

JORDAN ECONOMIC MONITOR

THE GREEN ECONOMIC BOOST

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PREFACE

The *Jordan Economic Monitor* provides an update on key economic developments and policies over the past six months. It also presents findings from recent World Bank work on Jordan. It places them in a longer-term and global context, and assesses the implications of these developments and other changes in policy on the country's outlook. Its coverage ranges from the macro-economy to financial markets to indicators of human welfare and development. It is intended for a wide audience, including policy makers, business leaders, financial market participants, and the community of analysts and professionals engaged in Jordan.

The *Jordan Economic Monitor* is a product of the World Bank's Global Practice for Macroeconomics & Fiscal Management, (GMFDR) team. It was prepared by Léa Hakim (Economist) and Zeina Hasna (Economic Analyst), under the general guidance of Eric Le Borgne (Lead Economist and Acting Practice Manager). The Special Focus 'A Time for Green Growth and Climate Action' was prepared by Léa Hakim (Economist), Monali Ranade (Senior Operations Officer) and Concepcion Aisa Otin (Senior Financial Officer); World Bank. The Special Focus on the Welfare Impact of Recent Price Changes in Energy and Water was prepared by Caroline van den Berg (Lead Economist), Joern Huenteler (Energy Specialist), Amr Moubarak (Social Protection Specialist), and Jon Jellema (Consultant); World Bank. Zeina El Khalil (Communications Officer) print-produced the report.

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The findings, interpretations, and conclusions expressed in this *Monitor* are those of World

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LIST OF KEY ABBREVIATIONS USED

bps:	Basis points
H1, H2:	First half of the year, second half of the year.
3mma:	Three-months moving average
pp:	Percentage points
Q1 (Q2, Q3, Q4):	First (second, third, fourth) quarter of the year
qoq:	Quarter-on-quarter
sa:	Seasonally adjusted
saar:	Seasonally adjusted, annual rate
yoy:	Year-on-year
lhs, rhs:	Left hand side, right hand side (for axis of figures)
EE:	Energy Efficiency
EMRC:	Energy and Minerals Regulatory Commission
GHG:	Greenhouse Gases
IMF:	International Monetary Fund
MOPIC:	Ministry of Planning and International Cooperation
NEPCO:	National Electric Power Company
NDC:	Nationally Determined Contribution
RE:	Renewable Energy
SME:	Small and Medium Enterprise
USD:	United States Dollar
WAJ:	Water Authority of Jordan

EXECUTIVE SUMMARY

i. Jordan's economy remains sluggish.

Growth slowed down in 2016 for the second year in a row – to 2.0 percent from 2.4 percent in 2015 – further diverging from its potential and below the 2.7 percent MENA average. This is largely due to a weaker mining and quarrying sector, partly related to downward pressures on global potash prices. Growth was also affected by a confluence of factors related to repercussions from the Syrian crisis, notably the closure of export routes to Iraq and Syria and lower tourism amid regional instability, despite a recovery in construction in 2016. The sectors that contributed the most to growth in 2016 were 'finance and insurance services,' 'transport, storage and communications' and 'real estate'.

ii. The labor market faces significant stress.

A new methodology adopted by the Department of Statistics as of the first quarter of 2017 (Q1-2017) reveals that unemployment reached 18.2 percent in Q1-2017, with labor force participation and employment rates of 40.5 percent and 33.1 percent, respectively, with women worse off across these. These figures are not comparable with the previous methodology. Labor market indicators had appeared to be worsening through 2016. Up until then, higher levels of unemployment and continued trend declines in the labor force participation and employment rates had been observed, particularly for youth. This could have stemmed from discouraged workers given perceived competition from refugees, limited job creation and the overall weakness of the economy that constrains overall job creation.

iii. Inflationary pressures appear after two years of deflation.

Jordan witnessed deflation for the second year in a row in 2016 with Consumer Price inflation averaging -0.8 percent (period average) largely due to an average decline in international oil prices and lower food prices, while core inflation

(excluding fuel, transportation and food) averaged 2.2 percent. Inflation has picked up since November 2016 and is expected to accelerate into 2017, due to higher oil prices' impact on transportation and fuel prices, and fiscal measures introduced to reduce the fiscal deficit.

iv. The fiscal deficit narrowed in 2016 and further into 2017 (excluding grants), yet debt remains elevated.

The fiscal deficit contracted to 3.2 percent of GDP in 2016 following a number of measures introduced that year including the removal of 2015 Goods and Sales Tax exemptions, reduction of tax exemptions on imported used cars, increasing taxes on cigarettes and alcohol, and raising the transfer fees on car sales. Excluding grants, the fiscal deficit continued to improve by 21 percent in Q1-2017 yoy to 0.26 percent of estimated GDP. Debt however remains elevated at 95.4 percent of adjusted GDP as of end-March 2017, with further pressures stemming from the financing needs of the Water Authority of Jordan whose debt is government-guaranteed.

v. The current account deficit slightly widened in 2016 due to lower current transfers.

The current account deficit widened from 9.1 percent to 9.3 percent of GDP due to lower current transfers including a 2.4 percent contraction of remittances, and decreased tourism receipts (albeit at a slowing rate). The trade in goods deficit narrowed led by 6.2 percent decline in imports (due to declining energy imports) which overweighed the 4.1 percent deterioration of exports of goods which continued to be affected by land trade route closures with Iraq and Syria.

vi. Monetary policy swiftly tightened as of December 2016 following the Fed's lead and in support of the exchange rate peg.

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of Jordan raised key policy rates three times since for a cumulative 100 bps to maintain the JD-USD deposit rate spread, and tackle rising dollarization and falling reserves. Dollarization of deposits (share of deposits in USD/total deposits) reached 19.5 percent by end-March 2017, its highest rate since December 2013; partly due to one-off factors. The stock of foreign currency reserves held at the central bank has been declining to US\$11.4 billion by end-April 2017 yet reserves still cover a solid 7.8 months of imported goods (excluding re-exports).

vii. Jordan's economic growth prospects are expected to remain tepid over the medium-term.

Assuming no change in the geopolitical situation, growth is forecasted to improve to 2.3 percent in 2017 on account of improvements in tourism and exports. In the medium-term, growth is expected to average 2.6 percent over 2017-2019 as the impact of some business climate reforms materialize. The current account is expected to narrow in 2017 due to higher current transfers offsetting a wider trade balance, the latter due to higher oil imports, before tending to 6 percent of GDP by 2019. As Jordan adheres to the IMF Extended Fund Facility Program, the fiscal balance and debt-to-GDP ratio are bound to improve despite higher cost of borrowing stemming from higher interest rates.

viii. A major challenge for the Jordanian authorities remains stimulating growth and job creation, while reining in the fiscal deficit and hosting more than 660,000 registered Syrian refugees.

This is even more imperative as security threats manifest, labor market indicators deteriorate and inflationary pressures appear. However, short of a positive shock such as the reopening of trade routes with Iraq or a peaceful conclusion to the Syrian conflict, and in light of fiscal and monetary policy tightening, it is difficult to foresee an impactful jumpstart to growth unless strategic structural reforms are implemented at a quicker pace. The Economic Policy Council's newly launched Jordan Economic Growth Plan 2018-2022 bodes well to stimulate some of these reforms. Given the difficult socio-economic environment, introduction of fiscal adjustment measures to contain the deficit and ease reliance on grants from

donors will continue to prove difficult as reflected in the 2017 budget debates and recent austerity protests.

ix. Jordan has an opportunity to vitalize green growth and undertake climate action as part of a sustainable solution to addressing Jordan's fiscal, economic and climate vulnerabilities. Climate action needs to be coordinated across government and includes introducing climate-smart fiscal policy and strengthening the energy grid. Such action could boost the economy and result in job creation, reduced dependence on commodity imports, attraction of Foreign Direct Investment and mobilization of international climate finance. Further analysis and policy coordination is required to fully optimize Jordan's potential for low-carbon economic transformation and to address the short run transition costs (Special Focus 1).

x. While the short-term welfare impacts of electricity and water tariff reforms on households have so far been limited, targeted social protection measures to accompany any future price increases would limit future impact on the poor. Analysis of the short-term welfare impacts on households of the electricity and water tariff reforms implemented between 2010 and 2016 suggest that welfare impacts so far have been limited. Household expenditures on electricity and water are still modest by international standards, but the Government should consider combining further tariff reforms with targeted social protection measures to limit the impact on the poor (Special Focus 2).

ix. ولدى الأردن فرصة لتحفيز النمو الأخضر واعتماد تدابير مناخية كجزء من حل مستدام لمعالجة مواطن الضعف المالية والاقتصادية والمناخية في البلد. ويتمين تنسيق هذه التدابير المناخية عبر مختلف المؤسسات الحكومية، ويشمل ذلك اعتماد سياسة مالية ذكية على المستوى المناخي وتعزيز شبكة الطاقة. ومن شأن هذه الإجراءات أن تعزز الاقتصاد وتؤدي إلى خلق فرص العمل وتقليل الاعتماد على الواردات السلعية وجذب الاستثمار الأجنبي المباشر وحشد التمويل الدولي للمناخ. كما يلزم إجراء مزيد من التحليل وتنسيق السياسات لتحقيق أقصى استفادة ممكنة من إمكانات الأردن في التحول الاقتصادي منخفض الكربون ومعالجة تكاليف هذا الانتقال على المدى القصير (التقرير الخاص ١).

x. ورغم أن الآثار القصيرة الأجل لإصلاحات تعرفه الكهرباء والمياه على الرعاية الاجتماعية للأسر كانت محدودة حتى الآن، فإن تدابير الحماية الاجتماعية المستهدفة لمواكبة أي زيادات في الأسعار في المستقبل ستحد من أثر هذه الزيادات على الفقراء. ويشير تحليل آثار الرعاية الاجتماعية على المدى القصير لإصلاحات تعرفه الكهرباء والمياه على الأسر التي نفذت بين عامي ٢٠١٠ و ٢٠١٦ إلى أن آثار الرعاية الاجتماعية كانت محدودة حتى الآن. ولا تزال نفقات الأسر على الكهرباء والمياه متواضعة وفقاً للمعايير الدولية، ولكن يتعين على الحكومة أن تنظر في إمكانية الجمع بين المزيد من إصلاحات التعريفات وتدابير الحماية الاجتماعية المستهدفة للحد من تأثيرها على الفقراء (التقرير الخاص ٢).

وبلغت قيمة الودائع بالدولار (حصة الودائع بالدولار الأمريكي/ إجمالي الودائع) ١٩,٥ في المئة في نهاية آذار/مارس ٢٠١٧، وهو أعلى معدل لها منذ كانون الأول/ديسمبر ٢٠١٣، ويرجع ذلك جزئياً إلى عوامل متفرقة. كما تراجع احتياطي النقد الأجنبي لدى البنك المركزي إلى ١١,٤ مليار دولار أمريكي بحلول نهاية نيسان/أبريل ٢٠١٧، إلا أن الاحتياطيات لا تزال تغطي ٧,٨ شهراً من السلع المستوردة (باستثناء السلع المعاد تصديرها).

vii. ومن المتوقع أن تظل آفاق النمو الاقتصادي في الأردن خجولة على المدى المتوسط. وبافتراض عدم حدوث تغيير في الوضع الجيوسياسي، من المتوقع أن يتحسن النمو إلى ٣,٢ في المئة في عام ٢٠١٧ بسبب تحسن السياحة والصادرات. وعلى المدى المتوسط، من المتوقع أن يبلغ متوسط النمو ٢,٦ في المئة خلال فترة ٢٠١٧-٢٠١٩ مع ظهور تأثيرات بعض إصلاحات مناخ الأعمال. ومن المتوقع أن يتقلص الحساب الجاري في عام ٢٠١٧ بسبب ارتفاع التحويلات الجارية التي تقابل ميزاناً تجارياً متزايداً، والسبب في ذلك يعود إلى ارتفاع واردات النفط، قبل أن يتجه إلى ٦ في المئة من الناتج المحلي الإجمالي بحلول عام ٢٠١٩. ومع التزام الأردن ببرنامج صندوق النقد الدولي ضمن منشأته الائتمانية الموسعة، من المتوقع أن يتحسن الميزان المالي ونسبة الدين إلى الناتج المحلي الإجمالي رغم ارتفاع تكلفة الاقتراض الناجم عن ارتفاع أسعار الفائدة.

viii. ولا يزال التحدي الرئيسي الذي تواجهه السلطات الأردنية يتمثل في تحفيز النمو وخلق فرص العمل، وفي الوقت عينه ضبط العجز المالي واستضافة أكثر من ٦٦٠ ألف لاجئ سوري مسجل. وتصبح هذه المسألة أكثر إلحاحاً مع بروز التهديدات الأمنية وتدهور مؤشرات سوق العمل وظهور الضغوط التضخمية. ومع ذلك، وبعيداً عن حدوث صدمة إيجابية مثل إعادة فتح طرق التجارة مع العراق أو التوصل إلى تسوية سلمية للنزاع السوري، وفي ضوء تشديد السياسة المالية والنقدية، من الصعب توقع حدوث قفزة مؤثرة للنمو، ما لم يتم تنفيذ الإصلاحات الهيكلية الاستراتيجية بوتيرة أسرع. وتبدو خطة تحفيز النمو الاقتصادي الأردني لفترة ٢٠١٨-٢٠٢٢ التي أطلقها مجلس السياسات الاقتصادية مؤخراً واعدة لتحفيز بعض هذه الإصلاحات. وبالنظر إلى البيئة الاجتماعية والاقتصادية الصعبة، سيظل من الصعب اتخاذ إجراءات ضبط أوضاع المالية العامة لاحتواء العجز وتخفيف الاعتماد على المنح المقدمة من الجهات المانحة، على النحو المبين في مناقشات الميزانية لعام ٢٠١٧ والاحتجاجات التقشفية الأخيرة.

الملخص التنفيذي

i. لا يزال الاقتصاد الأردني يشهد نمواً بطيئاً. فقد تباطأ النمو عام ٢٠١٦ للسنة الثانية على التوالي، ليصل إلى ٢,٠ في المئة مقارنة بـ ٢,٤ في المئة عام ٢٠١٥، ممّا أدى إلى تباطئه بشكل أكبر عن إمكاناته، وهو أقل من المعدّل ٢,٧ في المئة لمنطقة الشرق الأوسط وشمال أفريقيا. ويعود ذلك إلى حد كبير إلى ضعف قطاع التعدين والمقاع المرتبط جزئياً بانخفاض أسعار البوتاس العالمية. كما تأثر النمو بمجموعة من العوامل المرتبطة بتداعيات الأزمة السورية، ولا سيما إغلاق طرق التصدير إلى العراق وسوريا، وانخفاض السياحة وسط عدم الاستقرار الإقليمي، بالرغم من انتعاش قطاع البناء عام ٢٠١٦. أما القطاعات التي ساهمت بأكبر قدر من النمو عام ٢٠١٦، فكانت «الخدمات المالية وخدمات التأمين» و«النقل والتخزين والاتصالات» و«الأنشطة العقارية».

ii. يواجه سوق العمل ضغوطاً كبيرة. فقد أظهرت منهجية جديدة اعتمدتها دائرة الإحصاءات العامة اعتباراً من الفصل الأول من عام ٢٠١٧ أن نسبة البطالة بلغت ١٨,٢ في المئة في الفصل الأول من عام ٢٠١٧، وأن معدلات المشاركة في القوى العاملة ومعدلات العمالة بلغت ٤٠,٥ في المئة و ٣٣,١ في المئة على التوالي، وكانت النسب المتعلقة بالنساء الأسوأ ضمن هذه المعدلات. غير أن هذه الأرقام لا يمكن مقارنتها بالمنهجية السابقة. ويبدو أن مؤشرات سوق العمل ازدادت سوءاً خلال عام ٢٠١٦. وحتى هذه الفترة، كانت قد سجّلت مستويات أعلى من البطالة واستمرّ الانخفاض في معدلات المشاركة في القوى العاملة ومعدلات العمالة، ولا سيما في صفوف الشباب. ومن الممكن أن يكون ذلك نتيجة للعمّال المُحبطين نظراً للمنافسة المتصوّرة من اللاجئين ومحدودية فرص العمل والضعف العام للاقتصاد الذي يحّد من خلق فرص العمل عموماً.

iii. تظهر الضغوط التضخّمية بعد عامين من الانكماش. شهد الأردن انكماشاً للعام الثاني على التوالي عام ٢٠١٦، حيث بلغ متوسط تضخّم أسعار المستهلك -٨,٠ في المئة (متوسّط الفترة)، وذلك بسبب انخفاض متوسط أسعار النفط العالمية وانخفاض أسعار المواد الغذائية بشكل رئيسي، في حين بلغ متوسط التضخّم الأساسي (باستثناء الوقود والنقل والغذاء) ٢,٢ في المئة. وقد ارتفع التضخّم منذ تشرين الثاني/نوفمبر ٢٠١٦، ويتوقّع أن يتسارع في عام

٢٠١٧، نتيجة لتأثير ارتفاع أسعار النفط على أسعار النقل والوقود، والتدابير المالية التي اتُخذت من أجل تخفيض العجز المالي.

iv. تقلّص العجز المالي عام ٢٠١٦ وعام ٢٠١٧ حتى تاريخه (باستثناء المنح)، ومع ذلك لا يزال الدين مرتفعاً. انخفض العجز المالي إلى ٣,٢ في المئة من الناتج المحلي الإجمالي عام ٢٠١٦ بعد اتخاذ عدد من التدابير خلال العام بما في ذلك إلغاء الإعفاءات الضريبية على السلع والمبيعات لعام ٢٠١٥، وتخفيض الإعفاءات الضريبية على السيارات المستعملة المستوردة، وزيادة الضرائب على السجائر والكحول، وزيادة رسوم النقل على مبيعات السيارات. وباستثناء المنح، استمرّ العجز المالي في التحسّن بنسبة ٢١ في المئة في الفصل الأول من عام ٢٠١٧ مقارنة بالفصل نفسه من العام الماضي ليصل إلى ٠,٢٦ في المئة من الناتج المحلي الإجمالي المقدّر. إلا أن الدين لا يزال مرتفعاً عند ٩٥,٤ في المئة من الناتج المحلي الإجمالي المعدّل اعتباراً من نهاية آذار/مارس ٢٠١٧، مع وجود المزيد من الضغوط الناجمة عن الاحتياجات التمويلية لسلطة المياه في الأردن التي تضمن الحكومة ديونها.

v. أمّا عجز الحساب الجاري، فقد ازداد بشكل طفيف عام ٢٠١٦ بسبب انخفاض التحويلات الجارية. وازداد عجز الحساب الجاري من ٩,١ في المئة إلى ٩,٣ في المئة من الناتج المحلي الإجمالي بسبب انخفاض التحويلات الجارية بما في ذلك تقلّص تحويلات المغتربين بنسبة ٢,٤ في المئة وانخفاض عائدات السياحة (وإن كان ذلك بمعدل متباطئ). وقد تقلّص العجز في التجارة في السلع مع انخفاض الواردات بنسبة ٦,٢ في المئة (بسبب تراجع واردات الطاقة)، متجاوزاً تراجع صادرات السلع بنسبة ٤,١ في المئة التي ظلّت متأثرة بإغلاق طرق التجارة البرية مع العراق وسوريا.

vi. سرعان ما تشدّدت السياسة النقدية اعتباراً من كانون الأول/ديسمبر ٢٠١٦ بعد تحرك الاحتياطي الفدرالي ودعماً لربط سعر الصرف. ورفع البنك المركزي الأردني أسعار الفائدة الرئيسية ثلاث مرات منذ ذاك لتصل إلى ١٠٠ نقطة أساس تراكمية للحفاظ على هوامش سعر الفائدة على الودائع بالدينار الأردني-الدولار الأمريكي، ومعالجة ارتفاع قيمة الدولار وانخفاض الاحتياطيات.

RECENT ECONOMIC AND POLICY DEVELOPMENTS

1. Security incidents have escalated in and around Jordan further unveiling threats and fueling unease. Three incidents occurred on the Rukban area on the northeast Jordan border with Syria and Iraq since December 2016¹ in addition to an IS-attack in February 2017 on the Iraqi border with Jordan. An attack claimed by the Islamic State in the southern city of Al-Karak within Jordan claimed 10 lives and wounded at least 30 others on 18 December 2016 followed by clashes.

2. The 2017 Budget debates were heated and resulting reforms proved contentious. Heated discussions over the draft 2017 Budget tax hikes and spending cuts, prepared in line with meeting the IMF Extended Fund Facility program targets which Jordan embarked on last August, resulted in the watering down of some revenue-enhancing measures to protect low and middle-income households. The introduction of a number of expenditure-reducing and revenue-enhancing measures that took effect early February 2017 were met by protests a couple of weeks later across Amman, Salt, Karak and Madaba, despite an increase in the minimum monthly wage from JD 190 to JD 220.² On the local governance front, municipal and governorate elections are scheduled for 15 August 2017. This will be the first governorate elections held in light of the 2016-enacted Decentralization Law.

3. The Government has announced two cross-cutting plans to stimulate the sluggish economy. In light of a slowing macroeconomic environment and high unemployment, the Government adopted a Jordan Economic Growth Plan (JEGP) as recommended by the Economic Policy Council (EPC) (Box 2). The JEGP aims to

double economic growth over 2018-2022. The EPC was established by the King in June 2016 and the JEGP is the second main set of recommendations from the EPC. The government also launched its Green Growth Plan which identifies a green growth corridor, smart urban transformation and rural resilience as representing the convergence between climate action, sustainable local development and macroeconomic considerations with a focus on the energy, water, waste, transport, tourism and agriculture sectors.

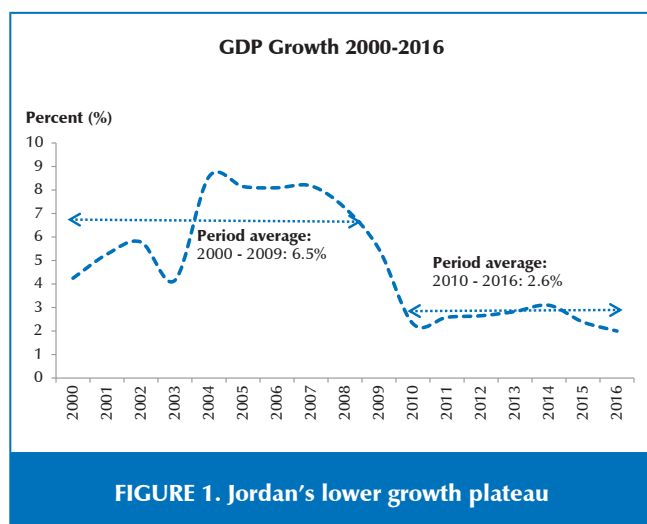
Output and Demand

4. Jordan's economy continued to decelerate as geopolitical repercussions take a toll. Growth in 2016 slowed for the second year in a row to 2.0 percent compared to 2.4 percent in 2015 (Figure 1). The growth slowdown was driven by a number of factors mainly related to the precarious regional situation that suppressed investor sentiment, handicapped tourism, and led to the closure of trade routes with Iraq and Syria severely affecting Jordanian exports to the region (both as final destinations and transit routes). Jordan's hosting of more than 660,000 Syrian refugees has hiked demand for goods and services and strained public finances.³ Data for the fourth quarter of 2016 (Q4-2016) of 2.0 percent year-on-year (yoy) brought down the annual growth to 2.0 percent compared to 2.4 percent in 2015. On a seasonally adjusted basis, Q4-2016 resumed the declining trend of quarterly economic growth revealing further weakness although there was an improvement in the fourth quarter of 2016 compared to Q4-2015 (Figure 2). As spare capacity

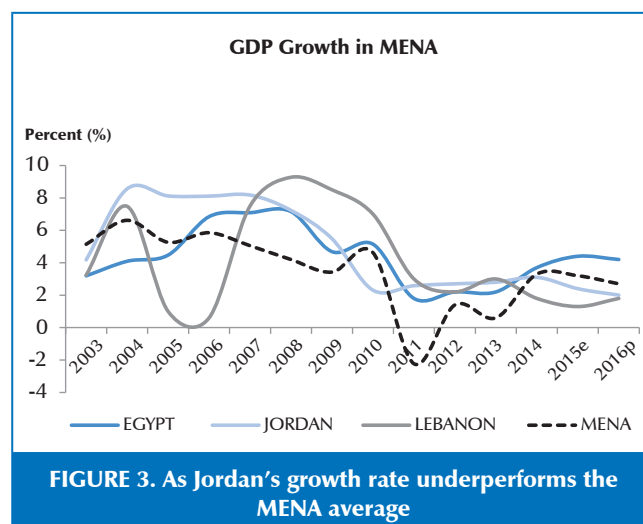
¹ These three incidents occurred on 17 December 2016, 21 January 2017, and 3 May 2017.

² Refer to paragraph 14 for details of these measures.

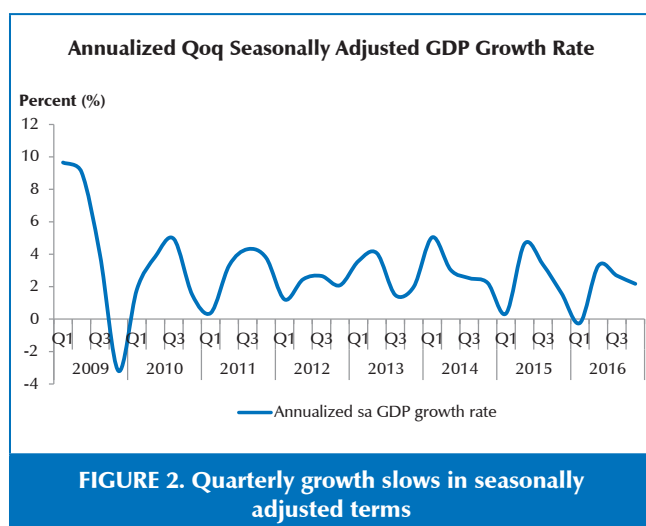
³ UNHCR records 660,315 registered Syrian refugees since 1 June 2017.



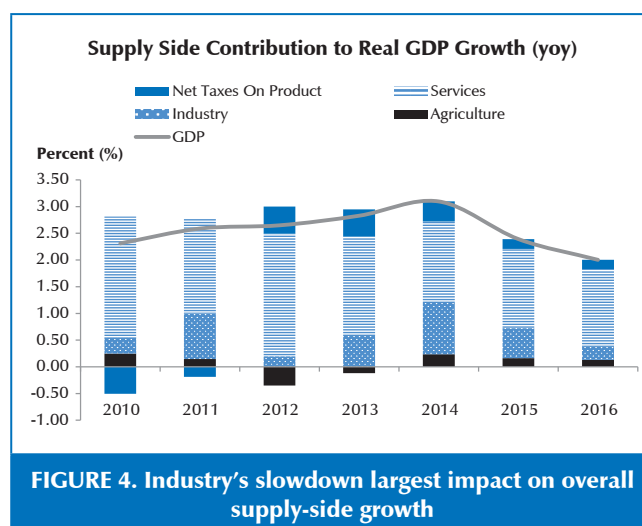
Source: Department of Statistics and World Bank staff calculations



Source: World Bank Economic Prospects, January 2017



Source: Department of Statistics and World Bank staff calculations



Source: Department of Statistics and World Bank calculations

in the economy increases, it is estimated that Jordan's output gap as a share of its potential output for 2016 was negative 1.12 percent (Box 1). As of 2015, Jordan is lagging MENA's average estimated growth of 2.7 percent for 2016 (Figure 3).

5. On the production side, and despite sluggish growth in 2016, only three sectors were drags on growth (Figure 4). The sectors that retrenched over 2016 were 'mining and quarrying', 'imputed bank service charge' and 'restaurants and hotels' by 0.2, 0.19, and 0.01 percentage points (pp), respectively. In growth terms, 'mining and quarrying' contracted by 12.1 percent in 2016 yoy reflecting pressure on potash prices that affected international demand for Jordan's potash as also reflected in the drop of the mining and quarrying component of the

2016 industrial price index in 2016 (Figure 7).⁴ The largest contributors to growth in 2016 were 'finance and insurance services' and 'transport, storage and communications', each contributing by 0.52 pp and 0.45 pp to real GDP growth, respectively; followed by 'real estate' (contributing 0.23 pp), 'electricity and water' (0.2 pp), 'manufacturing' (0.19 pp), and 'community, social and personal services' and 'net taxes on product' that each contributed by 0.17 pp to real GDP growth. Although 'restaurants and hotels' slightly regressed by 1 percent in 2016 yoy compared to 2015, and 'construction' witnessed a tempered rebound of 1.1 percent yoy in 2016, both sectors maintained negligible effects on real growth in 2016. Early indications in 2017 reflect a pickup in some real sector indicators, albeit from the low

⁴ The average of the mining and quarrying component of the IPI index dropped by 9 percent in 2016 compared to 2015.

BOX 1. Potential Output Gap Analysis.

The potential output gap is often considered a good proxy of an economy's wellbeing. By measuring how far off the economy is from its potential output (output generated at full capacity), the potential output gap is fundamental to the conduct of sound macroeconomic policy.

Two basic methods are applied for estimating potential output gap: statistical filtering and structural estimations. Statistical filtering includes the Hodrick-Prescott (HP) filter, a de-trending statistical method, which is employed in this analysis using three standard smoothing parameters (1600, 1000, 500). The application of different smoothing parameters serves as a robustness check of the estimation process. Further, the statistical filtering is applied on annual data (sample period 1975-2019) and quarterly data (1992Q1-2017Q4).^{*} Annual data post 2016 and quarterly data post 2016Q4 are obtained from World Bank staff projections. As for the second estimation method, structural estimations are based on a Production Function Model which incorporates economic theory that relates output to total factor productivity and production inputs. The structural estimations are only applied on annual data post 1990.

After nine years of operating above potential, Jordan suffered from a negative output gap in 2015. Throughout 2006-2014, Jordan witnessed high growth rates that led to positive deviations from its potential and thus report positive output gaps. During that period, the output gap averaged +2.3 of potential output. However, in 2015, Jordan's output dropped below its potential with the output gap turning negative to reach -0.44 percent of potential GDP (on average across the four estimation techniques employed). The gap widened further to -1.12 percent of potential output in 2016 as growth continued to be subdued (Figure 5).

At the quarterly level, the three HP filters yield similar results further asserting the expectations of a widening output gap in 2016. In 2016, the output gap is estimated to be negative in each of the quarters with all parameters employed. The output gap is estimated at -0.36, -0.12, -0.03 and -0.06 percent of potential output (on average across the three HP filters) in 2016Q1, 2016Q2, 2016Q3 and 2016Q4, respectively (Figure 6).

The various estimation techniques employed, at the annual and quarterly levels, consistently conclude that the Jordanian economy has been deviating away from its potential in the negative direction. This is not surprising given that the country's economy has been plagued by a turbulent regional setting that slowed down many important pillars of the economy, including: trade, industry, tourism, investment, consumption, employment, among others.

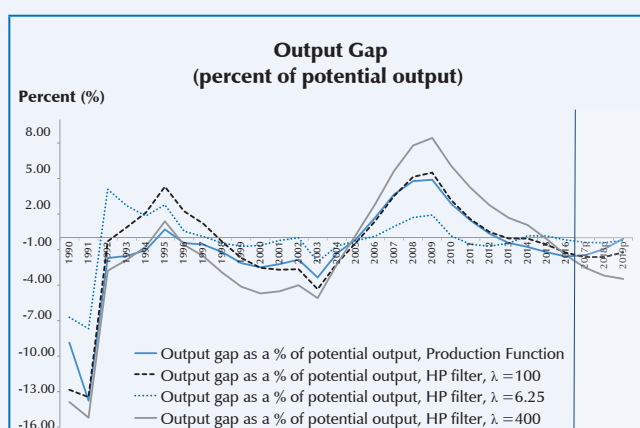


FIGURE 5. Output gap turned negative in 2015.

Source: Department of Statistics and World Bank staff calculations

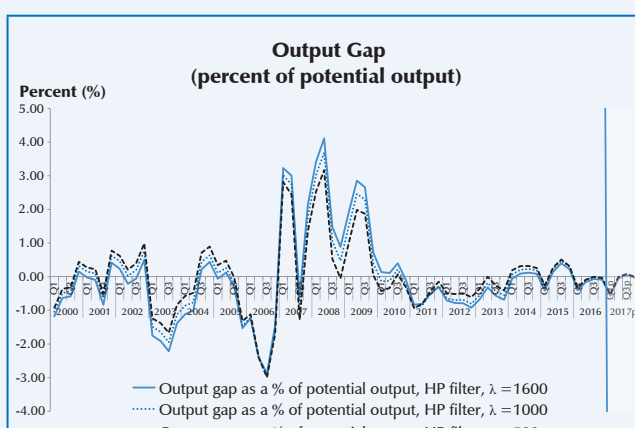


FIGURE 6. Output gap widened further in 2016.

Source: Department of Statistics and World Bank staff calculations

^{*} It is noteworthy that the HP filter is normally prone to end-point bias hence annual data was extended to 2019 and quarterly data extended to 2017Q4.



FIGURE 7. Industrial price index reflects the slowdown for mining and quarrying

Source: Central Bank of Jordan and World Bank staff calculations

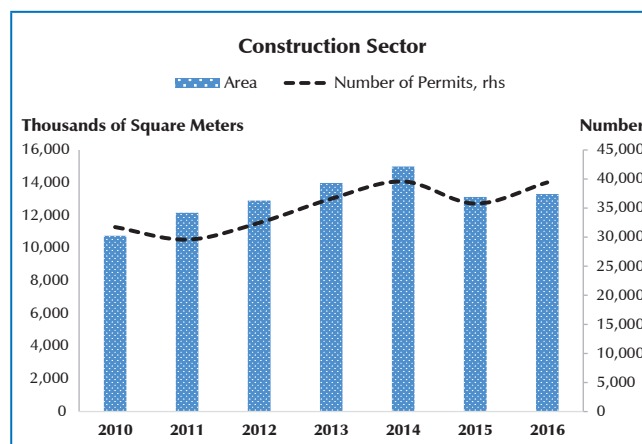


FIGURE 9. ...while construction indicators improved as of 2016

Source: Central Bank of Jordan and World Bank staff calculations

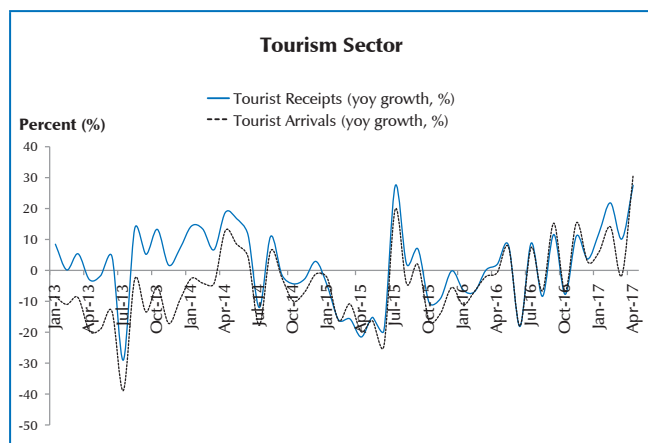


FIGURE 8. Tourism is picking up in 2017 albeit from a low base...

Source: Ministry of Tourism, Central Bank of Jordan and World Bank

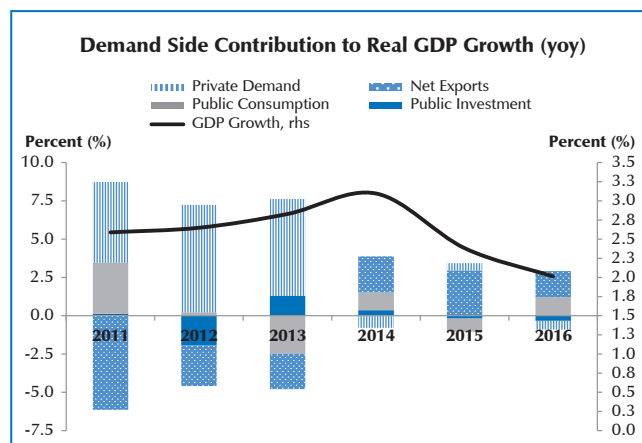


FIGURE 10. Private demand has been subdued since 2014

Source: World Bank staff calculations

2016 base. Tourist receipts only contracted by 0.5 percent in 2016 yoy compared to a 7.1 percent contraction in 2015 yoy (Figure 8) and the pickup has continued through to the first four months of 2017.⁵ Meanwhile, construction permits and area both rebounded in 2016 (Figure 9) and improved further in the first quarter of 2017.⁶

6. Net exports and public consumption drove growth from the demand side offsetting

⁵ In the first four months of 2017, tourist receipts and arrivals increased by 17.9 percent and 12.5 percent respectively compared to contractions of 2.6 and 5.2 percent in the same period in 2015, respectively, although reflecting low-base effect given the weak tourism performance in 2015.

⁶ Construction permits and area improved by 10.2 and 1.4 percent in 2016, a substantial rebound from the 9.6 and 12.5 percent contractions in 2015, respectively, and further improved by 19.4 and 18.0 percent during the first quarter of 2017 compared to the same period in 2016, respectively.

contractions from private demand and public investment in 2016 (Figure 10). In real terms, while exports deteriorated by 4.7 percent in 2016 yoy compared to the previous year, net exports are estimated to have contributed by 1.7 pp to real GDP growth in 2016, the main driver of growth from the demand side. Public consumption was also a driver of growth in 2016 with an estimated contribution of 1.2 percentage points. On the other hand, private demand (private consumption and private investment) is estimated to be the largest drag on growth in 2016, contracting growth by 0.6 percentage points representing weakened investment and consumption sentiment amidst continued turbulence in the region. Even though credit growth and personal loans from commercial banks to the private sector increased by 10 percent and 3.1 percent in December 2016 yoy, personal

BOX 2. Jordan Economic Growth Plan (2018-2022).

In effort of reigniting growth, the Jordanian government and the Economic Policy Council (EPC) collaborated on producing the second set of economic reforms* which took the form of a five-year Jordan Economic Growth Plan (JEGP). The JEGP aims at doubling economic growth over 2018-2022, reducing debt burden, creating jobs and increasing income levels notwithstanding the challenging regional situation. A series of international and regional, economic and political, setbacks (such as: the 2009 global financial crisis, the wave of Arab uprisings, the closure of trade routes with major trade partners and the recent surge in food and oil prices) have caused Jordan to fall off track to reaching the growth targets previously set in Jordan's 2025 Vision. Therefore, the JEGP aims at jumpstarting growth in the next few years such that growth forecasts for 2021-2025 would be in line again with the Jordan 2025 Vision.

According to EPC, a doubling of economic growth would require at least a 5 percent growth rate annually, equivalent to US\$ 1.8 billion annually. However, almost 50 percent of the economy is strained and cannot grow further. For instance, government services growth is limited as the government is bounded to a rationalized fiscal policy over the medium term. This in turn leaves it up to productive sectors to generate the additional US\$ 1.8 billion required. Analysis carried by EPC suggests the following increases in value added of the productive sectors, and the corresponding growth rate of each sector needed to bring forward its suggested increase in value added:

Sector	Increase in Value Added (\$US mln)	Corresponding Growth Rate (%)
Agriculture	113	10
Manufacturing	530	10
Electricity & Water	128	13
Construction	254	15
Hospitality and Tourism	169	5
Transport	334	12
Information & Communication Technology	222	12

The JEGP adopts a holistic approach to identifying the reforms needed for 19 sectors. In total, the JEGP classifies 95 policy actions (total value of US\$ 894 million), 85 government projects (total value of US\$ 8.8 billion) and 27 private sector investment opportunities (total value of US\$ 13.3 billion), which are meant to help stimulate growth and revive the Jordanian economy.

*For more on the first set of economic reforms by EPC, refer to Box 2 of World Bank. Jordan Economic Monitor – Reviving a Slowing Economy. Fall 2016.

Source: "Jordan Economic Growth Plan 2018-2022", The Economic Policy Council.

loans had recorded a 16.8 percent growth by end-2015 yoy. While the Jordan Investment Confidence Index (JICI) reported a 7.2 percent decline between February 2016 and September 2016, signs of recovery have been evident since October 2016 to March 2017. Moreover, public investment was also a drag on growth contracting it by 0.3 percentage points in 2016, partly reflecting the government's rationalized expenditure policy.

Labor and Employment

7. The labor market faces significant stress, with worsening unemployment, employment and labor force participation rates. In 2016 structural unemployment reached a high averaging 15.3 percent, 2.3 percentage points worse than 2015 affecting the high skilled more predominantly (Figure 11). Gender-based heterogeneity persists as female unemployment rate reached 24.1 percent while the male unemployment rate reached 13.3 percent, both increasing from 22.5 and 11 percent in 2015, respectively. The labor force participation

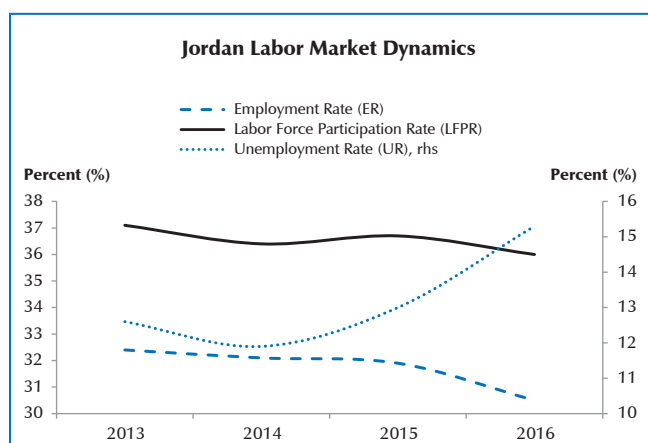


FIGURE 11. The three main labor market indicators continue to worsen

Source: Department of Statistics and World Bank staff calculations

rate and the employment rate (i.e., employment to population ratio) both further declined in 2016 to 36 and 30.5 percent from 36.7 and 31.9 percent in 2015, respectively. Both declines stemmed from worse labor dynamics for males. The labor force participation rate and employment rate for males dropped by 1.3 and 2.5 pp between 2015 and 2016, while those for females remained more or less flat. Youth remain the most vulnerable fraction of the labor force with youth unemployment rising to 35.6 percent in 2016, also a historical high, from 30.8 percent in 2015. On a governorate basis, Maan registered the highest unemployment rate for 2016 at 19.1 percent, 5 percent higher than the rate recorded in the capital Amman; while Jarash suffered from the largest surge in unemployment rate, a 3.6 pp increase from 2015 to reach 15.5 percent in 2016. All governorates witnessed increasing unemployment rates except for Tafiela and Madaba where unemployment rates dropped by 0.3 and 0.9 pp to 15.4 and 14.8 percent, respectively (Figure 12).

8. New methodology points to more stark labor market results. A new methodology adopted by the Department of Statistics as of the first quarter of 2017 (Q1-2017) seeks to expand the sample size used in measuring employment indicators and refines the calculation of those employed. The methodology is not comparable to previously published data but reveals that unemployment reached 18.2 percent in Q1-2017, with labor force participation and employment rates of 40.5 percent and 33.1 percent, respectively. The new methodology is consistent with

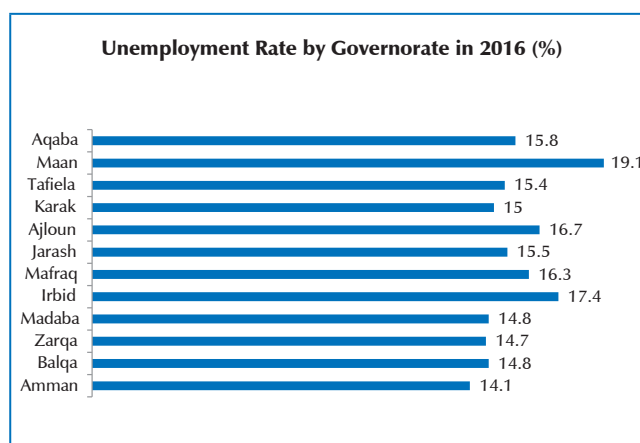


FIGURE 12. Maan exhibits highest unemployment rate per government by far

Source: Department of Statistics and World Bank staff calculations

previous statistics reflecting vulnerabilities for women (33 percent unemployed vs. 13.9 percent for men) and youth with the highest rate of unemployment for those aged 15-19 years old at 39.5 percent and those 20-24 years old at 35.4 percent unemployed. Also consistent, is the high level of unemployment amongst those holding university degrees, at 21.4 percent. The governorate with the highest level of unemployment is also Maan at 26.2 percent.

9. Net job creation in Jordan has been on a declining trend between 2007 and 2015. The Jordanian economy created a net of 48,309 jobs in 2015, almost 3.3 percent less than the total net jobs created in 2014 and 31.3 percent less than those created in 2007 (Figure 13). Between 2007 and 2015, 64 percent of the average net jobs created were in the formal private sector, while 33.9 percent were in the public sector and 2.1 percent were in nongovernmental organizations and the informal private sector. However, while the private sector created the majority of new jobs, the private sector itself has been generating less net jobs over time. The number of net jobs created in the private sector in 2015 were 14.3 percent less than those in 2014 and 43.3 percent less than those created in 2007. Meanwhile, net jobs created in the public sector in 2015 depict a 24.8 percent increase since 2014, compared to a slight decline of 3.7 percent since 2007.

10. In addition to weak job creation, the increase in the number of labor protests further

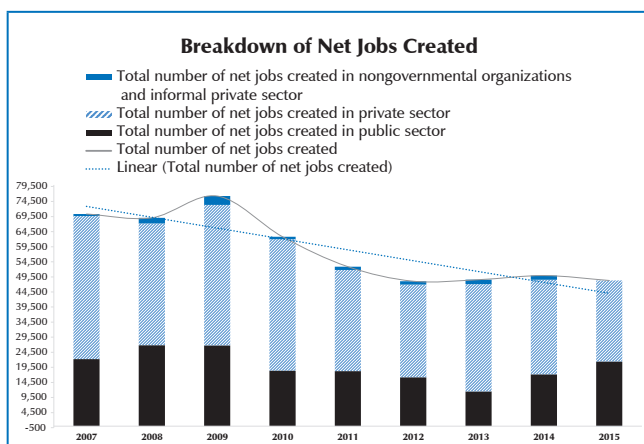


FIGURE 13. Net jobs created on a decline especially by the formal private sector

Source: Department of Statistics and World Bank staff calculations

asserts the fragile status of the Jordanian labor market. Labor protests increased by 22 percent in 2016 compared to the year before according to the annual report on labor protests published by the Phenix Center for Economic and Informatics Studies, with the majority of the protests being staged by the private sector (185 out of a total of 288 protests in 2016). This result echoes mounting economic pressures on the Jordanian labor market, particularly in the private sector, partially explaining the unprecedented elevation in the Jordanian unemployment rates.

11. Job creation due to the Jordan Compact has progressed slowly while the minimum wage is raised.⁷ Job creation and the take up of work permits by Syrian refugees - toward the government's 200,000 target - have been slow to materialize. By end-2016, about 37,000 work permits (free of charge until end-2017) had been issued. Industry is finding it difficult to attract the 15 percent Syrian labor required to produce goods in designated development zones that benefit from the European Union's relaxation of Rules of Origin

⁷ For more on the Jordan Compact, refer to Box 1 and paragraph 9 of World Bank. Jordan Economic Monitor – The Challenge Ahead. Spring 2016; and paragraph 9 of World Bank. Jordan Economic Monitor – Reviving a Slowing Economy. Fall 2016.

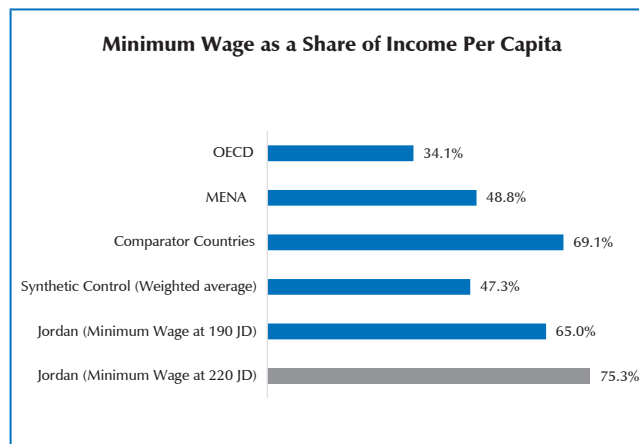


FIGURE 14. New minimum wage as a share of income per capita surpasses OECD and MENA ratios

Source: International Labor Organization, World Bank Development Indicators and World Bank staff calculations. The comparator countries are in line with those selected with Find my Friends Tool for the Jordan Systematic Country Diagnostic: Synthetic Control countries are Bulgaria, Guatemala, Paraguay, and Romania; in line with "Synthetic Jordan" and comprise China, Djibouti, Grenada, Guyana, Hong Kong, Moldova, Zimbabwe. For more, refer to Special Focus of Fall 2016 Jordan Economic Monitor.

effective for 10 years as of July 2016. Additionally, time and support are required for industry to comply with EU standards and understand opportunities from the trade deal.⁸ Separately, the government approved a 16 percent minimum wage increase to 220 JD/month. This is mainly expected to affect the private sector. The Ministry of Finance estimated the impact on the Treasury to be limited to JD 3 billion. At 75 percent of income per capita, Jordan's new minimum wage surpasses the same ratio for OECD and MENA (Figure 14). Too high of a minimum wage can negatively impact the formal labor market as workers with a marginal productivity below that threshold are effectively priced out. Given the high and rapidly worsening unemployment situation in Jordan, the large increase in the minimum wage might be expected to further complicate the recovery of the labor market, especially for lower skilled workers.

⁸ The Jordan Compact was expected to create 50,000 jobs for Syrians outside the 18 designated development zones covered by the European Union's relaxed rules of origin in addition to hundreds of thousands of jobs for Jordanians and Syrians inside development zones. The latter requires strong support from the Government of Jordan and different donors for existing manufacturers and to attract new investments into the development zones.

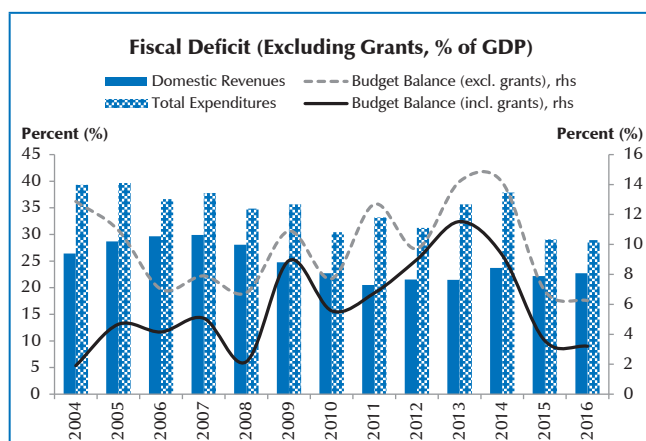


FIGURE 15. Fiscal situation has improved...

Source: Ministry of Finance and World Bank staff calculations

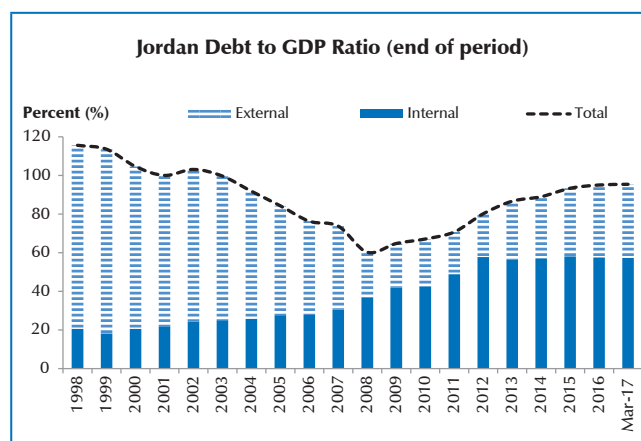


FIGURE 16. ...while the gross debt-to-GDP ratio rises

Source: Ministry of Finance and World Bank staff calculations

Fiscal Policy

12. The central government's fiscal aggregates improved in 2016 backed by introduced measures and limiting spending. The budget deficit improved by 0.3 pp in 2016 to an estimated -3.2 percent of GDP (compared to -3.6 percent in 2015), despite a 0.3 pp reduction in grants. The primary deficit slightly widened however to 0.2 percent of GDP on account of a 0.4 pp fall in interest payments in 2016 yoy (Figure 15). Both fiscal and primary balances improved however by 0.6 pp and 0.2 pp of estimated GDP respectively when excluding grants. The improved budget deficit was a result of a 0.5 pp increase in domestic revenues coupled with a 0.1 pp reduction in expenditures. The cutback in expenditures was mainly due to a 0.4 pp reduction in capital expenditures that outweighed a 0.3 pp increase in current expenditures which itself resulted from a 0.6 pp rise in expenditure on defense and security. Permanent measures contributed to the improvement in fiscal balance, including: (i) An increase in: a. cigarettes prices by JD 0.05/packet; b. cigarettes prices by JD 0.10/packet in Aqaba zone; c. diesel, kerosene and gasoline prices by JD 0.025/liter; d. the special sales tax on wines and spirits; (ii) The removal of 2015 GST exemptions including on clothes, shoes, watches, jewelry; (iii) Adding an extra fee for "transfer of titles" on used vehicles; and (iv) Reducing the depreciation allowance on used imported cars.

13. Despite the tighter deficit and cost recovery by NEPCO, gross debt continued to grow to 95.1 percent of GDP by end-2016. This reflects muted economic growth coupled with a higher debt stock. The debt stock increased by 4.9 percent to US\$ 36.8 billion by end-2016 compared to end-2015 with 60.5 percent of the debt denominated in local currency (Figure 16). Higher borrowing needs by the Water Authority of Jordan (WAJ), whose debt is government-guaranteed, was a factor. WAJ's higher financing needs stem from the impact of higher electricity tariffs and increased demand for water from Syrian refugees.⁹ NEPCO which had posed debt pressures since 2013, due to importation of oil versus cheaper gas supply from Egypt with unchanged tariffs, achieved cost recovery in 2015 (Refer to paragraphs 60 and 76). Debt held by WAJ and NEPCO combined (including advances from the treasury and on-lending loans) constitute about 25.7 percent of Jordan's gross debt. The Tariff Adjustment Mechanism introduced as of 1 January 2017 and activated as of 1 April 2017 is expected to at least maintain cost recovery for NEPCO.¹⁰ To meet financing needs, the government issued a US\$ 1 billion 10-year Eurobonds on October 24th, 2016, its only tap of international capital markets that year. While the issuance was not guaranteed by the US Treasury, at a yield of 5.8 percent and coupon rate

⁹ Refer to paragraph 59 of Special Focus 2 "Welfare Impact of Recent Price Changes in Electricity and Water" featured in this Jordan Economic Monitor.

¹⁰ As of 1 June 2017, the Fuel Clause was kept at zero because the three-month moving average of the Brent oil price has remained below the threshold of \$55/bbl.

of 5.75 percent, rates were more favorable to the government than the US\$ 500 million Eurobond issued 11 months prior for the same tenor at 6.125 percent coupon. The government issued JD 5.46 billion worth of Treasury bills and bonds in 2016 diversifying its instrument mix by re-introducing 6-month Treasury bills, 2 and 3-year Treasury bonds, and 5-year floating rate Treasury Bonds at limited sizes and inaugurating its 10-year Treasury Bond issue in September 2016. Issuances of ten-year Treasury Bonds accounted for about 21 percent of the total value of securities issued, the highest of any instrument. The Ministry of Finance sought to further diversify its debt instruments. After years of setting up the legislative framework, Jordan issued its first sovereign Sukuk in October 2016 for JD 34 million with 5-year tenor with a 3.3 coverage issue. This followed the May 2016-issued 5-year Sukuk for NEPCO priced at 3.5 percent. A second 5-year NEPCO Sukuk was issued in March 2017 priced at 4.1 percent (Murabaha rate). Additionally, in a deal that was more than three times oversubscribed, the Ministry of Finance issued a US\$ 500 million Eurobond (not guaranteed by the US Treasury) on April 26th 2017 with a yield of 5.875 percent maturing in 2026.

14. The fiscal deficit (excluding grants) improved in Q1-2017 although debt remains elevated, as new fiscal measures are adopted.

Excluding grants, the overall central government's fiscal and primary deficits aggregates improved in line with the fiscal consolidation program in the first quarter of 2017 narrowing by 0.26 and 0.19 percentage points of estimated GDP respectively compared to Q1-2016. With a 62 percent reduction in grants received in this period, the fiscal and primary deficits including grants widened by 0.04 and 0.11 percentage points of estimated GDP respectively. The non-grant fiscal balances improved due to lower expenditures as revenues slightly underperformed Q1-2016 levels (as a share of GDP). Debt increased to US\$ 37.3 billion by end-March 2017 (95.4 percent of adjusted GDP). Fiscal measures adopted earlier in the year aimed to improve Jordan's fiscal standing with more planned in the medium-term in line with the IMF program. Revenue-raising measures introduced in 2017 include removing tax

exemptions from a larger set of products (effectively raising the Good and Services Tax to 16 percent on selected goods and services including internet (from 8 percent)), increasing custom duties on non-essential imported goods by 5 percent, increasing fuel prices by 3-8 percent, increasing taxes on telecom services from 8 to 16 percent, increasing fees on passports from JD 20 to JD 50, adding further taxes on cigarettes, and introducing a 10 percent tax on soda beverages. Expenditure-limiting measures include deducting 10 percent from civil servants' monthly salaries that exceed JD 2,000 and setting a cap of JD 3,500 on public sector salaries. Expenditure allocations to current and capital expenditures for 2017 were reduced by JD 133 million and by a further JD 204 million in May 2017. Cabinet indicated that capital expenditure projects that were reduced in the latter cut would be financed by Public Private Partnerships (PPPs) and announced the adoption of some PPP projects. The Government of Jordan started a Train the Trainers (TTT) Program for Public Investment Management (PIM) and PPP, a prerequisite towards implementation of the PIM governance framework and enhanced efficiency in public resource allocation. Further, the authorities adopted an electricity Tariff Adjustment Mechanism to take effect as of 1 January 2017 to mitigate against further losses by NEPCO. A tariff increase would be triggered should the oil price exceed NEPCO break-even point (Box 6). Future policy changes include amending the income tax law.

External Position

15. Despite falling exports, the trade in goods deficit narrowed for the second year in a row buttressed by lower energy imports. The trade in goods deficit receded by 7.5 percent in 2016 yoy reflecting 6.2 percent lower imports of goods offsetting a 4.1 percent decline in total exports of goods (Figure 17). The contraction in imports was driven by a 23.4 percent drop in energy imports reflecting the combined effects of lower international oil prices on average in 2016 compared to 2015, and some impact from the diversification of energy

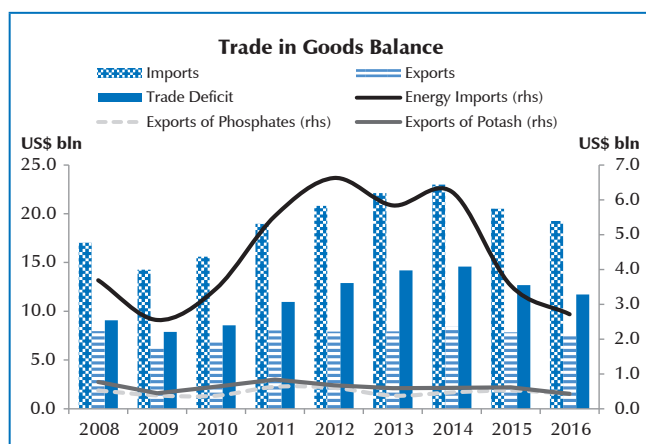


FIGURE 17. The trade in goods balance narrowed despite lower exports of phosphates and potash...

Source: Central Bank of Jordan and World Bank staff calculations

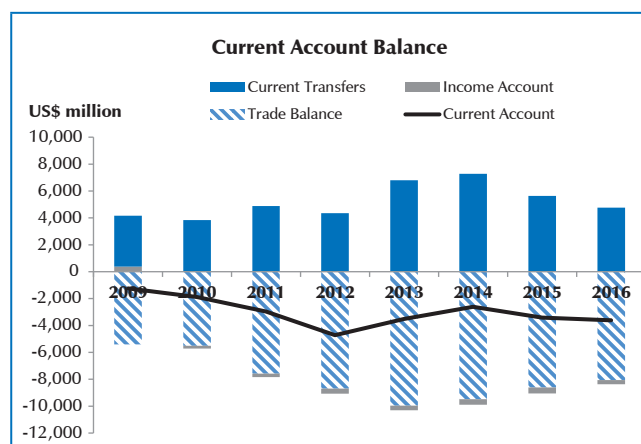


FIGURE 19. The current account widened despite an improved trade balance...

Source: Central Bank of Jordan and World Bank staff calculations

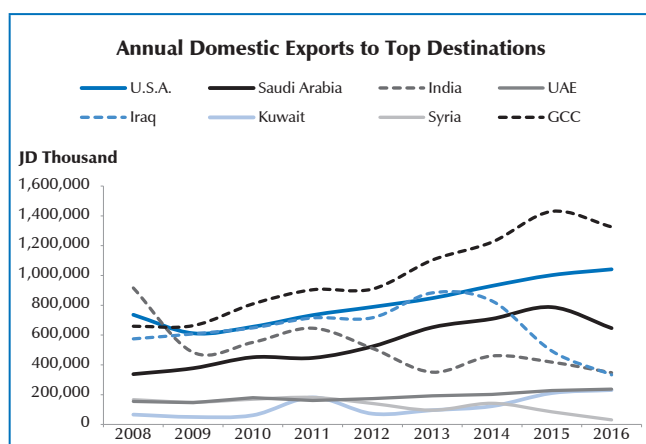


FIGURE 18. ...and as Jordan's exports to the GCC, Iraq and Syria continue to suffer

Source: Central Bank of Jordan and World Bank staff calculations

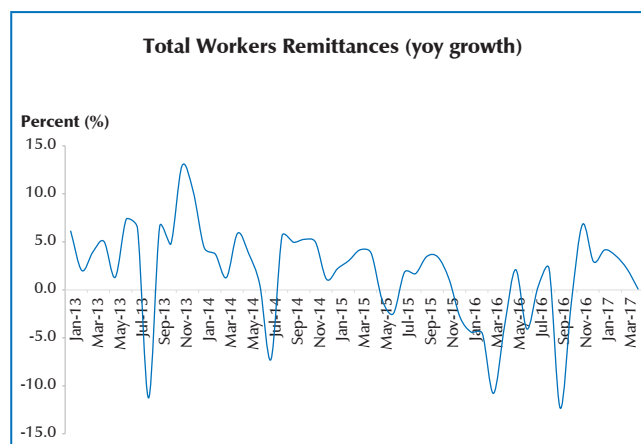


FIGURE 20. ...as affected by slower remittances

Source: Central Bank of Jordan and World Bank staff calculations

sources towards renewable energy and cheaper liquefied natural gas (LNG). Domestic exports of goods on the other hand, 8.9 percent lower than 2015, continued to be challenged by land route closures to Iraq and Syria that remained closed throughout 2016 despite high-level discussions to potentially reopen. As such, exports to Iraq and Syria fell by 32 and 64 percent, respectively. Exports to Saudi Arabia reversed trend in 2016 declining by 18 percent (mainly due to lower exports of live animals and fruits and vegetables in the first half of 2016 due to price effect). Kuwait's exports, partly capturing demand from the Iraqi market, rose by 9.8 percent. However, overall growth of exports to the GCC market contracted by 7.3 percent as did India's (Figure 18). From a product perspective, lower international prices of potash due to global oversupply resulted in a 30.6 percent decline in

potash exports while those of phosphates declined by 17 percent. Exports of food and live animals also faced significant decline of 19.9 percent. While domestic exports contracted, re-exports surged by 26 percent in 2016 yoy due to the re-export of high-value aircraft parts. Trade-in-goods results for the first two months of 2017 (2M-17) also reflect a narrowing trade balance of 4.4 percent compared to the same period in 2016 led by a 12.5 percent pick-up in total exports that offset 3.4 percent higher imports. The rise in exports was mainly driven by an 8.1 percent surge in domestic exports despite downward pressures generated from closure of trade routes with Iraq and Syria. Exports to GCC and Syria dropped by 20 and 23 percent yoy during 2M-2017, respectively, while exports to Iraq reveal a tempered rebound of 10 percent yoy although largely reflecting a low-base effect.

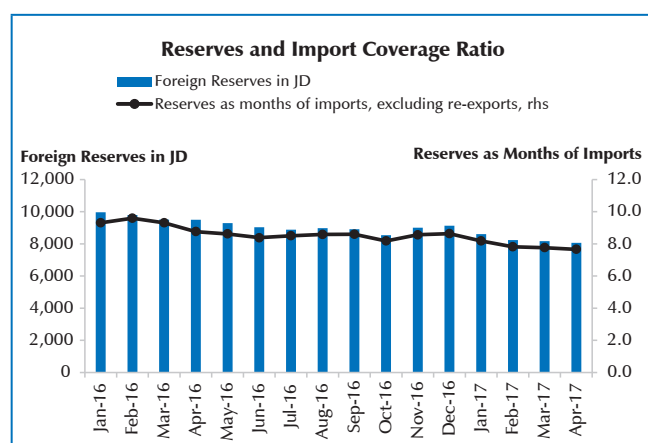


FIGURE 21. Stock of foreign currency reserves decline

Source: Central Bank of Jordan and World Bank staff calculations

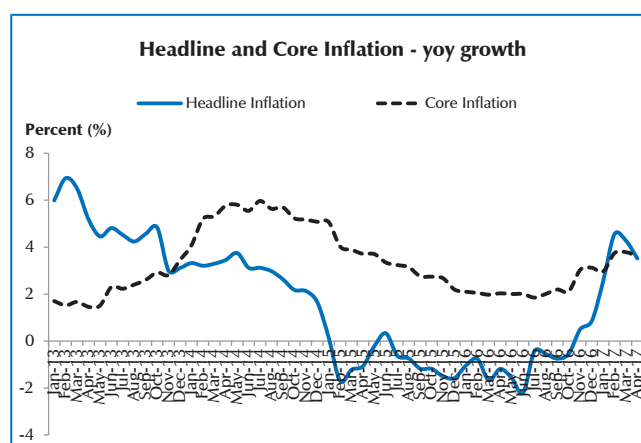


FIGURE 22. Inflationary pressures appear since late 2016

Source: Department of Statistics and World Bank staff calculations

16. The current account deficit widened slightly to 9.3 percent of GDP in 2016 led by lower current transfers. Compared to 9.1 percent of GDP in 2015, the current account deficit widened due to 0.8 and 2.7 pp of GDP declines in the services account and current transfers despite 0.4 and 2.9 pp improvements in the income account and trade-in-goods deficits, respectively (Figure 19). The narrowing of the income account deficit was led by a 0.4 pp pickup in investment income. Meanwhile, the decline in the services account was mainly due to 0.5 and 0.6 pp decreases in travel (net) and government services (net), respectively, with the former representing tourists' reluctance at visiting Jordan amidst rising security concerns during the period captured. However, since November 2016, tourist arrivals and receipts have improved through April 2017 yoy. The decline in current transfers in 2016 was mainly a result of a 2.8 pp drop in inflows. Of these, remittances regressed 2.4 percent (or 0.5 pp of GDP) affected by lower oil prices which impacts Jordanians working in the GCC but on an improving trend since November 2016 (Figure 20).

17. A combination of lower inflows, exchange rate pressure and rising dollarization weighed on the stock of reserves held at the Central Bank. By end-2016, the stock of foreign currency reserves reached US\$ 12.9 billion reflecting a tempered rebound compared to the past six months, although still lower than end-2015 by 9 percent, partly due to several one-off factors. This is despite the issuance of a US\$ 1 billion Eurobond in October and receipt

of donor financing including the second tranche of a US\$ 250 million Development Policy Loan from the World Bank, with \$1.63 billion (61 percent) of the 2016-2018 Jordan Response Plan funded in 2016.¹¹ Reserves further declined in early 2017 dropping a further 11.7 percent to US\$ 11.4 billion by end-April 2017, the lowest since October 2013, but still covering 7.8 months of imported goods (excluding re-exports). The decline in reserves is partly due to an Arab Bank deal for which local investors bought USD from the Central Bank (Figure 21).

Monetary Policy and Finance

18. After two years of deflation, Consumer Price inflation has resumed. Jordan witnessed deflation for the second year in a row in 2016 largely due to an average decline in international oil prices and lower food prices with Consumer Price inflation averaging -0.8 percent (period average) compared to -0.9 percent (p.a.) in 2015.¹² Core inflation (excluding food, transportation and fuel) abated closer to its long run average due to lower rents

11 For more on the Development Policy Loan, refer to paragraph 60 of Special Focus 2 "Welfare Impact of Recent Price Changes in Electricity and Water" featured in this Jordan Economic Monitor.

12 The average crude oil spot price in 2016 was 42.8 \$/barrel compared to an average of 50.8 \$/barrel in 2015.

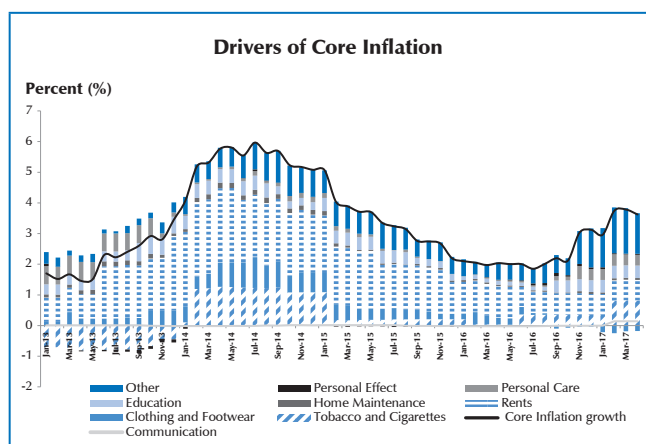


FIGURE 23. Tobacco, cigarettes and 'other' items drive core inflation.

Source: Department of Statistics and World Bank staff calculations

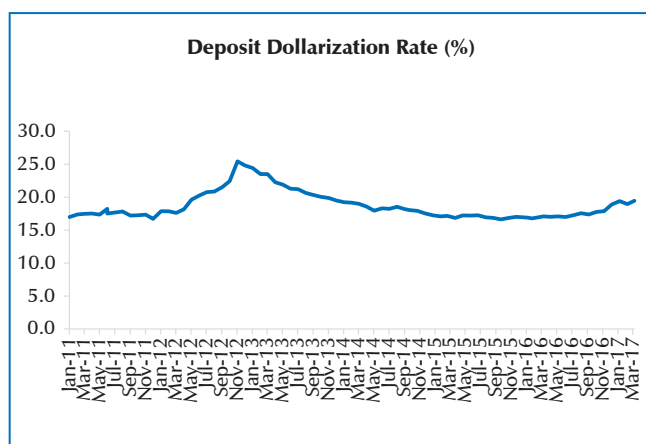


FIGURE 24. Dollarization rising since October 2016 partly due to several one-off factors

Source: Central Bank of Jordan and World Bank

and miscellaneous items that fueled the reduction averaging 2.2 percent in 2016 from 3.4 percent in 2015 (Figure 22 and Figure 23).¹³ Headline inflation has picked up since November 2016 and is expected to accelerate into 2017, due to higher oil prices' impact on transportation and fuel prices, the impact of raising the minimum wage, and higher costs related to the government's introduction of fiscal measures of taxes, fees and custom duties in 2016 and 2017 (Refer to paragraphs 12 and 14). Potential electricity tariff increases and their impact on water

13 This miscellaneous aggregate category includes alcoholic beverages, water and sanitation, household furnishings, health, culture and recreation, restaurants and hotels, insurance connected with transportation, contribute to other unions, other services.

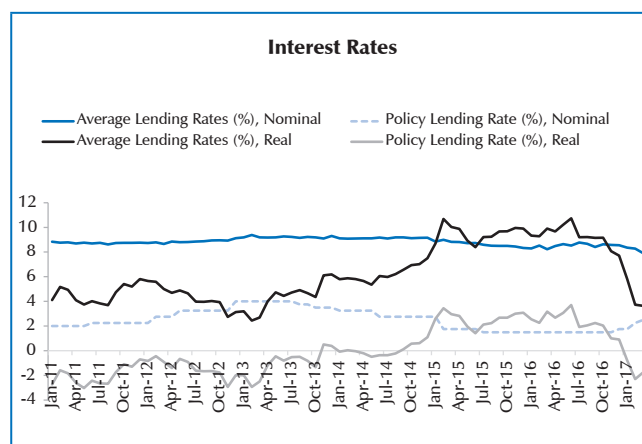


FIGURE 25. Real interest rates at recent low due to inflation

Source: Central Bank of Jordan and World Bank

tariffs would also contribute.¹⁴ By March 2017, and at 3.8 percent average for Q1-2017, headline inflation reflected the highest period average recorded value since December 2013; although it declined slightly to 3.7 percent by April-2017. Inflation was fueled by higher prices of transportation costs and fuel and lighting (both related to oil prices) followed by tobacco and cigarettes and rents.¹⁵

19. Dollarization rates reached 19.5 percent by end-March 2017. The dollarization rate of deposits (share of deposits in USD/total deposits in the money supply) rose by 100bps in December 2016 alone to 18.9 percent end-2016 compared to its end-2015 rate of 17.0 percent (Figure 24). The consequent rise of dollarization rate in March 2017 to 19.5 percent was partly due to JD 442 million of data reclassification of bank deposits and to the Arab Bank share deal.

20. The Central Bank responded to the decline in reserves and rising dollarization with raising interest rates on monetary policy tools, ending a three-year expansionary monetary policy. The Central Bank of Jordan raised its overnight dinar deposit rate, one-week repurchase and deposit rates

14 For a discussion on tariff changes in electricity and water, refer to Special Focus 2 "Welfare Impact of Recent Price Changes in Electricity and Water" featured in this Jordan Economic Monitor.

15 Headline and core inflation reached 0.8 percent yoy and 3.1 percent yoy in December 2016. By April 2017, headline and core inflation had risen further to 3.5 percent yoy and 3.6 percent yoy, respectively.

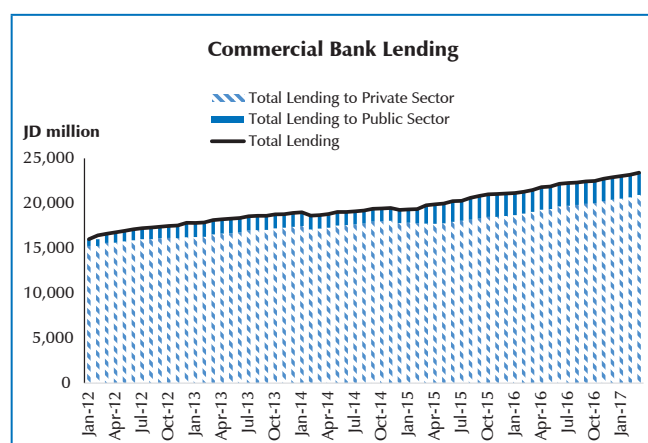


FIGURE 26. Commercial bank lending to both private and public sector continues to grow...

Source: Central Bank of Jordan and World Bank

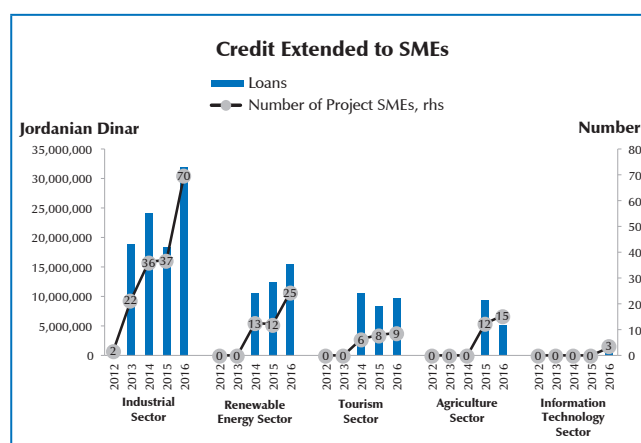


FIGURE 27. ...SMEs benefitting from new credit channels across sectors

Source: Central Bank of Jordan and World Bank

by 25 basis points each, effective from 18 December 2016, in light of the Fed's recent monetary tightening to maintain the JD-USD deposit rate spread. CBJ kept its rediscount rate and the overnight purchase agreement intact in order to stimulate domestic credit. However, in response to rising dollarization and pressures on the peg, CBJ increased its four key rates by 50 bps each on 22 February 2017.¹⁶ The third interest rate hike of 25 bps transpired in direct response to the Fed's equivalent rate hike announcement on 19 March 2017, only the Fed's third in 10 years (Figure 25).¹⁷ Despite these rises, real interest rates are at a recent low given rising inflation.

21. Commercial banks' lending to the private sector markedly improved in 2016 in part due to dividends from improved access to finance measures. Commercial banks' lending to the private sector averaged 8.3 percent monthly yoy growth in 2016 compared to 2.6 percent in 2015 (Figure 26). Lending to the private sector rose to 10 percent yoy in December 2016 and further to 10 percent yoy in March 2017. However, lending to the public sector receded from 50.4 percent average monthly yoy growth in 2015 to 15.9 percent in 2016, and 1.9 percent in the first three months of 2017, reflecting the public sectors' resorting to

¹⁶ The CBJ weekly repo rate, re-discount rate, interest rate on repurchase agreements (overnight), and the overnight deposit window rate.

¹⁷ The Fed's and CBJ's announcements of 25 bps increases each occurred on 17 March 2017. The CBJ's rate hikes took effect on 19 March 2017.

alternative sources of financing including Sukuks and concessional borrowing from multilateral and bilateral organizations. CBJ's September 2016 circular announced a subsidized 1.0 percent interest rate for extended advances to all targeted economic sectors (industry, tourism, agriculture, and IT which was added in 2016) for a period of 10 years for projects outside of Amman especially for Small and Medium Enterprises.¹⁸ Credit extended to SMEs via the CBJ's financing program grew by 29 percent in value terms and with 76 percent more projects benefitting in 2016 yoy (Figure 27). More broadly, the CBJ announced its 2018-2020 financial inclusion strategy in November 2016 which includes further measures to improve financing options for SMEs, micro-finance services, support financial literacy and enhance consumer protection in the financial sector. The CBJ had already supported efforts at improving access to finance such as through supporting the establishment of Jordan's first credit bureau, licensed in December 2015.

22. Jordanian banks continue to be broadly in sound standing. Banks' nonperforming loans (NPL) ratio improved for the fifth consecutive year to 4.4 percent by end-2016 from 8.5 percent end-2011 and the lowest since 2008 (4.2 percent) (Table 1). However, banks' Return on Equity (ROE) and Return on Assets (ROA) both declined to 8.8 percent and 1.1 percent by end-2016 (compared to 10.3 percent and 1.3 percent respectively by end-2015), respectively.

¹⁸ Circular to Licensed Banks number 4/11843 dated 7 September 2016.

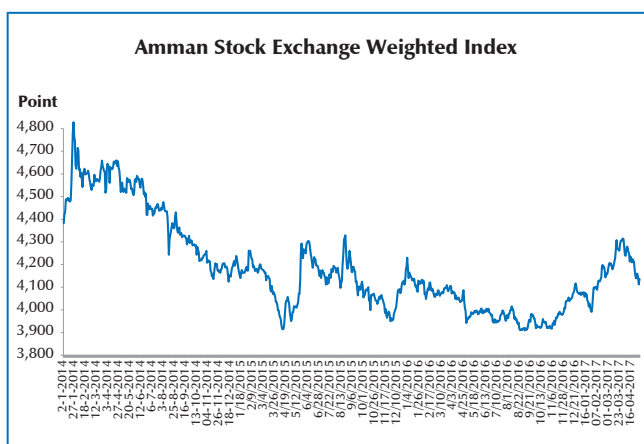


FIGURE 28. Stock Exchange makes headway in 2017

Source: Amman Stock Exchange and World Bank staff calculations

The capital adequacy according to Basel III was 19.0 percent by end-2016 while the leverage ratio increased to 13.0 percent compared to 19.1 and 12.7 percent by end-2015, respectively. Banks' exposure to sovereign debt was lower for the second year in a row accounting for 36.2 percent of total assets (and further to 35.5 percent by end-March 2017) compared to 40.6 percent end-2015. The net foreign asset position of commercial banks stood at minus US\$ 1.4 billion by end-2016 compared to minus US\$ 2.8 billion end-2015.

23. While the Amman Stock Exchange Index (ASEI) retracted in 2016 reflecting general investor sentiment, its performance is off to an encouraging start in 2017. The ASEI declined by 3.8 percent yoy by end-2016 as a result of drops in the banking, industry and services sector components by 0.2, 3, 16.3 percent, respectively (Figure 28). The Amman Stock Exchange's total value traded also shrunk in 2016 although by 31.8 percent yoy compared to a 51 percent yoy increase in 2015. These results reflect the Jordan Investor Sentiment Index published by the Jordan Strategy Forum that broadly revealed a decline every month since March to September 2016, albeit recovered slightly since to March 2017. The ASE activity rebounded in the first five months of 2017 recording a 1.6 percent improvement from end-2016 to end-May 2017. The pick-up was mainly led by 0.3, 1.4 and 3.3 percent increases in the services, banking and industry sectors, respectively, offsetting a 5.4 percent drop in the insurance sector. The cumulative total value traded at ASE by end-April 2017 increased by 114 percent compared to the same period last year, due to a 168 percent increase yoy in total value traded in the financial sector which offset 11 and 26 percent decreases in the total value traded in the services and industrial sectors, respectively.

Table 1. Financial Soundness Indicators.

(in percent unless otherwise stated)	2010	2011	2012	2013	2014	2015	2016
Nonperforming Loans/Total Loans	8.2	8.5	7.7	7.0	5.6	4.9	4.4
Provisions (in percent of classified loans)	52.4	52.3	69.4	77.0	77.6	74.7	78.2
Risk-weighted Capital Adequacy Ratio	20.3	19.3	19.0	18.4	18.4	19.1	19.0
Leverage Ratio	13.1	13.1	13.3	12.9	12.5	12.7	13.0
ROE	8.8	8.3	8.6	9.9	11.0	10.3	8.8
ROA	1.1	1.1	1.1	1.2	1.4	1.3	1.1
Net Profits Before Taxes (in JD million)	523.0	517.0	588.0	719.0	822.0	862.0	750.3
Liquidity Ratio	161.4	152.9	143.5	149.1	152.2	149.0	138.1
Growth Rate of Total Assets	9.6	7.9	4.3	9.1	4.9	5.1	2.8
Growth Rate of Customer Deposits	10.9	8.3	2.4	10.5	9.3	7.7	0.9
Growth Rate of Credit Facilities	8.6	9.8	12.5	6.3	5.2	9.6	8.7

* Preliminary and not annualized.

Source: Central Bank of Jordan

PROSPECTS

24. While sluggish, Jordan's economy is anticipated to remain resilient yet demonstrate slow adjustment. Jordan's economy is expected to pick-up marginally to 2.3 percent growth in 2017 with a slightly higher uptake forecasted in the medium-term to average 2.6 percent over 2017-2019 (Refer to Data Appendix). These projections are based on a status quo of geopolitical situation and assume the realization of impacts of reforms related to stimulating private sector investments (such as through improving predictability of regulations, improving access to finance for small and medium enterprises, and trade facilitation) and higher exports due to the European Union's relaxation of Rules of Origin kicking-in, and as sectors such as tourism, mining and construction improve.

25. The current account deficit is expected to narrow over the medium-term. In 2017, the current account deficit is expected to narrow to 8.7 percent of GDP while energy imports are anticipated to rise on account of higher forecasted oil prices. In the medium-term, the current account deficit is forecasted to tighten to an average of 7.3 percent (2017-2019) due to stronger exports of garments and potash, and a turnaround in exports of services, notably anticipated positive growth in tourism receipts, and positive inflows of remittances from the GCC given higher oil prices.

26. Fiscal and monetary policies are expected to remain contractionary. Fiscal consolidation will continue to predominantly focus on revenue-enhancing measures. While financial viability of the energy sector has improved, financing needs in the water sector continue to pressure the debt situation as operation and maintenance cost recovery is not expected until 2021.¹⁹ Given Jordan's peg to the USD,

monetary policy rates are also expected to continue rising in line with the Fed's expected rate hikes. With both fiscal and monetary policy tightening, and given subdued growth, and limited fiscal space, the only viable option to kick start growth is through credible and decisive structural reforms, especially supply side ones to remove bottlenecks to growth. The Economic Policy Council's newly launched Economic Growth Plan for 2018-2022 bodes well to stimulate some of these reforms.

27. A major challenge for the Jordanian authorities remains stimulating growth and job creation while reining in the fiscal deficit – even more imperative as labor market indicators deteriorate and living conditions become more expensive as inflationary pressures appear. However, short of a positive shock such as the reopening of trade routes with Iraq or a peaceful conclusion to the Syrian conflict, it is difficult to foresee an impactful jumpstart to growth unless structural reforms are implemented at a quicker pace. Given the difficult socio-economic environment, the introduction of fiscal adjustment measures to contain the deficit and ease reliance on grants from donors will continue to prove difficult as reflected in the 2017 budget debates and austerity protests. Another primary challenge to Jordan remains navigating the storm of implications from the Syrian crisis, including hosting more than 660,000 registered Syrian refugees, a situation that is becoming even more protracted. Securing donor support in the way of budget support grants and concessional financing is critical both vis-à-vis Jordan's external position and to strengthen Jordan's prosperity and resilience as it implements its reform agenda, Jordan Economic Growth Plan and Jordan Compact.

¹⁹ Refer to paragraph 78 of Special Focus 2 "Welfare Impact of Recent Price Changes in Electricity and Water" featured in this Jordan Economic Monitor.

SPECIAL FOCUS

I. A TIME FOR GREEN GROWTH AND CLIMATE ACTION²⁰

Climate action is an important part of a sustainable solution to addressing Jordan's notable fiscal, economic and climate vulnerabilities. Jordan's Vision 2025, the recently launched National Green Growth Plan and Jordan's Nationally Determined Contribution (NDC) on Climate Change outline such a pathway. While some building blocks are in place, in order to fully optimize Jordan's potential for low-carbon economic transformation, further analysis is required to design public policy in line with macroeconomic and fiscal objectives, mobilize climate finance and strengthen private sector engagement. Such an endeavor will require coordinated efforts of all ministries with a leading role by the Ministries of Finance, Environment, and Planning and International Cooperation.

Context

28. Jordan's economy has been recently characterized by sluggish growth, high unemployment, and fiscal and debt vulnerabilities which are impacted by the energy and water sectors. The economy has lost momentum in the past couple of years due to spillovers from the neighboring security situation in Syria and Iraq. Economic growth has averaged 2.6 percent over 2010-2016 reflecting this and other exogenous shocks such as the halting of gas supplies from Egypt in 2012, slowing to 2.0 percent in 2016. Unemployment is structurally high,

reaching an average of 15.3 percent in 2016. While the fiscal deficit was reined in to 3.2 percent in 2016, the gross debt-to-GDP ratio rose to 95 percent, overstepping the 60 percent legal guidance. About 25 percent of that debt is due to debt incurred by National Electric Power Company of Jordan (NEPCO) and the Water Authority of Jordan (WAJ) whose debt is government-guaranteed. This reveals how the Jordanian economy is dependent on international energy markets and vulnerable to any uncertainties such as oil prices and energy imports, though these are now to a larger extent mitigated in the energy sector due to a number of implemented reforms.²¹

29. Dependence on imported fossil fuels to serve the growing demand for electricity, water and transportation by industrial and non-industrial consumers has a direct fiscal, climate and environmental impact. The former caused by energy subsidies and the latter by greenhouse gas emissions and local pollution. These impacts can be reduced and fiscal resilience can be increased through policies and investments to promote clean technologies, energy efficiency and resource conservation in energy, water, transport and industrial sectors.

30. Since 2011, Jordan's energy sector has undergone major structural transformation. The Government of Jordan continues to implement a number of major reforms, including full liberalization of fuel prices over time, a gradual and ongoing increase in electricity tariffs towards full cost recovery, the construction of infrastructure to import natural gas with the LNG terminal operational since mid-2015, and the introduction of a number of measures to attract private capital into renewable

20 Authored by Léa Hakim (Economist), Monali Ranade (Senior Operations Officer) and Concepcion Aisa Otin (Senior Financial Officer); World Bank.

21 In 2013 and 2014, the central government transferred 6.0 percent of GDP and 7.0 percent of GDP respectively to NEPCO and WAJ combined. As of 2015, NEPCO achieved cost recovery and resorted to commercial bank borrowing and government transfers to WAJ have been limited.

BOX 3. Population Effect on Water Demand.

Jordan has faced a steep increase in water demand in recent years as a result of rapid population growth (the Syrian refugee influx led to an increase in demand by 21 percent throughout the country and a 40 percent increase in demand in the northern governorates), income growth, and urbanization. Future climate projections are likely to show an increase in mean annual temperature of about 2°C by 2050 with the country becoming warmer and drier with frequent heat waves and fewer days of frost. Water availability in this scenario is likely to continue to decrease and the demand for energy to treat and transport water likely to increase.

Source: World Bank Jordan 2nd Programmatic DPL

energy. Initial assessment indicates that total carbon emissions from the power sector in Jordan has decreased by 31 percent during 2014-16 (carbon intensity decline of 35 percent) while reducing losses in the National Electric Power Company and continuing to absorb a large influx of refugees. This exemplifies the convergence of fiscal strengthening and climate change mitigation.

31. While Jordan has been and is implementing structural and fiscal reforms, more can be done to move to a transformational low-carbon and green economic growth path.

The Government of Jordan delivered a number of reforms to improve Jordan's fiscal position in the wake of the International Monetary Fund Stand-by Arrangement (2012-2015) and current Extended Fund Facility. These have included removal of fuel subsidies in 2012 while introducing a cash transfer for vulnerable households.²² Specific to the water and energy sectors, the government has also implemented measures to enhance the financial viability and enhance energy efficiency in the sectors including as part of the World Bank's Programmatic Development Policy Loans.²³ However, there is untapped potential for Jordan to move towards a green economy and reap environmental, social and financial rewards, including from tapping into global climate finance funds. Jordan also has the opportunity to attract private financing to further benefit from its renewable resources. Due to its geographic location, Jordan is one of the best places in the world to invest in solar energy projects (PwC 2016).

22 Refer to paragraphs 12 and 14 for some EFF fiscal reforms and footnote 42 on the cash transfer program.

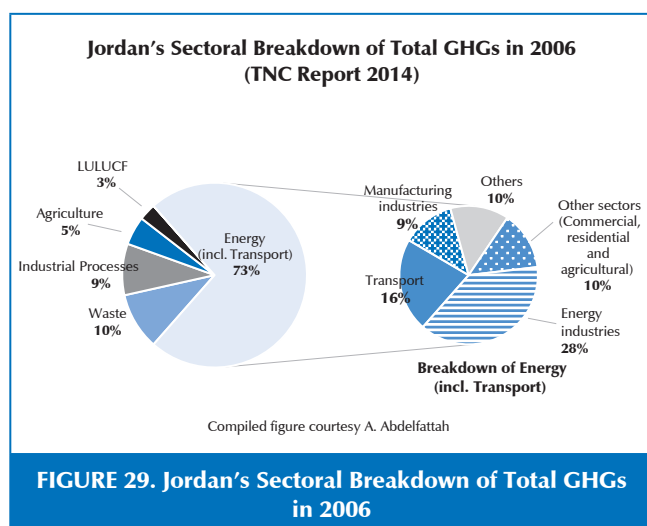
23 For a more extensive discussion of reforms in the water and energy sectors, refer to Special Focus 2 "Welfare Impact of Recent Price Changes in Energy and Water" featured in this Jordan Economic Monitor.

32. Sustainable economic growth, human development and climate action in Jordan need to be achieved in the context of scarce water and arable land resources, complex regional geopolitics, dependence on fossil fuel imports and a growing young population. The Jordan World Bank Systematic Country Diagnostic underscores water and climate change as the main constraints to eradicating extreme poverty and promoting shared prosperity in a sustainable way in addition to energy, natural resources and the environment.²⁴ (Box 3) Rainfall variability, which causes both droughts and floods, is likely to increase extreme precipitation, which causes flash flooding and landslides, can have a severe impact through loss of lives, land and infrastructure. Increasing temperatures, with frequent heat waves, are likely to increase demand for electricity for cooling and dependence on groundwater.

Jordan's Climate Change and Green Economy Commitments

33. Jordan is a party to the UN Framework Convention on Climate Change (UNFCCC) and is one of the most active and pioneering countries in the region. Jordan has submitted three National Communications on Climate Change (1997, 2009 and 2014). Jordan was amongst the first group of developing countries to join the Kyoto Protocol in 2003 and proactively supported innovation in the

24 World Bank. 2015. Jordan - Promoting Poverty Reduction and Shared Prosperity: Systematic Country Diagnostic. Washington, DC: World Bank Group.



Source: Jordan Third National Communication, 2014.

carbon markets. Jordan's National Climate Change Policy of 2013 is also the first comprehensive policy in the Arab region and the Middle East. Continuing this leadership, the Government of Jordan has ratified its Nationally Determined Contributions (NDC) under the Paris Agreement in November 2016.

34. While Jordan is not a major global emitter of Greenhouse Gases (GHG), it is highly vulnerable to impacts of climate change, especially on water resources. Jordan's GHG emissions represent less

than 0.06 percent of global emissions. The total GHG emissions in Jordan were 28.72 million tCO₂e with the share of emissions from fossil fuels for energy related activities (including transport) accounting for 73 percent of the total emissions in 2006 (Figure 29). The modeled impact of climate change on Jordan notably affects the already scarce water resources and consequently, the agricultural sector, biodiversity and ecosystems, coastal areas, urban areas, the health sector, all of which have socio-economic repercussions on local communities. The NDC includes specific commitments to reduce GHG emissions (mitigation) and to reduce the vulnerability to climate change impacts (adaptation). Box 4 provides a snapshot of Jordan's NDC.

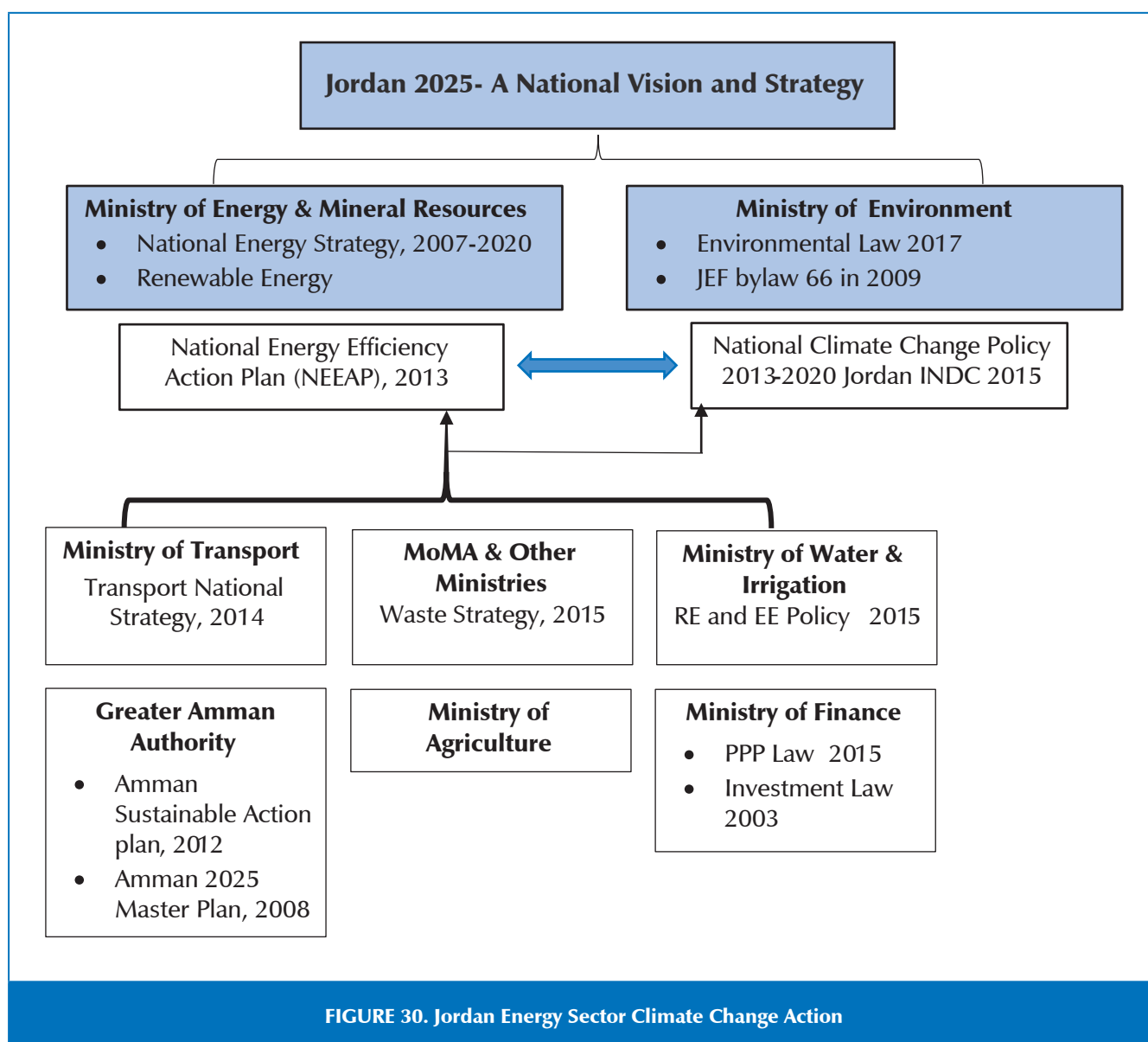
35. Despite Jordan's vulnerability to climate change, the economic cost has not been quantified which constrains the fiscal and economic urgency of action today. There has not yet been a concrete calculation of the negative impacts of climate change on the country's economy based on global GHG trends. Such an assessment would need to estimate the direct costs from climate change across sectors such as the environment, agriculture, human health, and indirect costs resulting from these effects

BOX 4. Snapshot Jordan's Nationally Determined Contributions (NDCs).

The Government of Jordan has submitted a comprehensive Nationally Determined Contribution (NDC) towards climate change mitigation and adaptation to the Paris Agreement. The energy sector is a priority for Jordan, from economic, social and environmental perspectives; accounting for the largest share of Jordan's emissions. This is reflected in the large share of energy related projects, which collectively add more than 1500MW renewable energy; reach more than 100,000 households, improve industrial processes in cement, chemical, food and steel, among others and increase share of public transport and efficient vehicles. Water is a major climate mitigation and adaptation concern from multiple perspectives including: access; utilization, such as climate smart agriculture practices; energy consumption for water pumping; conservation in all sectors, and waste water treatment. Forestry sector projects include both plantations in urban and northern areas and rangeland protection. As transportation is also a major emitter, public transport is important for the urban centers to reduce congestion from fast-growing vehicle population and projects include a Bus Rapid Transit (BRT) project and promotion of hybrid public vehicles.

The expected cost of achieving Jordan's NDC target of reducing GHG emissions by 14 percent over the baseline scenario by 2030 is USD 5.7 billion. The NDC target includes an unconditional target of 1.5 percent compared to business as usual scenario levels which the government commits to achieving with its own resources, and a conditional target of 12.5 percent contingent upon external support including access to financing, technology and capacity building. This 14 percent target is based on expected implementation of around 70 sectoral projects and relevant policy measures. The Government of Jordan has secured USD 542.75 million through its own means to meet the unconditional target. Accordingly, Jordan now requires at least USD 5.157 billion to achieve its conditional target. The cost of achieving the mitigation target is based on estimates articulated in the 2014 National Communication report to the UNFCCC and projects identified subsequently and will benefit from development of a fully costed and comprehensive strategy to align with broader development goals in Jordan.

Source: Jordan NDC



Source: PMR 2016

slowing Jordan's economic growth. These changes would impose damages on different segments of Jordan's economy and society. Without this information, analysis to compare the cost of action versus inaction is incomplete.

36. In Jordan, the National Climate Change Policy and related interventions rely on a framework of the laws, and strategies developed by sectoral line Ministries and relevant authorities. Jordan has many of the building blocks in place and the time is ripe to build on existing sector-specific strategies and experiences. As a country keen to transform its economy, to some extent, Jordan is also a casualty of its own success. A quick review reveals a vast number of sectoral plans, strategies

and programs. Figure 30 presents an overview of the relevant policies and strategies that provide the overall enabling framework for Energy Sector-specific Climate Action in Jordan. The common factor that binds them is the National Vision and Strategy for Jordan 2025. While the government is cognizant of the challenges surrounding climate change and has supported specific efforts, there is a need for more holistic efforts towards implementation and achieving "positive externalities" such as job creation. On the implementation level, a lack of coordination and cohesion across ministries, agencies and development partners can be the source of mixed signals regarding short term needs and longer term development priorities, which is particularly challenging for private sector participation. Enhancing

Cluster 1: Green Growth Corridor

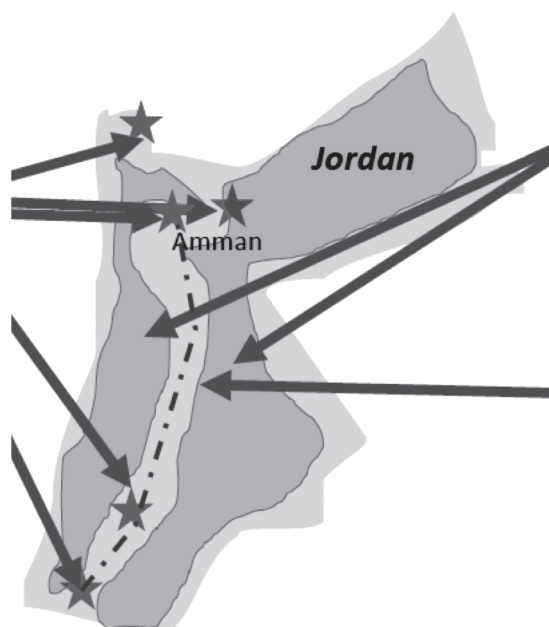
The green growth corridor is focused on NEPCO's Green Corridor project which runs along the backbone of Jordan between Aqaba and Amman. This provides a framework for a number of interlocking projects. The focus is on improving Jordan's energy resilience as well as providing new economic growth opportunities along the route. Acknowledging the long term need to move away from fossil fuels to provide baseload energy, solar technologies such as Concentrated Solar Power (CSP) is recommended for exploration along the route

Key

- Rural Area
- ★ Urban Area
- Green Growth Corridor

Cluster 2: Smart Urban

The urban cluster aims to transform Jordan's urban areas into green cities that are attractive to both investors and residents through a series of flagship green growth projects. The cluster selects a group of interventions which can be used to publicise the urban area as 'green' to potential investors while also creating an improved urban space to live in.



Cluster 3: Rural Resilience

The rural resilience cluster aims to strengthen rural communities and their surrounding ecosystems by diversifying incomes, ensuring resource availability and reducing environmental impacts. Job provision is an important aspect of this rural cluster to encourage equitable distribution of the refugee inflows across the Kingdom. Tourism is also introduced, on the basis that the other interventions can help to boost the perceived stability of the area- this is of crucial importance given current challenges in the tourism sector around international perceptions of Jordan's safety.

FIGURE 31. Jordan National Green Growth Plan Clusters

Source: The National Green Growth Plan, 2016

the complementarity of reforms across sectors and coordination among agencies would improve the ability of the government to align climate change and development priorities, articulate expectations from the private sector, define specific climate-related financing needs and opportunities, and strengthen the role of citizens and civil society.

37. Jordan holds a pioneering position in the MENA region on renewable energy. This reflects the leading role played by the Ministry of Energy and Mineral Resources in achieving green growth in Jordan. "The Renewable Energy (RE) and Energy Efficiency (EE) Law 2012 is at the core of Jordan's RE Investment Policy framework. Under this and associated by-laws, Jordan has implemented incentive schemes and procurement methods for awarding long-term power purchase agreements to grid-connected RE projects, including: a feed-in-tariff (the first to be implemented in the Middle East), unsolicited expressions of interest from

investors through a "direct submission proposal" procurement scheme, a competitive tender; and public procurement under "turnkey" contracts. In 2014, Jordan established net metering and wheeling arrangements to encourage small and distributed RE located on industrial, commercial or residential sites. In addition, the Government has set tax exemptions for RE systems and equipment from customs duties and sales tax. As a result, Jordan has one of the most advanced regulatory and policy frameworks for RE investment in the MENA region." This policy framework has shown strong results, with investments rising from zero in 2012 to, according to the Government, over USD 1.6 billion in 2016 (OECD 2016).

38. Building on the strong linkages between climate change, national development priorities and the urgent need to create economic opportunities, the Government of Jordan intends to pursue a Green Economy pathway. The National

Green Growth Plan for Jordan was launched in May 2017 and focuses on energy, water, waste, transport, tourism and agriculture sectors. The World Bank definition of Green Growth is growth that is efficient in its use of natural resources, clean in its minimization of pollution and environmental impacts, and resilient in its consideration of physical disasters and natural hazards in the face of a changing climate. The Green Growth Plan has identified three clusters: a green growth corridor, smart urban transformation and rural resilience (Figure 31). These three clusters represent the convergence between climate action, sustainable local development and macroeconomic considerations. The ‘Smart Urban’ cluster, for instance, would include implementation of project and policy interventions such as public transport, waste management and clean energy service sand building, vehicle and appliance standards. These interventions would not only improve the quality of service delivery and the financial sustainability of utilities/service providers, it would also improve the quality of life of local residents.

The Economic Case for Climate Action

39. Jordan has a strong economic argument to become more efficient in the use of its energy resources, move towards climate friendly investments and contribute to reducing the fiscal burden and enhancing economic growth although transition costs are likely to be high and will have to be carefully managed. Beyond the positive effects on the environment, including from reducing GHG emissions, climate friendly policies and investment could support a reduction in the fiscal burden of the sector and higher economic growth. On the fiscal front, further reduction in dependence on commodity imports (oil and gas) in international markets. This, in turn, would bring additional stability to the budget due to a lower exposure to the fluctuation of commodity prices. In turn, this could support better debt management leading to an enhanced credit rating for Jordan and a reduction in its cost of funding. The stimulation of economic growth could stem from the attraction of

Foreign Direct Investment (FDI) for the development of infrastructure projects, which would in turn contribute to the involvement of the local workforce and the development of human capital. While such effects need to be modeled and quantified, investment in sustainable energy and climate positive related interventions could have a sizeable potential with spillover effects across Jordan’s economy (Box 5). The transition towards a low-carbon, green economy typically entails high short term costs. These costs need to be appropriately quantified to assess the impact on fiscal and debt sustainability.

40. Further analysis is essential to quantify the economic and job-generating impact from pursuing a green growth agenda. However, preliminary indications and global assessment is positive:

- The National Green Growth Plan (NGGP 2016) notes that “despite high growth rates, the Jordanian economy has created relatively few new skilled jobs, meaning many people of working age are still economically inactive or have emigrated. The majority of jobs created by growth to date have been low-paid, low-skilled jobs and have largely been taken by migrant workers due to the large proportion of skilled Jordanians.”²⁵ ILO survey²⁶ results show that the incidence of job informality among youth reaches above 50 per cent in Jordan, with refugee crisis increasing informality alongside deteriorating wage levels and working conditions. The need for skills development and job creation presents an opportunity to enable development of skills for green jobs. Through a combination of green growth and sustainable consumption and production efforts, the six sectors, namely energy, transport, water, agriculture, waste and tourism, have the “collective potential to attract sustainable green investments amounting to 1.3 billion U.S dollars and creating 51,000 new jobs in the next 10 years” (SCP 2016).
- “The Jordanian Government has estimated that RE and EE projects in Jordan could create around 2000-3000 jobs in remote and less

25 Jordan - National Green Growth Program, December 2016

26 ILO 2015

BOX 5. Potential Positive Economic Spillover Effects from Climate Smart Investments.

Climate Smart Investment has the potential to support growth and sustainable development in Jordan. Some positive spillovers, additional to environmental impacts, include effects on:

- i. Debt management: The diversification of the energy matrix renders Jordan less dependent on foreign oil/gas imports thus creating its own market and making it less exposed to the volatility of energy prices. This brings stability and reliability to the Government's fiscal balance and much less subject to "last minute" calls to the Ministry of Finance in order to issue funds for the utilities.
- ii. Labor market: Climate smart investments could result in a shift towards "green jobs" to the country. The shift needs to be managed to support net job creation.
- iii. Private sector development: Climate smart investments would reinforce and help the development of an incipient private sector in the area of sustainable energy and the development of their own technologies customized for Jordan needs.
- iv. International political positioning and additional funding: Positions Jordan as a serious actor in attracting climate change finance.

developed areas in Jordan." (OECD 2016) This does not include potential for increasing domestic manufacturing of solar PV or other potential jobs across the renewable value chain. Initiatives such as the Jordan Renewable Energy and Energy Efficiency Fund (JREEEF) of the Ministry of Energy and Mineral Resources are helping create and address consumer demand for RE and EE products. The Government of Jordan is also encouraging local manufacturing of efficient products in Jordan, which is likely to create additional green jobs across the energy efficiency value chain.

- Every job needs to become greener to ensure sustainable transformation towards a green economy. An ILO report identifies three sources of change that contribute to creation of green skills and jobs – shifts between industries, development of new occupations and changing skill profiles within occupations (ILO 2011). As noted in Jordan's Third National Communication to the UNFCCC, "with over 70 percent of its population under 30 years of age, Jordan's big investment needs to be in its talent." Skilled Jordanians are the invaluable asset that Jordan needs to achieve transformation towards a sustainable, low-carbon, climate resilient and green growth pathway.

41. Jordan's renewable energy experience exemplifies the transformational role of concerted government action that delivers multiple benefits, improving sustainability of the energy sector, effectively engaging the private sector, creation of local jobs, contribution to the global climate agenda and moving towards a green economy. Continuing on this tremendous progress and undertaking key priority actions, particularly enhancing the energy grid to absorb more RE, will place Jordan on a low-carbon, green energy pathway. This experience is also valuable for the overall Green Economy vision of Jordan. Climate mitigation goals in transport, waste, buildings and agriculture sectors can further enhance the green economy agenda. Transport sector policies to encourage public transport, fuel economy, electric vehicles and improved transportation services also provide multiple benefits including: limiting fuel imports, improving local air quality, reduced commute/travel times, creation of jobs in the transport system and reduced carbon emissions. The buildings sector is another example where 'enhancing building codes for newly established residential complexes targeting poor families' would not only ensure proper insulation but through a link with the green building codes also support efficient water and waste water management and overall energy consumption.

A Role for Climate Finance and Climate-Smart Fiscal Policy

42. Jordan estimates the cost of meeting its NDC targets at US\$ 5.7 billion, however, detailed assessment regarding the cost breakdown and alignment with macro-fiscal targets need to be assessed. Mitigation actions in the NDC related to “developing and utilizing the local conventional and renewable sources of energy” or “rationalizing energy consumption in all sectors” may require fiscal incentives, tax credits, tax relief or other instruments to incentivize achievement of the targets. Such instruments have a cost for the government in the short term until the longer run benefits materialize. As such, a comprehensive assessment of the cost of mitigation and adaptation measures needs to be undertaken in line with Jordan’s sustainable development targets.

43. Jordan is already spending considerable sums on domestic climate change related finance and is a recipient of international sources of climate finance. Climate finance encapsulates financing for climate change mitigation and adaptation actions that can stem from national, regional and international sources. Despite spending an average of USD 42.8 million per year (0.1 percent of GDP) on environmental protection from 2010-2015, Jordan spends a much higher share of its budget on climate relevant expenditure.²⁷ On the domestic front, and short of conducting a full Climate Public Expenditure and Institutional Review (CPEIR), Jordan is already spending about USD 808 million per year on current climate-relevant expenditure (2000-2016) with an average of USD 1,002 million per year projected over 2017-2019.²⁸ This is a proxy only based on climate-

27 Calculated based on Ministry of Finance General Finance Bulletin December 2016.

28 Climate-relevant ministries/agencies as identified from the central government budget used here were the Ministry of Industry and Trade, Ministry of Energy and Mineral Resources, Ministry of Agriculture, Ministry of Water and Irrigation, Ministry of Environment, Ministry of Health, Ministry of Transport, Ministry of Transport/Meteorology Department, and the Jordan Royal Geographic Center.

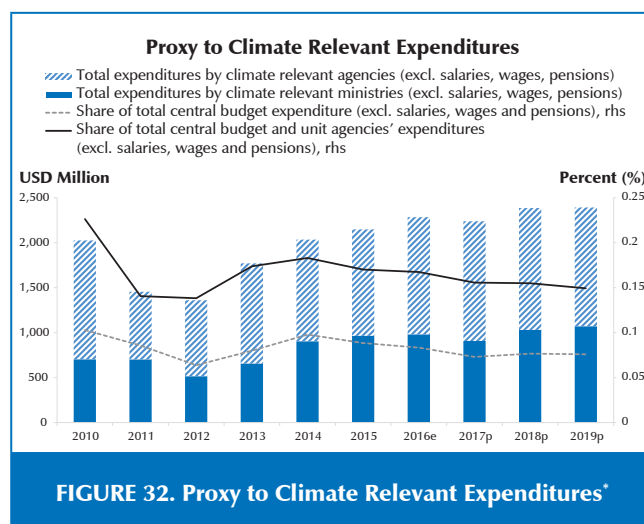
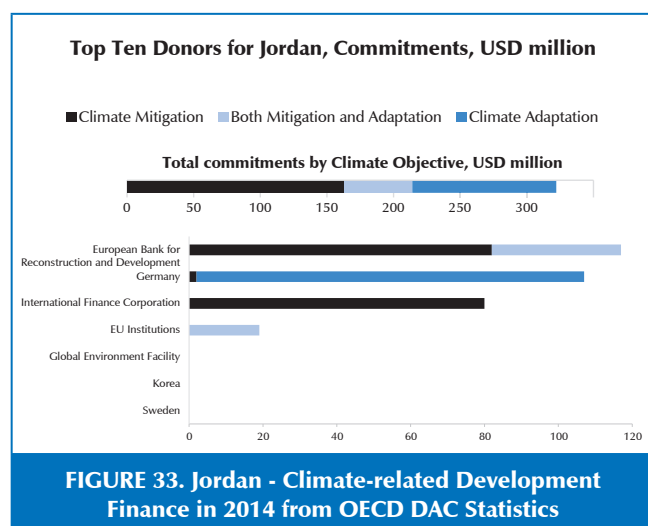


FIGURE 32. Proxy to Climate Relevant Expenditures*

Source: World Bank calculations based on General Budget Department Budgets (2017 Budget Law and previous Budget Laws).
*Refer to footnotes 28 and 29 for list of included ministries and agencies.

relevant ministries’ current and capital expenditures excluding salaries, wages and pensions. If climate-relevant unit agencies’ budgets are included, the total figure rises to an average of USD 1,948 million over 2000-2016 which is about 17 percent of total expenditures (excluding salaries, wages and pensions).²⁹ These figures illustrate the scale that Jordan is already spending in terms of domestic climate finance and the projected increase in the medium term. However, caution must be exercised as the Ministry of Finance climate-relevant figures are not included, and these proxy figures are likely to overestimate the total figure as all expenditures are treated equally whereas in a proper CPEIR, each expenditure is evaluated based on how strongly it is climate relevant. In terms of international climate finance, OECD DAC Statistics indicate that in 2014 Jordan received over USD 300 million towards climate change related activities. Another form of domestic and international climate finance relates to the Central Bank of Jordan’s financing program for Small and Medium Enterprises (SMEs) for Renewable Energy and Energy Efficiency projects. The Jordan Renewable Energy and Energy Efficiency

29 Climate-relevant unit agencies identified as: the Water Authority, Aqaba Railway Corporation, Housing and Urban Developing Corporation, Jordan Hejaz Railways, Jordan Standards and Metrology Organization, Land Transport Regulatory Commission, Jordan Maritime Authority, Aqaba Development Corporation, Jordan Water Company (Miyahuna), Aqaba Water Company, Samra Electric Power Company, Jordanian Airports Company, Yarmouk Water Company, and the Energy and Minerals Regulatory Commission.



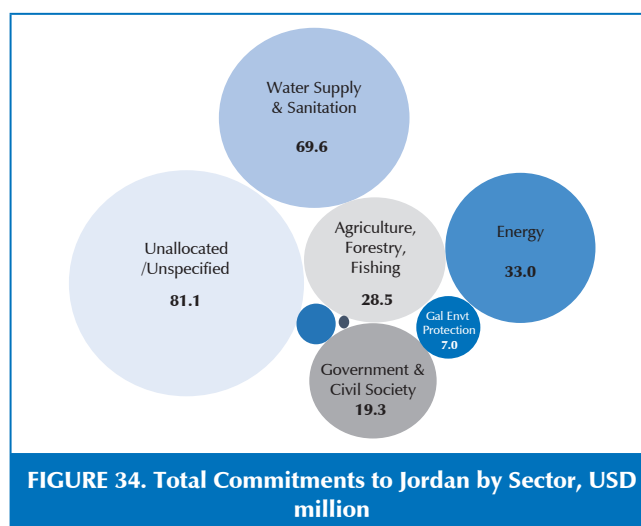
Source: OECD DAC Statistics 2014

Fund (JREEEF) channels funding from national and international sources to all sections of society.

44. Jordan enjoys strong relationships with development partners, donors and multilateral institutions and these could be further leveraged.

According to the OECD DAC statistics for 2014 the largest funders for projects that address climate change include the EBRD, Government of Germany, the International Finance Corporation and the EU. A majority of this funding is committed to priority sectors such as Water and Energy and to government and civil society activities. In addition, development partners including the Agence Française de Développement (AFD), United States Agency for International Development (USAID), United Nations Development Program (UNDP), United Nations Environment Program (UNEP), Global Green Growth Institute (GGGI) and the World Bank continue to support development of policies, projects and institutional mechanisms that support climate change mitigation and adaptation action. With stronger coordination and planning between the ministries of Planning and International Cooperation, Environment and Finance, and with leadership of Ministry of Finance (MOF) in leveraging financing, further international climate finance could become available to support climate action in Jordan.

45. The mobilization of further climate finance to implement the NDCs and Green Growth Plan would support multiple environmental, social and economic targets especially given Jordan's



Source: OECD DAC Statistics 2014

financing needs. While Jordan is working towards further improving its fiscal position, its historical dependence on grants and current high debt-to-GDP ratio reflect its exposure with respect to mobilizing external financing. More efficient fiscal spending coupled with enhanced revenue mobilization and financial sustainability of the energy and water sectors is required to improve the fiscal deficit and limit further increases in debt.

46. Jordan could tap a myriad of financial instruments to finance green projects, although debt instruments need to be used cautiously bearing in mind Jordan's high level of indebtedness.

Instruments include debt instruments stemming from domestic or international debt issuances, guarantees or syndicated loans. Jordan could also leverage the legal and financial infrastructure in place since 2016 to be able to issue Sukuk bonds, Islamic finance bonds that are Shariah compliant, and also meet a lot of the criteria of sustainable/responsible investments. The main challenge would be identifying the underlying asset. Additionally, Jordan could also explore tapping into additional instruments that attract a community of socially responsible investors or to finance green projects. Socially responsible investors are interested to invest in green bonds, notes linked to 'green indices', Asset Backed Securities (ABS structures) using energy savings for example as assets. These kinds of structures have the potential of providing additional confidence to investors since they have an asset backing them. This can be translated in a price decrease thus

potentially improving the funding cost of the entity behind the structure/issuance. In other words, the effect could be seen as a guarantee. Development of reporting systems would support the overall debt management framework. Other instruments related to concessional sources of finance are the Climate Investment Funds such as the Global Environmental Facility (GEF), and from bilateral agencies including AFD, KfW Development Bank, and USAID. Finally, Jordan could benefit from guarantees and lines for RE/EE through private commercial banks and partial risk sharing facilities.

47. Many of Jordan's current investment needs are already in the Green Growth arena.

The Greater Amman Municipality has been pursuing a Green Growth Program, which provides a foundation for cross-sector action for green economic development in the largest urban center in Jordan. Nationally, many of Jordan's investments relate to RE, EE, wastewater treatment plants, and green transport corridors. Given that these are investments already in the pipeline would imply that Jordan would not incur additional debt for pursuing a green or sustainable path. A second implication from implementing these initiatives relates to reduced dependence on fuel imports which would reduce volatility of Jordan's fiscal stance related to fluctuations in the fuel price or exchange rate.

Moving from Plan to Policy Action

48. Achieving Green Growth in Jordan requires an alignment of policy, planning and financing frameworks, enabling financial mechanisms, building institutional capacity and effectively engaging all government and non-government stakeholders. As one of the recommendations, the Green Growth Plan suggests clustering of interventions to ensure coordination between policies and implementing partners, ensure the intervention are mutually reinforcing, and combine investments from both the public and private sector. Through the Partnership for Market Readiness (PMR) initiative, Jordan is establishing

a monitoring, reporting and verification (MRV) mechanism to capture climate action across all sectors, and exploring matchmaking mechanisms to enhance the ability of the public and private sectors to access existing and new financing sources. Adaptation and mitigation interventions in Jordan's NDC can be clustered geographically, and can also be clustered as projects and policy interventions (as per Figure 34). Building on the growing success of the renewable energy sector, particularly private sector participation, there is significant potential for rationalization of energy consumption in all sectors. Energy efficiency improvement can be supported through (a) projects, such as water pumping and street-lighting, (b) improved standards for appliances and equipment, and (c) stronger building codes. The transport sector is a major and fast growing fuel consumption sector, which can be supported through (a) projects such as, improved public transport and introduction of zero emission electric vehicle (ZEV) and (b) improved vehicle efficiency and emission standards. NDC adaptation related activities include (a) projects such as afforestation of rangelands and forest areas and (b) strengthening climate-informed disease control programs and surveillance systems and promote climate smart agricultural practices. These activities can be further aggregated, within clusters or across project or policy interventions, for efficiently identifying financing resources and improving pace of implementation.

49. A just transition in the labor market is encouraged in moving towards a Green Economy transformation. Both the International Labour Organization (ILO) and the Paris Agreement on Climate Change highlight and call for the transition for workers to be just to ensure no one is left behind, with the Paris Agreement recognizing the opportunity and creation "of decent work and quality jobs in accordance with nationally defined development priorities." Furthermore, the ILO's Guidelines support the need for assessment of labor market implications at macro and sector level, policy coherence and ongoing social dialogue (ILO 2016).

50. Adaptation to climate change is a significant undertaking yet an adaptation and related financing strategy is not yet developed.

An adaptation strategy requires multiple pillars. Jordan's NDC actions includes examples of some of these. Key pillars include: (a) the provision of public goods to reduce risk exposure, for example related to infrastructure, water services, awareness campaigns ex. the NDC action "Developing emergency and fast response plan to providing emergency relief and aid to those affected by impacts of seasonal severe cold (mainly during snow storms) and hot conditions and support programs for incomes of families impacted by drought"; (b) public policies such as Jordan's Water and Wastewater Strategy; (c) standards and regulations that integrate climate change consideration such as building codes ex. the NDC action "Enhancing codes of buildings for newly established residential complexes targeting poor families to include proper insulation"; and (d) financial instruments such as insurance, microcredit, and catastrophe bonds. This latter instrument is the least developed in Jordan's climate change strategy and related documentation and a comprehensive adaptation plan could further set a sound financial strategy.

51. Access to finance is central to Jordan's vision for green growth and climate action and for achievement of national priorities and sector strategies. The Green Growth Plan identifies the availability of finance as a key component of Jordan's green growth strategy, highlighting the new opportunities to attract more private financing in addition to the more traditional concessionary funding and grants. The Jordan NDC identifies the need for US\$ 5.7 billion, which will have to come from a combination of domestic and international resources. Jordan's efforts to attract financing for Green sectors could be further leveraged with a conducive policy environment and if Jordan were to take a more prominent position in the international arena of Green financing. Jordan has the potential to get funds from international sources of finance, such as the Global Environment Facility (GEF) and Green Climate Fund (GCF). All traditional financial instrument could be used to finance green projects including, from debt coming from a domestic or international debt issuance, guarantees, syndicated loans. There is also the possibility to use additional instruments to attract a community of social

responsible investors that otherwise may not get into the market.

52. The government has exhibited a strong interest in engaging the private sector although higher engagement requires greater policy certainty, particularly long range infrastructure planning and effective communication. The RE and EE Law has attracted private sector interest and investment in utility scale RE projects. The Government and development partners are actively supporting private sector development, particularly in the sectors pertaining to green economy and clean energy. However, emphasis on providing concessional finance to end-users of clean energy technologies has an unintended consequence of limiting the ability of intermediaries and enterprises, including Energy Service Companies, to engage with the market. This reduces the potential multiplier effect that intermediaries can have as they can reach a larger number of small customers, particularly MSMEs and households. Aligning financing mechanisms with private sector led delivery mechanisms could accelerate the pace of clean technology adoption in Jordan.

53. The government particularly recognizes the potential for greater reliance on private sector participation for large investments across all sectors and implementation of the Public Investment Management (PIM) - Public Private Partnerships (PPP) Framework. The government approved the PIM 2017-2019 Action Plan. Implementation of this plan would result in a qualitative improvement in Jordan's public investments and the selection of projects facilitating growth. Private sector participation could be further enhanced through improved coordination among agencies, aggregation of investment opportunities within a sector and active, ongoing private sector dialogue. In addition, and as also noted by the IMF staff concluding statement, "there is a need to promptly tackle red-tape. Discussions with business sector representatives indicate a pressing need to simplify regulatory process, improve legal stability, predictability, and the rule of law, and enact the inspection law." (IMF, 2016) These actions, combined with the ongoing efforts to improve the

enabling environment for small and medium scale enterprises such as through the credit bureau and efforts to strengthen financial inclusion, could accelerate the pace towards green economy in Jordan.

54. The Ministry of Finance has a crucial role in designing policies and attracting climate finance for both mitigation and adaptation.

Fiscal policies can be considered that both address pollution and other externalities that contribute to climate change and are revenue-generating for the Treasury which further supports the fiscal position. On the expenditure side, climate change needs to be mainstreamed in budget processes. Jordan could consider undertaking a Climate Public Expenditure and Institutional Review (CPEIR) to define the current status of Jordan's public spending from a climate change lens and to identify a suitable approach to incorporate climate change into the planning and budgeting process. This CPEIR can in turn serve as a building block to then develop a climate fiscal framework for Jordan which would through delivering a CPEIR and implementation of the NDC which would further support efficient spending, job creation, and fiscal resilience in the face of climate change related fiscal risks.

Considerations for Transformation to a Low-Carbon and Green Economy

55. In order to enable achievement of the NDC and the Green Growth Plan, the following next steps could be considered. First, further analysis and macroeconomic modeling is required to quantify savings from energy and water related mitigation and adaptation actions across all sectors, contribution to green economic development, related job-creation potential and identification of comprehensive amount of financing (from all sources) needed. Second, plan a just and fair transition towards this new pathway (ILO 2016) and identify recommendations

to provide complementary support to embed Green Growth into government operations. For example, given Jordan's large annual procurement volumes, Jordan could consider developing a Sustainable Public Procurement strategy. Third, strengthened coordination between government entities and development partners, to facilitate an alignment of policy signals to the private sector, for example on application of feed-in-tariffs, strengthening the energy grid, and attracting private sector investment. Fourth, conducting a comprehensive assessment and costing of fiscal and other policies required to meet Jordan's mitigation and adaptation targets and green growth aspirations. Based on this, Jordan can select and ensure that implementation and movement towards a green economy is in line with macroeconomic stability, fiscal and debt targets and objectives especially given the expected short run costs of transition for the budget and given Jordan's target to improve its fiscal balance and reduce its debt-to-GDP ratio to 77 percent by 2021 (in line with the current IMF program).

56. Attracting investment to support climate action and green growth requires a number of prerequisites:

- Coordination between key government agencies (MOPIC, Ministry of Environment, Ministry of Energy and Mineral Resources, Ministry of Water and Irrigation, Central Bank, Ministry of Finance). The Minister of Finance has a leading role in development and implementation of the Climate Change and Green Growth financing strategy to enable investments that will help the economy grow while better managing its debt. This would require leveraging public, concessional, commercial and private financing, in addition to international climate financing.
- Alignment of policy signals, financing instruments, and capacity support across government and the donor community. For instance, promotion of zero emission, electric vehicle transport may be inhibited if "subsidies reduce the price of vehicle fuel more than they reduce the price of electricity. As the cost of electric vehicles falls, such subsidy imbalances might begin to have major implications

for competitiveness, pollution, household consumption, and affordability.” (OEF, 2017)

- A plan aligned with Jordan Vision 2025 to encourage and proactively engage domestic and international financing sources, investors and private sector interested in climate change, sustainability and green growth. For instance, Jordan could consider a series of green bonds or green Sukuk, which by itself would not reduce Jordan cost of funding but would attract a more diverse group of investors.

57. Sustainable solutions to addressing Jordan’ fiscal, economic (growth) and climate vulnerabilities can pave the way towards achieving low-carbon and green societal transformation.

Jordan has begun its journey towards a low-carbon, green economy despite the challenges facing the region and the country and is also committed to achieving the sustainable development goals (SDGs). Climate change is being mainstreamed into the policies and strategies of key sectors and the National Green Growth Plan has identified a pathway to transform the economy in line with the Jordan Vision 2025. Scaling up climate action can support Jordan’s fiscal and macroeconomic objectives, proactively support the creation of green decent jobs and, strengthen resilience of the society and economy. This will require further analysis and consultation with stakeholders including civil society and the private sector, assessment of the short run costs of the transition, and identification of mechanisms for collaboration across the government and the private sectors. The role of the Ministry of Finance, in collaboration with the Ministries of Environment and Planning and International Cooperation, is crucial in realizing Jordan’s Green Growth and sustainable development aspirations.

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II. WELFARE IMPACT OF RECENT PRICE CHANGES IN ELECTRICITY AND WATER³⁰

Over the past seven years, Jordan has repeatedly reformed its electricity and water tariffs to reduce government subsidies and reduce the vulnerability to price shocks. This section evaluates the short-term welfare impacts on households of the electricity and water tariff reforms that were implemented between 2010 and 2016. The results suggest that welfare impacts so far have been limited and household expenditures on electricity and water are still modest by international standards, but the Government should consider combining further tariff reforms with targeted social protection measures to limit the impact on the poor. In the electricity sector, which reached full cost recovery at the end of 2015, further tariff reforms will be needed to sustain cost recovery amid fuel price fluctuations, and to reduce cross-subsidies to keep large consumers from ‘leaving the grid’. In the water sector, where operation and maintenance cost recovery has not yet been achieved, further tariff reforms will be needed to ensure at least operation and maintenance cost recovery by 2021.

Context

58. Evidence is mounting that energy and water subsidies in the MENA region are associated with slow economic growth and high unemployment as they shift investment from labor-intensive to resource-intensive sectors (Devarajan et al., 2014). These subsidies limit the ability of utilities to operate as commercial entities and impact their ability to finance their operation, maintenance and investments. Moreover, tariff subsidies are often neither well targeted nor cost-effective. Though subsidies may reach the poor and vulnerable to

some extent, they mostly benefit the better off, who often consume more energy and water per person. The IMF estimated that 26 percent of electricity subsidies in Jordan benefit the richest quintile of the income distribution, compared to 19 percent for the poorest quintile (Sdravovich et al., 2014).

59. Electric and water subsidies in Jordan reached fiscally unsustainable levels after 2010 when the cost of service for the state-owned utility companies in the two sectors escalated. In the electricity sector, rising oil prices and the abrupt decline of gas imports from Egypt since 2010 had raised fuel costs for the National Electric Power Company (NEPCO), causing financial losses of over JD 1 billion per year between 2011 and 2014. In 2013 and 2014, the central government transferred 6.0 percent of GDP and 7.0 percent of GDP respectively to NEPCO and WAJ combined.³¹ The water sector has seen costs escalating due to the impacts of the Syrian refugee crisis and—as a major consumer of electricity—is directly affected by the increase in electricity tariffs charged to the two main water supply agencies, the Water Authority of Jordan (WAJ) and the Jordan Valley Authority (JVA), from JD 79 million in 2012 to JD 156 million in 2015. In 2015, the Government’s transfers to the water sector were reduced to JD 20 million, and further reduced to zero in 2016 (compared to JD 203 million in 2013 and JD 206 million in 2014), while capital expenditure increased. In 2016, WAJ’s net borrowing reached JD 394 million. By 2016, total debt held by NEPCO and WAJ had reached around JD 7 billion equivalent to 24 percent of estimated 2016 GDP and 26 percent of Jordan’s gross debt. Accumulating such large amounts of debt on the utilities’ balance sheets reduces their ability to operate as commercial entities and poses significant fiscal risks for the Government, as all debt of NEPCO and WAJ is guaranteed by Jordan’s Ministry of Finance.

60. Jordan has reduced cost and reformed tariffs to improve cost recovery of electricity and water services. The Government’s reform program, supported by the World Bank’s Energy and Water Sector Development Policy Loan Program (2015-17)

30 Authored by Caroline van den Berg (Lead Economist), Joern Huenteler (Energy Specialist), Amr Moubarak (Social Protection Specialist), and Jon Jellema (Consultant); World Bank.

31 In 2015, NEPCO resorted to borrowing from commercial banks and transfers to WAJ were limited.

as well as two IMF programs, includes a series of tariff reforms, policies to promote renewable energy and energy efficiency in the electricity and water sectors, and measures to reduce system losses and other operating costs. In the electricity sector, a series of electricity tariff reforms, in combination with the decline in international oil prices since mid-2014, the switch from oil to cheaper natural gas since mid-2015, and the commissioning of the first large-scale renewable energy plants, allowed NEPCO to reach cost recovery in the fourth quarter of 2015. The water sector still has some way to go to reach cost recovery, but the IMF estimates that the Government's reforms will allow WAJ to generate a positive operational margin by 2021.

61. By ensuring that Jordan's energy and water sectors become more financially sustainable, the Government's recent pricing reforms are expected to have a positive effect on economic growth and employment and a net positive impact on the poor and the bottom 40 percent. The reforms would also reduce air pollution (and hence reduce its impact on public health) and reduce the effect of overexploitation of groundwater³², thus contributing to achieve the Bank's twin goals in a sustainable manner. These positive effects, however, take time to materialize as the economy adjusts to changes in relative prices. In the short term, consumer welfare will be affected by energy and water tariff increases. This Special Focus of the Jordan Economic Monitor will estimate the short-term welfare impacts of the recent electricity and water tariff changes in electricity and water on household welfare.

32 The Syrian refugee crisis has increased the total use of groundwater because of the rapid increase in demand since 2013; but the per capita water consumption has decreased between 2013 and 2015.

Empirical Methodology & Data

62. The analysis presented in this Special Focus is based on estimates of direct and indirect³³ welfare effects of the proposed electricity and water tariff increases between 2010 and 2017. The effect of the different policy measures was simulated using the World Bank Subsidy Simulation Model (SUBSIM). Welfare impacts are approximated by the change in household expenditures. The direct welfare effects were calculated by applying the revised tariff schedules to household expenditures for electricity and water. Household expenditures were taken from the Household Income and Expenditure Survey (HIES) 2010/2011³⁴ and adjusted for real wage increases and consumer price inflation between 2011 and 2017. To estimate these indirect welfare impacts, an input-output table of the Jordanian economy was used to estimate the price changes in all production sectors that use electricity and water as an input either directly or indirectly. The estimate was made under 'cost push' assumptions within a price-shifting model: producers pass on any increase in input prices by increasing sales prices with a proportional amount. The HIES was then used to link household consumption expenditures to these production sectors and program, for consumption taking place in each sector, and for determining how much the price of that consumption block is likely to rise when electricity and water subsidies are reduced. The difference between a household's expenditure on its consumption basket (excluding water or electricity) in 2010 and 2017 is equal to our measure of 'indirect welfare losses' brought about by the tariff increases (see Atamanov et al., 2015 for more details on the methodology).

33 Direct effects measure the impact of residential electricity and water tariff increases on household budgets. Indirect effects calculate the effect of electricity and water tariff increases in non-residential sectors that are passed through to households.

34 The HIES 2010/2011 survey, while the most recent data available for research, precedes the influx of Syrian refugees and may therefore no longer be fully representative of Jordanian households. The authors intend to repeat this analysis once the 2016/17 data is available.

63. Potential electricity tariff increases in 2017 were modeled using two different scenarios: A 11.25 fils per kWh increase for all tariff blocks (Scenario S1) and a 14.56 fils per kWh increase for tariff blocks below 500 kWh (Scenario S2). Both scenarios reflect the full pass-through of a (hypothetical) cost increase equivalent to a US\$10 per barrel increase in the oil price in 2017 beyond NEPCO's break-even point, but assume a different distribution of the additional cost across consumers (more details below). In a next step, those real total cost increases in total cost (by tariff block) were applied to household expenditures (based on their marginal tariff block assignment). The difference between a household's total electricity spending in 2010 and 2017 is equal to the measure of 'direct welfare losses' brought about by the tariff increases.

64. In the case of water, potential water tariff increases were modeled using the forecasted tariff increases as programmed in the Structural Benchmark Program (2013–2021) that the Government developed to increase sector revenues³⁵ while reducing the costs of service delivery to improve O&M cost recovery in the water sector by 2021. Since 2013, the Government has implemented a series of tariff increases affecting different types of water users. These include residential water and wastewater tariffs, water and wastewater connection charges, industrial groundwater fees, agricultural groundwater tariffs, and surcharges and penalties for illegal wells. The Government has finalized its update of the Structural Benchmark Program as part of the recently agreed Extended Fund Facility with the IMF. The updated program includes another series of tariff and fee increases covering various groups of water consumers forecasted to take place between 2017 and 2020.

³⁵ The National Water Strategy 2016–2025 reaffirms the Government's commitment to rationalize the price structure of water and wastewater services to ensure efficient use of water, improve the use of commercial practices, and reduce subsidies to the sector.

Results

Electricity

65. Jordan's Electricity and Minerals and Regulatory Commission (EMRC) revised electricity tariffs nine times between 2010 and 2016³⁶ in order to restore cost recovery in the electricity sector (EMRC, 2016). Wholesale tariffs increased from an average of 47 fils per kWh in 2010 to 81 fils per kWh in 2016, raising NEPCO's revenues by around JD 650 million, according to World Bank estimates.

66. Tariff increases mostly affected industrial, commercial and large household consumers, leading to large build-up of cross subsidies between consumers groups. The term cross-subsidies refers to the fact that, in a situation with unequal distribution of costs between consumer groups, those groups paying high tariffs effectively 'subsidize' those with lower tariffs. While such cross-subsidies are relatively common across the developing world, they have reached an unusually high level in Jordan. Electricity tariffs for large household consumers are more than eight times larger than tariffs for small household consumers³⁷. The development of household tariffs over this period is shown in Figure 35.

67. While these tariff increases almost doubled revenues in the power sector, these electricity tariff reforms had relatively modest impacts on real household welfare, for three main reasons. First, most households were exempt from tariff increases on their direct consumption of electricity. As shown in Figure 35, the four lowest tariff blocks (covering consumption up to 600 kWh per month) were exempt from tariff increases. Figure 36 shows that only very

³⁶ Tariffs were raised in January 2010, July 2011, May/June 2012, August 2013, January 2014 and January/February 2015. Both in 2012 and in 2015, tariffs were revised twice in short succession. In November 2016 tariffs were lowered for large consumers.

³⁷ Large cross-subsidies also exist between large and small commercial and industrial consumers. For example, banks pay four times as much per kWh as small industrial consumers and seven times as much as charities. However, cross-subsidies between non-residential consumers' groups are beyond the scope of this analysis, which is focused on households' welfare.

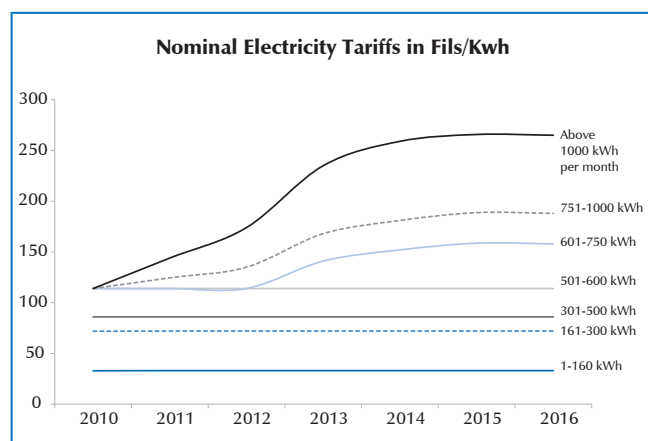


FIGURE 35. Nominal electricity tariffs 2010-2016.

Source: Energy and Minerals Regulatory Commission.

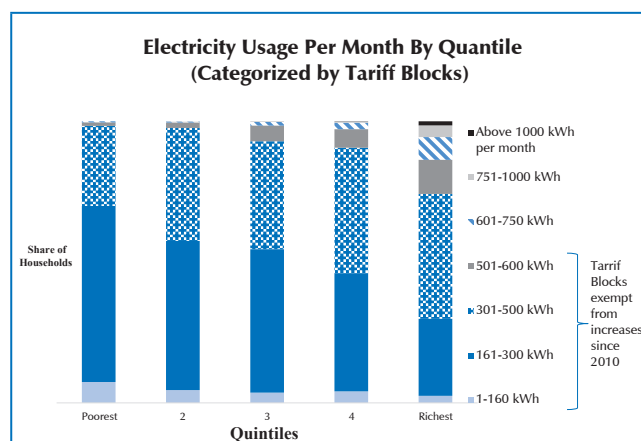


FIGURE 36. Household electricity consumption by quintile mapped onto tariff block structure, indicating households exempt from tariff increases 2010-2016.

Source: Authors' calculations based on 2010/11 HIES.

Table 2. Household Size, Tariff Block, and Mean Electricity Share.

Income Quintile	Median Household Size	% in Block 2 (161-300 kWh/month)	% in Block 3 (301-500 kWh/month)	Electricity Share
1 (poorest)	7	62	28	1.7
2	6	53	40	1.5
3	6	51	38	1.5
4	5	42	45	1.3
5 (richest)	3.75	27	44	1.3

Source: Authors' calculations based on 2010/11 HIES.

Table 3. Cumulative real total cost increase for household/domestic electricity consumption 2010-2016.

Block	1	2	3	4	5	6	7
kWh/month	1-160	161-300	301-500	501-600	601-750	751-1,000	Above 1,000
Real increase in tariff (%)	0	0	0	0	0.8	20.0	49.0

Source: Authors' calculations.

few, mostly rich households consume more than 600 kWh of electricity per month. Second, electricity represents only a relatively small share of household expenditure (1.7 to 1.3 percent on average for the poorest and richest quintiles, respectively, as shown in Table 2). Third, even for the higher tariff blocks, real tariff increases were dampened by inflation. The cumulative increase in real total electricity costs (for households) by tariff block is listed in Table 3.³⁸

38 Where cumulative inflation was greater than the nominal increase in total electricity tariffs, the real increase was capped at zero.

68. Cumulative household welfare impacts from electricity tariff increases between 2010 and 2016 are estimated between 0.44 and 0.5 percent of pre-reform welfare, with most effects coming from indirect effects. Table 4 provides estimates of the direct and indirect impacts of these cumulative (2010–2016) real electricity cost increases. Table 4 indicates that the indirect effects of real increases in the industrial cost of electricity on household welfare are much more significant than the direct effects. Total electricity costs for industrial users (not shown in Figure 35) are estimated to have risen

Table 4. Cumulative welfare losses (per capita) from electricity tariff increases between 2010 and 2016 (in constant 2013 JD and percent of pre-reform welfare).

Quintile	Indirect		Direct		Total	
	JD	%	JD	%	JD	%
Poorest	3.7	0.44	0.00	0.00	4	0.44
2	5.6	0.45	0.01	0.00	6	0.45
3	7.4	0.45	0.03	0.00	7	0.45
4	10	0.44	0.17	0.01	10	0.45
Richest	18	0.42	3.33	0.08	18	0.50

Source: Authors' calculations based on 2010/11 HIES.

Table 5. Description of scenarios for future electricity tariff adjustments.

Scenario	Description	
	Total tariff adjustment	Distribution of tariff adjustment
Scenario 1	Increase in total cost of electricity service by JD 162 million (equivalent to effect of increase in crude oil price by \$10/bbl)	Fuel clause is applied uniformly to all tariff categories
Scenario 2		Fuel clause is higher for smaller consumers to reduce cross-subsidies

Source: Authors' assumptions.

by 67 percent in real terms (after inflation) between 2010 and 2016. In contrast, direct effects are, on average, negligible, as most households (regardless of income level) consume electricity volumes that corresponded to tariff blocks that did not see any real tariff increase. Table 4 also shows that while the total impact (direct and indirect) of electricity price increases is small, it is marginally larger (relative to income) for richer households.

69. If fuel costs increase in the future, electricity price increases under the new tariff adjustment mechanism would impact households more directly, but welfare effects would most likely still within an acceptable range (which is defined as less than 1 percent of total household expenditures) if oil prices remain below \$70/bbl. While NEPCO reached cost recovery in 2015, future changes in fuel cost or electricity mix may require further adjustments to the electricity tariff. Sector stakeholders in Jordan have put forward proposals to share the burden of any future electricity tariff increases more equally between consumer groups (e.g., JSF, 2016). To estimate what such a policy would mean for household expenditures, Table

6 provides estimates of the marginal direct and indirect impacts of a (hypothetical) electricity cost increase under two different scenarios (S1 and S2). Both scenarios capture tariff increases in response to escalating sector cost, assuming a cost increase equivalent to a US\$10/bbl increase in the Brent oil price, beyond NEPCO's break-even point (e.g., from US\$55/bbl to US\$65/bbl).³⁹ This hypothetical cost increase, which corresponds to a total cost increase by JD 162 million, could come from increasing natural gas prices or from other cost items such as interest payments, capacity charges, etc. If passed on fully to consumers under the new tariff adjustment mechanism, such an increase in the oil price (or an equivalent increase in other cost items) would raise the fuel clause by 11.34 fils/kWh if, as currently envisioned, the clause is not differentiated by consumer category (Scenario 1). This value would rise to 14.46 fils/kWh if the Government chooses to

39 We estimate here the welfare effect of a hypothetical oil price increase by US\$10/bbl beyond NEPCO's break-even price of oil in 2017, which the Government currently (as of October 2016) estimates at US\$55/bbl. The welfare effect would be the same if other cost items – such as interest payments, capacity charges for generators, or renewable energy payments – increase by an equivalent amount (JD 162.3 million p.a.) compared to the baseline.

Table 6. Welfare losses (per capita) from the electricity tariff increase needed to cover a (hypothetical) US\$10/bbl oil price increase in 2017 under two scenarios (S1, S2). See Table 5 for description of scenarios.

	Indirect welfare effects	Direct welfare effects			Total effects	
		S1: Uniform fuel clause for all consumers	S2: Higher fuel clause for smaller consumers to reduce cross-subsidies		S1	S2
	%	%	%		%	%
Poorest	0.14	0.53	0.70		0.67	0.84
2	0.14	0.44	0.58		0.58	0.72
3	0.14	0.39	0.51		0.53	0.65
4	0.14	0.35	0.45		0.49	0.59
Richest	0.13	0.28	0.32		0.41	0.45

Source: Authors' calculations based on 2010/11 HIES.

reduce cross-subsidies and effectively applies the tariff increase only to the lowest three (less than 500 kWh/month) tariff blocks (Scenario 2).

70. Table 6 shows that the tariff adjustment mechanism is mildly regressive in relative terms in both scenarios. The poorest quintile would see an aggregate welfare impact of 0.67 percent and 0.84 percent in Scenarios S1 and S2, respectively, compared to 0.41 percent and 0.45 percent for the richest. Table 6 indicates that the direct effect of real increases is more significant than the indirect effects from the additional industrial cost of electricity on household welfare. Table 6 also shows that while the total impact (direct plus indirect) of electricity price increases is small, it is larger (relative to income) for smaller households.

Water

71. Since 2011, the Government is not only reforming water tariffs of residential and non-residential water and wastewater users, but also for agricultural and industrial groundwater users through a combination of changes in tariffs and fee structures. While total effects on household expenditures are smaller compared to the changes in the electricity sector, these water tariff reforms had larger direct effects on households for two reasons. First, unlike in the electricity sector, water consumption is not very sensitive to income (Komives et al., 2005). This fact is illustrated in Figure 37, which shows average water usage per month

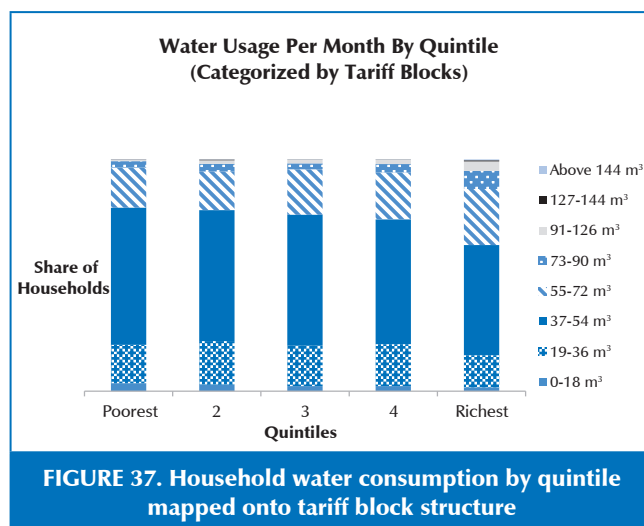


FIGURE 37. Household water consumption by quintile mapped onto tariff block structure

Source: Authors' calculations based on 2010/11 HIES.

for different quintiles of the income distribution, especially when seen in contrast to Figure 36. The fact that water rationing is widespread in Jordan as the country is one of the most water scarce countries in the world adds to the relatively small differences in water consumption between poorer and richer households. Trying to exempt poor households from price increases by exempting lower consumption categories is therefore less effective than in the case of electricity. Second, changes in the tariff structure since 2015 have affected the poorer households more than richer households. The cumulative increase in real total water costs by tariff block (for households) is listed in Table 7. For households, there are real cumulative cost increases for each block, especially as the Government has used a combination of increases in variable costs and fixed charges to generate sector revenues. The real total cost increases for households

BOX 6. Jordan's New Electricity Tariff Adjustment Mechanism.

Many countries around the world allow utilities to pass through fuel cost to consumers on a regular basis using a 'fuel clause' in the tariff. These fuel clauses come under different names, including "fuel surcharge"; "fuel and power purchase cost adjustment"; "fuel cost adjustment", "fuel adjustment charges", "fuel adjustment clause" or "power cost adjustment". Examples of countries with such adjustment mechanisms include the United States, the UAE, Japan, South Korea, Thailand, Pakistan and many more. The different names notwithstanding, all the mechanisms share the same functionality: to pass through hard-to-control changes in power generation or purchasing cost— by adding one or more adjustable components to consumer electricity bills—in order to mitigate financial risks for the utilities and to encourage price-responses in consumption. Notably, the fuel cost adjustment is done in a process that is separate from the normal tariff review (which often happens annually or quarterly), and the base tariff remains the same during the tariff period.

Since 2010, Jordan's electricity tariff includes such a fuel clause that allows EMRC to adjust wholesale and end-consumer electricity tariffs on a regular basis to pass through variations in fuel cost. However, EMRC has so far kept the fuel clause at zero despite significant variations in fuel cost. On October 5, 2016, EMRC adopted a tariff adjustment mechanism (TAM) to activate the fuel clause. The objective of the TAM is to sustain NEPCO's ability to recover its cost through electricity sales. Under the new TAM, effective from January 1, 2017 onwards, EMRC will adjust the fuel clause on a monthly basis in case the total cost of electricity service is higher than the average selling price of electricity. The EMRC will determine the cost of the electricity system every month based on data submissions by NEPCO and the distribution companies. The required adjustment for each sector and category would then be calculated by EMRC's tariff department and recommended for adoption to the Council of Commissioners of EMRC. Upon adoption, EMRC will communicate the fuel clause schedule to the distribution companies so that these would include the fuel clause in their billing. Due to lagged data availability, the revision for a specific month would be based on data from two months before (e.g., adjustment of the month of October would be based on actuals from August). EMRC will undertake a true up adjustment at the end of the year to ensure that these delays do not cause any net losses for NEPCO.

Table 7. Cumulative real total cost increase for household/domestic water consumption between 2010 and 2017.

Block	1	2	3	4	5	6	7	8
Per Quarter (m3)	0-18	19-36	37-54	55-72	73-90	91-126	127-144	>144
% increase tariff WAJ	28.0	36.0	6.6	3.7	8.1	7.1	8.6	10.0
% increase tariff water companies	22.0	23.0	2.2	1.7	6.6	6.4	7.6	9.2

Source: Authors' calculations based on 2010/11 HIES.

Table 8. Median marginal tariff block and mean water share in budget.

Quintile	Median Household Size	% in Block 3	% in Block 2 or 4	Water Share in Budget
Poorest	7.00	59	34	1.4
2	6.00	57	36	1.2
3	6.00	56	37	1.0
4	5.00	54	38	0.9
Richest	3.75	48	38	0.8

Source: Authors' calculations based on 2010/11 HIES.

Table 9. Description of scenarios for welfare impacts from water tariffs.

Scenario	Description	
	Direct effects	Indirect effects
Scenario A	Based on household water tariffs	Based on industrial tariff increases, including those for groundwater
Scenario B	Based on industrial tariff increases, excluding those for groundwater	

Source: Authors' assumptions.

Table 10. Welfare losses (per capita) from cumulative water tariff increases between 2010 and 2017 (Scenario A: including groundwater tariff increases for industry).

Quintile	Indirect		Direct		Total	
	JD	%	JD	%	JD	%
Poorest	2.3	0.27	0.60	0.06	2.9	0.34
2	3.4	0.27	0.78	0.05	4.2	0.33
3	4.5	0.27	0.80	0.04	5.3	0.32
4	6.0	0.27	0.98	0.03	7.0	0.31
Richest	11	0.25	1.67	0.02	13	0.29

Source: Authors' calculations based on 2010/11 HIES.

Table 11. Welfare losses (per capita) from cumulative water tariff increases between 2010 and 2017 (Scenario B: excluding groundwater tariff increases for industry).

Quintile	Indirect		Direct		Total	
	JD	%	JD	%	JD	%
Poorest	-0.50	-0.059	0.60	0.06	0.10	0.01
2	-0.73	-0.059	0.78	0.05	0.04	0.00
3	-0.96	-0.059	0.80	0.04	-0.16	-0.01
4	-1.29	-0.058	0.98	0.03	-0.31	-0.01
Richest	-2.41	-0.055	1.67	0.02	-0.74	-0.02

Source: Authors' calculations based on 2010/11 HIES.

served by the water companies (customers served by the regional water utilities of Miyahuna (Amman), Aqaba and Yarmouk) have been slightly lower than those for households whose water and wastewater services are provided by WAJ.

72. The size of the indirect effects of water tariff increases on household expenditures depends on assumptions about groundwater tariffs. Total water costs for industrial users are estimated to have risen 48 percent in real terms (after inflation) from 2010 to 2017 if groundwater (for industrial use) tariff increases are included (Scenario A). If

groundwater (for industry) tariff increases are not included, total water costs for industrial users have not risen in real terms between 2010 and 2017 and estimated indirect effects on household welfare are in this scenario (defined as Scenario B) negligible.

73. If groundwater tariffs are included in the estimation (Scenario A), indirect effects—while still relatively modest in size—outweigh direct effects. Table 10 provides estimates of the direct and indirect impacts of real water cost increases (including both groundwater and piped water). Table 10 indicates that the indirect effects of real increases

Table 12. Direct and indirect welfare losses (per capita) from water and electricity tariff increase in 2010–2017.

Quintile	Indirect		Direct	
	Water Scenario A: With GW tariff increase	Water Scenario B: Without GW tariff increase	Electr. Scenario 1: Uniform fuel clause	Electr. Scenario 2: Reduced cross-subsidies
	%	JD / %	JD / %	JD / %
Poorest	0.91%	0.58%	0.08%	0.16%
2	0.92%	0.59%	0.07%	0.13%
3	0.93%	0.60%	0.06%	0.10%
4	0.91%	0.59%	0.06%	0.09%
Richest	0.87%	0.56%	0.16%	0.16%

Source: Authors' calculations based on 2010/11 HIES.

Table 13. total welfare losses (per capita) from water and electricity tariff increase in 2010–2017.

Quintile	Total			
	Water scenario A / Electr. Scenario 1	Water scenario A / Electr. Scenario 2	Water scenario B / Electr. Scenario 1	Water scenario B / Electr. Scenario 2
	%	%	%	%
Poorest	1.00%	1.08%	0.67%	0.75%
2	1.00%	1.05%	0.67%	0.72%
3	0.99%	1.03%	0.66%	0.70%
4	0.98%	1.01%	0.65%	0.68%
Richest	1.03%	1.03%	0.72%	0.72%

Source: Authors' calculations based on 2010/11 HIES.

in the industrial cost of water on household welfare are more significant than the direct effects. Table 10 shows that piped water accounts for a small share of household budgets and also that most households (regardless of income level) consume water volumes corresponding to tariff blocks that have not seen moderate real increases in total costs. Table 10 also shows that while the total impact (direct plus indirect) of water price increases are small, they are larger (relative to income) for poorer households.

74. If groundwater tariffs are not included in the estimation (Scenario B), increases in real piped water costs for industry would be in fact negative. This means that the cumulative nominal increase in total piped water costs over the period from 2010 to 2017 was less than inflation over the same period, leading to a real decrease in the water costs for industry. Table 11 indicates that the indirect effect of real tariff decreases in the industrial cost of

water on household welfare are similar in magnitude (though of the opposite sign) to the direct effects. Table 11 also shows that the total impact (direct plus indirect) of piped water price increases are near zero for every household independent of whether they are classified as rich or poor.

Combined Effects

75. We estimate total effects of the electricity and water tariff increases in 2010-2017 on household welfare in the range of 0.65-1.08 percent of pre-reform welfare. Table 12 and Table 13 provide estimates of the joint direct and indirect impacts of water and electricity tariff increases in 2010-2017. Results are shown for four different scenarios for the total effects (A1, A2, B1 and B2). A1 and A2 combine Scenario A for the indirect effects of water tariffs for industry with Scenarios 1 and 2, respectively, for the 2017 electricity tariff increases.

B1 and B2 combine Scenario B for the indirect effects of water tariffs for industry with Scenarios 1 and 2, respectively, for the 2017 electricity tariff increases (See sections above for a discussion of the individual scenarios for water and electricity). The joint consumption effect of energy and water tariff increases are assumed to be additively linear.

Policy Implications

Electricity

76. Cost recovery of electricity services was achieved in 2015 without threatening affordability for end-consumers, because almost all households were exempt from tariff increases.

Our results suggest that the welfare impact of recent tariff increases for residential consumers, including the poor and vulnerable, was small (see Table 4). Cross-subsidies between electricity consumer groups have buffered the impact on the poor, which still pay only around 2 percent of their total household welfare for electricity, less than half of the affordability threshold of 5 percent of total household consumption typically assumed in the literature (e.g., Briceño-Garmendia and Shkaratan, 2011). These results are in line with the simulation done by Atamanov et al. (2015), which showed that the 2010-2015 electricity tariff reforms had little impact on the per capita welfare of households. However, going forward the Government is looking to reduce cross-subsidies between consumer groups, although the exact distribution of future tariff increases is yet to be determined. Cross-subsidies between consumer groups have reached a limit and households may be more significantly impacted in the future. This is because tariffs for large households or large commercial consumers, which pay up to 2.5 times the average cost and eight times as much per kWh as the smallest consumers, are significantly affecting their cost competitiveness, especially in the case of firms competing in export markets. Furthermore, tariffs have risen to levels where it is more economical for large commercial users to produce their own electricity from solar or diesel sources, a scenario that over time would deprive the sector of its revenue base. Both effects

put pressure on the Government to distribute the burden of future tariff hikes more evenly across consumer groups.

77. If oil prices rebound in 2017, there would be scope for the regulator to increase tariffs while reducing cross-subsidies, but targeted compensation mechanisms should be considered if oil prices approach \$70/bbl. Tariffs were not increased in 2016 because revenues were sufficient at the end of 2015 to cover the sector's full cost. However, the sector remains exposed to fuel price fluctuations for at least the coming 2-3 years due to the pricing structure of NEPCO's LNG supply contracts. The Government currently estimates that NEPCO breaks even if oil prices average US\$55/bbl in 2017. While the overall impacts of a \$10/bbl price increase would still be modest (<1 percent), any further increase would lead to significant welfare losses for the poor under the new tariff adjustment mechanism. This means that the pass-through of fuel costs and the intended gradual reduction of cross-subsidies between consumer groups must be designed and monitored carefully to ensure that the economic benefits of tariff reforms outweigh the impact on the poor. This could be achieved by linking price increases directly to compensation measures for the most vulnerable customers (see below).

Water

78. Operation and maintenance cost recovery in the water sector is not expected to be achieved until 2021 due to the sharp increase in electricity rates in recent years. Water tariffs, charges and fees have increased between 2010 and 2016, and more are planned between 2017 and 2021. However, the water tariff reforms have had so far little impact on the per capita welfare of households, even poor and vulnerable households (see Table 10 and Table 11). The Government has ensured that all water consumers (not only households) have seen their prices increase, but it is worth noting that as of 2016, no water consumer pays the full cost of water. Every water user essentially receives a subsidized water rate, with the subsidies widely varying between consumer categories. Between 2010 and 2016, industrial groundwater users faced the largest tariff

increases. This policy has significantly reduced the price gap between industrial groundwater and piped water, but still provides incentives for industries to use groundwater instead of piped water. The effect of these industrial groundwater tariffs, however, affects residential households if it assumed that these cost increases are passed through to households. The indirect effect of the overall tariff increases has shown to be significantly larger than the direct effects (see Table 10). The government uses cross-subsidies in the sector. The use of cross-subsidies is widespread in the water sector between different groups of consumers (agriculture, households, industry and commerce), but also within these consumer categories through the use of increasing block rates (for residential and agriculture water use). Interestingly, the Government also used a decreasing block rates in the sector for non-residential piped water users. This is rather surprising as a decreasing block rate structure⁴⁰ is usually applied in an environment where water resources are abundant, and industrial customers often impose lower average costs because they enable the utility to capture economies of scale (Whittington, 2002). The results indicate that the reduction of subsidies and cross-subsidies in the water sector must be designed and monitored to ensure that the benefits between and within water user categories are well distributed.

79. The Government has built into the water tariff reforms measures to mitigate the impact on the poor and vulnerable by distributing tariff increases across all water consumers and by using cross-subsidies between residential and non-residential consumers. However, the cumulative impact of the reforms since 2011 has been modest. The same is true for the marginal impacts of the 2016 reforms, which focused on non-residential users, and the planned reforms in 2017 (see Table 10 and Table 11). This reflects modest real tariff increases, the smaller size of the proposed water tariff increases for households compared to non-residential consumers and the smaller share of water expenses in the total household expenditure as compared to electricity. The indirect welfare losses due to higher water

tariffs for groundwater use by industry⁴¹ are uniform across consumption quintiles. The combined direct and indirect impacts of the water tariff increases in 2010-2017 on household welfare are estimated to be small, but mildly regressive.

Linkages to Social Protection

80. Future utility tariff reforms could be explicitly linked to targeted compensation payments to protect the poor, but this would require reforms to Jordan's social safety nets and improved targeting mechanisms. The experience of the fuel subsidy cash compensation scheme in 2012⁴² shows that Jordan can mobilize broad, cash-based compensation of households relatively quickly. However, social safety nets targeting the poor and vulnerable did not expand during the series of fuel, electricity and water price reforms in recent years despite expected increases in poverty headcount.⁴³ Although the National Aid Fund (NAF) reached over 100,000 households (little over 300,000 individuals) and disbursed JD 85 million in cash assistance in 2016, this coverage amounts to less than half of the poor in Jordan.⁴⁴ To address the impact of any future fiscal adjustments (including future utility price reforms) on the most vulnerable, Jordan would need improved mechanisms to target social protection services for the bottom quintiles. The Bank's National Unified Registry and Outreach project is currently being restructured to establish an integrated and automated data-exchange system (as the National Unified Registry system) connecting the NAF with key participating institutions and data provider

41 It is assumed here that the water tariff increases are the same across sectors. In case the Government pursues cross-subsidy policies, the indirect effects may be larger. Price elasticity effects in the water sector tend to be relatively low and hence have not been considered here.

42 The fuel cash compensation transfer program that was set up as an ad-hoc mechanism in 2012 to alleviate the effect of the subsidy reform for petroleum products. This temporary compensation scheme covered 70 percent of Jordanian households, but became inactive in December 2014.

43 Based on 2010 Household Income and Expenditure Survey (HIES), poverty headcount is estimated at 14.6 percent following fuel subsidy reforms (Atamanov et. al)

44 Assuming 2010 poverty headcount rate, Jordan's NAF will need to triple in size to cover all the poor in Jordan, requiring an additional JD 170 million assuming no increases in administrative costs to expand current programs or introduce new ones.

40 With decreasing block tariffs, the rate per unit of water is high for the first (lower) block of consumption and decreases as the volume of consumption increases.

agencies. If future investment in the expansion of the registry is prioritized, Jordan can have a unified registry and an integrated case management system that can identify, compensate and refer services to poor, vulnerable, and potential beneficiaries in the bottom two quintiles in an integrated approach. This approach will more accurately draw on administrative data and household visits (where needed) to improve decisions on eligibility and benefit delivery for current and future safety nets programs.

Conclusions

81. Many household and industrial consumers have experienced real increases in the cost of water and electricity in recent years as the Government has been taking measures to restore cost recovery in the energy and water sectors, but short-term welfare losses for (poor) households have so far been modest in view of the expected benefits from the reforms. This Special Focus estimates cumulative welfare effects of the price reforms between 2010 and 2017 on households at approximately 0.65 to 1.08 percent, depending on the chosen scenario for 2017. With respect to both electricity and water tariffs, richer households have experienced greater absolute welfare losses. However, as a share of income, total (direct and indirect) welfare losses from electricity cost increases are relatively uniform across the income distribution. Therefore, while the overall impacts are modest as a share of total expenditures, the results indicate that the reduction of subsidies and cross-subsidies in electricity and water must be designed and monitored carefully to ensure that the benefits, specifically improvements in the business climate and employment (which are not captured by the results presented here), outweigh the impact on the poor. Furthermore, as the window for price subsidization closes in Jordan, future utility tariff increases will require to be accompanied by more robust social safety nets interventions to protect the poor and vulnerable population beyond broad-based compensations.

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DATA APPENDIX

TABLE 14. Selected Economic Indicators.

	2014	2015	2016	2017	2018	2019
	Act.	Act.	Act.	Proj.	Proj.	Proj.
Real sector	(annual percentage change, unless otherwise specified)					
Real GDP	3.1	2.4	2.0	2.3	2.6	3.0
Real GDP per Capita	0.3	-0.0	-0.0	0.6	1.2	1.8
Agriculture (share of GDP)	3.3	3.3	3.4	3.4	3.3	3.3
Industry (share of GDP)	25.2	25.2	24.9	24.9	25.0	25.1
Services (share of GDP)	55.8	55.9	56.3	56.0	55.9	56.0
Net taxes (share of GDP)	15.7	15.6	15.4	15.8	15.8	15.7
Money and prices	(annual percentage change, unless otherwise specified)					
CPI Inflation (p.a.)	2.9	-0.9	-0.8	3.0	2.1	1.9
Money (M2)	6.9	8.1	4.0	3.9	8.8	9.3
Investment & saving						
Total Investment	28.0	24.1	22.1	21.0	21.5	22.8
Gross National Savings	20.7	15.0	12.8	12.3	13.9	17.2
Government finance	(percentage of GDP, unless otherwise specified)					
Total revenues and grants	28.6	25.5	25.8	27.1	27.9	28.1
Domestic Revenue (excluding grants and privatisation)	23.7	22.2	22.7	24.4	25.0	25.4
o/w. tax revenue	15.9	15.4	15.5	16.8	17.3	17.5
Foreign Grants	4.9	3.3	3.0	2.7	2.9	2.8
Total expenditure and net lending	37.9	29.1	29.0	30.0	30.5	30.4
Current ¹	33.4	24.9	25.2	25.8	26.0	25.8
o/w wages and salaries	4.9	4.7	4.6	4.9	4.7	4.6
o/w interest payment	3.6	3.4	3.0	3.4	3.4	3.4
o/w Transfer to utilities (NEPCO and WAJ)	7.0	0.1	0.0	0.0	0.0	0.0
Capital & Net Lending	4.5	4.1	3.8	4.3	4.5	4.6
Overall balance (deficit (-), excl. grants) ²	-14.2	-6.9	-6.2	-5.6	-3.7	-3.0
Overall balance (deficit (-), incl. grants) ²	-9.3	-3.6	-3.2	-2.9	-0.8	-0.2
Primary Balance (deficit (-), excl. grants) ²	-10.5	-3.4	-3.2	-2.2	-0.3	0.4
Primary Balance (deficit (-), incl. grants) ²	-5.7	-0.12	-0.2	0.5	2.6	3.2
External sector	(percentage of GDP, unless otherwise specified)					
Current Account	-7.3	-9.1	-9.3	-8.7	-7.6	-5.6
Net Exports	-26.4	-22.9	-20.8	-21.2	-20.2	-18.7
Export FOB	43.3	37.6	35.1	36.6	39.5	42.5
Import FOB	69.7	60.5	55.9	57.8	59.6	61.2
Net Income and transfers	19.1	13.8	11.5	12.5	12.5	13.1
Net Private Investments (FDI and Portfolio)	9.1	7.7	7.1	7.3	7.7	8.2
Foreign Currency Reserves (US\$ Millions)	14,079	14,153	12,883	13,293	13,966	14,238
Foreign Currency Reserves ^{3/} (Months of Imports GNFS ^{4/} , excluding re-exports ^{5/})	7.1	7.8	7.6	7.3	7.2	6.7
Total Debt	(in million US\$, unless otherwise specified)					
Total Debt Stock	31,984	35,126	36,843	38,491	38,498	39,258
Debt to GDP Ratio (%) ^{6/}	89.0	93.4	95.1	95.6	91.7	88.9
Memorandum Items:						
Nominal GDP (Billion JD)	25.4	26.6	27.4	28.5	29.7	31.3
GDP (in million US\$)	35,917	37,612	38,752

Source: Government Data and World Bank Staff Calculation. Macroeconomic projections are as of 15 April 2017.

1/ Includes adjustment to other receivables for 2012 (0.4% of GDP) and transfers to NEPCO and WAJ. As of 2015, NEPCO and WAJ reverted to government-guaranteed borrowing from commercial banks. The government transferred 0.1% of GDP to WAJ in 2015.

2/ Includes fiscal gap of 1.8% of GDP in 2018 and 2.0% of GDP in 2019.

3/ Reserves exclude bank deposits in foreign currencies.

4/ GNFS: Goods and Non-Factor Services.

5/ As of January 2017, coverage ratio calculation for the series deducts re-exports from imports.

6/ Government and guaranteed gross debt. Includes WAJ estimated borrowing for 2017-2019.

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