

Domestic Debt and Economic Growth in Jordan An Empirical Analysis

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Abstract

Jordan's economy is among the smallest in the Middle East, with insufficient supplies of water, oil, and other natural resources underlying the government's heavy reliance on foreign assistance. Other economic challenges for the government include chronic high rates of poverty, unemployment, inflation, and a large budget deficit. The study investigates the impact of debt on economic growth in Jordan applying the OLS technique for the period of 2000 to 2014. The study indicates that the stock of domestic debt affects the economic growth positively and statistically significant. This indicates that loans partially were utilized by the government for investment oriented projects. On the other hand, the increasing figure of the public debt indicates that the rest used for private and public consumption purposes, which do not bring any return. The study also indicates that the domestic debt servicing affects the economic growth negatively in Jordan. This result is due to the fact that huge amount of money goes for non-development expenditures and also the rest goes for unnecessary expenditures. The study suggests some policies which should be taken by the government to decrease both domestic debt and domestic debt servicing.

Keywords: Domestic debt, Economic growth, Jordan Economy.

Introduction

Borrowings involve an important macroeconomic policy choice. Substantial literature has come up in order to understand the relationship between debt and economic growth. Economic theory suggests that reasonable levels of borrowing by a developing country are likely to enhance its economic growth. Countries at early stages of development have small stocks of capital and are likely to have investment opportunities with rates of return higher than those in advanced economies, as long as they use the borrowed funds for productive investment and do not suffer from macroeconomic instability.

However, there is a flip side to financing development through foreign borrowing. Many times, foreign loans are utilized for meeting the consumption expenditures of the Government or utilized for those investment projects, which have low rates of return, or they happen to incur losses. Thus, (1) there is the problem of income generation. (2) Secondly, these loans and interest on them are to be returned in terms of foreign exchange and hence export surplus has to be created in order to achieve this. This cannot be done immediately and hence for some time, more loans are taken subsequently so that past loans and interest on them can be paid out of these new loans.

Thus, the total amount of public debt goes on increasing. Government, instead of reaching an export surplus stage, ultimately, it continues with import surplus in the current account and finds itself unable to fulfill its responsibility of the repayment of principal amounts with interest and goes on borrowing more and more and getting less and less net amounts. Government is tempted to borrow from the domestic banking system; this expands total money supply, which may prove to be inflationary and leads to lower per capita income.

The reduced domestic investment and growth performance of most indebted economies is often attributed to their external debt burden, an observable fact that has been described by the debt overhang. Debt in the initial stages helps accumulate capital and later on it becomes a burden on the economy because it causes tax creation on future output, daunting productive investment plans of the private sector and adjustment attempts of the government. Eventually borrowed amount has to be repaid with interest rate, which means that you have

fewer savings left to finance domestic investment and the per capita income will be reduced in the next period to below what it would have been prior to borrowings (this depends upon the productivity of capital formed from the borrowings).

Various studies on the subject demonstrate that in poor countries low levels of savings and foreign exchange earnings constrain investment and growth. Thus, the fundamental reason for borrowing is that it can allow higher levels of investment and imports rather than depending on domestic savings and exports alone. Some argue, if growth is sustained, the problem of managing the repayment of the debt should be easy. The question arises that if this is true what actually causes the debt problem? The main reason was attributed to the poor economic management by the government of indebted country.

Debt and Economic Growth

External public debt is a debatable issue whether it arouses or hinders economic growth, some researchers find it positive, some negative and some found no significance relationship between external debt and economic growth. External debt is the total public and private debt payable to foreign country in foreign currency, goods or services.

Loans by developed countries to developing countries are recommended to come out mainly off the vicious circle of poverty. But it is not true that this vicious circle of poverty cannot be broken without external loans and kick-starting the virtuous circle of development. As a consequence of the First and Second World War, England, U.S.A., Canada and many European countries sought some help of foreign capital, but the healthier factors, which contributed to their development, were indigenous. It should be admitted that with foreign capital in the form of equity capital or loan capital, economic development could be made more rapid, if these developing countries follow growth promoting fiscal, monetary and commercial policies while observing strict fiscal discipline. In an economic milieu where these restrictions are not observed, foreign capital may be wasted and even may become responsible for perpetuation of wrong economic policies, which retard economic development.

The external debt problem for a country is created on account of lack of capacity to service the debt in time. But debt servicing depends on the export performance of a country, which again is dependent on the growth rate of national product. The growth rate of real national income depends much on the adoption of the sound monetary and fiscal policies and also on its degree of openness. Thus for avoiding external debt crisis for developing economies, internal factors are considered to be more important than the external shocks like, high real rates of interest, sudden drastic increase in the price of oil or adoption of disinflationary policies by the developed countries.

To service debt we need capital accumulation, therefore, saving and investment come to picture. In case of closed economy, saving equals investment. To sustain a positive economic growth and expand the economy, new investment must exceed the depreciated capital. Thus, the volume of saving and investment is an important determinant of the growth rate of an economy. If investment is not enough to cover the amount needed for the depreciated capital, then, negative growth rate is occurring in the economy, which forces the government to change its policy by:

1. Reducing its consumption expenditures or,
2. Utilizing these expenditures in an effective way, such as, introducing new technology, which may generate more capital or,
3. Raising new taxes.

If tax receipts are insufficient to cover the government's expenditures, then, the government must borrow. Because, it cannot go on increasing tax revenues, therefore, debt grows as a result of deficit. To find out at what rate debt is growing, we consider it to be a fraction of GDP (i.e. Debt / GDP). GDP must grow more rapidly than debt in order to sustain a healthier and better economic growth.

This can be possible at the initial stage of borrowing. The government's borrowing adds up to saving. This borrowed capital has to be repaid in the future along with interest, i . The interest rate on debt is similar to that of the depreciated capital in the closed economy. Hence, investment after borrowing must exceed the amount necessary to replace the interest on debt too. Else, the country will go on borrowing and therefore, its debt keeps on increasing resulting in a negative economic growth.

Utilization of capital in an effective way, such as, better education, training, management, equipment and technology will all tend to increase production per worker. Introducing new technology would also increase the output as a result of improvement in the methods of production, with all inputs unchanged.

The rate of improvement in technology is called technical progress, or Total Factor Productivity (TFP). The most important factor for the growth of an economy is to choose the appropriate or intermediate technology.

Public Debt in Jordan

By year end 2014, the net public debt outstanding rose by 7.6% from its level at the end of 2013, reaching about

JD 20555.5 million, and representing 80.3% of 2014 estimated Gross Domestic Product (GDP). The public debt outstanding-to-GDP ratio increased by 0.3% compared to 2013, despite the positive GDP growth of 7.3% in 2014. This increase was mainly as a result of increase in the external debt outstanding by 11.0%, reaching JD 8030.1 million at the end of 2014, which represents a rise in the percentage to GDP from 30.3% at the end of 2013 to 31.4% by the end of 2014. In contrast net domestic debt balance increased by 5.6% reaching JD 12525.4 million at the end of 2014, net domestic debt as percent of GDP decrease from 49.7% at the end of 2013 to 48.9% by the end of the year 2014. Public debt service payments at year-end 2014 increased compared with year end 2013. This increase is apparent in interest payment by 20.8% and principal payment by 49.6%. The weighted average maturity of the public debt increased at end of 2014 reaching to 3 years and 2 month compared with 3 years and 1 month end of 2013.

Regarding the external debt, the outstanding balance at the end of 2014 shows increase of JD795.6 million compared 2013 year-end balance. This is basically due to the net impact of the transaction payments (disbursements, repayments) during 2014 which produced increase in the outstanding balance by JD 1041.0 million. Moreover, the depreciation of the Japanese Yen, Kuwaiti Dinar, Euro, Special Drawing Rights and rest of currencies versus the Jordanian dinar decreases the external debt outstanding by JD245.4 million. The exchanging rate of Japanese Yen depreciated by 12.7%, Euro by 11.8%, Danish Krone by 11.6%, Swiss Franc by 9.9%, Special Drawing Rights (SDR's) by 6.0%, Pound Sterling by 5.7%, Korean Won by 3.9% and Kuwaiti Dinar by 3.6%, from their levels at the end 2013. When neutralizing the impact of the currencies exchange rates on the external debt, and analyzing the debt outstanding to its currencies composition during the end of 2013-2014, it should be noted that the external debt stock in Pound Sterling, Swiss Franc, the Danish Krone, and Saudi Arabian Riyal have dropped by following ratios, respectively (83.6%, 24.0%, 19.0% and 4.2%). This reflects the fact that the loans repayments exceeded the drawings in these currencies. On the other hand, the external debt outstanding in Special Drawing Rights (SDR's), U S. dollar, Euro, Kuwaiti Dinar, Japanese Yen, Korean Won and U.A.E. Dirham increased during the same period where a major part of loans disbursements for the past year were in these currencies. It should be noted that these currencies account for 97.0% of the external debt outstanding at year-end 2014. The External debt is considered to be a long-term debt, where in some cases, its loans due dates extend to the year 2052. The short-term debt (debt due within one year or less) amounts only to JD 1252.3 million, (15.6% of the external debt). In spite of that the weighted average maturity of the external debt decreases to 5 years 4 months compared with 5 years 6 months at year-end 2013.

The external debt service payments during 2014 (on a cash basis) increased by JD 307.5 million when compared to 2013 and amounted to JD 906.4 million. As a result, the ratio of external debt service payments to GDP in 2014 reached to 3.5% with increase one percentage compared with the same percentage of 2013, while the ratio of official reserves of the foreign currencies to debt service reached 1102.9% and the implicit interest rate on the external debt was about 2.8% in 2014.

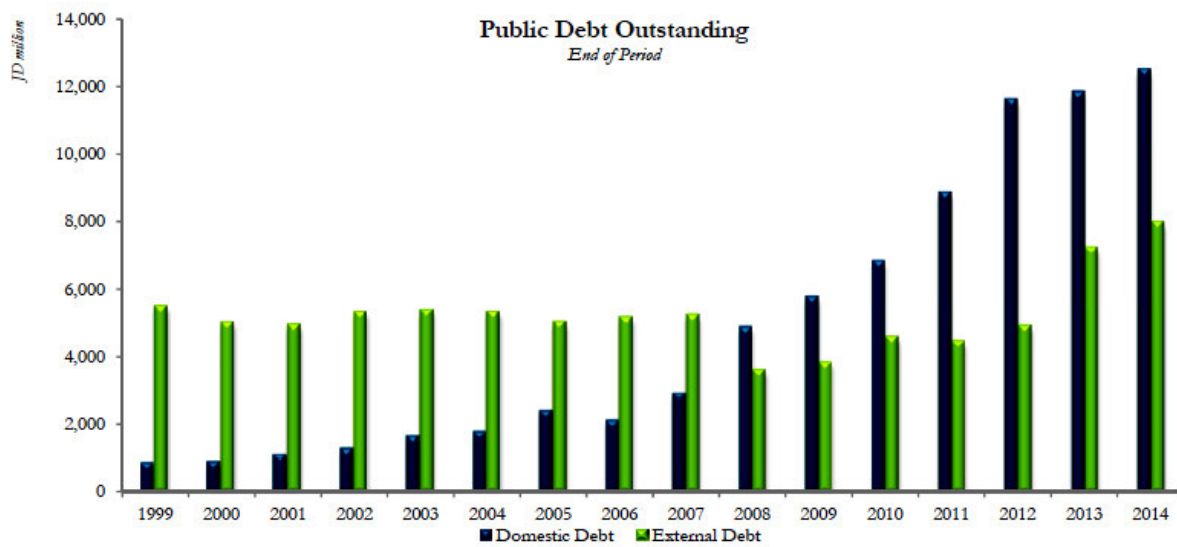
During the year 2014, the government signed several new loans agreements with total value of JD 1483.6 million, where the largest share was to finance budget deficit with total value of JD1218.5 million through issue Eurobonds with USA government guarantee with total value of JD710 million, and signed loans agreements with World Bank, EU, JICA and Arab Monetary Fund. Also it signed five agreements to finance project in energy sector with total value of JD 218.8million, and two agreements to finance project in water sector with total value of JD 46.3million.

The net domestic debt outstanding at the end of 2014 shows an increase of JD 663.2 million in comparison to 2013 year-end balance, also the gross domestic debt outstanding balance increased by JD 1182.0 million during the same period reach to JD 14621.5 million.

The rise in the net domestic debt occurred due to:

- An increase in total gross debt by 8.8% from its level at end 2013, this was due to the increase of issuance of the Treasury Bills, Bonds and own-budget agencies bonds.
- An increase in the bank deposits of the central government budgetary agencies and government own-budget agencies by 32.9%.

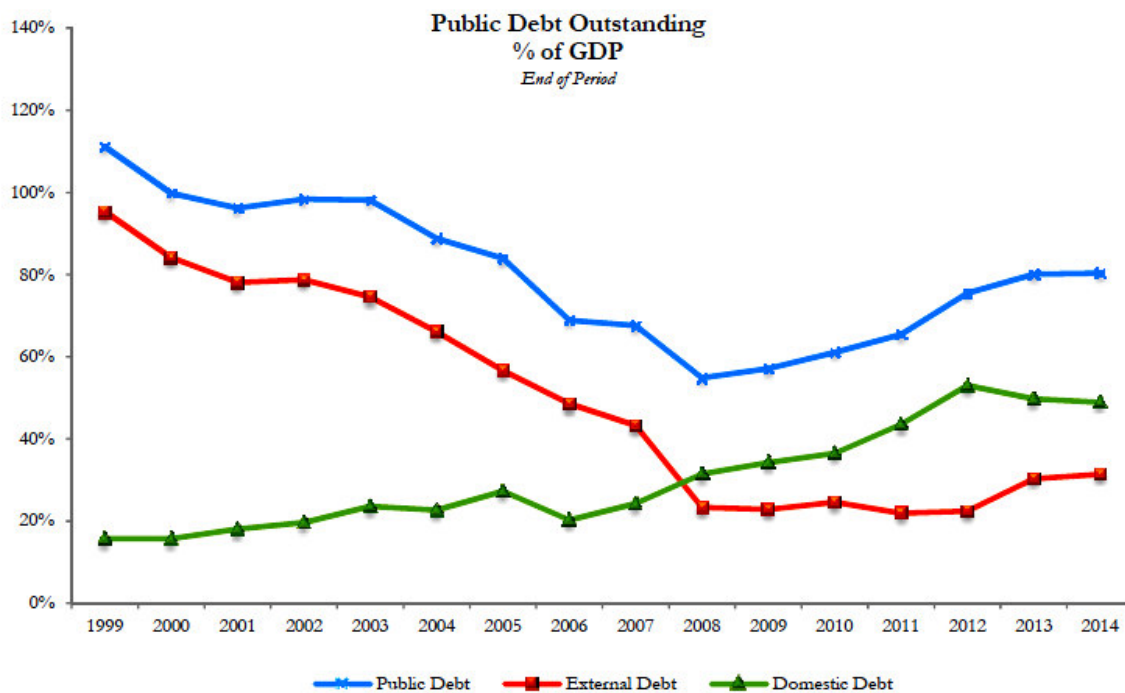
Resulting net increase in the domestic debt by 5.6%, which represents a JD 663.2 million and reach to JD 12525.4 million. The short-term domestic debt represents about 28.7% of the gross domestic debt and amounts to JD 4201.9 million, with the Treasury Bills amounting to JD 650 million. The weighted average maturity of the domestic debt increase at year-end 2014 reach to 2 year compared with 1 year and 9 months 2013. This increase was mainly as a result of government policy of issue domestic bond with long maturity during 2014.



Source: Public debt bulletin, Ministry of Finance, 2014.

Regarding the domestic debt instruments, interest payments in 2014 increased by 14.1% over the year 2013, reaching JD 809.6 million. This came as a result of the increased debt instruments issuance.

In 2014 the issuance of the governments' securities in the domestic market and denominated in dinar increased to 106 issuances with the amount of JD 5935 million, compared to 81 issuances with total amount JD 4840 million during 2013. The bid-to-cover ratio for Treasury Bills was between 1.2 and 4.3 and the maturity 1 year, while the bid-to-cover ratio for Treasury Bonds was between 1.0 & 3.1 and the maturity from 2 years to 5 years (Public debt bulletin, Ministry of Finance, 2014).



Source: Public debt bulletin, Ministry of Finance, 2014.

Econometric specification

The primary objective of this study is to investigate the impact of domestic debt on economic growth in Jordan. The study has used domestic debt and domestic debt servicing in separate equations just to avoid multicollinearity.

The equations can be represented by:

$$GDP = f(TGE, TDD, X, WR) \dots \dots \dots (1)$$

$$GDP = f(M_2, DDS, CF, FDI) \dots \dots \dots (2)$$

The econometric equations specified in linear forms are given as follows:

$$GDP = \alpha_1 + \alpha_2 TGE + \alpha_3 TDD + \alpha_4 X + \alpha_5 WR + \mu \dots\dots\dots(3)$$

$$GDP = \beta_1 + \beta_2 M_2 + \beta_3 DDS + \beta_4 CF + \beta_5 FDI + \mu \dots\dots\dots(4)$$

Where:

GDP = Gross Domestic Product

TGE = Total Government Expenditure

TDD = Total Domestic Debt

X = Exports

WR = Worker Remittances

M_2 = Money Supply

DD = Domestic Debt Servicing

CF = Capital Formation

FDI = Foreign Direct Investment

μ = Error Term

Study Results and Discussion

The mathematical models are presented by the equations 1 and 2, and the econometric models are presented in equations 3 and 4. To achieve the objectives of the study, data were collected from monthly statistical bulletins issued by the Central Bank of Jordan (CBJ). The study uses time series for the period 2000-2014. All variables are in nominal terms and regression analysis was used for the estimation of the equations.

The results of equation 3 were arranged in table 1. From the econometric specification, GDP is dependent variable used to show economic growth, where as total government expenditure, total domestic debt, exports and worker remittances are independent variable. From table 1, the value of regression coefficient of total government expenditure is 1.89 which means that an increase in one million-government expenditure increase the GDP by about 1.89 million. The value of coefficient is positive and statistically significant. The size of government expenditure and its effect on long-run economic growth, and vice versa, has been an issue for sustained interest for decades. Many studies has been directed towards assessing the impact of government spending on long-run economic growth, especially the Keynesian school of thoughts, suggests that government spending accelerates economic growth. In the developing countries, more government expenditure may increase the performance of the economy. For example, in attempt to use the expansionary policy, the government increases its expenditure, this in turn increase income and aggregate demand. Similarly, higher profit tends to increase investment expenditure as well as more demand on the economic resources. So, we can say that in Jordan government spend money for development purposes that is why our GDP is positively related to government expenditure.

In the case of Jordan, the percentage share of the current expenses components (education, health, economic affairs, housing and community facilities) which form 99% of the total current expenditure during the period of the study. Capital and current expenditure of Jordanian government should be derived mainly to productive economic activities.

**Table (1) Parameters estimates of GDP equation
 (Dependant variable is GDP)**

Independent variables	Equation 3	Equation 4
Intercept	- 3771.052 (-2.161)	-124.491 (-0.125)
FDI	----- -----	0.047 (0.323)
WR	1.596 (0.825)	----- -----
CF	----- -----	-1.391 (-2.219)
X	0.350 (0.487)	----- -----
DDS	----- -----	-0.620 (2.620*)
TDD	0.451 (3.806*)	----- -----
M_2	----- -----	0.955 (11.319*)
TGE	1.899 (2.647*)	----- -----
R^2	0.95	0.96
DW	2.02	1.98
Sample Size	14	13

Note: the t-statistics significant at 5% and 10% levels are indicated by *

The second variable in equation 3 is total domestic debt, which is the focused variable. The value of regression coefficient of total domestic debt is 0.451, which suggest that an increase in total domestic debt worth of one million would enhance the GDP by 0.451 million. The sign of coefficient is positive and statistically significant. Government debt rose considerably over the past decades and this trend was generally accompanied by an expansion in the size of government expenditure. Since independence Jordan facing serious problems in the balance of payments deficit and growing public debt is a worldwide phenomenon. External debt plays both a positive and negative role in shaping economic growth, particularly of the developing countries. External debt has positive effect when it is utilized by the government for investment oriented projects. On the other hand, it would effect negatively when it used for private and public consumption purposes, which do not bring any return. (Rais, 2012, 537).

In the case of Jordan, the public debt remains on an upward trending, as the public net debt-to-GDP is projected to increase to 90% in 2016, according to IMF estimates, from 76% in 2012. However, looking at gross domestic debt, the picture becomes somewhat bleaker. In 2015, gross public debt reached JD.22billion or around 90% of GDP. Meanwhile, sources of external borrowing becoming limited especially in view of high payments and redemption, which indicates that the government will likely face challenges to borrow from external markets in the next couple of years. One of the major solutions for the government of Jordan is to cut unnecessary expenditure, especially in the public sector.

The third variable in equation 3 is exports. The value of exports is 0.35 demonstrating that if an increase in one million worth of exports would leads to increase GDP by 035 million. The sign of the coefficient is positive. Exports can increase intra-industry trade, help the country to integrate in the world economy and reduce the impact of external shocks on the domestic economy. Experience of Turkish economy provides a good example of the importance of the exports sector to economic growth and development, which lead economists to stress the vital role of exports as the engine of economic growth (Abu-Stait, 2005, 1). This study provided support for growth-led exports in case of Jordan.

The external sector witnessed a net improvement in export growth on the back of a continuing moderate growth in imports. Total exports registered a growth of 5% in 2015 to reach JD. 5.1billion. The breakdown of domestic exports by commodity shows that the main Jordanian exports were clothes, vegetables, potash, medical and pharmacy products, phosphates and fertilizers. The geographic distribution of domestic exports indicates that the largest importer of Jordanian produce is the United States (18%) followed by Iraq

(17%), Saudi Arabia (14%), and India (10%).

The fourth variable in equation 3 is total worker remittances. The value of coefficient of worker remittances is 1.596 which means that an increase in one million-worker remittances increase the GDP by about 1.596 million. The sign of the coefficient is positive and the effect is high. The spread channels by which the funds of remittances of the emigrated workers can have positive effects on the growth of their home country; the transmitted funds can fund the dynamic investment, moreover, these funds are deposited in financial institutions this will imply a significant increasing and rising the financial recourses which enable the families to finance their needs for consumption or their capital expenditure. At Macroeconomic level, worker remittances increase the total capacity of financing of the investments (Yassen, 2012, 8).

In case of Jordan, worker remittances are very important to the Jordanian economy as the remittances plays a significant role in the economic growth of Jordanian economy. Appropriate policies should be taken to encourage emigrants to remit their savings, in general, and use official channels of remittances in particular and hence essential for the country's macroeconomic stability.

In table 1, the model explains about 95% of variation in growth as the value of R^2 is 0.95. The DW-statistic does not fall in the rejection range and lies within the acceptance range as it is clear from the estimation of equation 3. Thus, we can accept the null hypothesis that autocorrelation is absent from the regression errors.

The values of regression coefficient of equation 4 are given in table 1. The model specified in equation 4 consists of four variables. GDP is dependent variable used to show economic growth where as money supply, domestic debt, capital formation, and foreign direct investment are independent variables.

The first independent variables in equation 4 is M_2 , the value of regression coefficient of money supply is 0.955, which means that an increase in one million worth of money supply would increase the GDP 0.955 million. This effect is strong and statistically significant. Since money used normally in all economic transactions, it has powerful effect on economic activity. Thus, increase in money supply of money will result in decrease in interest rate and increase investment. In this way when extra money is spread in the economy the customers buy more durables and firms plan to increase their investment.

The border money supply (M_2) widened by 6.9% or \$ 2.65 billion in 2014 to reach \$ 41.2 billion at the end of the year, following an expansion of 9.7% in 2013. The growth in money supply in 2014 compares to a money creation of \$3.62 billion, resulting mostly from a rise in net foreign assets of \$1.4 billion and a \$889 million increase in claims on the private sector. These differences between the growth in money supply and money creation, amounting to circa \$482 million, suggests a monetization of financial claims in 2014. Looking forward, monetary policy is set to continue to carefully weigh the need to safeguard price stability and the attractiveness of the dinar with that stimulating economic activity. The IMF expects headline inflation to decline to about 2% over the medium term, and recommends giving time to the latest policy rate reduction to play out so as to determine whether it has contributed to higher private sector credit growth at large. (Bank Audi economic report, 2015, 11)

The second variable in equation 4 is domestic debt servicing. The value of regression coefficient of domestic servicing is negative (-0.651), which suggests that an increase in one million worth of debt servicing lower growth of GDP by 0.651 million. This value of coefficient is statistically significant. A condition to limit associated cost of public debt is to increase the level of efficiency of public debt management and more important is to channel the borrowed recourses to productive expenditure. If the borrowed financial resources are used efficiently and the interest rate is not high, only the foreign debt is likely to stimulate economic growth. But, if the funds are used to finance nonproductive public expenditure corroborated with high interest rate, the foreign public debt has a negative impact over growth and economic development (Gabriel, 2012, 657).

The annual growth rate of the net public debt is expected to decrease by 5.2% during 2016 to further drop to 2.6% in 2018 according to official estimates. According to the figures, the public debt service is expected to grow by 7.7% during 2015 compared with 23.7% in 2012. As a result of the economic reforms the public debt-to-GDP ratio is expected to reach around 74.1 in 2018 compared with 82% in 2014. The government has reduced substantial measures to rein in public spending such as the partial removal of food and oil subsidies, while improving revenue mobilization through income tax and mining tax reforms. Further fiscal consolidation is planned over the coming years, with the government aiming to reduce budget deficit. However, delayed fiscal adjustment measures and the weak economic context will likely derail government plans to achieve its budgeted fiscal targets in the coming years.

The third variable in equation 4 is capital formation. The value of regression coefficient of capital formation is negative (-1.391), the value is negative which suggests that an increase in one million worth of capital formation lower growth of GDP by 1.39 million. The reason may be that increase in capital formation increases burden on economy in the short-run as more money to be invested in capital goods, but the benefits of this formation will be in the long run. Economic growth is not possible without making and using industrial machinery, making of agricultural tools and implements factories...etc. all these capital goods are a man-made

instrument of production and increase the productive capacity of the economy.

Usually the share of public sector to total gross capital formation in Jordan over 2000-2014 was, on average, higher than that of the private sector, 55% versus 45%. However, since 2010, the share of the private sector increased, the rise of this share indicates that the civil service has grown more than the total labor force. A number of observations can be made: firstly, private investment constituted an important share of total investment. On average, its share was 45% during 2005-2014. Yet, as short-term profit is a feature of private activity or the economy in general, investment was mainly in the construction sector and transport rather than capital equipment for industry. Secondly, most government investment concerned on two sectors namely infrastructure and the services sector (health and education). Privatization and shortage of funds explain the upward trend of the private sector (Tabishat, 2015, 700).

The last variable of equation 4 is foreign direct investment. This is 0.047, which suggest that an increase in one million worth of FDI leads to increase GDP to 0.047 million. This effect is positive. The positive impact of FDI on the local economy is likely to be greater if the economy suffers from high unemployment as in the Jordanian economy. First of all, there is a direct effect, establishment of foreign firms increases labor demand in the host country. Second there is indirect effect, as the foreign firms lies up with the local economy by demanding intermediate goods and producer services from local suppliers. This indirect effect also adds to labor demand and should lead to reduced unemployment or increased wages or a combination of the two.

Historically, the Jordanian economy has benefited from massive investment by the Gulf countries, which increased from USD 74 million in 2002 to USD 3.1 billion in 2006. However, since then FDI has declined due to the international economic crisis, followed by geopolitical instability. In 2014, FDI was 20.5 billion. In order to boost these flows, the Government has planned large-scale infrastructure projects (water, transportation, nuclear energy) for which it needs foreign and private funds. Jordan is trying to become a regional logistics crossroads, notably for electric and transport networks. Investments are mainly concentrated in the field of real estate (residential and commercial), financial services and large tourism projects. The country's attractiveness lies mainly in the quality of its infrastructure, its solid and dynamic banking system, as well as its level of economic openness, which has allowed it to create free-trade zones and public-private partnerships. Problems linked to bureaucracy, corruption and investment protection are obstacles to FDI. A new draft law on investment is expected to revitalize FDI flows.

The value of R^2 in equation 4 is 0.96, the model explains about 96% of variation in growth. The problem of autocorrelation is absent from the model. The DW-statistic does not fall in the rejection range and lies within the acceptance range. Thus, we can accept the null hypothesis that autocorrelation is absent from the regression errors.

Conclusion

Government debt rose considerably over the past decades and this trend was generally accompanied by an expansion in the size of government expenditure. The public debt remains on an upward trending, as the public net debt-to-GDP is projected to increase more than 90% in 2016. Despite the value of regression coefficient of total domestic debt which is 0.451, it appears that resources generated through public debt are basically used in a nonproductive manner. Hence, debts have negative effects on Jordanian economy because they are not used for productive projects. Government must come up with policies and structured reforms to increase the revenue and lower its current expenditure.

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