab countries but less than MENA and the LMI country rate of 112 percent.
- *Completion*. Jordan outperforms the world average and the MENA and LMI countries with a primary school completion rate of 100 percent. This was a strong increase from only 95 percent in 1991. Jordan also outperforms MENA and LMI countries in its percentage of girls (98 percent) and boys (99 percent) who progress from primary to secondary school.
- *Student-teacher ratios*. Jordan and the relatively wealthy OECD countries have primary school

pupil-teacher ratios of 16 to 18 students for each teacher. LMI and MENA countries have student teacher ratios of about 25 to 1.

- *Youth literacy.* Perhaps the most comprehensive indicator of the effectiveness of Jordan's basic education program is its youth (age 15–24) literacy rate, which stands at 99 percent compared to the MENA rate of 89 percent.

Secondary education. Secondary education covers students in grades 11 and 12 and consumes about 13 percent of the Ministry's budget. Its objective is to expand enrollment opportunities in secondary education that enable students to broaden their life and professional choices and to effectively participate in social changes and development. The Ministry's program performance indicators for 2011 include increasing the percentage of formal students who pass the Secondary General Examination from a 2009 level of 59.5 percent to 59.8 percent. The annual program cost per academic secondary student in 2009 was JD 365.

Jordan currently spends at an amount equal to 17 percent of per capita income per secondary student (up from 15.8 percent in 1999), while OECD countries spend roughly 24 percent of their significantly higher GDP per capita.

Jordan's public academic secondary school enrollment is about 145,000 students, with a total gross enrollment rate of 88 percent, outperforming the world average as well as MENA and LMI countries. Jordan also outperforms MENA and LMI countries in the ratio of female to male secondary school enrollment. Jordan's transition rate of high school graduates to tertiary education is about 75 percent, a very high rate.

Vocational education. This program is responsible for preparing secondary students to pursue vocational education and training relevant to the requirements of the labor market. It represents 3.2 percent of the Ministry's budget for 2011and 20 percent of the combined secondary and vocational education budgets. The Ministry's program performance indicators for 2011 include increasing the number of workshops with modern equipment to 160 and ensuring that 50 percent of vocational students enroll voluntarily.

Enrollment in secondary vocational education as a share of total secondary enrollment declined from 18 percent in 2000 to 14 percent in 2009, with an annual cost per student of JD 813. The program currently enrolls about 25,000 students.

Education, Social, and Sports Activities. This program is aimed at enhancing participation of students in programs and activities that strengthen their national affiliations. These efforts claim 0.8 percent of the Ministry's total budget. The Ministry's program performance indicators for 2011 include maintaining 12 teachers clubs, 6 scout camps, and 4 sports festivals.

Special education. Representing 0.5 percent of Ministry spending, Special Education increases opportunities available for students with learning disabilities and for gifted students. The Ministry's program performance indicators for 2011 include maintaining seven source rooms for students with learning disabilities and seven excellence schools for the gifted.

Illiteracy and elderly education. This small program represents only 0.1 percent of the MOE budget. Its objective is to develop programs, curricula, and human resources to help eliminate illiteracy. The adult literacy rate improved significantly over the past 10 years and at 93 percent (89 percent for females), it is well above both MENA and LMI country rates. The Ministry's program performance indicators for 2011 include enrolling 6,800 individuals at 491 literacy centers.

Armed Forces Department of Education

Educational and social services. The Armed Forces Department of Education's 2011 budget is JD 18.6 million, 2.2 percent of total education spending. It provides educational and social services for the children of active and retired military personnel and children in secluded and poor areas like the Badia region. It is also responsible for six community colleges and plays a role in enhancing the cultural and educational level of the Armed Forces.

Vocational Training Corporation

The Vocational Training Corporation (VTC) has a proposed 2011 budget of JD 11.8 million (the Government Units Budget Law was not approved through June 2011), 1.4 percent of the total education budget. It is an independent institution governed by a board of directors chaired by the Minister of Labor. The VTC produces a professional labor force through training, habilitation and rehabilitation. Its activities are organized under two programs. Administration and Support Services (18 percent of VTC budget) aims to reinforce the management of programs and training, as well as support the computerization of all work procedures in the Corporation. The Training and Habilitation program (82 percent of VTC

budget) aims to enhance enrollment in vocational training programs at its 42 Vocational Training Centers, nine of which are equipped for special needs students, and to improve employment after graduation. VTC maintains a stable enrollment level of about 10,000 students, who enroll in its core courses and about 9,000 additional students who enroll in short training courses. The annual cost to maintain each VTC student is about JD 1,300. In 2011, about 19,000 different students are expected to be enrolled.

Recent efforts to restructure the Vocational Training Corporation are intended to enhance the efficiency of Employment-Oriented Training. This has led to an amended VTC By-law and establishing academies for training for jobs in pharmacy, food industry, tourism, environment, energy, engineering and electronics.

Ministry of Higher Education and Scientific Research

The Ministry of Higher Education and Scientific Research (MOHESR) has a 2011 budget of JD 74.9 million, about 9 percent of total education spending. For 2011, the Ministry's capital projects appropriations total JD 28.1 million, or 37.5 percent of its total appropriation.

The most prominent accomplishments of the Ministry have been in new legislation, improved governance, strategic planning, and development of higher education infrastructure. Accomplishments also include developing the Management Information System to support University decision-making; establishing Faculty Development Centers for continuous learning and training; amendments to Higher Education and Scientific Research Laws to reinforce university autonomy and reinforce the role of boards of trustees in finding more sources of university funding. The Ministry also set new mechanisms to support needy students through the student aid fund, financed by both the Government and the private sector. In addition, the Higher Education Accreditation Commission for both public and private universities is now independent.

In the area of community colleges, the Council of Ministers approved a 2011 proposal to Parliament for legislation to provide for all technical education programs offered by universities and community colleges to be coordinated through a new department to be created in the Ministry of Higher Education and Scientific Research. This new initiative, after approval by Parliament, is expected to have a three year transition period for implementation.

Administration and support services. This program represents 5.5 percent of the Ministry's budget. Its objective is to enhance administrative capabilities in all administrative units of the Ministry and to reinforce the management of programs and projects.

Public colleges and universities. This program represents 94.5 percent of the Ministry's budget and includes all government budget support for public institutions of higher education. It provides for academic environment and research capacities. It also help to ensure the academic institutions under its purview keep pace with developments in information technology, deploys those developments on behalf of administration and academic programs, and supports universities' infrastructure.

The Ministry's program performance indicators for 2011 include reaching 75 percent of students with grants or loans and increasing the ratio of community college students to total higher education students, which was 11 percent in 2009, to 14 percent.

Community colleges. Jordan has 51 community colleges, of which 26 are publicly supported. These include 14 community colleges under the auspices of Al Balqaa' University, six sponsored by the Armed Forces Department of Education, and six other governmental community colleges. While the preference for university education is strong, a weak preference is evident for vocational, applied, and technical specialties, as reflected in low rates of community college enrollment. While national policies have emphasized the importance of community colleges playing a more important role in technical and applied fields of education in order to increase the efficiency and productivity of the labor market, progress has been slow and responsiveness to labor market needs and demands remains weak. Thirteen of the fourteen public community colleges offer bachelor's degrees and a high proportion of students bridge from community colleges to public universities.

The following describes tertiary education performance against several common indicators.

- *Spending*. Higher education budget appropriations are 10.4 percent of total education expenditures and 0.4 percent of GDP, while OECD countries average 1.2 percent of GDP.

Although institutions of higher education have seen declining government support in recent years, the cost of higher education to students at the 10 universities and 14 public community colleges remains below that of private institutions and below the actual costs of that education, due to the annual government subsidies.

Of the JD 71 million currently appropriated, JD 17 million (24 percent) is designated for student financial aid and JD 54 million is distributed to the 10 public universities. This JD 54 million in transfers to universities is up from JD 38 million in 2001. While this amount appears to be an increase, the 2011 amount is distributed among 10 universities compared to four universities in 2001. In addition, higher education institutions are carrying previously incurred debts estimated in the area of JD 100 million.

- *Enrollment.* The tertiary education gross enrollment rate is about 40 percent, which means that 4 of 10 Jordanians of higher education age are enrolled. This is well above the worldwide and MENA averages of 26 percent and double the rate of the 56 LMI countries. These high rates reflect a strong preference for higher education. Jordanian females enroll in tertiary higher education at a higher rate than males.

  The Ministry of Higher Education grants admission to significantly more students annually than are recommended by the Higher Education Accreditation Commission, whose main concern is the quality of education. This emphasis on quantity allows the institutions to enjoy the benefits of additional student fees, but has negative implications for education quality.

- *Admissions.* Admission to institutions of higher education is largely governed by the results of the annual Tawjihi examination. Basically, Tawjihi scores determine the universities and academic programs to which applicants can gain admission. The highest scoring students are generally admitted to the 10 government subsidized universities; students falling into the second tier of Tawjihi scores tend to attend private universities; the third tier of scorers tends to attend community colleges. An exception to this is permitted through parallel enrollments, whereby students with lower scores, but with the ability to pay, can be admitted to competitive programs and institutions and pay additional fees.

- *Employment.* Institutions of higher education have an excess of non-teaching administrative and support staff. Ratios of administrative to teaching faculty at the public universities range from 1.2 to 2.2 non-academic staff for each teaching position. A 2009 report of the Jordan Center for Policy Research concluded there are ample opportunities to reduce the number of non-teaching employees at universities.

Higher Education Accreditation Commission

The HEAC is an independent organization responsible for assuring the quality of higher education. Claiming only JD 1.3 million or 0.2 percent of the total education budget in 2011, its objectives include increasing the number of academic specializations subject to accreditation and ensuring that all public and private universities implement accreditation standards. The HEAC's budget is organized into three programs, including Administration and Support Services, Higher Education Institutions Accreditation, and the National Examination Center.

Other education-related appropriations

In addition to the appropriations on behalf of education-related programs presented above, the 2011 Annual Budget includes additional amounts designated to accomplish education objectives, but which are appropriated to the Ministry of Planning and International Cooperation (MOPIC) in support of basic and higher education. In addition, the Ministry of Finance (MOF) administers an off-budget trust fund that will provide JD 12 million to reduce higher education debt in 2011.

RESPONDING TO CHALLENGES

The previous sections of this Chapter accomplished several objectives. The first section provided the macro perspective on education in Jordan and reviewed the conclusions and recommendations of important education reports. The next section presented the micro perspective, describing budgets, levels of education services provided, and results accomplished at the program level of six educational organizations.

Four prominent documents represent a unified and consistent body of policy and program perspectives. First, the 1991 Public Expenditure Review referred to in the introduction illuminated critical education needs, problems, and opportunities, too many of which remain with us today. Second, the 2003 Public Expenditure Review presented a number of reasonable and practical solutions

that remain relevant to the needs and problems of today. Too many of those solutions have yet to be implemented.

Third, the 2006 National Agenda for education demonstrated a full understanding of the education needs and problems and the importance of appropriate solutions. It presented a constructive and meaningful policy framework. It also raised Jordan's aspirations from the status of a normally low performing lower middle income country to the status of vibrant and productive knowledge-based economy and member of the upper middle income category.

Finally, the 2010 Millennium Development Goals report signaled a major transition. It celebrated Jordan's education successes above and beyond the typical lower middle income country and it pointed to the future—evolution to a more advanced "knowledge-based" developmental level.

This chapter of *Public Expenditure Perspectives* adds a fifth document to the twenty years of unified and consistent reports on education in Jordan. It also contributes another critical perspective—that the principal challenges in 2011 and the future are not related to the need to better understand our problems or the need to develop more appropriate policies and objectives. Our problems center on the implementation of change and on the need for government officials who are willing and able to be accountable for successful implementation.

The following findings and recommendations are organized in line with nine critical issues that deserve special attention. The recommendations associated with these issues promise to contribute to Jordan's success in achieving the status of a knowledge-based economy to which citizens can contribute and be rewarded for their productivity.

Teacher staffing

This issue has three dimensions, the first two of which are necessary pre-conditions to accomplish the third dimension—improved student performance.

a. Teacher staffing levels;

b. Teacher recruitment and selection; and

c. Improved results in student performance.

Teachers are by far, the largest education expense. Teacher employment growth exceeded student growth between 2001 and 2011 and all analyses of teacher utilization since 1991 have concluded that there are significant inefficiencies in the utilization of teacher resources.

A Teacher Utilization Study, sponsored by the Education Reform for Knowledge Economy Project (ERfKE), was issued in September 2008. The study recommended that the student-teacher ratio of 17.7 to 1 be increased to improve both efficiency and education results. Since then, the situation has deteriorated. The student teacher ratio has dropped further, to 16.2 to 1. This includes a kindergarten and basic education (through grade 10) ratio of 18 to 1 and a secondary education (grades 11 and 12) of 13 to 1. As a result of the low student-teacher ratio, teacher salaries represent an overwhelming 92 percent of the recurrent budget.

The relatively high number of teachers is accompanied by relatively low levels of teacher salaries. The most recent teacher salary data available through the UNESCO Institute of Statistics, shows that Jordan's teachers earn salaries that, on a purchasing power parity basis, are 25 percent of the level of OECD countries. At the same time, the 92 percent of the recurrent budget spent on salaries has squeezed out spending for non-salary items necessary for quality education, e.g.:

- educational materials for classrooms;
- teacher in-service training;
- incentives for teaching in remote areas; and
- school maintenance, renovation, and construction.

The same 2008 teacher utilization study analyzed three alternatives as to levels of teacher employment: a stringent policy; a moderate policy; and the existing liberal policy. The moderate policy was recommended and called for student teacher ratios of:

- 29 to 1 in kindergarten;
- 25 to 1 in basic education; and
- 20 to 1 in secondary education.

Recommendations. School staffing level decisions should be determined based on the number of students per teacher, consistent with the recommended "moderate policy" recommended in 2008. With adequate organization and teacher training, a program of multi-grade teaching could be an efficient alternative for some schools.

Moving from the current staffing approach to effective implementation of the recommended moderate policy, was estimated in 2008, to accomplish within five years, a reduction of 16,000 teaching positions from the current policy trajectory. This, in turn, would yield an annual savings of about JD 85 million, which could better be invested in areas that can improve education quality.

Teacher recruitment and selection

Centralized recruitment and selection of teachers through the Civil Service Bureau has resulted in less qualified teachers, than if recruitment and selection were more decentralized. Most education analyses over time have recommended that authority to recruit and select teachers be decentralized to the Ministry of Education from the current centralized system through the Civil Service Bureau.

Recommendations. We propose three specific actions to 1) include MOE directly in the hiring of teaching staff, 2) that an incentives system be developed to retain good teachers and slough off those who are not up to standard, and 3) implement a solid, annual assessment system for all professional staff of MOE that would include dismissals of unsatisfactory staff.

Education results

The OECD conducts a triennial survey titled the Program for International Student Assessment (PISA). The survey examines what 15-year-old students know and can do in reading, mathematics, and science. In 2009, 65 countries participated in the survey of knowledge and skills.

Jordan's PISA scores and ranks cannot be compared to a world average, because only 65 countries participated in the survey. Similarly, comparisons cannot be made with Arab or MENA countries since only three of the other Arab and MENA countries (Dubai, Tunisia, and Qatar) participated in PISA. It is notable, however, that on all three scales—reading mathematics, and science—Jordan scored significantly below the average of the 33 OECD countries and did not rank well against the other 32 PISA participants. Jordan's ranking among the 65 countries on each of the scales ranged from 51 to 56 as listed in Table 4.4.

Given that the Government's policy priorities are to achieve the status of a knowledge-based economy, it is more appropriate to compare Jordan with countries, like OECD members, who have largely knowledge-based economies.

TABLE 4.4. PERFORMANCE—PROGRAM FOR INTERNATIONAL STUDENT ASSESSMENT (PISA)

	OECD Average	Jordan	Jordan's Rank out of 65 Countries
Reading	493	405	55
Mathematics	496	387	56
Science	501	415	51

Table 4.4 clearly illustrates that in Jordan, the most compelling challenge at hand is the quality of education.

Other factors that contribute to low academic performance are discussed in other sections of this report. These include non- or late enrollment of age appropriate children in school; lack of resources for educational materials and teacher training; overcrowded classrooms; and teachers with lower than appropriate qualifications. An additional factor that may contribute to students' relatively low performance may be its very low rate of repeating grades. While 4 percent of students worldwide repeat grades, Jordanian students only repeat at a rate of 1 percent, meaning that low performing students may be pushed on to the next grade and perform poorly at the higher level.

Recommendations. The Ministry of Education should analyze the extent to which the very low 1 percent rate of repeating grades contributes to low academic achievement on international tests of student knowledge and skill and determine whether a change to have more low performing students repeat grades can increase positive education results and student scores on standardized tests.

It should be mentioned, however, that having a low repetition rate is not, in and of itself, a negative factor in attaining education excellence. If, however, the low repetition rate is caused by simply passing failing students on from one school year level to the next, without remedial assistance, then this would be the schools rather than the children who fail.

Utilization of school facilities

This issue deals with the efficient utilization of school facilities, including overcrowding and underutilization. In the 2010–2011 school year, almost 60 percent of the country's 3,400 schools were classified as small (300

students and less) and they enroll 25 percent of the students. The cost per student demonstrates the inefficiency of these small schools—between double and triple the cost per student of large schools.

In a separate MOE analysis of data from the 2010–2011 school year, almost 70 percent of public schools were classified as small (400 students or less). By this classification, 70 percent of the schools enrolled 36 percent of the students and employed 48 percent of the teachers, again demonstrating the inefficiency of small schools (see Table 4.5).

The most recent comprehensive report on MOE's school facilities, issued in December 2008, included an evaluation of the status and future needs with respect to school capacity and utilization. It provided a blueprint for school construction, extensions, and renovations for the ERfKE II Project engaged in school construction through 2013. The report, completed during the 2008/2009 school year, noted that overall, Jordan's 1.1 million public school students from kindergarten through grade 12 were attending 3,400 schools and that enrollment through 2019 was estimated to grow by about 25,000 students annually. In addition to developing a blueprint for future construction, the report documented overcrowding, excess capacity, safety issues, and maintenance problems within current facilities. Deferred maintenance is a major problem because it results in deterioration that is far more expensive to correct than the cost of preventive maintenance.

Analysis of these problems demonstrated significant opportunities to improve the efficiency in the utilization of current and future school facilities. These opportunities included:

TABLE 4.5. SMALL SCHOOLS HAVE TOO FEW STUDENTS AND TOO MANY TEACHERS

Size (# of students)	Number of Schools	% of Schools	% of Students	% of Teachers
Large (800+)	332	9.7%	29.0%	19.8%
Medium (400–800)	711	20.8%	35.5%	31.7%
Small (201–400)	923	27.0%	23.3%	26.7%
Small (101–200)	661	19.3%	8.5%	12.7%
Small (1–100)	795	23.2%	3.9%	9.1%

- Almost 60 percent of MOE schools were underutilized, with 173,000 surplus seats available, while 10 percent of students (101,000) were studying at overcrowded schools;
- Most schools with excess capacity were located within one kilometer of an overcrowded school;
- Many of the schools built between 2003 and 2008 were in the same area as other schools with excess capacity;
- The number of schools with fewer than 100 students had increased between 2003 and 2008; and
- MOE did not have a modern maintenance management system, including technical software, that applies objective criteria and standards and routine analysis of condition assessments to identify problems and prevent building failures before they become critical.

Recommendations. The problems should be approached from four perspectives: a) reduce the number of small schools, b) improve the use of space in current schools, c) provide more transportation to get children to their schools, and d) improve maintenance. These are each discussed briefly below.

The number of small schools should be reduced to lower total education costs. As part of this recommendation, it is critical that objective and efficient criteria used to locate schools be strengthened and that the use of non-objective political influence in school location decision-making be reduced.

Even a 25 percent better utilization of the existing excess seats (173,000) in existing schools was estimated, in 2008, to generate a savings of JD 30 million in the capital costs of school construction, in addition to economies of scale in operating costs.

The Government should establish a transportation system to provide for student transportation that results in shifting students from overcrowded to underutilized schools.

A modern maintenance management system, including technical software, should be implemented. A maintenance survey documenting unsafe buildings and critical needs for comprehensive maintenance will lower more costly repairs and replacement costs over time.

Kindergarten and primary enrollment

A great deal of education research demonstrates the importance of early childhood education as an investment that increases the future benefits of education, especially for low income and disadvantaged children. As articulated in the National Education Strategy, kindergarten education is an important part of any reform efforts.

Most kindergarten education is provided by the private sector. In the 2003–2004 school year, 95 percent of kindergarten enrollment was in private sector schools. By 2007–2008, this was reduced to 90 percent with the MOE significantly increasing its emphasis on early childhood education. Public kindergartens are virtually all for KG2 (age 5).

Under-enrollment has been the most persistent problem for kindergarten and primary levels. The primary school gross enrollment rate has steadily declined from 1985 through 2008 and currently falls below those of other LMI and MENA countries. The problem is especially critical for kindergarten, both KG1 (age 4) and KG2 (age 5), with pre-school enrollment rate at 36 percent. Although this exceeds the low performing MENA countries, it falls below the average LMI country and is only half the OECD average.

Gross enrollment in KG2, which was 47 percent in 2000, moved up to 51 percent in 2008 following major investments involving the MOE, the ERfKE I program, and 15 other partner organizations. This successful collaboration, widely regarded as a model for reform achievement, raises the question of why there are still under-enrollment problems and why about half of 5-year old children are not enrolled in private or public sector KG2 classes.

Recommendations. Additional classrooms are needed to increase kindergarten and primary grade enrollment rates. Current initiatives to construct and equip additional classrooms and to expand current facilities will provide needed capacity to increase kindergarten and primary grade enrollments.

To get kids to school, the MOE and local schools should establish a transportation system to provide student transportation between home and school on behalf of kindergarten and primary school students. Some students live too far from their schools to walk and parents often have concerns about the safety of their children who must walk to school. A system of student transportation would increase enrollment.

Consistent with recommendations in the chapter on Alleviating Poverty through Social Assistance, cash transfers conditional on school attendance could be supportive of the notion that parents should send their little ones to kindergarten. Currently, 74,000 families receive cash benefit payments through the National Aid Fund (NAF). These payments could be made on the condition that age-appropriate family members be enrolled in kindergarten and basic education. Jordan had such a requirement in the past, but compliance was not effectively monitored or enforced and the school enrollment results are not known. Conditional cash transfers have been successfully implemented in numerous countries, including Turkey and Yemen, and provide opportunities to study successes in designing an effective conditional cash transfer program.

Vocational education and training

The complexity of the country's labor market issues is illustrated by the fact that unemployed labor force participants (13 percent) are outnumbered by 250,000 guest workers who hold Jordanian work permits, not to mention an even larger number of illegal foreign workers. The unemployment problem is especially severe for young labor force participants. Job seekers aged 15–19 are unemployed at a rate of 36 percent while those aged 20–24 are 28 percent unemployed.

Multiple entities are responsible for providing the vocational and technical education and training essential for Jordan's evolution into a knowledge-based economy. The Ministry of Education provides secondary vocational education. Both the Vocational Training Corporation and public and private community colleges (under the Ministry of Higher Education) provide vocational and technical training and education. The overlapping mandates have naturally provided challenges for management and oversight of this sub-sector.

To overcome these challenges, an Employment-Technical and Vocational Education and Training (E-TVET) Council was created in 2008. The scope of its oversight responsibilities include VTC, Al Balqaa' University, the E-TVET Fund, Private Sector Training Centers, MOE's Vocational Secondary Education program, and the Employment Directorate of the Ministry of Labor. It also created an Accreditation and Quality Assurance Center. Yet, there is little evidence that this initiative has raised quality or performance in vocational education and training.

From the Government's perspective, several factors contribute to a disproportionate number of non-Jordanians occupying vocational-technical jobs in the country. First is a perceived shortage of vocational and technical training programs and the incompatibility of existing programs with labor market demands. Second, is the cultural stigma associated with vocational-technical jobs. Even if training programs were available, Jordanians tend to prefer academic over vocational education. As a result, secondary vocational education enrollment as a share of total secondary enrollment has declined over the years, despite an increasing demand for vocational and technical skills.

Of those who do enroll in MOE-administered secondary vocational education, students tend to be those who under-perform in the academic stream. The majority of students who enroll at the Ministry of Labor's Vocational Training Centers tend to be from the lower ranks of secondary education graduates or have dropped out of secondary education.

Meanwhile, community colleges, while offering diplomas in subjects from languages to business administration, have been no more successful in cultivating talent or responding to the technical and vocational knowledge and skill needs of a modern economy.

Unfortunately, the private sector has traditionally played little if any substantive role in vocational education and training governance or in setting professional standards; nor has it been authorized to award certifications. This represents a missed opportunity to garner more policy and financial support from private sources.

Recommendations. There are opportunities to improve vocational education and training. We recommend a new evaluation of the effectiveness of the 2008 E-TVET initiative in leading the development of the Kingdom's technical and vocational education structure. We also recommend increased private sector provision of vocational and technical education, e.g. authorizing private centers to certify graduates. At the same time, involve the private sector in setting professional standards and examination mechanisms.

Again, the Government needs to decentralize hiring by granting more independence for MOE and the VTCs in the selection and hiring of appropriate staff.

Finally, there is a need for greater awareness and guidance related to vocational education and training, to provide higher rates of enrollment in this sector and to enhance the image of vocational education and training. Leaders should document the benefits of vocational education and training, and conduct serious outreach campaigns to make sure that the public is aware of this.

Community colleges

Alignment between higher education outcomes and the labor market has consistently been an important policy objective, with the National Agenda citing improvements in the governance and funding of community colleges among its highest education sector priorities.

Community colleges are essential for economic diversification and the growth of the economy. However, they have struggled to restructure their traditional academic programs in a way that contributes more positively to labor market productivity. The policy priority in this area is to produce a skill mix more relevant to the labor market and capture increased economic and employment benefits from the community college system. Currently, the country's 14 public community colleges are organized as part of Al-Balqaa' Applied University.

Past reports have pointed to a wide range of community college problems, including:

- frequent changes in leadership;
- absence of clear policy objectives;
- lack of commitment to building required institutional infrastructure;
- weak linkages with the employer community;
- academically oriented faculty with low levels of practical experience;
- high numbers of students transferring to traditional academic university programs; and
- large and growing numbers of redundant administrative staff.

Given these problems, the Council of Ministers recently approved actions to create a separate department within MOHESR, specifically for community college governance, management and operation. This new arrangement, expected to be implemented over a three year transition period, will bring Jordan into conformance with community college governance practices typical in developed economies. It is expected to nurture the institutional culture necessary to provide graduates with employment

linked knowledge, skills and abilities based on continuous and close institutional relationships with the employer community.

With an exclusive mandate to develop human capital at the intermediate, technical, and paraprofessional levels and to keep up to date with the needs of a changing economy, the new department will be accountable for results—that community college graduates will have the competencies articulated as needed by employers in their respective fields, including academic knowledge, professional/ occupational competencies, employability skills, and entrepreneurial competencies.

Recommendations. The results of the solution currently being implemented—a new and separate MOHESR department exclusively dedicated to technical education—will not be clear for several years. Nevertheless, key performance indicators should be monitored to confirm whether expected results are accomplished. These should include, *inter alia*:

- percent of community college graduates that find employment related to their technical education within one year of completion;
- percent of employers expressing satisfaction with community college graduates; and
- percent of community college graduates indicating their technical education was effective.

Revenue opportunities for public education

Currently, MOE has successful investment programs generating over JD 325,000 annually from leases for commercial and office spaces in Amman, Aqaba, and Irbid. These successful initiatives are small relative to the potential opportunities to convert unused and surplus assets into education benefits.

The Ministry of Education has responsibility for an extensive system of schools, buildings, facilities, land, and other fixed assets. An unknown portion of those assets are not fully utilized. These surplus assets include buildings, properties, land and other capital assets that could generate additional revenues for the Government through sale, lease, or other business arrangements. The proceeds in turn, could be put to productive use in providing direct educational benefits or invested in increased capacity to generate future revenue for direct educational benefits.

Examples of revenue generating opportunities include using surplus school land to lease or to construct commercial complexes; investing in commercial production capacities at vocational education facilities that can sell products with revenues reinvested in vocational education; creating a printing house to operate on behalf of the Ministry of Education and sell to the private sector; renting out school stadiums, meeting rooms, and gymnasiums to private groups; leasing surplus land for agricultural production; and leasing out Scout Camps for tourism groups.

Recommendations. Great benefit could come through developing a comprehensive initiative for managing education-related revenues. To start, an amendment to Education Law Number 3 of 1994 would be needed, creating a special fund with all revenues to be deposited in a designated subaccount of the Treasury Single Account under the name of the Ministry of Education. It would also create an investment committee responsible for maximizing education-related revenue generating opportunities and for recommending policies and procedures to meet specific education needs. All such special expenditure proposals would be identified and included as part of the annual General Budget Law.

This initiative must include the development of a system of incentives for generating revenues to ensure the success of this initiative. This should be accomplished by a governance structure and policies that provide for the engagement of decision makers at all three levels of education governance to take actions to generate revenues and to benefit from the resulting revenues at their respective levels:

- the national level through the Ministry of Education;
- the Field directorate level for initiatives within the respective directorates; and
- the individual school level.

Bylaws for these purposes should be developed by the Ministry of Education.

Financing higher education

Almost 5 percent of the population is enrolled in higher education, a higher level than the United States. Enrollments have grown an average of 7 percent each year since 2001. With 40 percent of the age appropriate university students enrolled and over 75 percent of high school graduates entering institutions of higher educa-

tion, the quantity of higher education opportunities appears to be ample, thanks in large part to the growth of private sector institutions.

Significant progress has been made in strengthening governance and oversight of higher education. Since 2009, the Government has restructured the Higher Education Council to function with a more representative membership. In addition, university autonomy was significantly strengthened and the Higher Education Accreditation Commission was made fully independent in pursuing quality assurance mechanisms for both public and private institutions. But the system itself is having difficulty balancing tradeoffs between demands for increasing the quantity of higher education opportunities and demands for improving education quality.

Public sector financial support for the 10 universities and 14 public community colleges parallels global trends, with government support for public institutions declining. Higher education expenditures as a percent of Jordan's total budget dropped from 2.5 percent in 1991 to 1.3 percent in 2011. At the same time, enrollment growth at private universities has exceeded that of public institutions, putting Jordan among the countries with very high private financing of higher education.

The public budget trend is to reduce direct support that subsidizes Jordan's institutions of higher education. The public policy trend is to plan for tuition and fees to recover the total cost of higher education and, at the same time, that Government will increase the availability of financial assistance for financially disadvantaged students. About 28,000 grants and loans are planned for 2011.

MOHESR is creating a Jordan Student Aid Bank to replace the loan component of its student aid fund that reaches approximately 25 percent of financially eligible students. This new program, scheduled to begin in 2012, has been designed to be attractive to private banks that will lend manageable amounts to student borrowers, and to be fiscally sustainable for the Government to guarantee those loans. A major barrier to implementation of the program, however, is the current level of debt, which is very close to the official 60 percent ceiling set for debt-to-GDP ratio. This means there is limited debt capacity available for the Government to subsidize or guarantee student loans.

Recommendations. The MOE with the MOF should explore opportunities for the participation of international donors, a USAID Development Credit Authority, or other agencies, in addition to private banks, in subsidizing or guaranteeing student loans for higher education. At the same time, the Government should hold the Ministry of Higher Education accountable for monitoring the restructuring of higher education support from institutions to students by tracking amounts and the percentage of total higher education spending dedicated to student grants and loans.

CHAPTER V

Enhancing the Quality of Life through Health Services

OVERVIEW

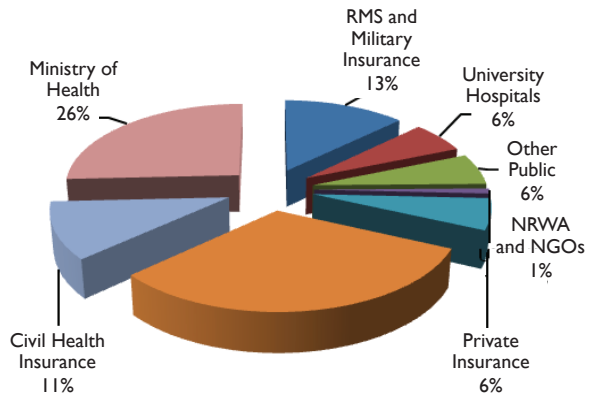
Jordanians benefit from a relatively modern health system that is accessible and provides health services coverage to virtually everyone.[1]

There are a number of agencies involved in the public health enterprise. The Ministry of Health (MOH) is the largest provider of health services and the second largest financing source, after households. Other major components of the public health care system are the Royal Medical Service (RMS), the university hospitals, and the Jordan Food and Drug Administration that, with the MOH, comprise about 57 percent of total health care spending. Private insurance and households, a total of 38 percent of spending in 2008, represent the other major source of financing. Figure 5.1 displays graphically the distribution of health financing.

Reasonable expectations for Jordan

What results in health can be reasonably expected for Jordan? An analysis was undertaken to compare Jordan's health sector to those of other countries by using World Development Indicators data maintained by the World Bank and regression analysis to forecast expected values for that data. Regression analysis of the cross-country data provided estimates of expectations that demonstrate how Jordan is performing relative to what can reasonably be expected. In modeling demands for health spending, health services delivered, and health outcomes, and in comparing Jordan's results to what would normally be expected, the results are positive.

FIGURE 5.1. SOURCES OF HEALTH CARE FINANCING IN 2008



Based on predictions from the worldwide regression model, public health spending as a share of GDP is more in Jordan than the expected amounts. For instance, the model predicts that Jordan's public health spending would be about 4.9 percent of GDP, given its per capita income level and the size of its government. Its actual health spending, as a percent of GDP, is 5.4 percent.

Other findings from the regression model suggest how Jordan is performing compared to expectations. With respect to the supply of health professions and hospital beds, for example, the model predicts:

- A supply of physicians of 1.5 and 3.2 nurses and midwives per 1,000 Jordanians. In fact, the supply of physicians is 2.6 and nurses is 3.2; and
- An expected value of 2.5 beds per 1,000 Jordanians compared to an actual of 1.8 beds.

The number of hospital beds does not suggest medical services in Jordan are not up to expectations, but perhaps the need for tertiary care is lower in Jordan compared to the countries with similar spending levels.

Other measures of the quality of a country's health care system are the levels of services supplied to children less than five years of age, prenatal care, low weight babies, child mortality, and life expectancy. The comparison of expectations and actual services indicates, for:

[1] Detailed notes on methods and sources can be found for most of the tables and figures in this chapter in Zafra, Victor (2011) *Health Sector Public Expenditure Perspectives Working Paper*, USAID-FRP II.

TABLE 5.1. SELECTED HEALTH INDICATORS

Indicator	1980	1985	1990	1995	2005	2009
Population (millions)	2.2	2.7	3.5	4.3	5.5	6.0
Life expectancy at birth:						
Female	67.4	71.0	68.0	70.0	72.4	74.4
Male	65.5	67.0	64.0	66.0	70.6	71.6
Infant mortality per 1,000 births	70	60	37	28	22	23
Maternal mortality per 100,000 births	n/a	n/a	40–60	40–60	40.3	19.1
Child immunization rates (% of children, 0–24 months):*						
Measles	n/a	65%	87%	92%	100%	103%
DPT 3	n/a	89%	98%	100%	95%	103%
Polio	n/a	n/a	98%	99%	95%	103%
Hepatitus B Virus	n/a	n/a	n/a	n/a	95%	103%
Households with access to improved water	n/a	n/a	n/a	n/a	n/a	97%
Fertility rate (live births per woman)	7.8	7.0	5.5	4.6	3.7	3.8

*in excess of 100% due to refugee children

- The percentage of children receiving care, the model suggests 69 percent, whereas the actual percentage is 75 percent;
- Immunizations, an expected value for children between 12 and 23 months for DPT (diphtheria, pertussis, and tetanus) is 88 percent and the actual in Jordan is 97 percent and, for measles, 87 percent compared to an actual of 95 percent;
- Prenatal care, the model suggests 87.7 percent, whereas the actual in Jordan is 99 percent;
- Low weight babies, the expected rate is 8.7 percent, compared to an actual of 12.6 percent;
- Child mortality, the expectation is 54.4 child deaths per 1,000 births, compared to the actual of only 19.9; and
- A life expectancy of 67 years for men, compared to the actual of 70 years.

Thus, the expectation model, using quality-weighted variables, suggests that the quality of Jordan's health services exceeds the expected value for almost every variable explored.

Health status indicators

Jordan has made significant progress over the years in a number of important health indicators.

This is consistent with the expectations derived from the model described above. As can be seen from Table 5.1, since 1980, there have been marked improvements in life expectancy (an increase of just under 10 percent for men and just over 10 percent for women) and reducing infant mortality (by 200 percent). Child immunization is currently universal and access to improved drinking water is nearly 100 percent.

PROGRAMS AND EXPENDITURE POLICIES

The activities of the Ministry of Health are conducted through six programs:

1. Primary Care/Health Services Centers Program;
2. Secondary Health Care/Hospitals Program;
3. Serums, Vaccines, Medicines, and Medical Consumables Program;
4. Human Resource Development Program; and
5. Expanding Health Insurance Program and the Civil Health Insurance Fund;
6. Administration and Support Services Program.

The following presentation is structured around the first five of these six programs, as presented in the Annual Budget Law.

Secondary health care/hospitals

This is the largest program in the Ministry of Health (MOH). Hospital care is provided through a network of 31 hospitals comprising 4,358 beds in 2011. MOH esti-

TABLE 5.2. MINISTRY OF HEALTH EXPENDITURE TRENDS

	JD Millions								
	2005	2006	2007	2008	2009	2010	2011 budget	Indicative	
								2012	2013
Primary Health Care/Clinics	43.4	44.5	63.4	56.3	57.9	74.5	80.1	81.2	82.3
Secondary Health Care/Hospitals	117.4	150.3	167.9	146.5	171.8	153.0	152.6	164.2	164.1
Serums, Vaccines, Medicines, and Medical Consumables	—	—	—	60.6	91.0	60.5	60.0	75,7	93.2
Human Resources Management	2.5	2.4	2.5	3.1	3.4	4.1	4.2	4.3	4.7
Health Insurance Umbrella	—	—	—	91.5	143.0	125.5	95.5	95.5	96.5
Administration and Support Services	6.9	13.6	3.3	20.5	27.3	28.6	36.0	36.6	35.5
Total Ministry of Health	**170.2**	**210.8**	**237.2**	**378.5**	**494.4**	**446.2**	**428.4**	**457.5**	**476.3**
% of GDP	**2.0**	**2.0**	**2.0**	**2.3**	**2.8**	**2.3**	**2.0**	**1.8**	**1.7**

mates that every citizen is within 30 minutes maximum driving time of one of its hospitals.

The 31 hospitals receive direction and technical support from 10 headquarters units. These units cover:

- Outpatient and emergency care, and medical, nursing, and dental specialties;
- Clinical pharmacology, clinical laboratories, and radiological services; and
- Blood banking, quality, and supervision and follow-up.

In 2011, the funding level for hospital activities represents approximately 35 percent of total MOH expenditures (see Table 5.2). This program has a staff of 15,620, or about 54 percent of MOH total positions.

As reflected in Table 5.3, the total number of hospital beds in Jordan has almost doubled in 20 years, between 1990 and 2009. The occupancy rate, however, has stayed in generally the same range over that period.

TABLE 5.3. AVERAGE LENGTH OF STAY, OCCUPANCY RATES, AND HOSPITAL BEDS

	1980	1985	1990	1995	2005	2009
Ministry of Health Hospitals						
Average length of stay	n/a	3.9	3.1	3.5	3.2	3.2
Average occupancy rate	n/a	69%	65%	66%	71%	69%
Number of beds	1,455	1,909	2,233	2,942	4,633	4,633
Ministry of Defense RMS						
Average length of stay	n/a	6.0	5.0	4.5	4.2	4.0
Average occupancy rate	n/a	67%	65%	74%	78%	80%
Number of beds		1,318	1,507	1,731	1,917	2,131
Private Hospitals						
Average length of stay	n/a	2.8	3.1	2.5	2.4	2.2
Average occupancy rate	n/a	39%	43%	48%	48%	51%
Number of beds	815	1,535	1,506	2,306	3,306	3,526
University Hospitals						
Average length of stay	n/a	na	5.0	4.5	4.7	4.0
Average occupancy rate	n/a	n/a	65%	72%	74%	65%
Number of beds	n/a	481	507	461	924	1,113
Totals						
Average length of stay	**n/a**	**4.1**	**3.5**	**3.5**	**3.5**	**3.5**
Average occupancy rate	**n/a**	**59.6%**	**59.9%**	**61.6%**	**64.1%**	**61.7%**
Number of beds	**3,814**	**5,243**	**5,723**	**7,440**	**9,618**	**10,863**

The total number of beds has grown by 90 percent, but over one-third of the beds are unoccupied.

As Table 5.3 indicates, the average lengths of stay (ALOS) in Ministry hospitals are significantly higher than those of the private sector. The extent to which this is a function of the case mix, e.g., more complex admissions in MOH hospitals, has not been documented.

Table 5.3 also shows that the average MOH hospital bed occupancy rate in 2009 was about 69 percent, though these vary significantly among the MOH's 31 hospitals. They range from a low of 10 percent at the Al-Rueshid Hospital to a high of 94 percent at Princess Rahma Hospital. The Royal Medical Service, by contrast, had a bed occupancy rate of 80 percent. A range of 80 - 85 percent is often identified as the optimally efficient hospital occupancy rate.

Internationally, it has been estimated that an empty hospital bed costs two-thirds as much to maintain as an occupied hospital bed, due to fixed maintenance and personnel costs. If this is true in Jordan, then there are opportunities to achieve significant cost savings by reducing the number of beds maintained.

Table 5.4 provides some perspective on hospital bed capacity by governorate and sector, as of 2009.

There are opportunities to consider eliminating or downsizing MOH hospitals in some areas while relying more heavily on the private sector and the university teaching hospitals, whose occupancy rates are 64 percent and 66 percent, respectively. This is particularly true for complex and specialty care in Amman, Irbid, and Zarqa.

In Irbid, for example, there are 17 hospitals with almost 1,900 beds. Some of issues that arise about hospital capacity in Irbid include, for example:

- Are 17 hospitals really needed to serve the needs of the region? Does the MOH need eight hospitals in Irbid, in light of the total potential capacity and other government hospitals in the area?
- Are the costs associated with 17 free standing facilities warranted, in terms of overall limited national resources and health system priorities?
- Given the size of the region, what are the opportunities for consolidation of MOH hospitals and reliance on the local transportation capacity to support access to its hospitals?
- What are the opportunities for contracting out care and sharing technology on a reimbursable or exchange basis?

There are no doubt a number of other issues that could be raised in terms of individual hospital size efficiency, bed occupancy rates, and ALOS in Irbid. Similar issues could be raised with respect to the hospital infrastructure in Amman and other locations.

TABLE 5.4. HOSPITAL BEDS, BY GOVERNORATE AND SECTOR, 2009

Governorate	Ministry of Health	Royal Medical Service	Jordan University Hospital	King Abdullah Hospital	Private	Total	Beds per 10,000 Population*
Capital	1,441	1,226	519	—	2,914	6,100	26
Irbid	782	281	—	494	326	1,883	18
Zarqa	450	227	—	—	284	961	11
Balqa	248	—	—	—	—	248	6
Mafraq	190	—	—	—	40	230	8
Karak	207	150	—	—	98	455	20
Jarash	135	—	—	—	15	150	8
Madaba	142	—	—	—	30	172	12
Ajlun	105	—	—	—	—	105	8
Aqaba	—	127	—	—	80	207	16
Ma'an	203	—	—	—	—	203	18
Tafiela	—	120	—	—	—	120	14
Totals	**3,903**	**2,131**	**519**	**494**	**3,787**	**10,834**	**—**
% of Hospital Beds	**36.0%**	**19.7%**	**4.8%**	**4.6%**	**35%**	**100%**	**18**

The completion of a new hospital in Zarqa would seem to provide a unique opportunity to determine the extent to which private management can provide effective and efficient care at affordable rates. The MOH could consider selling the hospital or contracting out its management and care to the private sector with this objective in mind. Presumably, it is a modern facility that was designed with efficiency in mind. The MOH would be able to compare costs, treatment results, occupancy, stays, and other performance measures with the other MOH hospital in Zarqa, Prince Faisal Hospital, as well as some of its other hospitals.

Of course, issues related to local political and social interests may carry some weight in making these judgments.

Primary health care/health services centers

This program is the MOH's main vehicle for the delivery of outpatient medical services.

Several program headquarters units in the MOH provide leadership to the over 1,400 clinics in the form of guidance and technical support, as well as emergency response efforts, as needed. These units cover:

- Disease control activities, such as the prevention of the spread of infectious diseases (including nosocomial infection in the hospitals);
- Non-communicable diseases and occupational health;
- Maternal and child health and school health;
- Environmental health and health education and information; and
- Chest diseases and immigrant health.

The Primary Health Care/Health Service Centers Programs encompasses the activities of three distinct types of centers: comprehensive, primary, and peripheral health centers. Also included in this program is a large number of dental and mother and child health centers. Table 5.5 shows the number of primary care centers, by type and location as of 2009.

TABLE 5.5. PRIMARY HEALTH CARE/HEALTH SERVICES CENTERS, BY TYPE AND LOCATION, 2009

Location	Comprehensive Health Centers	Primary Health Centers	Peripheral Health Centers	Mother and Child Centers	Dental Clinics	Total
Amman	9	37	12	41	33	132
East Amman	4	31	21	31	23	110
Madaba	2	12	17	14	11	56
Zarqa	7	29	6	35	27	104
Balqa'	6	23	16	29	22	96
Deir Alla	1	9	5	12	10	37
South Shouneh	—	8	4	8	7	27
Irbid	6	40	15	42	35	138
North Jordan Valley	—	9	5	8	6	28
Ramtha	1	12	0	13	9	35
Qura	2	11	1	13	12	39
Bani Kinanah	—	16	5	18	12	51
Ajloun	4	14	10	22	21	71
Jerash	2	17	9	18	16	62
Mafraq	6	26	22	29	21	104
North Badia	3	13	15	14	12	57
Kerak	6	33	29	38	30	136
South Jordan Valley	1	3	3	3	3	13
Tafeleh	4	10	8	16	14	52
Ma'an	3	18	21	19	15	76
Aqaba	3	7	12	8	10	40
Total	**70**	**378**	**236**	**431**	**349**	**1,464**

TABLE 5.6. EMPLOYMENT LEVELS AND CATEGORIES IN THE HEALTH SERVICES CENTERS

Location	Number Centers	Physicians	Dentists	Pharmacists and Midwives	Nurses and Midwives	Technicians	Controllers and Accountants	Others	Total
Amman	58	247	83	137	208	85	84	458	1,360
East Amman	56	118	38	69	97	37	53	352	820
Madaba	34	45	16	38	96	20	13	227	489
Zarqa	42	96	31	68	106	38	51	214	646
Balqa'	45	71	47	72	174	39	75	266	789
Deir Alla	15	15	9	12	50	9	8	45	163
South Shouneh	12	14	8	12	28	4	—	42	120
Irbid	61	120	47	86	250	31	154	263	1,012
North Jordan Valley	14	15	4	14	66	5	32	30	180
Ramtha	13	28	12	17	57	18	23	37	205
Qura	14	24	11	16	48	12	22	76	223
Bani Kinanah	21	20	14	23	71	3	30	28	210
Ajloun	28	30	19	28	139	27	50	159	480
Jerash	28	29	23	30	109	19	23	52	313
Mafraq	54	62	28	46	201	35	23	204	653
North Badia	31	26	13	18	100	25	19	113	345
Kerak	68	64	32	53	312	47	18	380	974
South Jordan Valley	7	7	2	5	19	3	5	38	86
Tafeleh	22	29	16	31	150	26	28	126	428
Ma'an	42	57	21	26	101	31	30	67	375
Aqaba	22	34	16	24	66	24	4	143	333
Total	**684**	**1,151**	**490**	**825**	**2,448**	**538**	**745**	**3,3320**	**10,201**

The services offered by the different types of centers vary. Comprehensive health centers, for example, generally offer a full range of services, including, at a minimum, obstetrics and gynecology, internal medicine, pediatrics and outpatient surgery. A dental or mother and child center is generally co-located with each comprehensive center.

Primary health care centers offer outpatient services by general practitioners and, in some cases, family practitioners. They may also have a dental and/or a mother and child center.

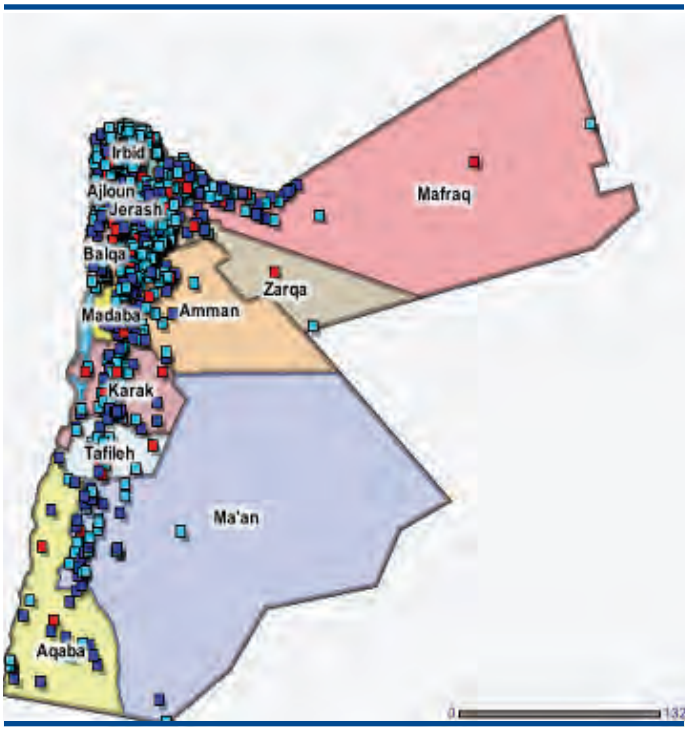
Peripheral (also, sometimes, called "village") health centers are usually served by itinerant MOH physicians, who are typically responsible for more than one peripheral center, with scheduled hours during which physician visits take place.

Together, the centers are the MOH's primary vehicle to promote family planning, school health, and behavioral changes through patient information. They also serve as the "front line" in combating communicable diseases and developing non-communicable disease registries and they function as screening mechanisms for early detection of diseases.

In total, the Primary Health Care/Health Services Center Program accounts for approximately 38 percent of the MOH's employees. Table 5.6 shows the distribution of the 10,201 staff by categories of health professions employees. The total includes over 1,100 physicians.

As can be seen from Table 5.7, the total number of health centers has grown dramatically, by about 35 percent, since 1995. Comprehensive health centers almost doubled, as did dental centers. The growth and placement does not seem to be based on a cohesive plan. Centers are often located within several kilometers of one another and/or a hospital.

FIGURE 5.2. GEOGRAPHIC DISTRIBUTION OF ALL TYPES OF HEALTH CENTERS



For example, in one area there are three peripheral centers, a comprehensive health centers and a hospital within 10 kilometers of one another. In another, a primary health center was located within four kilometers of a comprehensive health center. In this instance, the health center was very crowded and busy, but the primary health center was not.

Such close proximity of hospitals and centers is not unusual. Superimposing the various centers on the map of Jordan, as shown in Figure 5.2, even allowing for the scale of the map, illustrates the point for center numbers and locations.

The existence of so many centers in proximity to each other and to hospitals wastes valuable resources, not the least of which is physician manpower. As the availability of resources tightens, it is important to review what is really needed to provide health services efficiently. One of the complaints heard from MOH staff is that patients bypass the centers and go directly to hospitals.

This could be taken as a message. For the health centers, the system needs to respond to patient demands, even if it means eliminating low utilization primary care and peripheral health centers, relying more on comprehensive centers and hospitals, and addressing issues of staff reassignment and redundancy that such changes entail.

Rationalizing and reducing the number of centers, based on analyses of proximity, utilization, and costs would free up resources to improve the management of patient

TABLE 5.7. TRENDS IN THE ESTABLISHMENT OF HEALTH CENTERS, 1980–2009

	1980	1985	1990	1995	2005	2009
Comprehensive health centers	n/a	n/a	15	36	57	70
Primary health centers	88	188	306	319	368	378
Peripheral health centers	283	227	237	265	238	236
Mother and child centers	62	101	232	287	385	431
Dental clinics	43	58	114	166	274	349
Totals	**476**	**574**	**904**	**1,073**	**1,322**	**1,464**

TABLE 5.8. PRIMARY HEALTH CENTERS PATIENT AND PROVIDER DATA

Center Name	Doctor and Dentist Visits	Number of Doctors and Dentists	Average per Provider	Patients per		Minutes per Patient
				Day	Hour	
Al-Nuzha Health Center	76,499	5	15,300	61	7.6	7.9
Shafa Badran Health Center	15,172	6	2,529	10	1.3	47.6
Tarbarbour Health (Tareq) Center	47,291	6	7,882	31	3.9	15,3
Abu-Alanda Health Center	48,187	6	8,031	32	4.0	15.0
Al-Qweismeh Health Center	79,884	8	9,986	40	5.0	12.1
Um-Nouwara Health Center	38,747	6	6,458	26	3.2	18.7
Totals	**305,780**	**37**	**8,264**	**33**	**4.1**	**14.6**

TABLE 5.9. COMPREHENSIVE HEALTH CENTERS PATIENT AND PROVIDER DATA

Center Name	Doctor and Dentist Visits	Number of Doctors and Dentists	Average per Provider	Patients per		Minutes per Patient
				Day	Hour	
Amman Al-Shameli Health Center	166,615	35	4,760	19	2.4	25.3
Al-Amira Basma Health Center	126,000	17	7,412	30	3.7	16.3
Al-Weibdeh Al-Sharqi Health Center	62,576	15	4,172	17	2.1	28.9
Al-Hashimi Al-Shamali Health Center	139,003	11	12,637	50	6.3	9.5
Total	**494,194**	**78**	**6,336**	**25**	**3.2**	**19.0**

care, e.g., computers for managing patients and prescription drugs, facility maintenance, and travel allowances for itinerant peripheral health center physicians, to mention a few. All of these seem to be major issues for the centers and their staffs, as well as for hospitals. As part of a needed proximity analysis, consideration should be given to opportunities to substitute transportation services for fixed centers, a much cheaper alternative to renting and maintaining so many centers.

Table 5.8 and Table 5.9 show the relative time spent with patients and the number of patients seen daily in randomly selected comprehensive health centers and primary health centers in Amman. For this analysis we assume 251 working days in 2009 and eight-hour center working days.

Table 5.9 illustrates significant differences in average patient visits per provider and the time spent with patients among four randomly selected comprehensive health centers in Amman:

- Between the Al-Amira Basma and the Al-Weibdeh Al-Sharqi centers, the number of patients seen by physicians and dentists varies by over 75 percent; and
- Correspondingly, provider time spent with patients also varied. Patients at the Al-Weibdeh Al-Sharqi Health Center spent three times as much time with providers than patients in the Amman Al-Amira Basma Health Center.

The primary health centers shown on Table 5.8 have relatively high patient loads:

- The overall average time spent with patients was less than 15 minutes, but varied from 8 minutes to 48 minutes;
- The average number of visits per provider varied significantly from about 2,500 in Shafa Badran Health Center to over 15,000 in the Al-Nuzha Health Center—a difference of 500 percent; and
- Average patient visits at these primary health centers varied from 10 to 61 per day.

Serums, vaccines, medicines, and medical consumables

The Procurement and Supplies Directorate in the MOH manages the procurement of needed serums, vac-

TABLE 5.10. TRENDS AND SHARES OF PHARMACEUTICAL SPENDING, 1998–2008

Indicator	1998	2000	2001	2007	2008
Total expenditures (JD in millions)	158.9	160.2	184.6	344.9	496.5
Per capita expenditures (JD)	—	31.8	35.6	60.3	84.9
Pharmaceuticals expenditures as a percent of GDP	3.2%	2.7%	3.0%	3.2%	3.1%
Pharmaceuticals as a percent of total health expenditures	35.0%	29.1%	30.9%	34.0%	35.9%
Public	—	—	5.7%	11.3%	13.8%
Private	—	—	25.2%	22.7%	22.1%
Distribution of pharmaceuticals as a percent of total phamaceutical expenditure					
Public	24.0%	19.8%	18.5%	33.4%	38.4%
Private	76.0%	80.2%	81.5%	66.7%	61.6%

cines, medicines, and medical consumables. This is done through an annual tender process, conducted by the Joint Procurement Department based on a request from the MOH. The Directorate stores these supplies at several locations throughout the country and distributes them to facilities in the governorates, as needed by those facilities.

This program is a major part of the MOH's efforts to deliver quality health care. In 2013, it will be larger than the Primary Health Care/Health Services Centers program, based on the indicative levels.

In the past, the Procurement Directorate calculated hospital and center needs based on historical patterns of dispensation. As part of its calculations, the Directorate included a "reserve" for unanticipated needs, based upon experience, given the long lead time of the procurement cycle. Currently, however, a proposal is being considered that would change the system; under it, hospitals and centers would annually determine their individual needs and the Directorate would request that the Joint Procurement Department tender for those estimates. The Procurement Directorate indicates that it has in place a comprehensive computerized system to track distribution, expiration dates, etc., that enable it to manage and predict total MOH use more realistically than would be the case for individual hospitals' estimating needs.

Local drug procurement apart from tenders is sometimes made if the original estimates are insufficient due to an unexpected increase in the number of individuals requiring certain drugs.

The tender documents prepared by the Joint Procurement Department for the MOH identifies only the chemical names of drugs and only drugs registered with the Jordan Food and Drug Administration (JFDA) may be ordered. Potential suppliers may only offer brand name drugs, if generic equivalents do not exist, e.g., primarily cancer drugs, drugs for thalassemia and diabetes, and insulin, or if they can offer a brand name drug at a lower price than the chemical equivalent.

As Table 5.10 indicates, Jordan spends relatively large amounts on prescription drugs, as a share of total health spending. Public and private pharmaceutical spending is high. The *Jordan National Health Accounts 2008* points out that "Expenditures on pharmaceuticals [in 2008] are very high and reached JD 496.4 million which is equal to one-third of the total health expenditure and accounts for 3.08 percent of GDP."

In just one year, from 2007 to 2008, total pharmaceutical expenditures grew 44 percent. Private pharmaceutical expenditure represents 62 percent of total pharmaceutical expenditures even though private health expenditures, in total, amount to only 38 percent of total health care spending. Thus, while the public health sector spends considerably more in total on health than the private sector, its pharmaceutical spending ratio was 50 percent lower than that of the private sector in 2007.

From 2001 to 2008, however, the percent of public health expenditures for pharmaceuticals doubled, from 18.5 percent to 38.4 percent. The *Jordan National Health Accounts 2008* indicates that the MOH spent JD 55.1 million on drugs in 2008, or 15.5 percent of its budget. In 2013, it is estimated that this program will spend JD 94 million, or 20 percent of the MOH total expenditure.

The program does not now separately identify the relative amounts and value of medicines, vaccines, and serums. For example, it should identify separately the drugs, amount, and value of drugs, etc., that have to be destroyed because of expiration dates. If its data system yields expiration dates, it should sell to the private sector, at a significant discount, those drugs that it cannot use within the coming year. Assuming there is a demand for them in the private sector, this would make available cheaper drugs in the private sector, reduce total spending on pharmaceuticals, and provide revenue to the Government.

The Clinical Pharmacology Department in the Secondary Health Care/Hospitals program is in the process of preparing, by the end of this year, an evidence-based formulary for the most commonly prescribed drugs. This effort, if translated into physician prescribing practices in the MOH, will save money and improve prescribing while providing effective care. If the program's data can be analyzed to show distribution of drugs that the formulary seeks to replace, it would prove useful to the Clinical Pharmacology Department, particularly if there is not another mechanism to monitor prescribing practices at the hospitals and centers.

Human Resource Development

The Human Resource Development program is primarily concerned with training MOH employees and the attraction and retention of health professionals needed by the MOH to provide hospital and center care.

TABLE 5.11. NUMBER AND DISTRIBUTION OF HEALTH PROFESSIONALS

Category	Ministry of Health	Royal Medical Service	Official Universities		Private Sector	UNWRA	Grand Total
			King Abdullah Hospital	Jordan University Hospital			
Physicians	3,965	1,223	375	420	8,483	98	14,564
Dentists	653	245	—	66	3,389	30	4,383
Pharmacists	356	460	34	29	7.528	2	8.409
Registered Nurses	3,036	2,335	468	459	6,388	40	12,726
Associate Nurses	1,581	1,783	—	112	—	—	3,476
Assistant Nurses	3,000	301	98	87	2,261	187	5,934
Registered Midwives	1,203	140	17	—	593	32	1,985
Totals	**13,794**	**6,487**	**992**	**1,173**	**28,642**	**389**	**51,477**

Training is an important responsibility of the program. Nevertheless, assuring the availability of physicians, especially residents, and other health professions personnel, e.g., specialty nurses, is critical. This is a major issue facing the MOH. Recognizing that the Ministry of Public Sector Development and the Civil Service Bureau have important roles to play, it would seem to be incumbent upon the human resources activity of the MOH to identify (i) the nature and extent of anticipated problems and needs over the next decade and (ii) options through which its particular needs can be addressed.

The design and preparation of incentives and penalties to increase recruitment and retention will be an important component of the MOH's long-term needs.

Table 5.11 indicates that in terms of shares of the overall availability of health professionals the MOH employs 28 percent of physicians, 16 percent of dentists, 24 percent of nurses, but only 4 percent of pharmacists. A more detailed description of where the various types of physicians, (administrative, general practice, specialty, etc.), are employed, (by headquarters, hospital, and center assignments), would be a useful addition to the *Annual Statistical Book* published by the MOH.

The major recruitment and retention difficulty experienced by the MOH is the ability to retain clinical physicians, as opposed to physicians in administrative positions. According to MOH staff, the principal difficulty is low salary levels and compensation practices, e.g., the treatment of allowances that may represent as much as 500 percent of base pay and are disallowed in certain circumstances, such as for overseas training.

Jordan is part of a larger physician manpower network that includes Saudi Arabia and other nearby Gulf States. Thus, the MOH must compete most immediately with both the private health sector in Jordan and the wider geographic area surrounding Jordan.

As part of its mission, the MOH provides residency training opportunities for physicians. For both recent medical graduates and trained residents, however, anecdotal estimates of annual turnover are high. Documenting this turnover over the past few years is an important task.

According to the MOH, a recent survey of physicians who left the MOH revealed that 52 percent of those leaving identified low salary, better opportunity, and the desire to start their own businesses, as reasons for leaving. Another 10 percent identified remote location assignments as the reason for departure. A breakdown of physician turnover by length of MOH service and job category versus retirements, transfers to other ministries or the university hospitals, etc., needs to undertaken and presented. Data-driven solutions should then be proposed by the MOH.

In 2009, for instance, the MOH requested 1,050 physicians from the Civil Service Bureau (CSB) for which the CSB was able to certify 944 physicians. In the same year, almost 800 physicians left the Ministry. For the year, there was a net reduction in employed clinicians. The MOH should describe how such net reductions affected the delivery of health services over the years (assuming they exist).

Physicians who receive residency training at MOH hospitals make a commitment of two years of MOH service for each year of residency training. Nevertheless, "buy outs" are relatively inexpensive: as little as JD 2,000 for each year of unfilled commitment. Such "buy-outs",

particularly in light of the potential earnings available to qualified specialists in the private sector and Gulf countries, suggest an undervaluing of the residency training provided in MOH facilities.

Expanding the health insurance umbrella and Civil Health Insurance

Health services insurance and coverage in Jordan are provided through a variety of public and private mechanisms. This discussion focuses on the Ministry of Health's coverage activities.

The largest programs for health services coverage by far are the Civil Health Insurance program (CHI) administered by the Ministry of Health and the Royal Medical Service (RMS) of the Ministry of Defense. Together, in 2009, they provided coverage for 3.6 million individuals, daily workers, military, and their families (CHI: 1.9 million and RMS: 1.6 million); this represented about 62 percent of the population.

There are a variety of ways to pay for health services. These include the following sources and the percentages estimated by CHI:

- Civil Health Insurance (41 percent);
- other public health insurance, e.g., universities (1.3 percent)
- private health insurance (6 percent);
- Royal Medical Service (RMS) (27 percent); and
- United Nations Relief Works Agency and the Red Crescent (8.5 percent),
- and the remainder from all other sources.

In addition, CHI receives Royal Court subsidies to reimburse public facilities for the care delivered to Royal Court beneficiaries. CHI staff estimates a five percent level of duplicate coverage among these sources.

The Royal Court is responsible for determining the eligibility of individuals for "free" health services. These include (i) the categorically insured, i.e., those with diseases specified by the Prime Minister's office, and (ii) the indigent. The estimated costs of health services for these individuals are included in the Government Units Budget Law in the Civil Health Insurance Fund. When actual treatment costs are audited by a committee of the MOH and CHI, the Ministry of Finance provides an amount to cover the difference between initial budget estimates and "actual costs."

The MOH has, in effect, two programs that manage the public health services coverage and insurance. The Expanding the Health Insurance Umbrella Program became a separate program from the CHI Fund in 1985. This program receives transfers to expand coverage and make payments to CHI for Royal Court covered care.

Moreover, it collects payments from the Royal Court for the costs of providing health services to indigent and categorically eligible individuals at MOH and non-MOH facilities.

CHI coverage and premiums. CHI is the largest vehicle for providing coverage and financing for health services. CHI participation is mandatory for all public employees and daily workers. Benefit coverage is comprehensive – all outpatient and in-patient health, medical, and dental services (other than those that are purely cosmetic), and medically-indicated testing are covered. In addition, optional or "buy-in" comprehensive coverage from CHI is open to companies or individuals. In 2010, an estimated 24,000 individuals were enrolled in CHI via the "buy-in" option.

There are three grades of public employees for purposes of CHI coverage.

Grade 1 (an estimated 100,000 in 2010). Members of Parliament, ministers, and senior civil servants may elect to obtain hospital care and dental services in private or MOH, university, or RMS hospitals or clinics. If they elect to receive care in the university hospitals or private facilities, they must pay 20 percent of the prices set by the CHI at individual hospitals; CHI reimburses those facilities for 80 percent of those prices. There are also individual prices that CHI negotiates for universities and the RMS reimbursements.

Grades 2 and 3 (an estimated 450,000 in 2010). These individuals are eligible for comprehensive health and dental care at MOH facilities without charge. Emergency care at private facilities is covered by the CHI on the same basis as for Grade 1 employees; nevertheless, members of Grades 2 and 3 are responsible for paying 100 percent of non-emergency medical and dental services provided in private facilities, if they elect to receive care in private facilities.

The only other differences between grades 1, 2, and 3 are in hospital room accommodations: grade 1 is eligible for private room accommodations, grade 2, for semi-private rooms, and grade 3, for ward accommodation.

Premiums vary by program and access to health services. Premiums for CHI program health services coverage are:

- JD 50 per month for members of Parliament and Government ministers and their families; and
- Three percent of total compensation, up to JD 30 monthly for public employees and their families.

Hospital outpatient co-payments are JD 1.5 for public employees for emergency care and JD 3 for non-emergency care.

The annual premiums for individuals enrolled via the "buy-in" option are based on age, as follows:

- 0–6 years: 100 JDs;
- 6–18 years: 50 JDs;
- 18–45 years; 75 JDs;
- 45–60 years: 150 JDs;
- Over 60 years: 78 to 72 JDs, on a sliding scale.

In addition, the Royal Court makes matching premium contributions to CHI for those over 60 years of age and pregnant women.

Royal Court Eligibility. As mentioned above, the Royal Court subsidizes the provision of health care for the following categories of beneficiaries:

- Low income individuals, whose family incomes meet certain thresholds;
- Individuals who have illnesses specified by the Prime Minister's office. These include, primarily:
  - Cancer diseases and side effects;
  - Mental illness;
  - Kidney failure;
  - Chronic blood diseases;
  - Snake and scorpion bites;
  - Alcoholism and drug abuse; and
  - AIDS.
- Residents of low income areas and remote areas, e.g., Badia; and
- National Aid Fund recipients, as determined by the Ministry of Social Development.

Individuals presenting at MOH facilities who do not have formal coverage must pay the MOH subsidized rates for an array of specified health services or obtain Royal Court coverage before non-emergency care can be given without charge. No one is denied emergency care at MOH facilities.

In 2010, the Royal Court provided JD 105 million to CHI to pay for the health care costs of its eligible beneficiaries (see Table 5.12). To be eligible for Royal Court coverage, a patient embarks upon the following steps:

1. Request a voucher from the Royal Court;
2. Obtain a letter from a physician indicating that his or her illness is one covered under the Prime Minister's designated diseases. The letter and the voucher are presented to the MOH for inclusion among the list of those eligible and the patient receives an identification card; and
3. Go to a MOH facility to receive treatment.

Identification cards are valid for 6 to 12 months, depending upon the diagnosis and treatment regimen.

CHI Expenditures for Patient Care. In 2010, CHI provided a total of over JD 123.8 million to public and private facilities (see Table 5.12). Of this total, JD 55 million was for the care of public employees and their dependents. For these individuals, CHI provided reimbursements to the Royal Medical Service, King Abdullah Hospital, King Hussein Cancer Center, the Jordan University Hospital, the National Diabetes Center, and Prince Hamza Hospital, as well as private facilities. For Royal Court beneficiaries who received care in 2010, an estimated JD 69 million was paid to the same facilities, excluding private ones.

CHI provides "incentive" payments, reflecting longevity and hierarchical position to both administrative and clinical staff at MOH headquarters and in the hospitals and centers. The amount distributed, based on a point system, is 90 percent of the revenue received from the Royal Court for MOH-provided patient care (after deducting the costs of medicines for this group). In 2010, JD 27 million was spent for this purpose, distributed as follows:

- 60 percent to doctors, dentists, and pharmacists;
- 20 percent to nurses; and
- 10 percent to other categories of staff.

In total, the JD 27 million was distributed to 2,870 employees, for an average amount of JD 1,107.

TABLE 5.12. TRENDS IN CIVIL HEALTH INSURANCE REVENUE AND EXPENDITURES

Category	(JD, in millions)					
	2005	2006	2007	2008	2009	2010
	Revenue					
Public employees and voluntary enrollees	24.1	24.6	27.0	34.6	34.0	43.4
Royal Court matching payments the aged and pregnant women	1,3	0.3	3.0	81.7	82.6	78.4
Patient payments and cost-sharing for medicines	7.0	7.5	10.5	12.8	18.4	16.0
Royal Court reimbursements for services	14.3	17.1	23.9	27.4	31.5	26.1
Other revenue	0.2	0.3	1.3	2.9	3.4	1.4
Total Revenue	**46.9**	**49.5**	**65.7**	**156.5**	**169.9**	**165.3**
	Expenditure					
Treatment of enrollees in non-MOH facilities	23.8	23.1	28.8	35.5	49.7	54.8
Contributions	0.7	0.5	0.7	0.7	0.7	0.7
Medicines, consumables, and equipment	8.2	6.7	7.8	20.3	4.9	5.7
Treatment for officials outside the country	0.6	0.6	0.9	0.7	0.5	0.4
Incentives and rewards payments to MOH staff	11.7	18.5	21.2	23.9	27.0	27.0
Treatment of uninsured in non-MOH facilities	—	—	—	60.4	71.1	69.0
Other operating expenses	0.6	0.8	3.8	4.8	5.6	5.6
Total Expenditure	**45.6**	**50.2**	**63.2**	**146.3**	**159.5**	**163.2**

RESPONDING TO CHALLENGES

Decentralize budget process and program administration

The development and the day-to-day management of budgets are highly centralized. Reviews of the two main health service delivery programs—Secondary Health Care/Hospitals and Primary Health Care/Heath Services Centers—suggest that the quality of budget preparation and the day-to-day management of budget allocations could benefit from decentralization. These two MOH programs alone represent 55 percent of the MOH budget in 2011, excluding Civil Health Insurance.

Decentralization is not a new issue, but it is one that has been awaiting implementation for some time. Moreover, the need for decentralization is the same for all of the principal operating components of the MOH.

The *Jordan National Health Accounts 2007* pointed out that "Even as the financing in the entire health sector is highly fragmented, within the public and private sector it is highly centralized and controlled, leaving little room for flexibility and maneuverability at the facility level."

Today, these observations on hospitals would apply with equal validity to the MOH's centers, as well as its other principal operating components.

The current system of budget preparation and management of budget resources continues to be highly centralized. As a result, directors of hospitals and centers, as well as directors of some of the other principal operating units, have little responsibility and control. This process eliminates, to a large extent, incentives for managers to manage their units in an effective and efficient manner, thereby depriving the system of potential savings to augment service levels.

Recommendations. In preparing its budget request, the MOH should restructure its budget process and strengthen the management of its hospitals and clinics

> ***"In Jordan, the governance of MOH hospitals is highly centralized. Senior level executives at headquarters in Amman decide all significant managerial, personnel, budgetary, and procurement matters. It is believed that hospitals may be more efficiently operated and the quality of care enhanced if greater independence was granted them."***
>
> **2006 *Health System Profile* by the World Health Organization's Regional Health Systems Observatory.**

(and other principal directorates) through a reform of its processes, specifically to institutionalize a budget preparation and justification process that allows those directors to:

- present their individual needs in budget requests in a "bottom up" budget preparation process; and
- manage allocated budgets within the flexibility allowed by law.

Integral to this process would be annual reviews and recommendations on the hospital and center directors' budget requests by the health directorates in the governorates and the managers of the respective headquarters program organizations, as well as continuous oversight of program implementation by governorate health directorates and headquarters units during the year.

Better use information to enhance management accountability, effectiveness, and efficiency

The 2011 General Budget Law refers to "Weakness of health information systems and lack of their use in making decisions and designing policies" in the section on "Major Issues and Challenges" that face the MOH.

For the over 1,400 centers of various types and 31 hospitals, some management information for individual clinics and hospitals is maintained by the MOH's Information Technology Directorate. It includes staffing information by category of employee, patient visits, etc. Information may also be available on annual expenditures of each of the individual hospitals and centers somewhere in the MOH, but it does not appear to be maintained in conjunction with service or productivity information in the Information Technology Directorate system, nor is it otherwise readily accessible.

In light of the projected stringency in funding, it is critical that the MOH, which is spending two percent of GDP in 2011, for example, be in a position to demonstrate the efficiency and effectiveness of its operations. This should be done with data and analysis of the programs it administers. The largest part of the MOH's budget is the combined hospital and center service delivery programs.

The absence of management information that links the costs of operating individual hospitals and centers with staffing and service information is a serious drawback in any effort to ascertain relative costs and productivity among MOH facilities. Such information should be produced and used as part of ongoing reviews.

Moreover, such information should be the basis for annual budget justifications. In its absence, the basis for budget decision-making, both at the macro-program level and the individual center and hospital levels is not transparent. As long ago as 2001, the importance of cost information related to utilization was pointed out with respect to Primary Care Centers, per Abt Associates (2001).

Recommendations. Together with decentralized, reformed budget development, review, and management procedures, the data maintained by the Information Technology Directorate should be expanded to include individual hospital and center expenditure data, as well as productivity data, beginning immediately. Such integrated data should be used by MOH's upper management both (i) to assess management performance by hospital and center directors and (ii) to strengthen budget preparation and justification in the annual budget preparation process. It should be part of the budget request submitted to the General Budget Department (GBD). The health directorates in the governorates may need to exercise responsibility for the preparation and execution of peripheral health centers budgets, given the nature and size of those centers.

For other principal component units within the MOH, a management information data system should be developed and related to performance indicators that the MOH should also develop for submission to GBD in the budget process.

Better utilize capacity of hospitals

The future for public finance suggests a tightening of resources as the population grows and the demand for publicly financed goods and services increases. As the *National Health Accounts, 2007* pointed out, the current trends in public health services funding are "not sustainable." Even if the National Health Accounts is pessimistic, the hospital infrastructure should be periodically reviewed in the context of need, costs, and effectiveness.

The differences in bed occupancy and average length of stay (ALOS) among the hospitals and the likelihood of tighter budget resources in the coming years suggests that opportunities need to be explored to take advantage of these differences in order to make the provision of MOH hospital care more efficient and more effective.

There are significant differences in both occupancy rates and ALOS between MOH hospitals and those of the private sector; the 17 percentage point difference in bed occupancy and a 45 percent difference in ALOS are not new information. What is missing is a comprehensive study of the total need for MOH beds and a plan that explores alternative ways to make use of available beds most efficiently.

Patient mix may account for a portion of occupancy and ALOS differences, although a portion of the more complex case load of the MOH is apparently contracted for in non-MOH facilities. Nevertheless, in light of the anticipated tightening of fund availability for public programs in the coming years, a critical light needs to be shown on expensive public institutions, such as hospitals, to identify possible efficiencies and cost savings. Even if funds do not become scarce, it is incumbent upon the MOH to assure itself of the effective use of whatever funding is available.

The MOH has effectively used contracts for the care of patients in public and private hospitals and it has had bed lease arrangements with private hospitals, e.g., Al-Mowash and Al-Hayah. This experience can be used to design long-term measures to streamline the MOH's hospital infrastructure and benefit from what other public facilities and the private sector can contribute.

Recommendations. The Ministry of Health should prepare a comprehensive 5-year plan and a set of integrated recommendations for its hospital program that identifies their budget implications. The plan should specify which hospitals, if any, should (i) be placed under private contract management or sold, (ii) be consolidated with other MOH hospitals, and/or (iii) be reorganized to provide appropriately tiered levels of care. The plan should address:

- How best to integrate the MOH facilities with the excess capacity of private sector hospital beds, particularly in Amman, Irbid, and Zarqa, through closures, consolidation, and/or greater levels of contracting or privatization; and
- The existing and planned capacity of RMS, university hospitals, and private hospitals for more complex procedures and specialty treatment and the opportunities for downsizing MOH hospitals, e.g., in Amman and Irbid, in light of that capacity and bed availability.

The plan should be included with its budget request to GBD. Pending review and resolution of the issues involved, no new hospitals should be approved. The *Health Public Expenditure Perspectives Working Paper* sets out a format that can be used to initiate the analysis.

Review the number and location of health services centers

With over 650 free standing centers and over 700 specialty centers, the MOH should explore opportunities for consolidation and streamlining of operations in the interests of effectiveness and efficiency. As part of its analysis, the MOH should examine individual center costs and performance, including visits per individual center by type of provider, costs per visit, etc.

Recommendations. For submission with its budget request, the Ministry of Health should prepare a 5-year plan and analysis for the centers that sets out alternative approaches to consolidation of the network of centers. Such a plan should include, among other things, for each center:

- Analyses of patient load, by type of provider, e.g., number of visits per physician, dentist, nurse, etc.;
- Number of providers, by type;
- Costs per patient visit;
- Center proximity (in kilometers, e.g., in a 5, 10, and 20 kilometer radius) to other identified centers and hospitals, both public and private; and
- The feasibility of providing reliable transportation or mobile clinics, as an alternative to the number and location of existing centers in order to use optimally the MOH's hospitals and centers.

Information along these lines should also be incorporated in the MOH's *Annual Statistical Book*. Pending review and decisions on the plan, no new centers should be established.

To the extent that there are specific costs to implement the recommendations, after identifying savings offsets from center closures and consolidations, these should be documented in the plan.[2]

[2] Zafra (2011) shows how the analysis can be initiated to make the needed assessments. This methodology might seem to be a large undertaking for 684 centers. It would amount to an average of just over 30 pages for each of the 21 health districts. However, with close to a total of 800 controllers and accountants at the centers, compiling the data should neither be excessively burdensome nor time consuming.

Create more patient-friendly hospitals

The hotel services in MOH hospitals compare unfavorably with those of the Royal Medical Service and university hospitals, as well as those in the private sector. Amenities—other than perhaps the occasional coffee machine at some MOH facilities—are essentially non-existent. If the Al-Basheer hospital, the Abu Nuseir Comprehensive Health Center, and the Shafa Badran Primary Health Center are typical of the MOH's service facilities, there is ample opportunity to make the MOH's facilities more patient friendly and provide income to the hospitals and centers.

Many hospitals and clinics the world over have adopted measures to make those institutions more service-oriented, in addition to providing health services. Many hospitals have gift shops wherein flowers, toys, reading materials, etc., can be purchased by patients and families. In waiting areas, vending machines with a wide variety of beverages and snacks are often provided. Patients and their families often have access to a cafeteria that serves hospital staff, as well.

Increasingly, hospitals around the world are making their room services more like those found in hotels, equipped with televisions, telephones, meal menus, and other amenities for which there are charges. Such amenities can make hospital stays and waiting times more tolerable and comfortable.

Recommendations. The MOH should consider measures that can make its facilities more patient friendly, including:

- Upgrading the physical quality of selected hospital rooms to make them more attractive to senior public employees and competitive with other non-MOH hospitals. This is essential, if the MOH's hospitals are to be competitive in the light of the reforms to the Civil Health Insurance Fund, as recommended below;
- Establishing gift shops in the larger hospitals that offer flowers, reading materials, toys, etc.
- Offering optional services, e.g., televisions, special menus, etc., in hospital rooms, on a reimbursable basis;
- Providing access to cafeterias for patients and their families in the larger hospitals that have cafeterias; and
- Installing vending machines that offer a variety of beverages and snacks in the waiting and other busy areas of hospitals and comprehensive health centers.

The results of the MOH's review should be included in the 5-year plans recommended above.

The MOH should explore contracting with vendors for most of these amenities, rather than providing the services directly. Although such contracts probably need to be tendered centrally, the income should go to the individual hospitals and centers. This will help assure effective management oversight of the service quality, e.g., the vending machines are properly stocked.

Reform incentives to attract and retain health professionals

MOH officials indicate that the attraction and retention of qualified health professional health staff is their most pressing human resource issue. As noted in the above discussion of the Human Resource Development program and as evidenced by the recent strike of clinical care physicians, past approaches have not worked. Innovative and long-term measures need to be explored and introduced, if the MOH is to have the numbers and types of health professionals it needs. Many countries have faced this issue and have adopted a variety of successful initiatives to deal with it.

Recommendations. The MOH should prepare a report for consideration as part of their budget submission to GBD that explores the feasibility, desirability, and costs of alternative initiatives to increase recruitment and retention of clinical physicians and other health professionals needed by the MOH. The report should demonstrate where specific recruitment and retention difficulties exist and consider moving away from an entitlement ethic, based on formal training, to a market ethic in which incentives are tied to jobs that are difficult to fill and keep filled, such as specialized clinical care.

Such a report should make recommendations for incorporation in the Annual Budget Law and address the desirability of:

- A program of stipends, tuition, and book expenses and other benefits for medical students in return for service commitments as clinicians in MOH, upon graduation;
- Contracts and signing bonuses for those completing residency training commitments to extend their service in the MOH; and

- In both cases, significant deterrent penalties for failure to complete commitments, e.g., repayment of a multiple of the direct costs and associated costs of training, should be identified.

The report's recommendations should also address measures to attract and retain other health professionals if it can be demonstrated that such shortages are affecting the amount and quality of care that the MOH is able to deliver. In addition, the MOH's *Annual Statistical Book* should be broadened to provide information on the health profession's utilization within the MOH, i.e., an annual breakdown of physician: [3]

- Utilization, by assignment, identifying specialty, program, and job assignment;
- Location, i.e., headquarters, center and hospital assignment, clinical administrative assignment, etc.; and
- Departures, by length of MOH service and job category, versus retirements, transfers to other ministries or the university hospitals, etc.

Introduce better pharmaceutical prescribing practices

The Serums, Vaccines, Medicines and Medical Consumables Program is a procurement program that is a large and critical component in the delivery of health services. The program is primarily an agent of the hospitals and clinics it serves. It has no direct role in the prescribing practices in the hospitals and the centers. Nevertheless, it can contribute to resolving the problem of excessively high amounts of prescription drugs by providing information.

The *National Health Accounts 2008* has identified the amount of drugs prescribed in both the public and private sectors as excessive. The MOH has identified in one of its performance indicators the need to reduce the prescribing of brand name pharmaceuticals. The Serum, Vaccines, Medicines, and Medical Consumables program has the ability to monitor the prescribing practices of hospitals and centers based on distribution of pharmaceuticals. This can complement the Clinical Pharmacology Department's efforts to change prescribing practices by identifying alternatives that are cheaper and equally effective. These combined efforts offer an opportunity for substantial savings to the extent they are successful in modifying prescribing practices.

Recommendations. We recommend that the MOH undertake the following two approaches:

- Work with the Clinical Pharmacology Department and prepare an end of year report for the MOH and the public to be placed on the MOH's website on the costs and value of the most frequently prescribed drugs, by individual MOH hospitals and centers; and
- Explore opportunities to sell, at a significant discount, pharmaceuticals that have a year to go until expiration, but that it estimates the MOH will not require during the year to come.

Make the Civil Health Insurance program more equitable and efficient

The Civil Health Insurance program covers public employees, the categorically eligible due to diseases specified by the Prime Minister's office, and the poor. Public employees are classified into three grades for purposes of hospital stays; the most important practical difference is the option that grade one employees have to receive care in university or private facilities and have part of those costs paid by the CHI.

All employees pay the same three percent of total compensation, up to JD 30 monthly, for CHI coverage. This raises the equity issue of employees paying a percentage of their compensation in premiums, but having different entitlement. Moreover, there is no direct relationship between the premiums collected and the costs of services received by public employees in MOH facilities or other public and private facilities.

The Government subsidizes public employee health care through MOH general funding because CHI makes no payments to MOH facilities for that care. The extent of that subsidy cannot be determined in the absence of data. Unlike many health insurance arrangements, both public and private, however, the Government does not match employee premium payments that go into a health insurance fund, although the general funding of MOH could be considered an "implicit" match.

Over time, CHI premiums charged to public employees and the matching Government shares need to reflect the costs of care received in MOH hospitals and centers that will be paid by CHI to the MOH, as well as RMS, private, and university hospitals. This would permit a reduction

[3] Zafra (2011) illustrates how such data could be presented. Similar information for dentists, nurses, pharmacists, etc. should also be tracked and presented in the *Annual Statistical Book*.

in general budget funding for hospitals and centers and, eventually, put the MOH facilities on a competitive financial footing wherein their income is related to the costs of services delivered.

CHI provides incentive payments to MOH employees, based on amounts received from the Royal Court for MOH treatment. These "incentive" payments are paid to both clinical and administrative MOH employees, based on a point system that builds on longevity and hierarchical position. These payments amounted to JD 27 million each in 2009 and in 2010. Nevertheless, the payments are not, strictly speaking, incentives for the quality or extent of health care delivered, since all professional staff in the MOH receive them, including administrative staff, by virtue of their academic training.

If CHI reimbursed MOH facilities for care delivered to its beneficiaries, any necessary incentives could be part of those reimbursements. Alternatively, if the compensation reforms being considered by the Government are enacted, the incentive payments from CHI that supplement MOH employee compensation could be dropped.

Recommendations. Over the medium term, a set of integrated steps should be taken to reform CHI. Among other things, the costs of beneficiary health services should be reflected in the premiums that insured employees and others pay and the existing implicit government subsidies for employee care should be reflected explicitly in matching premium payments, rather than as general fund subsidies to hospitals. As part of such reforms:

- CHI should start paying MOH hospitals and clinics for the costs of care rendered to public employees, just as the Royal Court funnels funds to CHI for the categorically eligible individuals and indigent who receive care in MOH facilities;
- CHI should develop public employee choice options under which all employees would be given coverage choices, i.e., access to private or university facilities and different types of accommodation that they may desire and for which they are willing to pay higher premiums;
- Government should contribute a matching premium to CHI for public employees; and
- "Incentive" payments for longevity, etc., from CHI should be terminated and should be funded in the annual MOH budget as employee compensation, if needed to deliver health services.

As part of its budget request, the MOH should prepare a report that analyzes each of these issues and alternatives and makes recommendations on implementation and timing.

Strengthen efforts to reduce smoking

Among the services offered at health services centers are smoking cessation clinics. Smoking cessation is a difficult problem, but an outcome performance indicator that measures the success of the clinics, e.g., percent of cessation clinic attendees who completed the clinics and were not smoking a year after completion, would measure the success of the clinics and would be important in determining whether resources spent in such an effort are effective.

Other performance indicators related to the smoking cessation clinics would be the persistence rate, i.e., of those who started, how many completed the clinic regimen. The total clinic costs divided by the number of individuals completing the clinics should be identified. Such an approach may be applicable to other priority activities of the program, particularly those designed to influence behavior to reduce the incidence of disease.

Too many Jordanians die young from smoking. The Ministry of Health should investigate possible approaches to combat smoking, especially among men. The approaches should be to discourage young people from starting, encouraging smokers to quit, and prevent the spread of health risk by reducing the problems of second hand smoke. Social marketing is needed. In addition to this softer side, there is ample evidence around the world that despite issues concerning contraband, that taxation can have a very beneficial impact on reducing the incidence of smoking. Indeed, World Bank (1999) recommends taxes equivalent to two-thirds or more of the value of the cigarettes.

Smoking is an important issue for improving mortality and morbidity. The Government has adopted laws and policies to reduce smoking, but more needs to be done.

Recommendations. The exemption of hotels and restaurants from the general prohibition on smoking in public facilities should be terminated.

The rules that prohibit smoking in public buildings need to be enforced, e.g., in the MOH itself, police stations, hospitals, and centers. Currently, smoking continues unabated in these facilities.

The Ministry of Finance should seriously consider imposing steep taxes on tobacco and tobacco products. International evidence shows that higher taxation of cigarettes and tobacco products can lead to increased smuggling and harm domestic monopolies or franchises, but that these costs are far below the benefits that can be gained for society, both in terms of increased public revenues and in healthier citizens.

CHAPTER VI

Transportation in a Modern, Competitive Jordan

OVERVIEW

Given the Kingdom's relatively small internal market and the potential for increased benefits from a fuller integration in the global economy, the most promising avenue for Jordan's development is a model of trade-driven economic growth.[1] This is the strategy of the National Agenda. But achieving such an objective calls for good and improving transportation infrastructure. The present challenge is how to advance toward this objective within the constraints imposed by tight fiscal budgets.

International comparisons

Relative to other countries at comparable development levels, Jordan's performance is very good. Tables 6.1 and 6.2 help tell the story.

Although still below that of high income economies, Jordan's overall air transport infrastructure is above average quality. Ease of connections to overseas markets is superior and, compared to country peers, Jordan ranks well in terms of number of airplane departures per thousand persons, number of operating airlines, and available seats for international travelers. This suggests that its international air-transportation infrastructure provides a relatively strong foundation for international trade expansion.

The infrastructure for ground transportation is relatively good. The quality of Jordan's ground transportation network is some 25 percent higher than the average of the 133 countries analyzed in the World Economic Forum's reports, with Jordan's rank above the median.

While the country has a low number of kilometers of road per square kilometer of land, this is explained by the concentration of the population in a few areas of the country, particularly the Amman metropolitan area. Moreover, the quality of the roads is high, although still with notable needs.

TABLE 6.1. QUALITY OF INFRASTRUCTURE

Mode of Transportation	2008 or Most Recent	Mean Value for All Countries
Quality of Air Transport Infrastructure Index (1=poor; 7=excellent)	5.7	4.1
Rank for available international seat kilometers per week originating in country (133 countries; 1=most numerous)	63	
Rank according to number of operating airlines (133 countries; 1=highest number of airlines)	62	
Rank according to ease of connections to overseas markets for in-country businesses (133 countries; 1=most connections)	30	
Quality of Ground Transportation Network (1=underdeveloped; 7=offers efficient, accessible transportation)	5.0	4.5
Rank of Ground Transportation Network (133 countries, 1=highest quality)	37	
Quality of Roads (1=underdeveloped; 7=extensive and efficient by international standards)	4.9	3.8
Rank of Roads (133 countries, 1=highest quality)	38	
Rank of railroad infrastructure (1=underdeveloped; 7=extensive and efficient by international standards)	1.7	3.1
Rank of railroad infrastructure (133 countries, 1=highest quality)	91	
Quality of Port Infrastructure (1=poor; 7=excellent)	4.4	4.0
Rank of Port Infrastructure (133 countries, 1=highest quality)	46	

As relates to port accessibility, while the country has only one seaport, Aqaba, the quality of its port infrastructure is somewhat above the mean for countries included in competitiveness analyses. Still, the country has a ways to go in improving its seaport infrastructure when compared with the United Arab Emirates, Bahrain, and Oman.

[1] Detailed notes on methods and sources can be found for most of the tables and figures in this chapter in Buttari, Juan (2011) *Transportation Public Expenditure Perspectives Working Paper*, USAID-FRP II.

TABLE 6.2. INTERNATIONAL TRANSPORTATION INDICATORS

Country/Group	Air Passengers per 1,000 Persons	Passenger Cars per 1,000 Persons	Liner Shipping Conn/ Index	Port Quality	Rail Goods	Road Density	Roads % Paved
Middle East and North Africa	98	–	–	4	2,284	–	76
Middle Income	106	61	–	4	4,498	89	–
High Income OECD	1,380	460	–	5	13,315	68	83
Lower Middle Income	80	–	–	3.5	2,879	224	–
Low Income	25	8.1	–	3.2	–	–	–
Lebanon	247	–	23	–	–	67	–
Saudi Arabia	642	415	42	5	1,403	10	22
Syrian Arab Rep	61	17	12	3	2,236	21	–
Jordan	383	94	23	4	609	9	100

Explanations of column captions:

'Air passengers' measures the number of passengers carried by air transportation

'Linershipping Conn/Index' is an index that measures how well countries are connected to global shipping networks. The higher the index the easier it is to access a high-capacity maritime freight service.

'Port quality' measures the quality of ports infrastructure; index ranges from 1=extremely underdeveloped to 7= well developed and efficient by international standards

'Rail Goods' gives the amount of freight transported by railways in million ton-kilometers

'Road Density' gives kilometers of roads per square kilometer of land area

'Roads % Paved' is the percentage of roads that are paved

Until recently the productivity of crane operations at the port was still below international standards – for example, cranes in Salalah, Oman and in Port Said, Egypt are judged to be operated more efficiently than in Aqaba. This is an important consideration if Jordan wants to boost its standing as a trade hub for the region.

The quality of rail infrastructure is quite below the world's mean with Jordan ranking far below the median rank for 133 countries. Since most industrial countries first built their railroad networks about 150 years ago, to replace canals or open new lands to settlement, all before the advent of automobile transportation, it is not surprising that this sector would not have been developed.

Structure of the sector

The transport infrastructure comprises:

- Three international airports (Queen Alia and the Amman Civil Airport in the capital and the King Hussein Airport in Aqaba) plus a smaller, domestic airport in Ma'an.
- One seaport in Aqaba, on the Red Sea.
- A road network of some 8,000 kilometers comprising a main road between Amman and Aqaba (over 3,000 km), side roads (about 2,000 km), and rural roads (more than 2,000 km). By far roads are the main freight and passenger transportation means.
- Two railway corporations, the Aqaba Railway Corporation that transports phosphates and other minerals from the mines to the port at Aqaba, and the Jordan Hejaz Corporation that operates a weekly train service from Amman to the Syrian city of Daraa.

This infrastructure supplies a population of 6.2 million persons of which about 53 percent live in the Amman-Zarqa conurbation, and some 85 percent live in urban areas.

Estimates of the mobility elasticity of Jordanians relative to GDP per capita (a measure of how mobility changes as GDP per capita changes) range between 1.1 to 1.5, an indication that an increase in GDP per capita tends to be accompanied by a proportionally stronger increase in mobility. Underlining this, and especially in the greater Amman metropolitan area, the number of vehicles in Jordan grew, from 1999 to 2008, at a much faster rate than the population or GDP: from 321,000 to 906,000 vehicles, resulting in a rise in the rate of growth in vehicles-

per-person from some 6.8 to 15.5 percent. And all along, annual population growth rates have declined over the last 30 years—from around 4 percent to somewhat above 2 percent.

Based on these trends, demand for land transportation services is estimated to grow until 2030 at rates ranging from 3.3 to 8.5 percent per annum. In other words, the country's development calls for enhanced population mobility. At the same time, Jordan's National Transport Strategy indicates that mobility is constrained and that the poor are not able to satisfy basic transportation needs. Accordingly, the Kingdom has to decide how best to strengthen its transportation infrastructure, balancing concerns for efficiency and equity.

PROGRAMS AND EXPENDITURE POLICIES

The share of transportation in GDP is estimated at about 10 percent, with public expenditures for the sector accounting for about 2 percent of GDP. Both figures are within the ranges found for most countries throughout the world. This reinforces the point that, as it seeks to enhance the quality of its transportation services, the challenge to Jordan resides not necessarily in increasing the long-term proportion of budget resources allocated to transportation, but in increasing the efficiency of the transportation infrastructure.

As shown in Table 6.3, public spending on transportation amounts to some JD 356 million, with funds appropriated for roads-related activities in the Ministry of Public Works and Housing accounting for close to 37 percent of the expenditures. Airport and seaport projects at the Aqaba Development Company came a close second with 34 percent of expenditures. The Ministry of Transport, the main policy and strategy setting transportation public institution, accounts for less than 17 percent of the sector's public budget. The programs of each of these entities are discussed below.

TABLE 6.3. PUBLIC SPENDING ON TRANSPORT, 2010

Ministries and Units	JD Millions	% of Total
Ministry of Public Works & Housing	132.6	37.3
Ministry of Transport	59.6	16.7
Aqaba Rail Corporation	12.8	3.6
Jordan Hejaz Railway	1.3	0.4
Land Transport Regulatory Commission	2.1	0.6
Jordan Maritime Authority	1.2	0.3
Civil Aviation Regulatory Commission	17.9	5.0
Aqaba Development Company	121.1	34.0
Jordanian Airport Company	7.3	2.1
Total	355.9	100.0

The *Ministry of Transport (MOT)* plays the leading role in strategy and policy setting in transportation, and plays a coordinating role among other public transportation institutions. Its responsibilities include designing general policy for transportation and supervising its execution in coordination and cooperation with all competent parties. MOT also oversees the implementation of bilateral transport agreements concluded between Jordan and other states. It is responsible for representing Jordan at regional and international bodies concerned with transport issues, and keeping up with their activities. In addition, MOT carries out transport-related research, and has established and maintains a databank for the transportation sector.

In terms of spending priorities, MOT's top capital investments in 2010 and beyond include: the development of a strategy for developing Jordan's railways; support for the Land Transportation Regulatory Commission (student transport subsidies and transport infrastructure); and linking public transport between Amman and Zarqa.

The most important items under capital project expenditures in 2010 are subsidies and grants to other government units and expropriation and purchases of land—having each about the same weight and together accounting for some 82 percent of capital expenditures.[2]

According to the projections, expenditures for the development of the railway system would account for some 70 percent of subsidies and grants in 2012 and 2013.

The *Ministry of Public Works and Housing (MOPWH)* is responsible for the expansion and upkeep of the road network. It develops plans and prepares studies and designs necessary for constructing the public road network, village and agricultural roads, maintaining them and ensuring their safety. It conducts tests and lab analyses for construction material and work and for quality control, and carries out research, theoretical and practical studies related to roads. MOPWH also is responsible for drafting legislation, updating it and developing specifications.

[2] See re-estimated spending for 2010 in the 2011 budget document.

Around 73 percent of road expenditures by MOPWH go to new road construction, with only 17 percent for road maintenance and the remainder for administration and support services.

Expenditures for road maintenance are treated as capital expenditures, a controversial practice. This is inappropriate in that it treats an expenditure that is oriented to preserving road assets as if it were an addition to assets, or an upgrading of them. This runs the risk of chronically underfunding maintenance expenditures since, as in recent years, capital projects are often cut more severely than current expenditures.

Such underfunding could be a serious mistake, especially in light of the importance transportation plays in Jordan's development strategy and the need to allocate resources to where their productivity is highest. Timely maintenance can lead to budget savings as compared with the costs of rebuilding.

As for current activities, twice as many resources are allocated for administration and support as are for setting plans, studies and designs for road construction.

MOPWH's overall spending has been on the decline for the past three years. Within this trend, the declines between 2009 and 2011 were significantly greater for road maintenance expenditures than for new roads (road construction), although that difference is partially made up by increases in 2012 and 2013 projections. The concern is whether road maintenance is getting adequate funding in light of National Agenda objectives.

The remaining transport institutions are outside the general government budget. With the exceptions of the Land Transport Regulatory Commission and the Aqaba Special Economic Zone Authority (ASEZA), the transport sector's "other government units" raise more than enough revenue to meet their own expenditure needs. General program areas and authorities for these entities are described below.

The *Land Transport Regulatory Commission (LTRC)* main functions are to oversee land transport public policy to meet the demand for land transport services with efficiency, and to regulate tariffs and conditions of public land transportation services. As noted above, starting in 2010 (and projected through 2013), the LTRC began receiving large subsidies from the Ministry of Transport to cover transport fees for university students and transport infrastructure.

The *Aqaba Port Corporation, the Jordan Maritime Authority, the Aqaba Development Company and the Aqaba Special Economic Zone Authority* divide responsibilities in the regulation, development and management of port and maritime operations.

The *Civil Aviation Regulatory Commission* regulates air transportation while the *Jordanian Airport Company* is responsible for the management of airports.

Finally, Jordan's railways are governed by two entities. The *Aqaba Rail Corporation* oversees the railway that connects phosphate mines to the port of Aqaba. The *Jordan Hejaz Railway Corporation* manages the railway transporting passengers and goods between Jordan and Syria.

PRIORITY AREAS

This section moves from a broad review of public programs and spending on transport to a deeper analysis of issues and planned actions in three priority areas: (1) the national railway; (2) traffic in Amman and its close proximity; and, (3) road-related aspects. This analysis is based on Ministry of Transport, *Proposed National Strategy for the Years 2009–2011* and Ministry of Planning, *Executive Development Program, 2011–2013*.

National Railway

In line with the objective of exploiting Jordan's potential as a freight transit gateway to other countries, the government has completed studies for a National Railway Network to link Mediterranean countries with the Gulf region through Jordan.

The planned railway network will be 1,080 kilometers long, reaching Syria, Iraq and Saudi Arabia, and is expected to have a strong impact in terms of facilitating Gulf region trade with Turkey and other Mediterranean countries. Figure 6.1 is a rough map indicating the location of these proposed rail lines. Main freight traffic would include crude and refined oil, phosphates, cement, containers for domestic markets, and cereals. Domestic private beneficiaries would likely include the Petroleum Refinery Company, the Phosphate Mines Company, and cement firms.

The Aqaba to Syria component of the network is expected to handle 36 trains daily in each direction by 2030, carrying an average of 38 million tons per year. The link to Saudi Arabia will have a daily traffic of six trains in each direction by 2030 with six million tons of freight an-

FIGURE 6.1. NATIONAL RAILWAY PROJECT LINKAGES

nually. The Zarqa-Iraq link will have a daily traffic of seven trains with an average annual tonnage of seven million.

As relates to neighboring countries' plans, it is understood that Syria ranks the development of a standard gauge link from Damascus to the Jordan border as a high priority and that the final design has been completed.

In Saudi Arabia three lines are under development, one of which is the North-South Railway linking Riyadh to the Jordanian border near Haditha and the Al Jalamid mining area to the Arabian Gulf.

While the railway will support Iraq's reconstruction efforts—Iraq's Gulf facilities are not sufficient to meet that country's needs—as of earlier this year, Iraq was said not to be placing a high priority on connecting its railway network with Jordan. The indication was that Iraq places a higher priority on upgrading its existing network and on establishing a new railway link with Iran.

As per the study recommendations, the project would be implemented in partnership with the private sector under a build-operate-transfer (BOT) arrangement. Accordingly, the infrastructure is to be financed and held by a state-owned company while a private company will be responsible for operations.

As planned, the total cost of the project amounts to approximately JD 2.4 billion for the network's three segments. The first connects Syria with Saudi Arabia through Zarqa with 255 kilometers of track and a cost of JD 738 million. Construction of the first link would take three years to complete. The second links major centers and the port—for example, Aqaba with Amman, Zarqa, Mafraq and Irbid—and comprises 399 kilometers at a cost of JD 1.39 billion. It would take four years to complete. Construction of segments one and two are to start simultaneously. The third will extend to Iraq through Mafraq and its cost is estimated at JD 273 million. Construction should take two years.

Project construction is scheduled to start during the first quarter of 2012. Revenues are projected to grow gradually from JD 229 million in 2015 to JD 375 million in 2020.

The GOJ is expected to pay a total of JD 300 million over three years plus an average of JD 60–65 million a year for 10 consecutive years to enable the Jordan Railway Corporation to service its debts. The financial rate of return to the government is estimated at around 11 percent.

The results of an economic analysis on the full project show economic internal rates of return of about 16 percent for a base scenario, with rates oscillating significantly above or below 10 percent depending on railway links included or not under base scenario assumptions. The analysis took into account economic prices and externalities, and incorporated sensitivity tests to gauge how results change under altered assumptions.

A number of aspects of this cost-benefit analysis are of concern and cause one to question the report's conclusions.

The results are very sensitive to higher social discount rates, i.e. the opportunity cost of capital. The baseline analysis relied on a social discount rate of 7.6 percent. As the analysis indicates, net present values and benefit cost ratios are sensitive to the discount rate used. In some cases, but not in all, such sensitivity makes a significant difference. For instance, if the discount rate is changed to say, 10 percent, calculated benefit-cost ratios fall by some 30 to 40 percent depending on the base scenario considered. By way of comparison, the U.S. Millennium Challenge Corporation applies a method for selecting a social discount rate that is equal to twice average economic growth rates of the country, but never below 10 percent.

The World Bank also standardized its social discount rate for these types of projects to a minimum of 10 percent.

The cost benefit analysis assumed that unskilled or low-skilled labor costs should be discounted by 50 percent and professional labor by 10 percent. This discounting to reflect what is referred to as "shadow costs" is a standard feature of cost benefit analysis when labor markets are extremely distorted by poor national economic policies. Our team does not agree with this assessment and recommends that labor costs not be discounted at all. Discounting labor costs in the cost benefit analysis in other countries might make sense, but in Jordan it seems to only result in underestimating the true cost the project is going to impose on society.[3]

The analysis shows relatively low sensitivity to costs being 10 percent higher than expected. However, much higher costs overruns in large long-lived projects are common. The sensitivity analysis should have included a scenario where actual costs turn out to be considerably higher than planned costs.

At present the national railway project is still under review at high levels within the government. Postponement of implementation would not be surprising given the project's magnitude.

Traffic in Amman and proximity

As the country's main commercial and business center, transportation conditions in the Amman metropolitan area require attention. In particular, congestion mitigation is a growing problem. The annual costs of traffic congestion are estimated at some JD 604 million per year.

As noted earlier, the Amman-Zarqa and environs region includes more than 50 percent of the Kingdom's population, the population growth rate is high, and the number of cars has risen at an alarming rate—10 percent per year. Moreover, as Amman is a zone of major commuter traffic, economic growth is necessarily going to add to traffic congestion pressures unless mitigation measures are implemented.

One reflection of the problem is that public transportation accounts for only 14 percent of transportation services in the area—estimated at some 4.4 million daily trips. The low proportion accounted by public transportation services may be in part a result of a strong preference for cars and other private means of transportation, but also reflects a dearth of reliable public transit services.

In fact, private automobiles account for 34 percent of transit service, with yellow cabs accounting for another 13 percent. Other trips are done on foot (some 26 percent), non-public buses (3 percent) and with the remainder basically accounted for by school buses, pick-ups and light trucks.

Public transit services are perceived to be of low quality and are used mainly by captive riders, that is, people with few options. Many journeys require multiple changes, take too long, and are hostage to service operators who do not respect timetables or route schedules, and who offer unsafe and unreliable rides.

A result is that bus occupancy rates are very low, a partial consequence of the poor services, and a situation that reinforces preferences for relying on automobiles for transportation.

While, as explained below, the local authorities are relying on partnerships with private parties to address the problem, in general, the National Transport Strategy highlights the weak response by the private sector to the Land Transport Regulatory Commission's bids to operate buses. While not much public information is available on the reasons for the lack of interest by the private sector to the requests, low bus occupancy is likely a factor behind an inability to cover costs.

It is likely that the poor quality of bus service is a reflection of private sector efforts to operate with very low profit margins. Fare regulations may be establishing artificially low price ceilings. However, this issue cannot be fully analyzed as, at least until recently, there was no reliable information on bus operating costs.

[3] The cost-benefit analysis applied a 50 percent conversion factor to calculate the economic cost of using unskilled labor, which is not well justified, indeed, does not seem warranted. The assumption that wages in Jordan's labor market are very far from reflecting the social opportunity cost of labor is a strong assumption worthy of more detailed treatment. (The justification for the 50 percent assumption builds on a combination of 12 to 13 percent unemployment rates plus minimum and low wages perceived as inconsistent with average value added per worker.)

FIGURE 6.2. AMMAN TRANSIT PROJECT BRT AND RAIL LINES

To address transport challenges, the Greater Amman Municipality (GAM) is following an ambitious transport reform strategy to be implemented through 2025. GAM carried out a 22-month study that included, as a major component, the development of a transport demand model for the area. Prior to this effort there was no comprehensive plan and initiatives responded piecemeal to issues as they surfaced.

Using the model, the authorities defined their strategy to address congestion. The backbone of the strategy rests on programs to develop and integrate rail and bus-based rapid transit, and expand the existing bus network complemented with restructured feeder services and routes.

The strategy is premised on the authorities' ability to improve service quality through service management contracts and effective quality standards and incentives. Among the main objectives are: raising the public transport share to 40 percent of transportation, reducing average journey time by 30 minutes, and achieving a level of accessibility to transportation services so that public transportation is accessible to at least 60 percent of households (current estimate is 40 percent), and 40 percent of jobs are within two kilometers of a major transportation mode. Plans call, as well, for electronic fare payments (broader use of smartcards), rehabilitation of stations and terminals, and construction or restoration of bus shelters and street furniture.

Two of the main pillars of this strategy—the bus rapid transit system and the Amman-Zarqa light rail system–are discussed below.

Bus Rapid Transit (BRT). Three routes were evaluated based on the existing routes connecting Amman and Zarqa, particularly those connecting to Mahatta in Amman to enable direct comparisons with the light rail system project. The three routes are the Hejaz Railway alignment, the Marka road, and a median or side running on the Autostrad. The BRT project's capital cost varies in accordance with the identified routes, ranging from JD 55 million to 164 million.

Under BRT schemes, commencement of services does not have to wait until the full completion of the infrastructure. Accordingly, the implementation of the preferred route option could be undertaken in phases, with special focus on those sections of the route subject to most congestion and where most benefit could be seen of early implementation. Nonetheless, construction is expected to take place between two to three years.

An economic analysis of the baseline case for BRT reports an economic internal rate of return of 11 percent for the project with a net present value of JD 23 million. The period considered consisted of 30 years and the social discount rate used was 10 percent.[4]

The same analysis indicated positive impact on all transportation users in terms of user benefits and private vehicle operating costs. Public transport users experience an annual benefit of JD 16 million in time savings as a result of the BRT, with the majority of benefits occurring for riders travelling to and from zones adjacent to the

[4] Note that a lower discount rate was used in the National Railway Project cost-benefit analysis.

BRT routes. According to the analysis, such result implies that the public transport will mainly benefit persons with a monthly income bracket of JD 350–450 as the persons who live close to a main BRT line fall in that income group.

Furthermore, it is reported that private vehicle users experience a yearly benefit of JD 4 million as riders shift from car to BRT and traffic congestion is decreased. Likewise, yellow-taxi users derive positive annual net benefits of JD 1 million. In addition, the BRT is expected to reduce road traffic accidents in Amman to the tune of JD 3 million in yearly savings from reduction in loss of life.

As to private losers from the BRT, existing public transport operators would experience a net loss of JD 29 million (JD 33 million in revenues partially offset by operating costs reductions of JD 4 million). Similarly, yellow-taxi operators would experience a net annual loss of JD 2.6 million as riders shift to BRT.

It is not clear whether the result of price competition between current transport operators including taxis and BRT was considered in the analysis. The rate assumption in the analysis was a flat-rate per boarding of JD 0.20 for existing public transport services (not including yellow taxis) and JD 0.30 for BRT.

From the cost-benefit analysis results, it would appear that the BRT project holds promise for relieving traffic congestion. However, since September 2011, the project has been stalled pending Government review.

The Amman-Zarqa Light Railway System (AZLRS) Project. The land corridor between Amman and Zarqa is an important traffic artery connecting by far the most populous city, Amman, with Zarqa, Jordan's third largest city and the country's industrial center. Present Amman-Zarqa traffic takes place on a main road that is substantially congested at various times during the working days, especially during early, late and mid-day commutes.

Current passenger traffic is estimated at over 400,000 trips daily with large buses and coaster vehicles accounting for more than half of the passenger load. Almost a third of all passengers travel in private cars; taxis and minibuses account for the rest.

Under existing roads, projections presage a rapidly deteriorating traffic situation. While Jordan's population growth for 2010–2043 is projected at annual rates between 0.6 and 1.8 percent, population growth in Amman and Zarqa is at much higher rates. Likewise, growth in the demand for public transport between Amman and Zarqa is projected at annual rates above 2 percent for most of the period with significant car ownership growth.

To address congestion in the Amman-Zarqa corridor, GAM and MOT designed a light-rail train service to operate on standard gauge double-track line running for 24 kilometers. The concept calls for private sector development of the project under a public-private partnership build-operate-transfer (BOT) arrangement. Under the arrangement, a private sector consortium would design, build, partly finance, operate and maintain the AZLRS for 25 years during which the consortium could claim the operating revenues. Afterward, the project assets and operations would be transferred back to the government. There have been a number of tender rounds over the last 12 years. None have been successful.

The most recent economic cost-benefit analysis (Buttari, 2010) of this project concluded that, while risky because of the consequences of potential deviations from assumptions (cost overruns for example), the project addressed a real social need, had the potential of creating more value than it used up, and that the benefits largely accrued to low-income population groups. Depending on assumptions, the project's economic internal rate of return was within a range of 10 to 14 percent.

While the median estimate of the internal economic rate of return (12 percent) is acceptable in light of established criteria, it is somewhat below the rates estimated in previous analyses of the light rail project. To a considerable extent, this reflected the strong impact of the (probably wise) upward adjustment to estimates of initial investment requirements made during a round of project design that ended in early 2010.

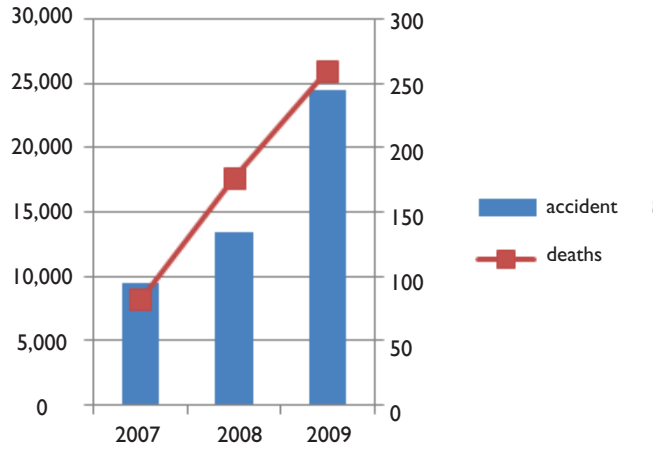
Social benefits from reduced pollution and decreased road accidents, although with positive effects, involve very small net benefits.

Because of the potential risks entailed in the project, it is suggested that the authorities measure the light rail project against other alternatives (BRT or road enhancements) before a final decision is taken.

Roads and road traffic

Two of Jordan's main challenges in road transportation are in ensuring an adequate level of road maintenance and improving road safety.

FIGURE 6.3. ROAD ACCIDENTS AND FATALITIES



Note: Accidents are on the left axis and deaths on the right.

Road safety. Driving or being a passenger in a vehicle on Jordanian roads is becoming a riskier and riskier affair, which is demonstrated by the rapidly rising number of accidents and road fatalities just between 2007 and 2009 (see Figure 6.3). These numbers are worrisome because both the number of accidents and fatalities are increasing yearly and at very high rates.

While available information does not establish whether road defects are the cause for the accidents, there is suspicion that road conditions are a contributing factor. Accordingly, the Ministry of Public Works and Housing (MOPWH) has carried out an analysis of road segments considered dangerous and has developed a corrective safety program. In addition, the safety program calls for sensitization programs towards road safety and stricter enforcement of regulations.

Road maintenance. Although road quality may not be bad, most roads have significant maintenance backlogs. Salient problems include deteriorated pavement surfaces, poor road geometry, high fills and cuts on hilly areas, absence of high-standard expressways or motorways, dangerous junctions, sharp curves, U-turns on dual carriageways and hazardous speed bumps.

A likely cause is inadequate maintenance resulting from constrained funding for road maintenance. Left unattended the problem is likely to worsen and a first priority is to execute a pavement recovery program.

Maintenance contemplated is classified in two maintenance categories: routine and periodic. Routine maintenance involves patching, cracks sealing, and edge repairs and seal coating. Periodic maintenance includes road milling, overlay and, in some cases, some structural improvement.

The MOPWH has planned a monitoring program, to be implemented after pavement recovery, oriented toward ascertaining changes in road conditions and better planning of pavement treatments. The program involves traffic surveys for all roads and sample axle-road tests.

As the country progresses in its strategy to increase its importance as a regional trade hub, in general, pressures on the roads will rise due to, among other factors, increased heavy-truck traffic—one fully loaded heavy truck causes as much pavement wear as thousands of automobiles. The development of the railway network might alleviate somewhat traffic pressures on some roads—the MOPWH estimates that such might be the case in connection with Road 15, for example. Nonetheless, no significant impact on most of the other roads is expected. Moreover, as overall traffic increases over time the initial road-traffic-alleviation impact from the railway system is likely to fade away.

The bottom line is, in the long run, it costs less to have good roads; but that requires continuous preventive maintenance. Analyses throughout the world support this contention.

Deferred maintenance drives up long-term costs by shortening the rehabilitation cycle, a situation that often leads to pavement failure and eventually complete reconstruction at perhaps 10 times the maintenance cost. Compared to rebuilding a road, for every dinar spent on preventive maintenance a savings of 6 to 10 dinars can be achieved.

RESPONDING TO CHALLENGES

The following are illustrative of areas where reform action might help raise efficiency of resource use. As noted in previous sections of this report, this is of the essence. Given fiscal realities, Jordan needs to strengthen its transportation sector not only through joint enterprises with the private sector—an approach that, if successful, should by itself help raise the productivity of the transportation infrastructure—but also through improved performance monitoring and allocation of budget resources.

National Railway

The proposed National Railway holds potential for expanding Jordan's trade within the region. There are important concerns, however, namely with the cost benefit analysis, the project's non-equity financing, and the capacity of the Government to manage the project.

Cost benefit analysis

There are concerns with the assumptions underlying the cost benefit analysis—a key tool for determining whether a project is worthwhile from a public investment perspective. There are risks that labor or material costs will be higher than assumed or valued. There is a risk that coordination of this rail network development with regional partners will falter.

Another major risk is demand falling below expectations. The Government could consider take-or-pay arrangements to mitigate this risk (see Box 1). However, a take-or-pay arrangement by itself could pose other risks if the project's main concessionaire refrains from committing to less than 100 percent of the traffic forecasted.

Additionally, the rail tariff should be forecast with great caution for two reasons. First, the tariff must be calculated taking into account the current trucking rate, albeit in a dynamic fashion. To illustrate, the current trucking rate could change *favorably* in the future if the Government decides to introduce measures that impact the productivity or capacity for the trucking sector, whether these affect the supply side (infrastructure, roads) or the demand side (business of trucks, beneficiaries and clients). Accordingly, the Government should identify such a rationale while conducting the analysis. Secondly, computing the expected rail tariff should be holistically and diligently done. A number of factors should be examined, including industry norms, inflation rate, economic growth rate, and efficiency issues, among others.

Another risk derives from applying a social discount rate that is not appropriate or likely to change over time, which would pose real threats to the viability of the project.

Finally, the cost benefit analysis should not over-estimate the economic benefits, especially those that are exogenous to the Jordanian economy, i.e. the benefits that are expected to accrue from regional economies.

Recommendations. The MOT should identify ways of mitigating concerns raised in the cost-benefit analysis. In particular these are:

- Possible undervaluation of costs
- Low social discount rate, which tends to skew the analysis in favor of a positive assessment of the project, when such an assessment may not be justified.
- Potentially overstated revenue streams based on optimistic projections for demand and usage.
- Real risks of cost overruns.
- Need to undertake more sensitivity scenarios to account for the above.

Project financing and risk-shifting

There are other non-economic risks related to the capital structure of the project, in terms of its non-equity financing. To counter any possible debt service-related shortfalls, the Government might be forced to introduce certain arrangements such as minimum revenue guarantees, which could mean annual cash subsidies or availability payments (see Box 1).

As in the case of take-or-pay agreements or broader agreements to provide subsidies, miscalculating the traffic could result in higher fiscal pressure on the budget.

These financing-related layers of risk should be appropriately treated in a "sensitivity analysis" and incorporated in the overall project feasibility analysis.

Recommendations. The Government should carefully plan the capital structure of the project, including its equity contribution, and the possibility to entice regional economies to participate in the project. The Government's authority and capacity to maintain the project's long-term, sovereign objectives can be sustained through introducing the "golden share" option (see Box 1).

As regards the other liabilities, including debt and debt guarantees, the Government should carefully examine all assumptions, considering the possibility that all of its liability could be converted into debt. Indeed, this would be in line with the Public Debt Law's interpretation of guarantees being part of debt. At any rate, all government debt guarantees are, according to the Debt Law, counted against the debt ceiling as if they were actual government debt.

RISK SHIFTING STRATEGIES FOR PPPS

Take-or-pay contracts or agreements are arrangements put in place to ensure that a compensation is paid to the provider of a product or service (private concessionaire in a PPP project, for instance) by establishing unconditional liability on the buyer (project sponsor in a PPP project) to honor the financial obligation even if that product or service is not rendered at a certain time. These arrangements are normally used as indirect guarantees, or, collateral for loans, in project financing. They are also considered as protective provisions to the buyers from price increases, and to the sellers from price decreases. Ultimately, however, take-or-pay agreements are guaranteed-revenue mechanisms for producers. They are frequently applied in electric utilities.

Availability payments are essentially a mechanism to compensate a private concessionaire for revenue-related risks, including insufficient demand, or due to external, non-project, factors such as price-setting policy issues. They can be looked at as a financial incentive to the concessionaire, or, put differently, as a means to enhance the financial performance of the project. Naturally, the key assumption is that the concessionaire will achieve a specific, pre-set, level of service, and, accordingly, the availability payments are made by the project sponsor on the basis of project milestones or a set of key performance standards. Availability payments are usually applied in projects with high capital costs, i.e. whose generated revenues will not be sufficient to cover such significant construction or, in many cases, their operational costs. There are different approaches to structure such annual payments, but in terms of timing, they are normally projected to start after construction. It is not unusual for availability payments to extend over the operational phase.

Cash subsidies could be used in a more general manner in the sense that they do not have to exclusively target the service provider. For example, they could be introduced to cater for a specific objective under a project, such as improving the capacity to meet the debt service requirements under a financing scheme. In other cases, cash subsidies could be used as a contingency plan to cover any unexpected shortfall in a project's future revenue stream.

Golden share is a well known concept in financial markets, especially for publicly-traded companies worldwide. It is a specific type of share that grants its shareholder veto power over certain actions or changes to a company's charter, regardless of the number of shareholders who initiate the change(s). The objective is for the holder of the golden share to retain control or power over critical areas of business, especially in cases of new entrants such as a hostile takeover, among others. Golden share is common in companies that will be subject to privatization, but can also be applied to special purpose vehicles or companies that are established to own and oversee a long-term project. Governments normally introduce the golden share concept to maintain their control in projects which are of national and economic interest. Their role becomes more important in cases where the concessionaire makes an exit.

PPP management capacity of GOJ

The Government should also have in place plans to build capacity for the Jordan Railway Corporation (JRC), the entity that will build and own the railway network. So far the JRC's law has been approved and endorsed by the Government, but more effort is needed to establish the optimal organizational structure, develop its staff, and support it with technical and financial expertise. The JRC will oversee the operator's business plan, and, ultimately its operational scheme for the project, and, hence, it should have the know-how and expertise to ensure a smooth and well-functioning project.

There is insufficient technical knowledge among GOJ staff working on developing PPPs, whether in transport or other sectors, in the analysis of projects. As mentioned, the National Railway Project's cost-benefit analysis was produced by the company advising on the project. The advisor has a stake in the project in that if a successful deal or transaction takes place, this will financially benefit the advisor. Our review of the railway cost benefit analysis pointed out a number of areas of concern. These concerns were raised with MOT authorities and with the analysts and some corrections were made. In our view, the cost benefit analysis underestimated costs, used too low a discount rate, and should have provided a broader set of scenarios to test the sensitivity of key assumptions in the analysis.

Recommendations. Officials working on PPPs or indeed any important public investment programs must become experts themselves in the types of analyses needed to make these projects useful and successful. At a minimum, these officials should have enough technical and analytical knowledge so that they can be good consumers of the technical analyses produced by exter-

nal consultants. We are not saying that consultants are necessarily biased in their analysis, but that Government needs to be a good, educated consumer of this analysis, be able to ensure that it is correctly carried out and correctly utilized. A poor cost benefit analysis can result in projects that can drastically harm the wealth of the nation.

Amman-Zarqa Light Rail System

Plans for a light rail system connecting the Kingdom's two most populous cities could provide important relief to the densely congested roads linking them now. In 2010, the USAID Fiscal Reform II Project conducted a cost-benefit analysis of the project and found an internal rate of return of 12 percent, deemed acceptable given the established criteria. The main benefit of the project is reduced travel time. Reduced pollution and fewer road accidents were secondary benefits.

Still, the analysis concluded that given the project's risks, such as the sensitivity to cost overruns possibly reversing the findings above, it would be important to give fuller consideration to alternatives before proceeding.

Recommendations. Government authorities should evaluate alternatives to light rail, such as the bus rapid transit, recently stalled, or road enhancements, especially market-friendly road enhancements.

Legal framework for Public Private Partnerships (PPP)

Article 117 of the Constitution stipulates that any concession agreement that entails rights in connection with investment in mines, minerals and public facilities must be ratified in a law. More importantly, the draft PPP law vaguely defines "investments" in public facilities, including roads, bridges, or railways (ports could be an exception though) to avoid any clashes with the Constitution. Such an important condition needs to be explicitly clarified, and investments in public roads and other facilities be allowed.

This framework should enable the Government to enact laws (or introduce articles or provisions) that allow for public road tolling. Without such a legal foundation, private investors would be reluctant to engage in public road investments (ring roads, highways, etc). The issue of legal enforcement of fare collection surfaced during the structuring of the light rail system project (by the International Finance Corporation), and was considered as a potential obstacle prior to inviting an operator.

Recommendations. Parliament should pass into effect the PPP law and other legislation that may be required that would allow private investors to collect tolls, fees, and other charges for the infrastructure service that they may provide.

Subsidies and private sector participation

The Government seeks to ensure the provision of transportation services through partnerships with the private sector. In general, under the schemes envisaged the government plays regulatory, monitoring, and financing-facilitating roles while the private sector is responsible for operations and part of costs.

Nonetheless, as noted in the National Transport Strategy, until recently the Land Transport Regulatory Commission had not received responses to requests for bids relating to underserved intercity routes. Add to this the difficulty in closing agreements with operators of rail ventures (the Amman-Zarqa Light Rail System, for example) and recent problems with bus service operators in Amman. It might be that, at least in some instances, regulated tariff rates for the services involved excessively limit profit margins required by private investors.

Regulated tariff rates may achieve policy makers' goal of making transport affordable to the poor, but they may be set too low to entice private sector participation. Such subsidy mechanisms risk helping the wealthy disproportionately and hurting many of the poor. The logic is as follows: (1) low tariffs lead to lower than acceptable profit margins; (2) operating costs are not adequately covered; (3) the quality of services deteriorate; (4) the wealthy and middle classes avoid poor quality services by relying on alternative transportation means (cars, private bus services, non-shared taxis, etc.); (5) the poor become captive riders, walk, or otherwise do without transportation services.

Recommendations. The government should review both the adequacy of levels of subsidization and the use of alternative means to the price system to provide for subsidies—for example, income tested cash transfers, and targeted smart cards. The authorities may want to consider adopting a principle of seeking a closer alignment of price for services with the full costs of transportation services with some adjustment for positive or negative effects on third parties.

Infrastructure Development Fund

There are many complexities to any important public sector investment program. PPPs, which can have many advantages to traditional public investments, are more complex, still. Some of these complexities are touched upon above, such as analytic demands, risk measurement, sharing and management, and legal frameworks.

Many of the PPPs currently planned for Jordan have very large financing requirements. While much of this financing is to be borne by the special purpose entity or vehicle set up to implement or operate the new project, these are generally financed by private sources. Due to the nature of some of these transactions, private investors often demand some government guarantees to share risk and raise the project's value for money. Government is highly restricted in its ability to provide such guarantees.

An *Infrastructure Development Fund* could serve as a medium- to long-term tool to support capital projects, especially projects with significant capital expenditure needs.

Participation from regional economies should be welcome. The fund could be divided into say three tiers. One would be for Gulf Cooperation Council (GCC) partners who mainly would be seeking to help ensure stability and development in the region and in Jordan, specifically. This tier would not be expected to generate a financial return. The next tier would be for private investors interested in normal returns from worthwhile capital project financing. A third tier would be for participation from outside the region from donors and other international financial organizations seeking to maintain the capital value of their participation. Capital injections could also come from user charges and taxes related to transportation or other public works.

The fund's capital would accumulate over a number of years and could be very useful to cover for *contingent liabilities* that could turn into actual liabilities in the future should any forecasted cash flows not materialize as planned.

The fund would be seen by policy makers as a good substitute to the never-ending subsidy issues and sovereign guarantees. The MOT could create a pilot fund, given the current capital projects in the pipeline (national railway, light rail system, bus rapid transit in Amman, and possibly another bus rapid transit between Amman and Zarqa).

Although there would be many options to allocate funds, the fund should be focused on new capital projects, not maintenance or rehabilitation, and these would need to go through a strict due diligence check-list for value for money and other analyses, including environmental impact assessments, to be eligible for financing.

The fund would have a simple board of directors (stakeholders) chaired by the Minister of Finance, and with memberships coming from sovereign ministries and sector-based ministries, including the Minister of Transport.

Recommendations. The Ministry of Transport, Ministry of Finance and other related agencies should, working closely with donors and international financial institutions, investigate the feasibility of establishing an Infrastructure Development Fund.

Congestion mitigation in Amman

While the National Transport Strategy mentions the use of congestion mitigation techniques, it is not clear how much weight congestion pricing approaches have in the transportation strategy for Amman. In light of financial and budget constraints, it would seem that applying such approaches to revamping transportation in Amman is wise.

At least in the Amman area, users of transportation services have a strong preference for automobiles as the preferred means of transportation. While, as noted in the Amman transport strategy, this is partially a result of deficient public services, it is unlikely that, by itself, better public transportation will solve the congestion problem in Amman. A strong attachment to the use of automobiles is evident in many modern societies. Yet, such use may impose significant negative externalities on others.

As the economy grows, the value of time wasted due to congestion will increase. As that happens, drivers are likely to become more interested in the option of bypassing congestion by using priced lanes. There is probably significant room in Jordan for traffic management techniques that rely on dedicated high-occupancy and high-occupancy-toll vehicle lanes and similar tools for congestion mitigation.

Value pricing, with such tools as tolls for the use of selected arteries, and fees that vary with level of congestion, is likely to be helpful. Moreover, these price-tools could be a revenue source of significance for the Government. Further, they can contribute to linking "willing-

ness to buy" transportation services to the amount of such services—thus helping create a market to accommodate increases in transportation demand.

A gradual introduction of these practices, along with education campaigns to develop awareness, could address both issues of congestion and road financing.

Recommendations. The Government should broaden the scope of fare-related and market-based congestion mitigation programs to address traffic needs in the Amman metropolitan area.

Local communities and transport planning

Jordan is giving prominence to the use and development of free and industrial zones, business parks, and development areas in the capital, as well as in different parts of the country. Such initiatives—for example, in Irbid, Zarqa, Al-Mafraq, Ma'an and Aqaba—are instruments to foster investment and regional development. Likewise, Jordan has made efforts to revamp tourism attractions and facilitate local economic development in historically and culturally important cities such as Jarash, Karak, Madaba, Salt and Ajloun, as well as consolidating the tourism industry in Petra.

Transportation facilities are an integral part of the potential attraction that Jordan could offer investors in such enterprises. The importance attaching to tourism can be illustrated by the Aqaba Special Economic Zone (ASEZ) which claims that it offers, among other advantages, an international airport, a seaport, and transportation infrastructure including cargo handling, aircraft overhaul and conversions, freight forwarding and integrated logistics, and cold storage and transshipment.

Nonetheless, while access to transportation services is important for the success of trade and investment schemes, transportation planning in Jordan seems to be highly centralized with limited participation of local interests in the process. Although this may be changing—indeed, it has to change as regions gain in economic importance—the country should be establishing the foundations for better integrating local interests in the transportation planning process.

The rationale is that local constituencies are well positioned to shed light on local priorities. Moreover, the integration of local interests in the planning process would facilitate local participation in cost financing under the principle of local financing for local benefits.

Recommendations. Taking the cue from models used in OECD countries, Jordan should advance toward the establishment of regional transportation planning bodies in relatively populated areas. Such bodies would have the shared responsibility of making suggestions so that expenditures for transportation projects and programs are based on a continuing and comprehensive planning process that takes into account the relevant public and stakeholders.

CHAPTER VII

Managing Water in a Thirsty Country

OVERVIEW

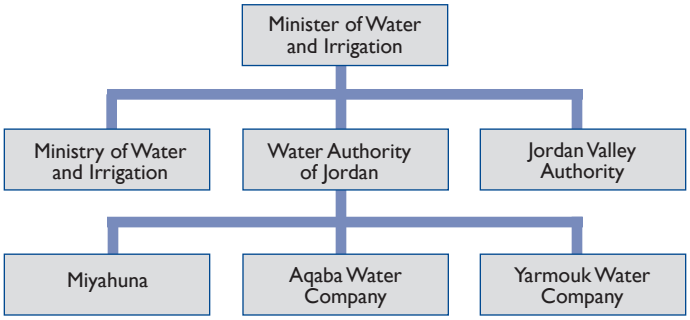
Jordan is one of the most water-scarce countries in the world, but the demand for water and water-intensive products is average by global standards. The economy as a whole consumes an average amount of water when the water used abroad to produce goods imported to Jordan is included.

In addition, Jordan compensates for natural water scarcity by investing heavily in domestic water production infrastructure, and pumping water from aquifers at unsustainable rates.[1]

According to Chebaane et al. (2004),[2] the Kingdom is already using essentially all of its domestic renewable water. Groundwater is being withdrawn at approximately double the natural recharge rates. Meanwhile, prospects are very limited for capturing more surface water through dams and water harvesting (small-scale water collection, which is expensive because of limited rainfall). Climate change is expected to further reduce naturally available and renewable water resources through changes to rainfall intensity, rainfall frequency, soil moisture, and other impacts.

As groundwater resources decline, the Government anticipates using more expensive sources of water, such as the Disi aquifer, additional wastewater reuse, and desalination. Absent improvements in how water is used, projected population and economic growth will significantly increase water demand, potentially doubling to 1,550 million cubic meters (MCM) per year by 2030 and push the Government to access a greater amount of the most costly water sources.

FIGURE 7.1. INSTITUTIONAL ORGANIZATION OF THE WATER SECTOR



The country has made significant progress towards its UN Millennium Development Goals (MDGs) for access to water networks and sanitation services, and is on track to achieve its targets for 2015. The MDG performance demonstrates that Jordan provides excellent basic water and sanitation services, which may contribute to Jordan's strong performance in the health sector relative to its GDP.[3] Jordan still has opportunities for improving performance in terms of providing continuous water supply, making groundwater withdrawals sustainable, reducing non-revenue water (NRW), expanding sanitation services and wastewater treatment capacity, and improving agricultural productivity with respect to water.[4]

Organization of the sector

Figure 7.1 shows the institutional organization of the water sector.

The Ministry of Water and Irrigation (MWI) is responsible for overall strategic direction and planning, in coordi-

[1] In 2001, Jordan ranked 75th out of 145 countries in per capita water footprint (the total volume of freshwater that is used to produce the goods and services consumed by the individual or community or produced by the business) (Water Footprint Network).

[2] Detailed notes on methods and sources for this chapter can be found in Sommaripa, Leo (2011) *Water Sector Public Expenditure Perspectives Working Paper*, USAID-FRP II.

[3] See Chapter V for a discussion of the health sector.

[4] Non-revenue water (NRW) is one of the biggest problems in the sector. It refers to water that is sent into the system, but is not billed. This can be because the water leaks out of the system, say due to poor quality of equipment, pipes, or inadequate maintenance. It can also be that water is delivered to homes and factories but for a variety of reasons, such as non-working meters or illegal connections, the water is not billed to the consumer.

nation with the Water Authority of Jordan (WAJ) and the Jordan Valley Authority (JVA). WAJ manages bulk water supply and retail distribution where commercialization of distribution services has not occurred. In contrast to MWI and JVA, WAJ is a government unit with authority to issue government-guaranteed debt and keep its revenue rather than returning it to the Treasury. JVA is responsible for the socio-economic development of the Jordan Valley, primarily managing bulk water supply for irrigation, domestic, and industrial purposes, but also promoting land development.

Miyahuna and Aqaba Water Company are government-owned utilities, operating as commercial entities to provide retail distribution and other functions such as water and wastewater treatment in Greater Amman and Aqaba, respectively.

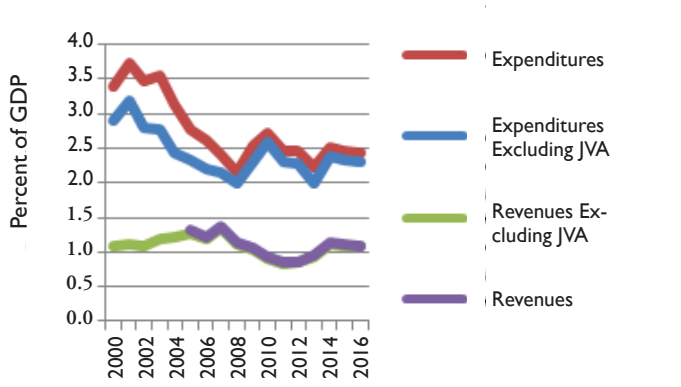
The Yarmouk Water Company begins operations in 2011 to service Jerash, Ajloun, Mafraq, and Irbid.

WAJ manages the contracts with the water companies through its Project Management Unit (PMU), and WAJ and JVA recommend water tariff changes and capital projects, but the Cabinet has ultimate regulatory authority, especially for tariffs.

EXPENDITURES AND REVENUES

This section examines the financial imbalances resulting from Jordan's policies to maximize development of a scarce resource while making it easily affordable and even free in some cases. The section begins with a comparison of expenditures and revenues as a percent of GDP, which indicates in terms of overall affordability the burden of water expenditures on the economy and the burden of tariffs on ratepayers and government subsidies. Since expenditures and revenues relative to GDP only tell part of the story, the remainder of this section analyzes the absolute amounts.

FIGURE 7.2. WATER SECTOR EXPENDITURES AND REVENUES AS % OF GDP



Public expenditure on the water sector has been between 2 and 4 percent of GDP, within the range of between one and five percent of GDP in the MENA region. Figure 7.2 shows that in 2000 the gap between sector revenues and its expenditures was about 2.5 percent of GDP. Until recently, this gap had been declining; to about 1 percent of GDP in 2008. The gap is expected to widen again through 2012, tapering back to more stable levels thereafter. Although the level of expenditures is reasonable for a water-scarce country, the gap between expenditures and revenues is significant and growing.

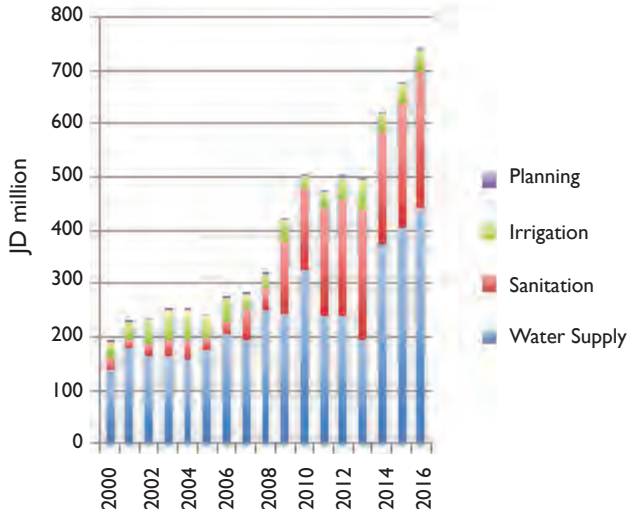
Expenditures

Water sector expenditures by the government—including MWI, WAJ, JVA, Aqaba Water Company, and Miyahuna—were approximately JD 500 million in 2010 and are expected to remain near that level until the Disi project comes online (see Figure 7.3). From 2006–2010, water sector expenditures nearly doubled, with sanitation's share increasing significantly. Water and wastewater has the largest share of any sector in the National Executive Development Program (EDP), totaling 16.6 percent of all investments included in the plan. With the increasing use of build operate transfer (BOT) contracts, the capital expenditures on many current projects will carry on long after the construction is completed. This analysis excludes a variety of subsidies that do not show in the water sector budget, such as the electricity subsidy used in the production and distribution of water.

The major expenditures in the last couple of years, including domestic and international assistance funding sources, have been on increasing water production (such as, Zara-Ma'in desalination plant, Disi groundwater abstraction and conveyance to Amman, Hofah-Zattary abstraction and conveyance to Irbid) and expanding the sewer system collections and treatment (for example, the Al-Khirba As-Samra wastewater treatment plant, the Greater Irbid Sewerage Project, and the Wadi Ash-Shelalah Wastewater Treatment Plant).[5] General inflation in the price of materials, electricity, and rising wages has

[5] In the environment field, "abstraction" refers to the removal of water from a river, groundwater, or other sources.

FIGURE 7.3. WATER SECTOR EXPENDITURES, INCLUDING WATER COMPANIES



also contributed to the increase in spending over the last decade.

Irrigation is a small portion of the total water sector expenditures, but the real cost of irrigation is in the opportunity cost of the water used, meaning the foregone economic value that would have been gained if the water were used for more valuable alternative purposes (e.g., industry, business, domestic consumption), or the economic and environmental savings if the water was not produced in the first place.

The 2011 budget continues the shift from expenditure on water supply to sanitation, made possible by a drop in expenditures on Disi from a peak of JD 120 million in 2010, which was primarily to buy down the unit price of produced water. Disi spending is planned to be approximately JD 85 million in 2014 when Disi is expected to complete its first full year of operation.

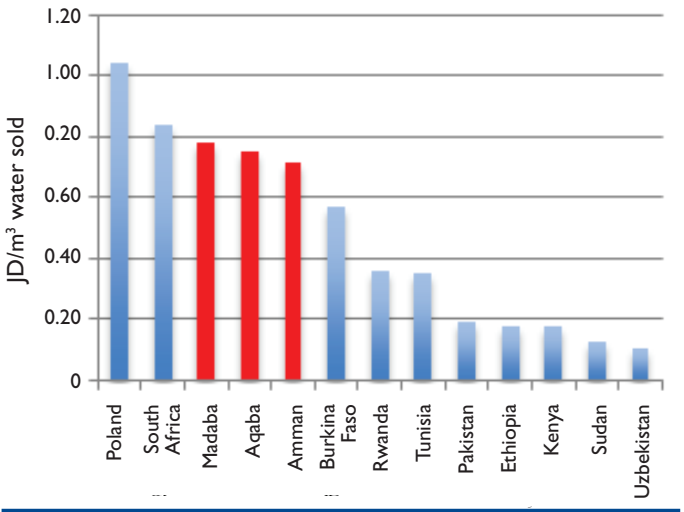
International comparisons of expenses and revenues provide only a rough indication of comparative performance, but they are a useful starting point for assessing performance and pointing to opportunities for improvement. The operational costs of water supply and sanitation systems in Jordan are relatively high when compared to other water-scarce countries (see Figure 7.4). The high unit cost of water sold is in large part due to the high rate of NRW (substantial cost is expended on water that is not billed to the customer) and the cost of pumping low elevation source water long distances to high elevation domestic water demand centers (although this problem could be alleviated by using some water from the highlands for domestic consumption rather than as irrigation water).

Aqaba has comparable costs to the rest of Jordan, but has much better service (water available continuously) and lower non-revenue water. This demonstrates the value that can be obtained through investment in new and upgraded systems.

Capital investments are large, lumpy, and extend over long periods. Proper budgeting of operations and maintenance (O&M), repair, and replacement for existing infrastructure is essential to optimize its useful life and control the overall cost of providing the service.

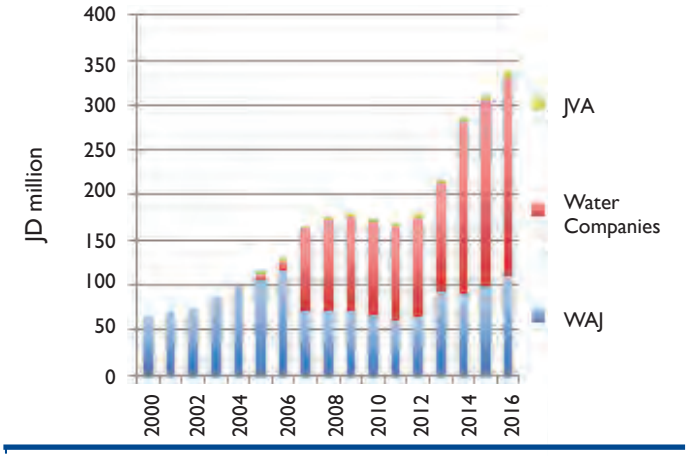
Furthermore, the water sector is a classic example of the need for considering the ability of the budget to support life-cycle costs before making new capital investments. Rough information is available on expenditures on new projects vs. maintenance of existing assets, but targets for minimum O&M expenditures or estimates of O&M as a percentage of total expenditures have not been developed. Such targets would be very helpful in developing O&M budgets necessary to reduce NRW losses and ensure that sufficient budgetary resources will be available in the future to fund proper maintenance of new infrastructure.

FIGURE 7.4. WATER SUPPLY AND SANITATION OPERATIONAL COSTS IN WATER-SCARCE COUNTRIES*



* The displayed countries are ranked in the top 50 for water scarcity by the United Nation's Food and Agriculture Organization AQUASTAT database, according to total actual renewable water resources per capita, taking into account the quantity of flow reserved by upstream countries (incoming flow) and/or downstream countries (outflow) through formal or informal agreements or treaties, and possible water abstraction occurring in the upstream countries.

FIGURE 7.5. REVENUES FROM WATER SERVICES



Revenues and operations

Water sector revenues grew rapidly from 2000–2007, due to increased rates, reductions in non-revenue water, and new connections added in 2006–2007, but stagnated thereafter (see Figure 7.5). Revenues are expected to increase again when the Disi project comes on line, but increasing production is not a sufficient solution on its own, since the government loses money on every unit of water sold. Increasing income and further reduction in NRW are needed to achieve revenue growth that keeps up with expenditure growth.

Better estimates of revenues are needed. In the 2010 Government Units Budget, the estimated WAJ revenues from sales of goods and services were JD 85 million, but actual revenues were only JD 67 million, 21 percent less than planned, a significant revenue shortfall.

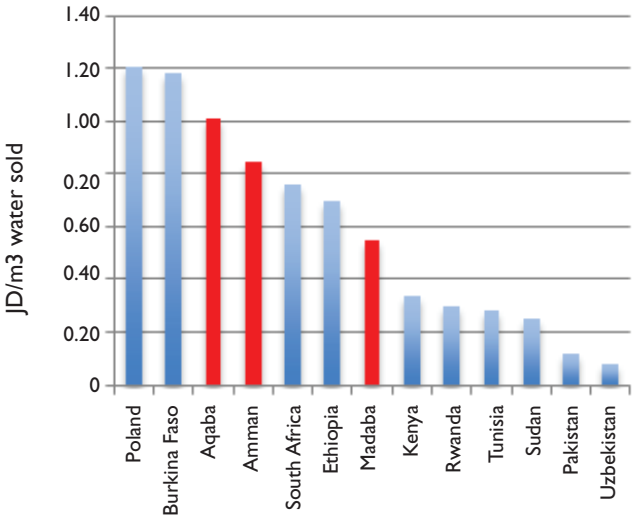
On the one hand, Jordan's urban water tariffs are reportedly among the highest in the Middle East, (Pitman, 2004). On the other hand, the country's non-revenue water losses—among the highest in the world—means that revenues per m^3 of water sold by water supply and sanitation systems are not as high as they need to be to cover the cost of all the unbilled water. If more of the NRW were kept in the system and billed, the cost per m^3 sold would likely fall.

Revenues per unit of water sold are highest for Jordan in Aqaba, demonstrating that a combination of high tariffs and continuous supply enabled by low NRW is acceptable to the public. While revenues per m^3 of water sold are relatively high in Jordan, tariffs could still be raised without exceeding normal international ranges for water-scarce countries (see Figure 7.6).[6] Increased revenues would allow for investment in NRW reduction, which would make it easier to provide continuous water supply.[7]

JVA sells water to agricultural and industrial users and gives water to WAJ for free, resulting in very low total revenues. Although JVA sells much more water for agriculture than industrial applications, the revenues from each sector are about the same (approximately JD 2 million per year, for each) because the tariffs charged for agriculture are much lower than those paid by industry.

There is ample evidence of a higher "willingness to pay" for water than the current publicly regulated prices. A 2010 study by ECO Consult found that tanker water, i.e. water sold via private water trucks, was priced at JD 3.8 per m^3. Yet a 2009 Segura/IP3 study reported that Miyahuna's average tariff was only JD 0.85 per m^3. In the agriculture sector, the exporter Modern Jordan Farms "…desalinates their own brackish water at a cost of JD 0.210 per m^3, plus the cost of pumping—demonstrating a willingness to pay 17 times more for water than the JD 0.012 per m^3 paid by small farmers to the JVA for irrigation water (sic)" (USAID Economic Development Program, 2007).

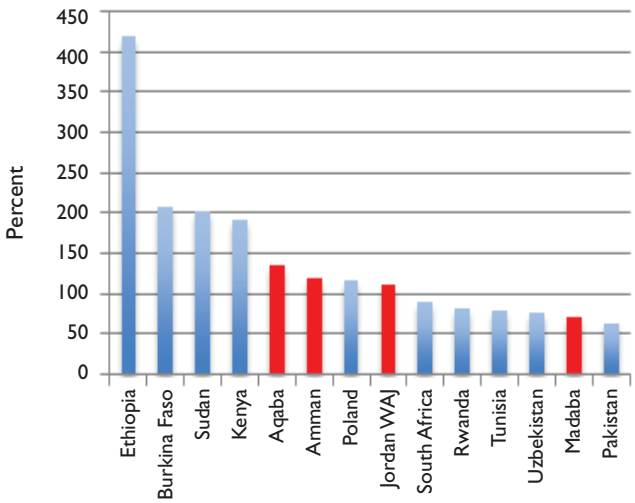
FIGURE 7.6. WATER SUPPLY AND SANITATION REVENUES IN WATER-SCARCE COUNTRIES



[6] Al-Assa'd (2011) found that in Jordan, "the share of the average [household] expenditure on water and wastewater services to the total [household] expenditure… [is] 0.92 percent. In comparison to many other countries, this is considered at least 50 percent less than them."

[7] In most of Jordan, water is available only one or two days per week, meaning that the supply is non-continuous.

FIGURE 7.7. WATER SUPPLY AND SANITATION OPERATING COST RECOVERY IN WATER-SCARCE COUNTRIES



Cost recovery

Jordan's national water strategy calls for tariffs sufficient to recover operations and maintenance costs, but not capital costs. However, national macroeconomic policy and deficit targets, as well as uncertain foreign assistance levels, may prevent the budget from providing subsidies to cover all capital costs. The net cost of the water sector to the government in 2010 was approximately JD 300 million, which at 20 percent of the combined deficit of ministries, departments, and government units is a significant strain on the budget. Failure to recover the full costs (operations, maintenance, and capital) of water supply has created a vicious circle in which maintenance is underfunded, the system deteriorates, and NRW is high, which makes it even harder to recover costs. This underfunding means that even if operations and maintenance costs are covered from an accounting perspective, the revenues are not enough to cover the amount that should be spent on operations and maintenance to keep the existing system running properly and efficiently.

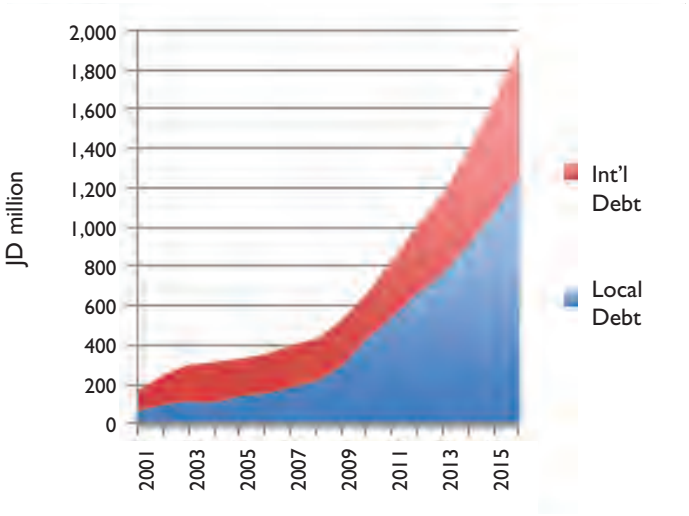
For WAJ and the water companies combined revenues come to or exceed 100 percent of operations and maintenance costs, but only 60–70 percent of total costs when capital costs (depreciation and recovery) are included. If hidden subsidies, like below cost energy, and sufficient operations and maintenance expenditures were included in the water sector cost accounting, the cost recovery would be lower.

There has been a worrisome downward trend in cost recovery since 2005, mainly due to large investments in water supply and wastewater treatment not matched with tariff increases. Especially worrisome, NRW levels remained very high, at almost 50 percent of water entering the system; this in spite of substantial investment programs. These investments have not yet improved revenue streams (through reduced losses and thus increased water sales).

Figure 7.7 shows that the cost recovery rate for Jordan is not particularly low when compared to other water-scarce countries around the world. The significant fraction of countries with cost recovery rates lower than Jordanian water companies' rates indicates that Jordanian water companies are not alone in struggling to cover operating and maintenance costs, let alone capital costs. On the other hand, the high operating cost coverage ratio for water companies in some countries indicates that improved cost recovery is possible.

The division of expenditures and revenues between WAJ and the water companies ensures that the companies are moderately profitable, while WAJ's debt is rapidly rising (Figure 7.8), expedited by the approximately JD 700 million investment in the Disi project. Debt levels are expected to rise from JD 0.7 billion in 2010 to JD 1.9 billion in 2016. This rise in debt by a public sector entity represents a serious potential fiscal risk to the country. In the absence of price increases or significant improvement in reducing NRW, it is quite possible that the Government will have to assume WAJ's debt as it did in

FIGURE 7.8. WAJ DEBT



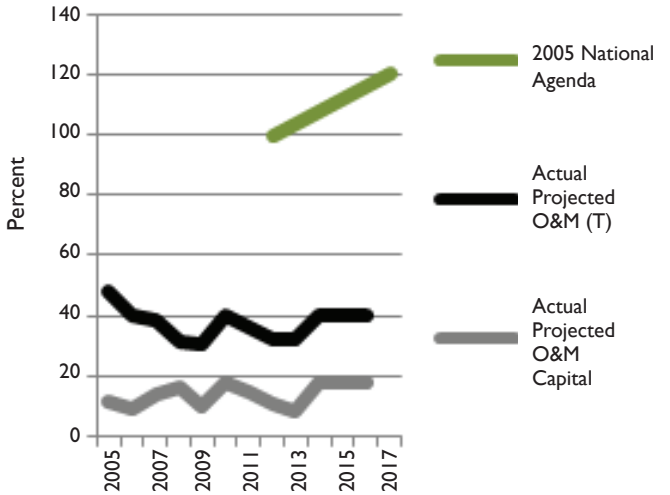
1999, making the deficit financing for WAJ a government subsidy, rather than an investment that will eventually be repaid through resulting increased revenues. The losses on WAJ's balance sheet make it look less like a financially self-sufficient Government Unit and more like a ministry or department under the General Budget Law receiving annual funding.

Cost recovery at the water companies is highly dependent on the subsidized prices of WAJ bulk water and electricity, and the fact that water companies are not responsible for major capital investments. Indeed, WAJ makes most capital investment in the sector. If WAJ charged the water companies a price for water that covered its capital costs, they would not be able to achieve full cost recovery.[8]

Irrigation cost recovery

JVA achieves approximately 40 percent O&M cost recovery—and about 20 percent O&M and capital cost recovery—for its water supply to agricultural and industrial users (JD 5 million in revenues vs. JD 11 million in operations and maintenance costs and JD 14 million in capital costs). JVA would be able to achieve full cost recovery for O&M if it did not provide water for free to WAJ.[9] However, if JVA revenues from industrial water were excluded, the cost recovery would be lower, since revenues from industrial users are about 40 times more per m^3 than agricultural users. The agricultural water tariffs are not high enough to achieve cost recovery on their own, even though NRW was only 14 percent in 2009. JVA is not on track to meet the National Agenda's targets for water cost recovery, largely because prices have not increased. See Figure 7.9.

FIGURE 7.9. COST RECOVERY FOR JVA IRRIGATION AND INDUSTRIAL WATER SUPPLY – TARGETS (T) AND ACTUAL



POLICIES

This section reviews and analyzes water sector policies in their implementation, mainly by WAJ and the water companies. The section focuses on water allocations, water supply or access, quality, non-revenue water, sanitation, productivity in water use by the agricultural sector, willingness to pay, and social considerations.

Water allocations

Domestic water supply is the first priority for water allocation, but the allocation is only enough for one or two days of supply per week in much of the Kingdom. In case of water shortages, domestic supply is maintained by transferring water that normally would go to agricultural uses. There is enough water in Jordan to provide continuous domestic supply, but only through some combination of reduced allocation to agriculture, reduced NRW, and improved management of demand.

JVA sets the annual quota in the Jordan Valley on the basis of volume of water per hectare (ha) under cultivation, with different allowances for bananas (15,000 m^3 per ha year), citrus (10,100 m^3 per ha year), and vegetables (5,050 m^3 per ha year). A farmer's water allocation is made based on how many hectares of crop JVA approves for water supply. Priority of water allocation for approved crop areas is citrus first, and then bananas and vegetables last. Taken together, these water allocation policies provide a great incentive for farmers to obtain approval for bananas and citrus, even though vegetables

[8] "In 2008 Miyahuna's total revenues were JD 76.5 million, including JD 9.3 million sewerage transfer from GAM tax and JD 12.2 million from connection fees. Only JD 50 million came from tariffs. These revenues barely cover its basic operating costs of JD 66.4 million. Moreover, Miyahuna's business plan contemplates some JD 24.8 million in investments for expansion and critical improvements; however this plan is under-funded which raises concerns about its viability. In addition Miyahuna receives substantial subsidies from WAJ for the supply of bulk water. Therefore pricing of services falls short on cost recovery grounds" (Segura, 2009).

[9] JVA's O&M costs for water services are estimated at JD 12 million per year. Water revenues were JD 5 million in 2010. JVA provided 100 MCM to WAJ in 2010, which at JD 0.10 per m^3 (a low estimate, which assumes none of the water is pumped; pumped water should be priced at JD 0.22 per m^3) is enough to cover JVA's O&M deficit.

provide better economic returns when the full value of water is considered.

In the highlands MWI allocates quotas for permitted wells, which could provide some degree of control on water abstraction. While there is a policy to reduce non-renewable withdrawals in the highlands, quotas have not been set low enough and have allowed free abstraction up to a limit of 150,000 m^3 per year per well, a volume much larger than the limits mentioned in the licenses that the quotas replaced. As a result of incomplete enforcement of quotas in the highlands, there is significant uncontrolled withdrawals from unlicensed wells and manipulated metering.

The allocation of water quotas in practice is based in part on current drought levels, costs of production, and political considerations. Practical opportunities to adjust quotas depend on these erratic factors more than on a systematic policy to improve economics of production and social safety nets. Without strong enforcement of quotas, it is difficult to establish a competitive market for quota allocation (for example, quota trading, buyouts, or even a gradual, systematic shift in water allocations). When farmers switch to crops with low water productivity (for example, citrus and bananas), or expand cultivation into marginally arable land (for example, olives in the eastern desert), the government has on occasion allowed them to use the water they need to continue operations.

Water supply

In quantity terms, the Kingdom has been doing a good job of maximizing water supply given the limited resources.

The largest but most expensive sources of additional water supply are the Disi project and the Jordan Red Sea Project (JRSP). Disi is scheduled to come on line in 2013–14, and will supply non-renewable groundwater for many years, but then diminish. The JRSP would desalinate seawater, but it will not be available in the near-term.

Smaller, but more cost-effective sources are reuse of treated wastewater, brackish water desalination, a few non-renewable groundwater opportunities, and dams.

The Government continues to make good use of treated wastewater, increasing reuse from 90 percent of treated wastewater in 2006 to 93 percent in 2009, completing the As-Samra wastewater treatment plant, and pursuing the Millennium Challenge Corporation (MCC) Zarqa project. By 2009, treated wastewater was 110 MCM, as large a source as the Disi project will be (though the quality and uses are different). A significant brackish desalination project—Zara Ma'in—has been completed. The decreasing availability of surface water limits the opportunity for building new dam capacity, now that the 110 MCM Wahda Dam Project has been completed. Repair or replacement of dams that have lost capacity due to siltation may be worthwhile.

Jordan's general trend in water supply per capita per day is impressive, considering that it faces many challenges that decrease performance: rapid population growth, dropping groundwater tables, increasingly expensive new sources of water, and political pressure to not shift water allocation from agriculture to domestic water.

The country's ability to meet its targets for domestic water supplies per capita depends in large part on whether those who make the actual water allocation decisions follow the direction of those who develop strategic plans for water allocation between domestic and agricultural users. While additional total water supply could help, it is not an overriding factor for this indicator. There is enough water in Jordan for domestic consumption.

Covering non-domestic water requirements, particularly agriculture, requires balancing the need to increase water supply with the Government's targets for limiting non-renewable withdrawals and allowing for sustainable groundwater recharge.

FIGURE 7.10. WATER CONNECTIONS/ACCESS – TARGETS (T) AND ACTUAL PERFORMANCE

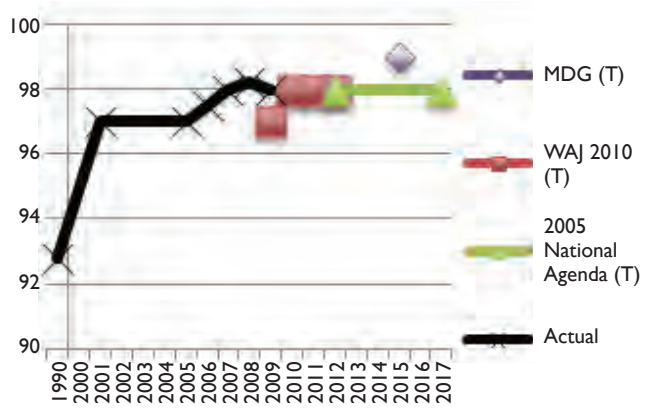
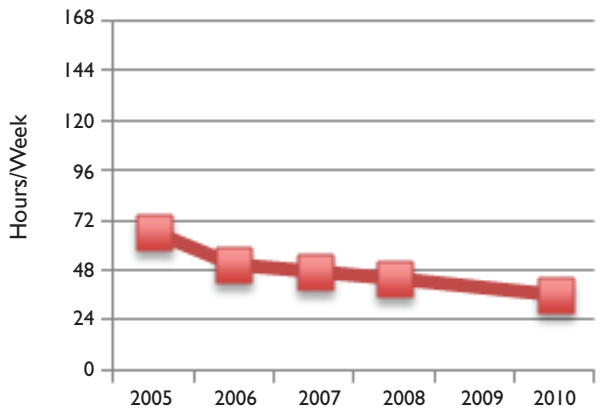


FIGURE 7.11. ACCESS TO WATER SERVICE IN AMMAN



Access to water

Jordan performs well in making connections accessible and affordable for most of the population (see Figure 7.10). A connection to the water network provides great health and economic benefits compared to no access to the network. Access to improved water is lower in rural areas than the country overall (91 percent according to the World Bank, World Development Indicators), but is among the best in the region.

A challenge related to access to water is the lack of continuous supply, i.e. the availability of pumped water at all times of day. Most parts of the Kingdom, with the exception of Aqaba, do not have access to a continuous water supply. In Amman, for example, the supply of water has fallen to less than two days per week (see Figure 7.11).

To be fair, some of the decline is due to a conscious tradeoff to reduce non-revenue water by pumping faster for shorter periods of time, at the expense of continuity of supply.

Still, given the per capita water availability in Amman, some argue that Miyahuna could provide continuous supply to its customers. Indeed, Conakry, Guinea and Dakar, Senegal are able to deliver continuous supply with lower quantities of water available.

Continuous supply reduces the risk of infiltration of contaminated water, improving water quality; reduces the cost of maintenance (less system damage from sudden changes in water flows); simplifies system operations (simpler distribution zone management, fewer staff to open and close valves); and makes it easier to detect and repair water leaks.

The additional water from the Disi project will facilitate continuous supply. However, switching from non-continuous supply will require significant investment in the network first, because continuous supply increases the impact of leaks and requires a different approach to system operation. Continuous supply could also increase the total quantity of water consumed by households, though one study predicted only by 10–15 percent. Demand management policies (including pricing) can limit the increase.

Water quality

According to WAJ, 98 percent of water samples are in compliance with the Jordanian specifications. However, according to the Department of Statistics 2009 socio-economic survey, about 60 percent of the people are not satisfied with the water quality of the public system and buy bottled water at significant expense.

WAJ believes that most of the complaints are associated with household storage conditions and people not cleaning their water tanks. However, the quality of water in the home and public perception of quality clearly need to be addressed. Continuous supply would help with both issues.

Non-revenue water

Jordan's non-revenue water rates are extremely high compared to other countries with low water supply (Figure 7.12). In part, this may be due to the non-continuous supply in much of the distribution network; the starting and stopping of water supply damages the system.

FIGURE 7.12. COMPARISON OF DOMESTIC NRW IN WATER-SCARCE COUNTRIES

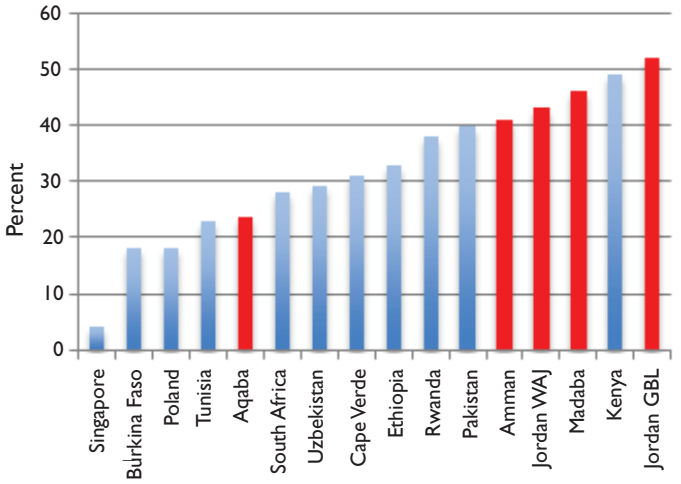
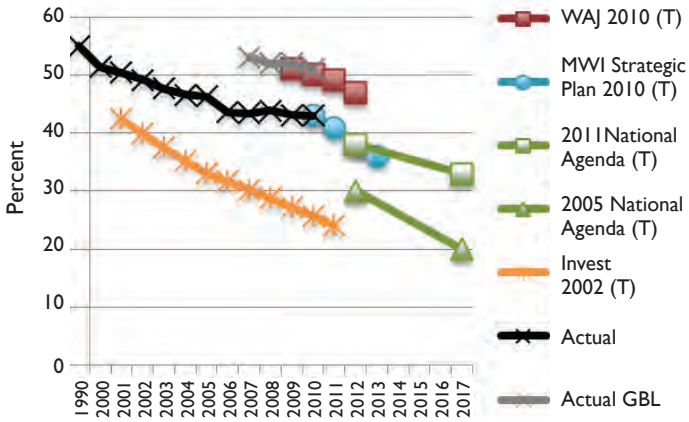


FIGURE 7.13. NON-REVENUE WATER FOR DOMESTIC USE – TARGETS (T) AND ACTUAL PERFORMANCE



However, some utilities in Kenya and Pakistan have non-continuous supply and are able to achieve better performance than Jordan overall. Aqaba has continuous supply, and much lower non-revenue water than the Jordan average.

Jordan is beginning to show progress in reducing non-revenue water (NRW), but there is still an urgent need for improved performance, given the very high losses. Data from the PMU show NRW has dropped from 52 percent in 2000 to 43 percent in 2009, a significant improvement, though still representing substantial losses. Data reported in the Government Units' Budget Law show NRW in the WAJ system has dropped from 53 percent in 2007 to 51 percent in 2010. Under either methodology, there is a loss approximately equal to total WAJ and water company water revenues, JD 170 million in 2010. This is equivalent to 60 percent of the JD 287 million deficit for water supply and sanitation in 2010.

The Government has not achieved its performance goals as quickly as planned (see Figure 7.13). NRW targets set in 2002 were not met and those set for the National Agenda in 2005 are not likely to be met.

Some of the most encouraging performance is by Miyahuna, which has demonstrated that water delivered and billed to the user can be increased not only by increasing supply, but also by reducing leaks and illegal connections and improving collections. As part of a 10-year, JD 250 million restructuring of the Amman water utility, its NRW was reduced from 48 percent in 2000 to 38 percent in 2009. However, some of that improvement is due to pumping faster for shorter periods of time, rather than by fixing leaks, which puts the goal of continuous supply further out of reach. Over the same period, the Aqaba Water Company has reduced NRW from 42 percent to 21 percent.

Even without commercialization of the water utility, it is possible to reduce NRW through focused efforts at improving operating processes. WAJ Madaba reportedly improved services and revenues after contracting out their billing and revenue collection processes to a local company. Similarly, a Japan International Cooperation Agency (JICA) pilot project in the middle governorates found that NRW could be reduced 40–60 percent through a relatively simple set of interventions focusing on leak identification and repair, costing about JD 20 per subscriber.

Enforcement of collections in the highlands is difficult due to the absence of water user associations, multiple water sources, and dispersed agricultural operations. Another factor may be the reported rationale that highlands farmers already pay high costs for wells and pumping, compared with farmers in the Jordan Valley who have water delivered to them by JVA.

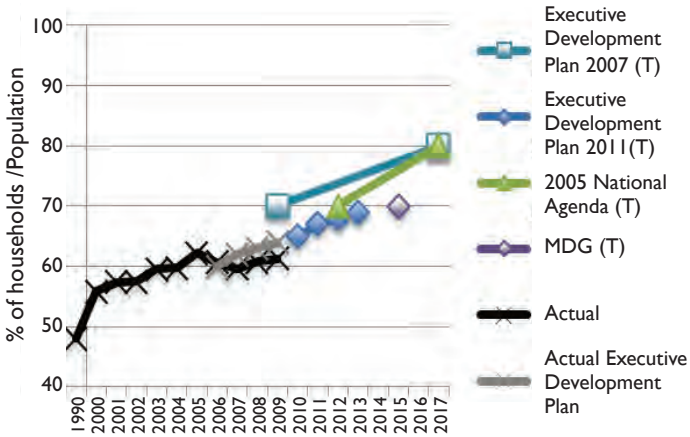
Sanitation

The main performance issues for sanitation in Jordan are access to the sewer system or other sanitation, and capacity of the wastewater treatment plants relative to the demand for wastewater treatment (utilization rate).

The Government is making progress on improving access to sanitation, but still has a long way to go to meet its MDG (see Figure 7.14). Significant expenditures on the As-Samra wastewater treatment plant (now completed), future expenditures on the MCC Zarqa, and planned increases for sanitation by WAJ in the 2011–2013 budget should all help.

Continued tracking of wastewater treatment utilization rates—above 80 percent generally implies that the plant may be overloaded and treatment impaired—would help budget for treatment plant construction. In 2008, wastewater plant treatment utilization was at about 150 percent, almost double the recommended maximum. Targets set in the Executive Development Program of the Government as well as the 2005 National Agenda anticipate these utilization rates dropping to 70 to 80 percent by 2016.

FIGURE 7.14. SANITATION CONNECTIONS – TARGETS (T) AND ACTUAL PERFORMANCE



Water productivity of agriculture

The Government allocates a majority of water to irrigated agriculture—57 percent in 2009. The country is falling short of its primary goal for agricultural use of water, set in the National Agenda in 2005: agricultural output per unit of water. If the goal for 2012 of JD 3.6/ m^3 is escalated from 2005 prices to 2009 prices, it becomes JD 5.0 per m^3. Even given the sharp increase in agricultural output per unit of water from JD 2.12 per m^3 in 2007 to JD 2.95 per m^3 in 2010, the trajectory is not likely to reach the 2012 goal. The efficiency of Jordan's agricultural water use should be measured by value added (i.e., profit plus wages), rather than value of production (i.e., gross revenue), because the water should be used to increase GDP, not merely to keep farms operating. A shift to higher value add crops with higher water efficiency could be made without impacting agricultural employment levels. In 2009, the value added for crops and livestock was JD 0.90 per m^3 of water and for crops alone was JD 0.63 per m^3 of water.

Studies indicate that in Jordan vegetables add more value per m^3 of water than bananas or citrus, though there is significant variability in productivity for each crop under different conditions.

Figure 7.15 demonstrates clearly that among water-scarce countries, Jordan allocates a relatively large share of water withdrawals to agriculture, but agriculture only contributes a small percentage of total GDP. By contrast, Algeria and Tunisia allocate about the same percentage of water withdrawals to agriculture, but their agriculture sectors achieve double the share of GDP (see Figure 7.15). Furthermore, Barbados and Djibouti allocate a much smaller percentage of their water to agriculture, but their agriculture sectors achieve approximately the same share of GDP as does Jordan.

Willingness to pay

This section analyzes water allocations and tariffs from the perspective of the net benefit to the user. The conclusion is that users can afford to and are willing to pay higher tariffs.

A key policy question is how much (if any) government assistance should be provided to domestic water consumers and farmers, and if so, whether there is a better way for the government to transfer benefits than in the form of cheap water.

Farmers might benefit more from subsidized irrigation equipment, or more consistent water supply, than subsidized water.

Similarly, the Disi project requires decisions about who should receive the new supply, at what price, and thus what benefit.

Water for industry and tourism is priced approximately at full cost recovery rates and thus may not involve a significant transfer of benefits.

FIGURE 7.15. AGRICULTURE AS A PERCENT OF GDP IN WATER-SCARCE COUNTRIES

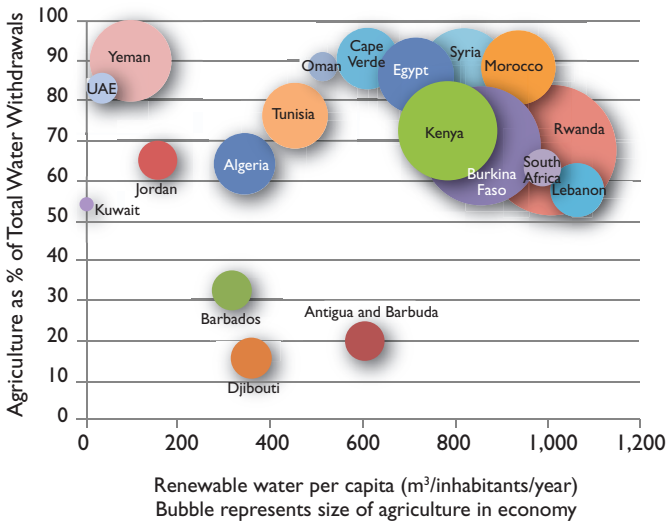


TABLE 7.1. ESTIMATED GOVERNMENT-PROVIDED BENEFITS

	JVA Agricultural Water	Domestic Water
Quantity (2009)	76 MCM freshwater from King Abdullah Canal, 55 MCM blended treated	309 MCM
Unit Value (marginal value)	JD 0.389 per m^3 for freshwater, 0.240 JD per m^3 for blended treated	JD 0.9 per m^3
Total Value (if all priced at marginal value)	JD 40 million	JD 278 million
Estimated Bulk Price	(not applicable)	JD 278 million
Bulk Revenue	JD 2 million (actual)	JD 65 million (estimated)
Estimated Government-Provided Benefit	JD 38 million	JD 213 million

The benefits transferred to consumers, through quotas and at low prices, is equal to the value of the actual quantity of water at the marginal value (or shadow price) for that quantity, minus the actual total expenditure by consumers.

- In 2009, the transferred benefit is estimated at JD 38 million for irrigation from surface water in the Jordan Valley and
- JD 213 million for domestic water.

Because it is difficult to calculate the price paid for water pumped from the highlands (since much of the cost is in terms of private purchase of pump equipment and electricity, for which data are not readily available), this analysis for agriculture only considers irrigation from surface water in the Jordan Valley (representing 26 percent of all irrigation water). Given that most irrigation water is used in the highlands, the biggest water allocation question is how much of the benefit of the highlands water should be allocated to agriculture, considering the risk of running low on highlands water as groundwater levels drop due to unsustainable withdrawals and the alternate uses for the water like domestic consumption. Table 7.1 shows data and calculated values that were used for the estimate.

Social equity considerations

The current domestic (residential) water tariff subsidizes many rich people, while charging higher water prices to many poor people. This is neither an effective nor efficient way to achieve the social equity or fairness goal of ensuring that the poor have access to affordable water.

Currently, the Government uses an increasing block tariff (IBT) to subsidize the price of water based on the amount consumed per month. In an IBT, the initial block or quantity of water consumed in a month is charged at a low unit price. Subsequent blocks are charged at increasingly high unit prices. The main problem with the IBT is that it assumes a correlation between water use per meter (not per person) and income, which is often not the case. It is possible that the poor use less water per person than the rich, but the poor are likely to have more people on a single meter than the rich (due to larger families and shared meters), thus increasing the consumption per meter. At least 20 percent of households in Jordan and 39 percent of households in some neighborhoods in Zarqa share the same meter. Furthermore, the IBT reduces the incentive to save water for people with low water use per meter (not per person) because they face an especially low marginal cost of water. The irony is that while developed countries have given up on the IBT as a way to assist the poor, it continues to be popular in developing countries.

Studies in Jordan have shown at most limited correlation between water use and income, meaning that many people who don't need the subsidy receive it, and many who do need the subsidy don't receive it. Table 7.2 shows results from a study of water use in Amman by Segura/IP3. The study found that income correlates with the Greater Amman Municipality (GAM) land classification, and so was able to use land classification as a proxy for income, with Category A representing the highest income and Category D representing the lowest income. The study then found that there were actually more upper income people in the lowest price block than low-income people, indicating that the subsidy of the IBT was helping the rich as much as it was helping the poor. It also found many poor people in the highest price block,

TABLE 7.2. WATER CONSUMPTION RELATED TO LAND USE CATEGORY IN AMMAN

Consumption per Quarter	Category A	Category B	Category C	Category D
		Percent		
0–20 m^3	22	29	27	18
21–40 m^3	26	35	33	33
41–60 m^3	21	22	24	29
>60 m^3	31	15	17	21

indicating that the IBT was actually imposing a high water price on many poor people. A rough calculation found that only 30 percent of the subsidy in water tariffs went to Category D households with less than 60 m^3 per quarter consumption, a very inefficient targeting.

According to the World Bank (2004), water may be available more often in wealthy neighborhoods than in poor neighborhoods, causing the poor to obtain more water from expensive water tankers than the cheaper, publicly piped supply. Poorer deciles report a higher percentage of 'rarely available' water compared to the richer deciles.

There is also a potential problem in the distribution of subsidies for sanitation. Households connected to the sewer system receive a subsidy for their sanitation services, in the form of a below cost water bill. However, households that are not connected to the sewer system must pay for the entire cost of septic systems. It is likely that the rural poor, lacking connections to the sewer system, are those who benefit least from the sanitation subsidy inherent in the subsidized water bill.

RESPONDING TO CHALLENGES

This section discusses a number of issues and challenges facing authorities today and in the coming years and provides recommendations for responding to these challenges. These issues range from pricing, to non-market allocations, incentives, to increased cost recovery, to non-revenue water reduction, to enhanced non-price demand management.

Price of irrigation water

The price of water for agricultural uses can be increased—at a minimum to cover O&M costs—with little impact on farmers. Since water is only a small percentage of total agricultural costs, small changes in the price of water are not likely to affect agricultural employment levels or income. On the contrary, price increases could boost efficiency of farms by incentivizing more intensive cultivation, increased use of technology, shifting to higher-yield crops, or renting the land to more efficient operators.

In addition to a general increase in water prices, the price for freshwater should be higher than for treated wastewater.

With these policies, the agricultural sector would use the same amount of water, but use it more efficiently to create greater economic benefit.

Price increases should be implemented carefully to minimize the impact on smaller, indebted farmers, or those with inadequate access to credit. Rather than raising prices on all farmers, the price for smaller farmers should remain subsidized. In contrast to the domestic water sector, an increasing block tariff (IBT) for irrigation water is a pro-poor policy because there is correlation between volume of water consumption and wealth of the farmer, though there are some wealthy people with small farms.[10] The existing block tariffs could better target subsidies for the poor by reducing the volume threshold for the low-use, most subsidized block tariff, and increasing the tariff on the other blocks.

Another pro-poor policy that also incentivizes water efficiency would be to increase the price of water for crops that use large amounts of water. In the Jordan Valley, the pricing structure could be divided according to the type of water quota for that farmland. Land approved for bananas receives the highest water quota and could be charged the highest price, citrus next, and land for vegetables with the lowest quota could be charged the lowest price. Currently, there is a disincentive for farmers to shift from producing citrus and bananas to producing vegetables because of the consequent loss of their higher water quota. Pricing according to quota allocation could reduce the incentive to lobby for higher quotas and might encourage shifting to crops with lower water needs. While a switch to more water-efficient technologies favors large, commercial farms, a switch to more water-efficient crops could favor the vegetable crops grown by smaller family farms. Switching from fruit trees to water-efficient vegetable crops is unlikely to have a significant effect on employment levels.

Recommendations. Increase the agricultural water tariff for medium and higher use blocks and decrease the size of the lowest use block. In addition, add a water tariff premium for farmers with banana and citrus quotas for irrigation water.

[10] Many wealthy people own farms for reasons other than to earn a living or to compete in markets.

Quotas for irrigation water

Compensation for reducing or reallocating water quotas can be achieved by creating a market for trading quotas or simply buying out farmers' quotas, but it would only work through a long-term, consistent policy on quotas combined with improved enforcement. While water markets have been created (for example, in California), they are complicated and may require better monitoring and enforcement than currently exists in Jordan.

A pilot program to purchase water rights and test the market could provide insight into how to best attack this problem. The pilot project could buy the rights of older farmers as a form of pension and thereby provide some incentive to retire. Chebaane (2004) finds that in the highlands approximately half of surveyed farmers indicated their willingness to sell out their wells. The study calculated that the project would have a net present value of JD 32 million. The analysis assumed a value of JD 0.42 per m^3 for water (Disi price estimate at the time), leading to a unit cost of the buyout at JD 0.12 per m^3, at that time.

Even absent compensatory policies, a small incremental reduction in water allocated per quota has been used in the past and could continue to be used to provide incentive to farmers to increase water productivity.

In any case, stopping the permitting of additional agricultural land and wells is essential to preventing increased use of water on marginally productive croplands. Olive trees in the Azraq region are a very inefficient use of water, but they are often planted to establish property rights. In much of the region, land ownership is contested between various tribal claims and the government claims based on Agricultural Law Number 20 of 1973, which established state rangelands. The Department of Land and Survey will register land to an individual if the claimant can demonstrate sufficient investment, and the cheapest proof of investment remains agriculture. Furthermore, Groundwater By-Law Number 85 of 2002, as amended by By-Law Number 76 of 2003 allows continued use of illegal wells if the government determines there is social or economic need. If the government established that use of unpermitted wells disqualified a claimant from establishing property rights based on agricultural investments, it might reduce water use in certain areas of the highlands.

Recommendations. Pilot test buyouts of water rights on a pilot basis and stop allocating land rights in the highlands to people with illegal wells.

Increase water efficiency of agriculture

Assistance to increase the water efficiency of agriculture can help overcome obstacles to change and should be pursued together with the increased prices and reduced quotas.

JVA should continue its efforts to improve water distribution system performance and subsidize water efficient irrigation technology, as in the Irrigation Optimization in the Jordan Valley project. JVA investment in improved distribution system performance will benefit all crops. However, any direct subsidies to farmers should be limited to crops that are water efficient or to lands that have the lower water use quota (for vegetables). Loans to farmers are not recommended. It is estimated that using micro-irrigation would add net revenues of JD 300-1,000 per ha per year for citrus, bananas, and vegetables in the Jordan Valley, which has 23,000 ha supplied by JVA's irrigation system. The resulting increased revenues from improved irrigation could be on the order of JD 10 million per year.

Lack of education may be one of the reasons hampering water efficiency in agriculture. Studies indicate that farmers are not taking full advantage of improvements in water infrastructure, such as drip irrigation, and that agricultural extension work is lacking in the highlands and the Jordan Valley. JVA's territorial control of the Jordan Valley tempers the Ministry of Agriculture's (MOA) willingness to work there. Better coordination and reallocation of resources might allow MOA to do more work with farmers on utilizing infrastructure to improve water efficiency.

To encourage farmers to switch to more water-efficient crops, crop insurance should be provided only for water-efficient crops. It could be funded through the existing Agricultural Credit Corporation insurance program, with the main change being improved targeting of which crops are eligible for the insurance. Special funds for water efficiency investments have also been suggested, but they face significant bureaucratic and political challenges.

There are a number of ways to help maintain farmer profits when water prices increase, e.g. improve post-harvest handling and transport, marketing programs, or assistance in developing contract farming, where the sale

is agreed upon before the crop is grown. Any improvement in profit and efficiency risks increasing water use, but can be counterbalanced through increased water tariffs and enforcement of quotas.

Recommendations. Link investments in the irrigation water distribution system to improvements in key performance indicators. Provide subsidies for investment in water efficient agricultural technologies and crop insurance only for water efficient crops. Improve coordination on water efficiency efforts between MOA and JVA. Increase the focus of agricultural extension work on water efficient technologies and crops.

Non-revenue water

Jordan's NRW is extremely high and has a huge impact on expenditures and revenues. The challenge is made more difficult because the water supply is non-continuous. On the positive side, NRW represents a large potential source of additional water and revenues. The estimated unit cost of JD 0.42–0.50 per m^3 of water that could be gained through a JD 200–500 million NRW reduction program is low compared with other options like the Disi project. For inspiration, the Government could look to the Phnom Penh Water Supply Authority in Cambodia, which decreased NRW from 72 percent in 1993 to 6 percent in 2011.

Identifying specific solutions to the NRW problem is made difficult by the lack of consistent reporting on the amount of NRW and the split between technical losses (physical leaks) and administrative losses (illegal connections to the water supply, under-billing because of metering problems, uncollected bills, etc.). As a first step, WAJ and the water companies should improve the quality and consistency of these data. In particular, it is hard to know how much to spend on system rehabilitation vs. collections and enforcement if the split between technical and administrative losses is not known. If administrative losses are due to a systematic under-registration of consumption at meters, it may be easier to simply increase the unit price of water than to replace the meters in order to get higher consumption readings per meter.

A detailed review of NRW, including the effectiveness of previous expenditures and the impact of successful projects on overall NRW figures, and an analysis of why the previous targets were not met, would help plan and budget for future investments. Using data from previous studies (for example, JICA, 2008), WAJ should include targets for NRW reduction and unit costs (for example, JD per m^3 saved) in its proposals for capital projects.

Solutions to the NRW problem spring from a recent report by the Asian Development Bank (2010), providing some of the reasons why NRW is not adequately addressed:

- Asset management practices are not sufficiently linked to addressing the causes and effects of NRW.
- NRW reduction is usually covered by an inadequate budget for O&M.
- NRW does not show up explicitly in water companies' financial statements.
- Highly subsidized price of wholesale water gives companies distributing water little incentive to reduce leakage or improve tariff collection.

Possible solutions to these problems include accounting for the full cost of the price of water in financial transactions between WAJ, JVA, and the water companies and developing an asset management plan (see below).

Account for the full cost of water. JVA should stop providing water for free to WAJ, and WAJ should stop providing its subsidy to water companies in the form of a below-cost wholesale water price. If the full cost of water is shown in accounting statements, then the financial value of the water saved by NRW projects increases, making it easier to justify the investment. Managers with bonuses tied to profits would have a larger incentive to reduce NRW.

The subsidy to water companies could instead be provided, for example, on a per connection, per population, or per meter of pipe basis, with an agreement between WAJ and the water companies to decrease the subsidy by a certain percentage each year. The water company and the customer would initially experience no net financial impact if NRW stayed the same, but both could obtain significant gains if the company reduced NRW. In the developing contract for commercialization of the northern governorates water company, the subsidy was negotiated on a flat annual amount, rather than on a unit basis (connection, inhabitant, or meter of pipe). The advantages of a subsidy on a unit basis are that it is less arbitrary than a flat annual amount, and that it can adjust automatically to changing conditions if set properly. But even a flat annual subsidy would be better than the current subsidy distorting the value of wholesale water.

If the government policy is to subsidize the retail price of water, then the subsidy should be an explicit and transparent transfer to the utility, and not buried in a discounted price of wholesale water. Although administrative arrangements make locations of the subsidies difficult to account for, this study has identified the subsidies in the budget and pointed to those outside the budget (see Water Sector PEP Working Paper, 2011). Making the subsidy an explicit line in the WAJ budget would be analogous to Miyahuna's practice of showing the full cost of retail water on the bills it sends customers, even though it doesn't hold them responsible for paying that amount. WAJ and the water companies could also be required to present the value of NRW in financial statements, at least as a note. Setting the price of wholesale water based on WAJ's fair costs, instead of what the water company needs to be profitable, would also be a step towards full separation of the interests of WAJ and the water companies. WAJ and the water companies could negotiate the contractual terms directly or through an independent regulator.

The water companies might be concerned that they would not actually receive the promised subsidy if it were no longer built into the price of the water. However, the contractual arrangement could provide the subsidy in the form of a deduction on the billed cost of water, so that there would never be a risk that the government withholds the subsidy from the water companies.

Asset management plan. Asset management plans are good practice for ensuring that water systems are properly maintained and operate efficiently.

WAJ, JVA, and the water companies should use asset management plans to identify the condition of system assets and plan the O&M, repair, and replacement needed annually and over the long term. Targets should take into consideration the asset condition needed to achieve NRW targets, at least for technical losses. By improving the understanding of system performance, an asset management plan could also assist in identifying administrative losses, e.g., by differentiating between leaks and illegal connections.

As a first step towards an asset management plan, target funding levels for investment in new projects vs. O&M and repair of existing systems could be developed to guide budgetary decisions. For example, if the total asset value is JD 1 billion, and one assumes 4 percent depreciation, then there should be JD 40 million/year in the budget for maintenance and replacement of capital. Previous analysis found under funding of Amman maintenance costs of at least JD 12 million/year, and is a good starting point for a target.

Recommendations. Stop providing subsidies through below-cost bulk water. This recommendation applies both to water provided by JVA to WAJ, and by WAJ to the water companies. Instead, provide the subsidy on a per connection, per population, or per meter of pipe basis, or simply through a negotiated flat sum. Institute an asset management plan to guide O&M and capital expenditures.

Wastewater and health

A recent report listed the most beneficial interventions to improve Jordan's water supply and sanitation system as those that (1) reduce the incidence of water-borne illness (already low), (2) increase the potability of water from the public system, and (3) increase the hours of availability of public water. It is essential to continue its efforts to expand the sewer network and increase wastewater treatment capacity to prevent the spread of disease. Increased wastewater treatment has the added benefit of providing an alternative source of water for agriculture. The Government should also promote access to sanitation in areas outside of the sewer network.

Increasing sanitation coverage is expensive, and the proposed shift in water sector expenditures from water supply to sanitation in 2011–2013 should be implemented. The Government will need to increase the revenues before Disi comes on line, in order to maintain the increased funding for the sanitation sector and not increase the water sector deficit.

As a second priority, WAJ and the water companies should increase people's awareness of the importance of well-maintained systems within the home to water quality and potentially provide incentives to ensure proper maintenance. According to a recent study, it is clear that many household users do not regularly clean and maintain their home water tanks, and do not understand the potential implications on potability. Of course, providing continuous supply would make home tanks obsolete, and remove the risk of disease from standing water.

Recommendations. Continue the 2011 Budget's plan to shift funding from water supply to wastewater, supported by increased revenues. Publicize maintenance needs of water systems in the home.

Increase revenues

Due to the positive externalities of water and sanitation for health, it may make economic sense to sell water below the market-clearing price. However, water sector subsidies were 20 percent of the budget deficit in 2010, and cause market distortions that limit economic growth. It makes sense to at least recover the cost of providing water service, in order to ensure that there are sufficient funds so that all have access to the benefits of water supply. Cross-subsidization—between rich and poor—of the price of water may be appropriate for ethical reasons. The Government has been reluctant to increase tariffs (or improve collections) in a way that adequately finances the investments needed to meet water demand because such measures might impact the affordability of water, especially for the poor.

We propose a series of technical or policy measures for Government authorities to institute over time that would certainly help to reduce the burdens that the water sector imposes on the budget. These measures should be implemented according to a strategic plan that includes considerable outreach and stakeholder participation.

Segura/IP3 (2009) recommended full recovery of the economic cost of water production at Miyahuna, estimated at JD 1.65 per m^3, which would require doubling the water tariffs. A forthcoming study by USAID Institutional Support and Strengthening Program (ISSP) finds that full cost recovery at Miyahuna can be achieved by increasing variable water costs from JD 0.51 per m^3 to JD 1.16 per m^3. The National Water Master Plan recommended closing the cost recovery gap through a combination of operation efficiency improvements (30 percent), an improved integrated investment planning process (30 percent), and higher tariffs (40 percent). If long-term goals for cost recovery are to be meaningful, they must be accompanied by annual targets for implementation. Annual targets for cost recovery should be broken down into goals for revenues and expenditures.

Variable domestic water tariffs (or a flat rebate) should be instituted, based on the income level of the neighborhood, using the existing approach and neighborhood wealth categories for the annual property tax rate. Exemptions can be made for poor families in wealthy neighborhoods.

A single block tariff should be created for all but the highest use, since most of the poor—62 percent in the Segura/IP3 study—already pay the medium use block tariffs. Bills for lower consumption would increase because many of these customers are wealthy. The highest use is more wealthy people and excessive consumption and should pay more.

An increase in domestic water tariffs should be linked to a commensurate increase in support for the National Aid Fund or for a fund to increase access of the poor to affordable water, as was done for electricity. The National Aid Fund is better able than the water sector to identify the needy.

Irrigation water tariffs should be increased for medium and high use blocks and land with banana and citrus quotas, which are unlikely to include poor farmers.

Discussion of water tariffs should be regularized in political discourse, as an annual tariff review by an independent regulatory board, so that it is not an unusual issue that mobilizes strong political resistance. Legislation should be enacted so that, at a minimum, water tariffs are automatically increased once a year to keep pace with inflation, saving politicians from having to actively support increases.

Efforts should be continued to empower water user associations to manage water rights, delegating responsibility for enforcement of usage compliance to the community.

Funding should be increased for enforcement actions.

The price of electricity, which is easier to enforce than highlands water quotas and charges, should be increased in order to make pumping groundwater in the highlands less economically attractive.

Recommendations:

- Phase out the water subsidies for middle and upper income families by instituting a flat tariff for all but the highest block water use.
- Support the poor either by targeting water subsidies based on real estate prices (land use categories in Amman), or through increased support from the National Aid Fund.

- Pass legislation to automatically increase water rates according to an inflation index.
- Raise tariffs for neighborhoods receiving continuous supply.
- Reduce electricity subsidies, which will reduce water pumping in the highlands.

Demand management

The simplest way to increase efficiency and reduce demand for water use is to increase prices, but there are complementary policies that can enhance the water saving benefits and minimize the cost impacts on consumers, including subsidies for water efficient technologies, water efficiency education to create a culture of conservation as has been done in parts of Australia and California, water efficient building codes, and water harvesting in homes.

There is great potential for expanded use of water saving devices (WSD), which are estimated to save several million cubic meters annually, and between JD 0.1–0.5 per m^3. Before WSD can become more universal, however, legal and policy barriers will need to be removed, standards developed, and the quality of technical support for WSD improved.

Several initiatives are addressing these issues and working to improve the efficiency of water use, such as: the USAID Reuse for Industry, Agriculture and Landscaping (RIAL) and Instituting Water Demand Management (IDARA) projects, the MWI Water Demand Management Unit, the GIZ Highland Water Forum, and the Jordan Business Alliance on Water.

Recommendations. Some of the most important policy actions include:

- The water companies should implement their water use efficiency plans developed with the USAID IDARA project with fully staffed Water Demand Management sections or units. Water use efficiency plans should also be developed for distribution areas not covered by the water companies, incorporating lessons learned from initial implementation efforts by the water companies.
- Rather than general subsidies for water consumption, the budget might peel off some of these to subsidize the installation of water saving devices for domestic use. IDARA estimates that installation of 25,000 devices at JD 15 per device could generate nearly JD 10 million in savings over 20 years.
- Continue development of the Water Demand Management Unit to guide policy at the Ministry of Water and Irrigation.
- Develop and enforce a national standardized plumbing code and efficiency standards for water using products (plumbing products, appliances, etc.).
- Continue to expand the use of treated wastewater for agriculture in order to reduce agricultural demand for fresh water. The agricultural use of treated wastewater must be implemented in a sustainable way, in particular ensuring that the salinity of the treated wastewater does not cause long-term damage to the soil.

CHAPTER VIII

A Look Ahead

This chapter first presents a likely scenario for where the Jordanian economy and its public finances are heading between 2012 and 2016, creating a new and somewhat longer term macro-fiscal framework.

This is followed by fitting the current services expenditure analysis that the team conducted into the new macro-fiscal framework, along with a number of other "non-discretionary" demands on the budget, i.e. expenditures over which the Government has little control.

Finally, based on these analyses and in reference to the sectoral analyses presented in the other chapters, looming fiscal risks and opportunities to ameliorate or minimize these risks are presented.

Combined, this chapter provides a path forward for taking advantage of the various opportunities that lie before the Kingdom on its path to significant fiscal consolidation, resumed economic growth, and more and better public services from a more efficient and results-oriented government.

MACROECONOMIC FRAMEWORK

The USAID-funded Fiscal Reform Project II (FRP II) has developed, in close cooperation with the Ministry of Finance's Studies and Economic Policies Directorate (SEPD), a macroeconometric model of the Jordanian economy. This model is based on economic relationships among the various factors that determine the size, shape, and growth of the economy over the past 10 years. These factors include, for example, gross domestic product (GDP), government spending, taxation, world oil prices, employment and labor force growth, export and import prices, foreign financing and donor assistance, and economic growth in other countries, such as the Middle East and North Africa (MENA) region, Europe, and the United States. The model relates all these variables to each other in functional terms that make sense in terms of causality and in terms of accounting principles. The model, of course, is not perfect—forecasting the future is always uncertain. Nonetheless, fiscal management in the absence of this sort of modeling effort is nothing better than guesswork.

Table 8.1 presents the forecast numbers that form the foundation for the fiscal analysis for 2012 through 2016. It presents the passive overall macro-fiscal results that derive from the above macroeconomic scenario. These results are "passive" in that the model is deterministic rather than based on policy decisions. However, these outcomes can be changed with effective leadership and earnest effort.

This macroeconomic forecast provides us with a reasonable, perhaps conservative, path for the immediate course of the economy and a hopeful, though perhaps not as sanguine view of the future than has been expected by others who have been hoping for a simple return to pre-2010 growth rates. Basic improvements that lead

TABLE 8.1. MACROECONOMETRIC FRAMEWORK: FRP II AND MOF/SEPD

	2012	2013	2014	2015	2016
Real GDP growth, %	3.3	4.4	4.5	4.4	4.3
Price inflation (CPI), %	5.0	3.3	2.3	2.1	2.2
GDP, nominal in JD millions	21,712	22,768	25,140	27,822	30,806
Unemployment rate, %	13.5	13.3	13.0	12.8	12.5
Public sector annual job growth rate, %	0.3	1.1	1.3	1.3	1.3
Private sector annual job growth rate,%	3.4	3.4	3.4	3.3	3.3
Gross capital formation, % GDP	27.2	24.4	21.1	23.3	23.9

Source: Macroeconometric model: FRP II and MOF/SEPD

Note: 2012 based on GBD budget request, which included corrected classification of capital and O&M spending.

TABLE 8.2. BASELINE FISCAL SCENARIO, 2012 TO 2016

	Percent of GDP				
	2012	2013	2014	2015	2016
Total revenue, central government	25.4	25.1	24.6	24.1	23.7
Domestic revenue	22.9	22.7	22.3	21.9	21.5
Tax revenue	15.8	15.8	15.6	15.5	15.3
Other domestic revenue	7.1	6.9	6.7	6.5	6.3
Foreign grants	2.5	2.4	2.3	2.2	2.1
Budget balance, after grants	–4.0	–3.5	–3.0	–2.6	–2.3
Budget balance, before grants	–6.5	–5.9	–5.3	–4.8	–4.4
Total expenditure	31.5	31.0	30.0	28.9	28.1
Current expenditure (modified)	26.9	26.5	25.5	24.5	23.6
Current expenditure (classic)	26.9	24.3	23.3	22.2	21.4
Current account balance (classic)	–4.0	–1.6	–0.9	–0.3	0.2
Current account (modified)	–4.0	–3.8	–3.1	–2.5	–2.1
Current account balance (after grants)	0.2	0.8	1.4	1.9	2.3
Development spending	6.7	6.7	6.7	6.7	6.7

Note: 2012 based on GBD budget request, which included corrected classification of capital and O&M spending.

Source: Macroeconometric model: FRP II and MOF/SEPD.

to greater productivity include higher participation of Jordanians, especially the young, in economic activity, a better business and labor environment, better use of public resources, and increased foreign and domestic productive investment. These factors can all help to build competitiveness and lead to higher economic growth. In addition, the model does not anticipate donor contributions to the budget greater than has been the case over the past few years. But with the recent (mid-2011) boost in announced donations from Saudi Arabia, as well as other hoped for assistance from other Gulf Cooperation Council (GCC) countries and the G8 countries as part of the Deauville Partnership, GDP levels and growth rates are likely to be more positive.

Our baseline forecasts take into account recent events of this year, such as reduced ability to trade with partners such as Yemen, Syria, and Egypt; higher costs incurred due to lost access to gas from Egypt; and reduced tourism. For longer term, other factors are considered, such as the likelihood of continued weak growth in the US and Europe, with modest improvements after next year. Noting this year's petroleum price rises, forecast at 28 percent higher than last year, we anticipate continued petroleum price increases of about 10 percent per year for the next several years. Clearly, changes in petroleum prices can go either way, but we feel that this is a conservative scenario and a better one for macro-fiscal programming than a scenario that envisions declining petroleum prices.

The economic fundamentals facing the Kingdom are such that our scenario for real economic growth for 2011 is for quite slow growth, though it is more positive than it would have been had the Kingdom of Saudi Arabia not provided Jordan with a JD 1 billion grant in mid-2011. Much of this money is being spent, per a budget supplement, on a number of domestic programs, including the Ramadan gift of JD 100 to every public sector employee, His Majesty's Local Development Initiative, and other such activities. The JD 1 billion grant comes to a full 5 percent of GDP and has had an important stimulus impact on economic demand.

FISCAL FRAMEWORK

Table 8.2 presents a "baseline fiscal scenario" which is a number of macro-fiscal targets that arise from this macroeconomic framework, but include a number of policy targets designed to help ensure a stable economy, restrain debt financing, and support a return to growth.

The first four lines of the baseline fiscal scenario derive from the macroeconometric model. These forecasts are based on overall macroeconomic forecasts, current law, and recent revenue collection trends. These are neither optimistic nor pessimistic, but aggressive implementation of tax policy and tax administration reforms that have

been suggested elsewhere, could help overcome this declining trend. [1]

Total expenditures are calculated based on the availability of resources. This availability of resources is the sum of total revenues and grants plus the amount of money that would enter the treasury from domestic and foreign borrowing. Total borrowing is a policy target and is consistent with macroeconomic discussions that have been held with others and discussed both in public and among policy makers. It is also consistent to a large degree with the draft *Medium Term Debt Strategy* being discussed (mid to late 2011) among high-level Government and Central Bank officials.

Development spending, including capital investment by Government, is a result of the macroeconomic model and is part of the requirement for gross capital formation needed to provide the infrastructure, roads, schools, hospitals, and other such capital assets that contribute to economic growth. We refer to this category as "development spending," which is a term used in many countries around the world, since it includes not solely pure capital expenditures, but also other spending that supports capital investment, such as the maintenance of recently completed projects and salaries for persons implementing capital projects. This capital support spending is estimated at about one-third of the development budget. It should be noted; this capital support spending is clearly indicated in the General Budget Law and noted as "completed projects" expenditure heading.

To get a better understanding of the structure of government spending we separately account for this development spending that supports such investment. We create a new category of spending called "modified current spending" which is the classic current spending reported in Jordan plus the amount of the development budget devoted to supporting capital spending.

Non-discretionary spending levels

This section calculates a number of spending lines that should be seen either as unalterable, or extremely rigid, or offering little opportunity within this study for in-depth analysis leading to recommendations for reform. For the purposes of this study, we consider non-discretionary spending to include: interest payments on current and accumulating debt, pension payments for persons in the legacy public pension system, allocations to the Royal Court, spending on national defense, and planned or likely subsidies to petroleum and petroleum derivatives. Once these committed spending levels are accounted for they can be deducted from the total spending ceiling discussed in the previous section to arrive at the available spending ceiling for all other, what we refer to as discretionary, spending.

Each of these non-discretionary spending categories is calculated using a separate methodology. Interest payment obligations are taken directly from the *Medium Term Debt Strategy* paper prepared in summer 2011 and under review at the time of this writing. Pensions, compensations, and allowances obligations are based on recent budget data, indicative spending from the Medium Term Expenditure Framework (MTEF), and extrapolation of trends. Allocations to the Royal Court and spending on the military are also from MTEF and then extrapolated according to the expected annual increases in consumer prices. Finally, spending on oil or petroleum products subsidies is based on a calculation

TABLE 8.3. NON-DISCRETIONARY SPENDING, 2012 TO 2016

	Percent of GDP				
	2012	2013	2014	2015	2016
Total expenditures	32.0	31.0	30.0	28.9	28.1
Interest payments	1.8	1.9	2.3	2.7	2.7
Pensions, compensations, and allowances	4.1	4.1	4.1	3.8	3.6
Royal Court	2.0	1.9	1.8	1.7	1.6
Military spending	5.3	5.0	4.7	4.4	4.2
Oil subsidies	1.4	1.4	1.4	1.4	1.4
Total Non-discretionary spending	14.6	14.3	14.3	14.1	13.5
Funds for all other spending	17.3	16.7	15.6	14.8	14.6
Funds for all other spending, percent of total spending	54.2	53.8	52.1	51.3	52.0

[1] See *Benchmarking the Tax System in Jordan* by Al-Momani et al. (2010).

TABLE 8.4. PROJECTING GOVERNMENT SPENDING

	2012	2013	2014	2015	2016	Change
	JD millions					%
Social assistance	307	321	336	352	368	20
Health	818	874	854	893	935	14
Transportation	282	403	412	419	369	31
Water	505	500	621	678	741	47
Education	925	963	998	1,038	1,084	17
Interest	374	433	578	751	832	123
Pensions+	850	933	1,031	1,066	1,103	30
Royal court	424	438	457	477	498	18
Military	1,091	1,127	1,177	1,229	1,283	18
Oil subsidies	300	330	363	399	439	46
Other	954	716	776	854	1,143	55
Total	**6,830**	**7,038**	**7,603**	**8,156**	**8,795**	**33**

Note: 2012 total spending from Nov. 30, 2011, GBD budget estimates.

of such spending needs in 2011 and with an increase of 10 percent per year over each of the next five years. This 10 percent increase is directly linked to the expected increase in oil prices that is included as a basic assumption in the macroeconometric model.

The result of this analysis is non-discretionary spending comprising almost one half of the overall central government spending, starting at 14.6 percent of GDP in 2012 and declining to 13.5 percent of GDP in 2016. Discretionary spending is expected to decline from 54.2 percent of total spending to 52 percent, over the same period. In terms of GDP, discretionary spending's decline will likely be more precipitous, dropping from 17.3 percent in 2012 to 14.6 percent.

It should be clear that we make no claim of precision in these numbers, because we cannot be certain about what is going to happen to international oil prices, GDP, and government revenues. But it is clear that at this time, the Government already has control or decision making power over just a little more than half of its budget, and this situation is unlikely to change in the next few years.

Current services budgets for target sectors

This section presents estimates of current services budgets for health, education, social assistance, water and transportation. Each of these is based on the five sector *Public Expenditure Perspectives Working Papers*.

A current services budget is a fairly straightforward concept and a common budget analysis technique used in many countries. Based on economic, demographic, social and environmental expectations the current services budget forecast tells how much will have to be spent to continue providing the exact services while maintaining coverage (such as portion of population, percentage of school age children, health care for pregnant women) and implementing the currently dominating policies (e.g. student-teacher ratios; availability of hospital beds, road network per vehicle).

Throughout all of the current services estimates we project funding requirements based on expected need to maintain the current services today, maintain coverage in terms of population and economic growth, when appropriate, and we account for general price rises, so as to maintain purchasing power of budgeted resources. Levels of public employment are assumed to increase along with the growing service client bases, but we do not factor in wage rate or benefit increases that exceed general consumer price inflation. Any anticipated adjustment in the civil service remuneration rates would have to be separately factored into this analysis.

Our team first calculated the current services budgets for each respective sector. These calculations fit into the general budget framework presented here and were then adjusted in a number of ways, depending on need. Each of these calculations is discussed in the working papers, but their elaboration is also touched upon here.

To the extent possible, these calculations are consistent with and based on the functional classification of government spending that is practiced by the General Budget Department and the Ministry of Finance, and as reported in the Annual Reports of the General Budget Department.

Social assistance current services estimates assumed that the same relative population would continue to receive assistance from the National Aid Fund, National Zakat Fund and the Ministry of Social Development. We then inflated these estimates to rise with the consumer price index. This was done to ensure that cash benefits would not lose purchasing power. In addition, we assume that the population to be covered would increase in size in lock step with the country's overall rate of population growth.

For *transportation* programs, which include specific spending by Ministry of Public Works and Housing and all spending by the Ministry of Transportation, we first analyzed current spending plans in the existing Medium Term Expenditure Framework (MTEF), then extended this based on some project profiles, as well as to cover inflation. In addition, instead of expanding expenditures according to population growth, as in the case of social assistance, we assumed that transportation spending requirements would grow with overall economic expansion in Jordan.

The analysis for *water* programs was done in a similar manner as for transportation. We reviewed spending plans in the existing MTEF by the Ministry of Water and Irrigation, the Water Authority of Jordan, the Jordan Valley Authority, and the water companies. We then extended this based on the assumption that water spending requirements would expand with economic growth, and added the Disi project's capital and operations profile, escalated for inflation.

For *education* we analyzed the budgets of the Ministry of Education, the Armed Forces Department of Education, the Vocational Training Center, the Ministry of Higher Education and Social Research, the Ministry of Planning and International Cooperation's programs on basic education and universities and colleges. We reviewed already approved increases in service levels, employee hiring plans, increases in student enrollments, increases in service levels as may be required by law, previously approved capital projects, completing capital projects, and other factors, some of which include reductions in savings from planned closings of facilities.

For the *health* sector, we analyzed current and MTEF planned spending needs of the Ministry of Health, in particular: secondary health care and hospitals, primary health care and health services centers, serums, vaccines, medicines and medical consumables, human resource management, the health insurance umbrella plan, and administrative and support services. We included estimated energy increases, annualized costs of projects being completed and completed in prior years, previously approved program expansions and eliminations, and scheduled capital facilities openings and closings. We then factored in expected inflation and rising population needs. Of course, better use of current facilities, as recommended in Chapter V, such as reducing vacant hospital beds, can generate important savings for the sector.

Table 8.4 presents our estimates of spending allocations based on the limits on non-discretionary spending discussed above and including the projections of current services budget requirements for our target sectors. The overall spending target is drawn from the baseline fiscal scenario indicated in Table 8.2. The other category of spending is derived as a residual; once projected non-discretionary and targeted sectors current services estimates are subtracted from overall spending.

RISKS AND OPPORTUNITIES

What this macro-fiscal analysis shows is that it is quite feasible for the Government to constrain public spending, even in a more slowly growing economy, and still meet its current set of objectives as represented by current services budget requirements. But, it is useful to point out certain fiscal risks and, drawing generally from the sector chapters and other research, identify opportunities for ameliorating these risks and improving overall macroeconomic performance, leading to better services and welfare for citizens, and going further in the alleviation of the deleterious impacts of poverty.

Risks

Numerically, the biggest fiscal risks include the growing burden of interest obligations, the current policy of subsidizing the price of oil and derivatives, burgeoning water sector spending, off-budget guarantees for debt financing of the National Electric Power Company (NEPCO), and the downward drift in tax and other non-tax domestic revenues. Indeed, even with the targeted declines in overall fiscal deficits, as elucidated in Table 8.2, showing after grant fiscal deficits declining from 4.0 percent of GDP in 2012 to 2.3 percent in 2016, debt will continue

to rise and interest payments on that debt will more than double, even while the overall budget is expected to only grow by about 30 percent. The second big and obvious risk is the current policy of insulating the public from fuel price increases, whether due to rising international prices of oil or unstable gas supplies from Egypt. The alternative to this policy is to let consumers bear the full fluctuations in the prices and availabilities of these supplies, while between price signals and perhaps other measures, actually encourage greater conservation and hence less outlay for fuel.

With the changes in regime in neighboring Egypt that have occurred this year, an increase in disturbances and terrorist activity in the Sinai have led to cutoffs of natural gas to the Kingdom. This has necessitated the production of electricity by means other than gas, which has led to significant cost increases of power generation. These increased costs are passed on to NEPCO, the transmission company, but because of Government stabilization policies, NEPCO is unable to pass these increased costs on to consumers by way of higher tariffs. To cover the loss generated by this policy, NEPCO has been borrowing, with Central Government providing debt guarantees.

These debt guarantees facilitate NEPCO's borrowing, but a number of issues arise. First, this method is not fiscally transparent. If the Government wishes to hold down electricity tariffs, the most transparent way of doing this would be to provide a direct subsidy to NEPCO to cover the cost of this policy. The Government would then have to show this as an increase in its current spending and this would need to be financed either by greater revenue effort or by new grants or borrowing.

The second issue of concern is that, although we do not have access to the data, it is likely that NEPCO borrowing, even with GOJ guarantees, is more expensive than direct domestic borrowing by the Government.

The fiscal risk either way is very large. Early in 2011 estimates were that this policy would require the MOF to provide loan guarantees up to about JD 700 million. However, by October 2011, the estimate of this loan guarantee requirement had risen to JD 1.1 billion. This represents a very high fiscal risk for the Government in that it is not at all clear when the situation will change and NEPCO would be able to generate the revenues to actually pay off this debt. It is also not clear that permanent solutions have been found to either secure the Egyptian gas or to find economic substitutes. If the costs of producing electricity are not lowered and the policy of retail suppressing tariffs persists, this large fiscal risk will only be exacerbated.

Similarly, the risk of rapid indebtedness growth of the Water Authority of Jordan poses a very large fiscal risk. Chapter VII showed how WAJ's debt had risen to about JD 700 million in 2011 and that on current estimates it is planned to triple to about JD 1,900 million by 2016. In the absence of real changes in how water is priced, non-revenue water is captured or reduced, and other efficiencies, such as in allocation and operations, the GOJ very likely would be forced to take on this debt, just as it was forced to in 1999. This debt would come to almost 10 percent of GDP.

Foreign grants have been very important in the fiscal system. The fiscal scenario posited here shows this importance continuing. While these grants are a true boon to the economy and maintaining fiscal balances, they bear the risk to the fiscal system of not really being so reliably programmed. The amount of these grants is subject to many, many forces external to the country and out of the control of Jordan's leaders. Fiscal challenges of trading partners, oil price fluctuations, and economic and political instability around the world have much more to do with these grants than would be healthy for any fiscal system. When one realizes that foreign grants represent more than 10 percent of not requitable revenues, the risks become clear.

An important risk that does not appear at all in any of these tables is the uncertainty of what might happen in terms of government salaries. Government employees are paid in a variety of ways: direct salaries, performance or incentive pay, contract salaries above normal pay scales, special payments for participating in committees and other similar bonuses. Chapter II pointed out that over the past several years, overall government remunerations have grown somewhat more slowly than per capita GDP, and implicitly more slowly too than in the private sector. During recent months in 2011, the Government has been developing a comprehensive wage and jobs structure reorganization that is likely to alter this dynamic. Without knowing more precisely the contents of this imminent, planned reform, one can only guess what is likely to happen with government salaries. For the purposes of this study, however, we have simply assumed that salaries will not grow more rapidly than the prices in the rest of the economy, i.e., the consumer price index. Should there be a considerable increase in government salaries, fiscal risks would increase proportionately.

Another area of concern is that of "fiscal space." Fiscal space is the amount of "room" available within the annual budget to provide for funding of new projects. While the macroeconomic and the fiscal scenarios above allow for 6.7 percent of GDP to be executed as the Government's capital or "development" spending program, fully one-third of this is used to maintain and operate capital projects that have already been completed, while most of the remainder is used to fund ongoing projects. This means that even if 6.7 percent of GDP is available for this account, the amount of funding available for financing new projects, such as relate to the various mega projects and others, will be minimal. And, as shown in Chapter II, capital spending seems to be the area of the budget most likely to be cut in lean years. Should growth and revenues and grants not all perform as in the macroeconomic and fiscal scenarios laid out here, capital spending, fiscal space, and new project funding are the most likely spending areas to suffer.

The Government is quite acutely aware of this fiscal space concern and it is one of the rationales for pursuing public-private-partnerships as a means for undertaking important infrastructure projects, such as the Red-Dead Sea project, the Nuclear Reactor project, the Bus Rapid Transit Project, the Amman-Zarqa Light Rail System project, and the National Railway project, among many others. However, since several of these mega projects' partners are requiring some sort of guarantees from the Government the full benefits of true private sector financing may not be achieved. Considering that according to law, Government debt guarantees must be accounted for the same as if they were actual debt of the Government and matched with the fact that the legally mandated debt ceiling of 60 percent of GDP has already nearly been hit, gaining new fiscal space will be absolutely necessary for advancing the aspirations of the country in transport, energy, and indeed, in any area of infrastructure development.

Opportunities

The people and the Government have many options for reducing the noted fiscal risks and their impact, and especially for creating fiscal space for new capital investments. There are various approaches: raise more revenue through higher rates, raise more revenue by reducing tax "expenditures" or tax exemptions and special preferences, further reduce spending, and seek other options for public-private partnerships that do not require government guarantees of investor capital.

With respect to reducing spending, many recommendations have already been made in other parts of the study about how spending could be made more efficient and more effective. Rather than repeating these recommendations here, it is important to note that the study has made recommendations to:

- Reduce spending on education by reducing the surplus in the numbers of teachers and school buildings,
- Reduce budget costs for health by raising copayments, raising insurance premiums, especially for those high-level employees whose benefits are superior, better manage pharmaceuticals, rationalize tertiary care facilities across private and public sectors and reduce bed vacancy, among many others,
- Reduce non-revenue water,
- The Ministry of Finance should closely monitor all finances of the entire water sector to ensure actions are not taken to upset the Government's Medium Term Debt Strategy or place the country into debt troubles,
- The Ministry of Finance should conduct fiscal affordability analysis of all large and mega capital projects to ensure that they do not upset future fiscal stability, and
- Increase user fees and thereby lower budget costs for roads.

Of course, some of these cost reducing measures would also need to be matched by some cost increasing measures, such as efforts to raise the quality of primary and secondary education to better compete internationally.

With respect to generating greater budgetary revenue, the tax system offers many opportunities that could be ushered in with very little impact on the society or the economy. Our focus here is on reducing tax expenditures, but some tax structure or policy issues are also mentioned. [2] Such a reform could include:

- Phase out existing *special investment incentives*. These have been shown to be counterproductive in almost every country of the world where they have been implemented and evaluated.

[2] These recommendations stem, in large part, from the Working Paper, *Evaluating Tax Expenditures in Jordan,* by Heredia-Ortiz (2011).

- Phase out the tax exemption on income from exports. As with other tax exemptions, this has been shown to be counterproductive, and it is against World Trade Organization rules.
- Eliminate all zero-rating for the Value-Added Tax, except for exports.
- Reduce most exemptions and reduced rates under the VAT. Consider raising the zero rate for import duties, except, of course, where this is not allowed under international law. The zero-rating actually harms Jordan's competitiveness and encourages misallocation of resources by private industry.
- Raise the top personal income tax to 20 percent. Freeze the personal or family income deduction. This will not likely raise a great amount of revenue over the coming period, since inflation is expected to be low, but rising incomes among middle and lower income groups will help to buoy the revenue system.

Al-Momani et al. (2010) provide numerous recommendations for raising revenues from the current tax system through better use of identifying companies and individuals who should be in the tax system, but have either dropped out or have avoided detection all along. Implementing these methods would help not only to increase government revenues without imposing any new economic burden on the private sector, it would also reduce unfair competition, where the dishonest and dishonorable gain at the expense of those who comply with the law and regulations of the land.

In terms of reducing the requirement for government guarantees for public-private partnership projects, the Government should focus more on projects that in their basic design would not lead to conditions requiring such risk burden by the Government. Perhaps solutions would be to develop project designs that have a greater market orientation to them and where risks are clearer. One way of doing this would be to develop means of signaling the permanent or semi-permanent status of regulatory arrangements, such as establishing predictable tariffs. Other arrangements, such as Build Operate Own (BOO) over Build Operate Transfer (BOT) might be more beneficial for risk sharing since the private partner would not need to incur a loss of capital in the distant future.

In Chapter VI, we provided a recommendation for the establishment of an infrastructure development fund. Such a fund could provide either capital or capital guarantees that would support mega projects and could minimize the requirement that Government be a guarantor for private capital in these projects.

CONCLUSION

This *Public Expenditure Perspectives* study presents a broad spectrum of opportunities for ushering the country into a new era of fiscal consolidation and economic prosperity. We have identified many areas for improving the quality of government spending, reducing inefficiency, and saving scarce public resources.

Comparing Jordan with countries at similar income levels, we find there is much to be proud of: high literacy and school enrollment rates, universal health care, good and improving road and air infrastructure. The challenge now is to raise the value of each taxpayer JD spent, releasing pressure on the fiscal system and enabling economic growth to push the country above and beyond its peers. Conversely, if serious policy actions are not taken immediately to avert some of the fiscal risks elucidated here, the country stands to fall further behind.

Our hope is that the analysis and recommendations herein provide a useful guide for policy makers looking for concrete, innovative and cost-conscious ways to meet these challenges.

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