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Article

The Macroeconomic Determinants of External Debt in Ottoman Empire: A Study of Data from 1881–1913

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ABSTRACT - The 19th century witnessed noticeable events that shaped the geopolitical and economic spheres in both Europe and Ottoman Empire. Internationally, the industrial revolution, the economic crisis, and the Crimean War were some of those. By 1870, the OE declared its bankruptcy and this decision went viral into the international market, which in fact led to tighten the conditions by the European powers to obtain foreign capital. This study aims to provide a new insight on the external debt determinants using the economic data 1881 to 1913. Applying ARDL as an econometric approach to determine the interrelationship, the findings of the study reveal that the economic growth is negatively associated with the external debts. Also, the study found that government expenditure is having a positive relationship with the accumulation of external debts.

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INTRODUCTION

External borrowing is not a new phenomenon, and it is known as a situation where a state attempt to finance the gap between its national savings and required domestic investment (Oke & Sulaiman, 2012). In other words, it is the outstanding amount of those actual current, and not contingent, liabilities that require payment(s) of interest and/or principal by the debtor at some point(s) in the future and that are owed to non-residents by residents of an economy (World Bank, 2016).

In general, external debt can be linked to one or more of the three types of creditors; 1) Multilateral creditors which are international financial situation.2) Official bilateral creditors where the government agencies such as the Paris Club[1] and 3) Private creditors such as, commercial banks and other bondholders.

The period between 1870 and 1914, the international market observed a tremendous level of capital transfer from Europe to the rest of the world (Ferguson & Schularick, 2006). Interestingly, some commentators named Europe as the world's bank as a result of such a noticeable movement of money (Tuncer, 2009). Substantial amounts of funds were given in a form of external debts to the governments in America, Africa, and Asia to finance their budget deficit or any other expenditure (Pamuk, 2004). More importantly, great amounts were also attributed to the infrastructure in these countries such as railroads, aimed at expanding trade (Pamuk, 1988). The decisions to modernize the state started during the era of Sultan Selim III, who had forced the state to fall under foreign domination and to lose its political and economic independence.

[1] The Paris Club is a forum of official creditors for negotiating debt restructuring. It is an informal intergovernmental group convened to renegotiate debts to official creditors (OECD, 2005)

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Basah et al. (2007) contend that as economic activities grow it is more likely that demand for both physical and liquid capital tend to rise. With the passage of time, the Ottoman Empire (hereafter OE) faced a continuous demand for fund in order to finance the military needs and to confront the political and military movements that destabilized the state (Pamuk, 2006).

To deal with such financial constraints, the decision to borrow from the international market was proposed by the grand Vesir Ressit Pasha in 1850 but the agreement was rejected by the Sultan "*Abdulmejid I*" due to his fear that foreign loan would be accompanied by foreign interventions (Ferguson & Schularick, 2006). Four years after and during the Crimean War 1854, the OE began to sell long-term bonds in the European financial markets to obtain the necessary fund to finance the war and its reparations (Pamuk, 2004). Private bankers, the so-called Galata bankers with connections in Europe provided short terms loans to the state at high rates of interest.

With unfavourable terms, in 1863 a total of six loans with a total a value of 39 million pounds sterling had contracted and secured by various direct and indirect tax revenues such as: custom duties and the Egyptian tribute. Interest rates cited in the contracts were always around 4 to 5 percent of the nominal values of the bond. The exposure to surrendering the sovereignty of the state was something unprecedented and unavoidable as a result of poor economic policy. The below Table 1 depicts the trend of external debts from 1854 –1888.

Table 1: The Trend of External Debts from 1854 –1888

	State Debt (Million pounds)	
Years	**Capital Inflows from New Borrowing**	**Total Debt Payments**
1854–1875	4.7	3.1
1880–1898	0.9	2.8
1899–1913	2.7	4.6
1854–1864	2.0	0.8
1865–1875	7.3	5.4
1876–1879	0.7	0.6
1880–1887	0.8	2.1
1888–1898	0.9	3.4

By 1914, the unpaid external debts had reached £140 million or close to 60 percent of the GDP of the state. Unlike the British investors who had 15% of the debts, both French and German investors held more than 70 percent. Arguably, the main drivers behind the accumulation of debts are war, banking crises, fiscal policies and external shocks (Pamuk, 2005). For OE, the debts were accumulated as a result of series of wars against Russia, Iran and Egypt which created a major pressure on the state finances deficits and the performance of the economy (Pamuk, 2006). Undoubtedly, the reliance on the external borrowing exposed the state to the threat of losing its control over the economic policies and ultimately reducing the efficiency of the state in generating wealth. Nevertheless, the domestic policies might have its own challenges including high level of public debt (Shaharuddin, 2020). Table 2 below shows the creditors to the OE between 1881 and 1913.

Table 2: Foreign Debt of the Ottoman Empire

	1881	1898	1913	1881	1898	1913
	(Million Ottoman Lira)			(Percentage %)		
France	36.72	35.00	65.00	40.0	44.9	49.5
Britain	26.62	8.50	9.00	29.0	10.9	6.9
Germany	4.32	9.50	26.30	4.7	12.2	20.1
Belgium	6.61	14.00	14.40	7.2	17.9	11.0
Holland	6.97	3.50	3.90	7.6	4.5	3.0
Italy	2.41	1.00	1.30	2.6	1.3	1.0
Austro-Hun Emp.	0.89	1.50	1.70	1.0	1.9	1.3
Local Investors	7.28	5.00	9.40	7.9	6.4	7.2
Total	**91.82**	**78.00**	**131.00**	**100**	**100**	**100**

To overcome the issue of indebtedness, the OE declared a moratorium on its outstanding debt with 200 million pounds sterling and a formal negotiation with the creditors happened on 1881 in Istanbul, which produced the decree of *Muharrem* in 20 December 1881. The representative of the European powers, British, French, Dutch, German, Italian and Austro-Hungarian bondholders agreed that the OE' debts reduced from about 191 million pounds to 96 million pounds. Outstanding interest payments, which were around 62 million, were reduced to approximately 10 million. Finally, the interest service on the debt was also reduced from approximately 13.6 million to 2.7 million pounds sterling.

As mentioned above, the *Muharrem* decree also stated the establishment of Ottoman Public Debt Administration (OPDA). The OPDA established during the reign of Sultan "*Abdul Hamid II*" the 34th sultan of the OE, who drafted a plan of general economic policy in 1879. This plan intended to boost the revenue of the state through paying more attention to these economic sectors: commerce, agriculture and industry. However, due to the political unrest in the country and default in the public funds, an empty treasury, the 1875 insurrection in Bosnia and Herzegovina proved that the change to be nearly impossible. In 1909, Abdul Hamid II was overthrown from the throne and his brother was proclaimed sultan as Mehmed V.

High levels of external borrowing have always addressed as a serious impediment towards economic growth, and it is not a new phenomenon. The historical facts as well as recent economic crisis show that a feedback effect occurs between financial crises and the indebtedness of a country (Gokmenoglu & Rafik, 2018). Countries tend to finance the gap between its national savings and the required investment through the channel of external borrowings, which hinders investment, leads to scarce capital stock, and creates a vicious cycle of poverty. This obviously creates undesirable outcomes of the economic growth and reduces the chances of the debtors to meet their debt–service obligations (Tiruneh, 2004) and thus making its economy vulnerable to financial crises (Gokmenoglu & Rafik, 2018). Evidences show that external borrowings contribute to the economic growth by providing extra financial resources. However, there are also concerns linked with move towards foreign loans. A high level of debt to GDP makes a country prone to witnessing a serious economic meltdown.

Fundamentally, the issue of borrowing has attracted more attentions of academician, economists and certainly politician due to its economic, political, and even managerial dimensions that are of high significance. Recently, the notion of debt trap is becoming prevalent in the economic literature and media. It is defined as situation where the borrower ended up with a default of repaying the loan and requesting the scheduled payments on the principal of a loan. This scenario is not something new and it was the case for the Ottoman economy which suffered from the grip of external loans causing a devastating result (Conte & Sabatini, 2014). Given this fact, prior literatures on external debt provide insights on the interrelated factors as contributors of debt accumulation. However, it seems plausible to argue that these studies might not be comprehensive enough in providing empirical evidences on the determinants of external debt

during a critical period where rescheduling of debt had not solved the problem rather it postponed the doomsday. Hence, to further investigate on this matter and to enrich the literature on Ottoman economy, this study aims to scrutinize the determinants of external debt in the last quarter of the 19th centuries using the economic data 1881 to 1913.

The importance of this study can be manifested in different ways and one of them, is the significance of history in our life. The proverb "*Those who don't know history are destined to repeat it*" presents a powerful justification for us to look back to the history a powerful tool to understand the present using the past facts. Ottoman Empire was one of the greatest empires in the civilization. Ottomans built one of the greatest, longest-lived, and most splendid multi-ethnic and multi-religious state and it existed in in three continents: Africa, Asia, and Europe for more than 600 years. Though the Ottoman history literature is rich in the sense of number of studies, there is still a need to further investigate and enrich the economic aspects to bridge the existing gap in the literatures. Using a scientific approach, this study intends to establish vigorous arguments that accurately describe the economic situation during the 19th century.

More importantly, this study goes hand in hand with the recent movement from the Turkish Statistical Institute (TURKSTAT) who disclosed the economic statistics of Ottoman Empire covering the 19th century. Using this data is significantly vital to unleash economic causes behind the domination of western countries over the Ottoman economy and to provide reliable explanation of the economic collapse.

LITERATURE REVIEW

The prior literatures present some driving factors that contribute to debt accumulations. These factors can be divided into internal and external aspects. For the internal, authors have provided these determinants that function as push factors, poor policy making and economic mismanagement (Easterly, 2002), unrealistic macroeconomic policy (Burnside & Dollar, 2004), excessive government spending (Edo, 2002), variability in export revenue and government expenditure (Ajayi & Khan, 2000), primary budget deficits (Bilquees, 2003), fiscal deficits (Folorunso & Falade, 2013), and balance of payments (Kemal, 2001). The external determinants can be capital flight (Tiruneh, 2004), interest rate shocks (Hajivassiliou, 1987), trade liberalization (Zafar & Butt, 2008).

It is important to mention here that albeit debt is a popular topic, a noticeable shortage in the empirical evidences. This could be pertained to the lack of comprehensive data on debts in the developing countries. In addition, a large portion of the existing literatures tends to examine the relationship between external debt and economic growth. In this respect, Grennes et al. (2010) used the economic model of Hansen (2000) to analyse the nonlinear relationship between debt and long-term growth of 79 countries. Their finding revealed a threshold of 77.1 percent of public debt-to-GDP for the countries that surpassed costs 0.0174 percentage points in annual average real growth. Pyeman et al. (2014) examined the possible macroeconomic determinants of external debt of Malaysia from 1972 until 2012. Their finding exhibited that GDP, exports, and FDI were important indicators affecting the external debt of the country.

Tiruneh (2004) examined the demand for external borrowing of sixty heavily indebted poor countries and non-heavily indebted less-developed countries over a period from 1980 to 1990. The outcomes depict that capital flight, debt service payments, the imports to GDP ratio, income per capita, and the growth rate of GDP are the main determinants that impact the decision to seek overseas loans.

In another study, Clements et al. (2003) investigated the nexus external debt and economic growth for 55 low income covering a period from 1970 to 1999. They provide evidence that beyond a certain threshold, countries with higher external debt tend to experience a lower growth rates of per capita GDP. The threshold is ranged from around 30-37 percent of external debt to GDP or around 115-120 percent external debt to exports. Looking at the association between economic crisis and external debt, Bordo and Meissner (2006) used historical data from 1880 to

1913. Interestingly, their study showed that high exposure to external debt may not necessarily lead to a high chance of having a debt crisis, currency crisis, or a banking crisis.

Recently, Waheed (2017) investigated the macroeconomic determinants of external debt in oil and gas exporting and importing countries. The sample contains 12 oil and gas exporting and 12 oil and gas importing countries covering the period 2004-2013. For oil exporting countries, the panel data results show boosting economic growth, foreign exchange reserves, general government revenue, price of oil, and domestic investment are the driving factors in decreasing external debt. As for oil and gas importing countries, increase in trade deficit, international price of oil, interest payment on external debt, FDI and domestic investment is causing a tremendous spike in the volume of external debt. Exploring the Ottoman economy, the existing literature have pointed out that the external debt were positively harmful to OE economy. Eldem (2005) notes that the Ottoman government decided to strengthen its ties with the west to a gradual process of integration via the process of the forging loans. He added that the political implications of the external loans were not clear at the early stage but six years after the first loan, the OE lost its financial and political autonomy.

Under such uncertain financial conditions, the OE was looking for another source to meet the increasing expenditures and external loans that were offered by the Europeans to put an end to the glory days of OE. This view is supported by several economists such as Conte and Sabatini (2014) who posit that foreign loans, as well as increasing the empire's public spending, played as an influential factor that ended the greatness of the OE. Tezel (1972) concludes his study by saying that the reckless economic policy of external debts led the state to face unexpected results ended up with the establishment of foreign economic and political control over the ottoman periphery. Several economic indicators namely budget deficit and financial institution contributed to the rise of external debts. With regards to budget deficit, the study of Pamuk (2006) found that between 1820s and 1830s and despite the attractiveness of external borrowing, the OE paid a heavy price due to the absence of an efficient fiscal discipline that can monitor the ongoing economic changes.

The above concerns might correspond to bringing in the theoretical dimension of the debt overhang theory which views the reliance on the external debts for the long run will ultimately create a poisoned economic environment and certainly the economic growth will negatively be affected.

METHODOLOGY

The Turkish Statistical Institute (TurkStat) has recently published this economic data with the assistance of economic historians who translated the figures into English. Thus, in examining the suggested paradigm, the researcher has chosen to restrict the scope of this study to a period of 33 years from 1881 to 1913. All the data refer to the area within 1913 border: Northern Greece, Anatolia, Syria and Iraq. Due to the limitation of the provided data in Turkstat, this study relies on other sources namely, Maddison Project Database (MPD) (2018), Tuncer & Pamuk (2014), Tuncer (2015), Eldem (1999) and Pamuk (1987). For instance, the import and exports figures were obtained from Tuncer and Pamuk (2014) who gathered the annual foreign trade statistics of OE with these countries: United Kingdom, France, Germany, Austria, Russia and United States. Additionally, the GDP figures represent a challenging part as the historical data of Maddison project has shown some serious problems pertained to OE economic statistic. Thus, the sources of each variable are presented in Table 3.

Table 3: Source of Data and Variables' Measurement

Definition of variables			
Variable	**Concept**	**Description**	**Sources**
FDI	Natural logarithm real foreign direct investment inflow	Foreign direct investment % of the GDP	**Pamuk, (1987); Geyikdağı, (2011)**
IS	Natural logarithm of IS	Interest Service	**Tuncer & Pamuk, (2014)**
TO	Natural logarithm of TO	Trade Openness: sum of total exports and imports of goods and services by GDP	**TurkStat**
GE	Natural logarithm of GC	Government expenditure as % of GDP	**TurkStat**
GDP per capita	Natural Logarithm GDP	GDP per capita	**Pamuk, (2006)**

Formulation of the Econometric Model

For this particular model, the study implies the econometric models of two gap model (Chenery & Strout, 1966). This model postulates the notion that a gap can be identified between country's own provision of resources and its absorptive capacity. The proponent of this model argues that developing countries might either face a shortage with their domestic savings as a way to boost for investment opportunities or they are facing serious challenges with foreign exchange constraints to finance the needed capital and intermediate goods. Hence, tow possible sources of debt accumulation are identified by the gap models, which are the saving gap, and foreign exchange gap and it is represented as follow:

$$M - X \text{ (Foreign Exchange Gap)} = I - S \text{ (Savings Gap)} \quad (1.0)$$

Where M is the Import, X is Export, I is the investment (or Domestic Capital formation) and S is savings (domestic).

Prior literatures also identified other possible determinants of external debt. For instance, the economic growth measured by GDP or GDP per capita (Hajivassiliou, 1987; Sezgin, 2004; Tiruneh, 2004) trade openness (Forslund et al., 2011) government expenditure (Bader & Magableh, 2009; Awan et al., 2011) and Foreign direct investment (FDI) (Imimole et al., 2014). Thus, this study proposes this equation to examine the external debt determinants in the Ottoman Empire for 1881 to 1913. Using this platform would allow us to propose the following production function:

$$ED = f(FDI, GDP, TO, GE, IS) \quad (1.1)$$

$$LNED_{it} = \alpha_0 + \beta_1 LNGDP_{it} + \beta_2 LNFDI_{it} + \beta_3 LNTO_{it} + \beta_4 LNGE_{it} + \beta_5 LNIS_{it} + \varepsilon t \quad (1.2)$$

Where: GDP is the GDP per capita, FDI is foreign direct investment, TO is the trade openness, GE is the government expenditure and IS is the interest service. Where α_0 is the intercept, β_1, β_2, β_3, β_4, and β_5 are the coefficients to be estimated and εt is the error term.

The ARDL technique is used to perform the analysis of the data. Primarily, the analysis begins with a summary of the descriptive statistics of the data providing more details on the nature

and many other facts pertained to the examined sample. The ARDL test is formulated based on the F- statistics, which in turn functions as an indicator for the long run relationship. Numerous diagnostic tests were executed to ensure the adherence of the data to the statistical norms such as Augmented Dickey-Fuller (ADF), Kwiatkowski-Phillips-Schmidt-Shin (KPSS), autocorrelation, functional form, normality, heteroscedasticity, CUSUM and CUSUM. Further, the study generates the results pertained to long and short run elasticities to explain the relationships between independent variables and dependent variables.

RESULTS

The descriptive statistics of the data, it is apparent that the differences between minimum and maximum values of interest service (LNIS), external debt (LNED) and FDI were big enough for a robust analysis. It implies the increasing trend of the variables. The value of mean and median of variables in all the selected countries was close to each other. Considering the following elements which are the mean, median, maximum, minimum, standard deviation, skewness, and kurtosis would indicate the mixture of the observed exogenous and endogenous factors. For instance, it is apparent that all the variable except LNFDI (mean = -0.6758) are having a positive mean and standard deviation. Besides that, mean and median, which implied the normal distribution of the data, were close enough to each, thus, provided more robust analysis. Refer Table 4 below:

Table 4: Descriptive Statistic for Model of External Debt

	LNED	LNFDI	LNGDP	LNGE	LNTO	LNIS
Mean	4.0731	-0.6758	2.4098	2.5041	2.2255	0.8406
Median	4.1790	-0.5635	2.3873	2.5149	2.2289	0.6618
Maximum	4.2818	1.7574	2.5351	2.8452	2.4337	1.3125
Minimum	3.6817	-2.8735	2.3713	2.2742	1.9939	0.4774
Std. Dev.	0.2152	1.2257	0.0460	0.1458	0.0970	0.3130
Skewness	-0.6737	-0.0155	1.3023	0.1865	-0.2804	0.6720
Kurtosis	1.8473	2.3536	3.5638	2.4605	2.9103	1.5359
Observations	33	33	33	33	33	33

Unit Root Tests

Analysing the stationarity of data is a key aspect in determining the powerfulness of the result. Practically, the bound test requires the variables either only stationary at first difference, I (1) or a mixture of stationary at the level, I (0) and at first difference, I (1). In addition to that, it is essential that the result of unit root test reveals that variables are not integrated of order two, I (2) or beyond as rules set by the bound test. Two types of unit root test that were used in this analysis were ADF, and PP. Given the null hypothesis of the series with a unit root was tested against the alternative of stationarity, two tests were applied ADF and PP. In contrast, the KPSS test holds the premise that null hypothesis does not contain unit root while alternative hypothesis has a unit root. In Table 5 a summary of the outcomes of ADF and PP are presented. In a nutshell, the finding provided evidences that there was a mixture of stationarity at I (0) and I (1) for the proposed variables in the model, and with that, it is justifiable to move forward with the use of bound testing for cointegration.

Table 5: ADF and PP Unit Root Tests for Model of External Debt

Level	**ADF Unit Root Test**		**PP Unit Root Test**	
	Intercept	Intercept and Trend	Intercept	Intercept and Trend
LNED	-0.7220(0)	-1.9220(0)	-0.7908(1)	-2.1236(2)
LNFDI	-3.2174(0)**	-3.0903(0)	-3.0522(7)**	-2.8837(7)
LNGDP	-3.0001(0)**	-2.5141(0)	-2.9608(1)**	-2.5135(2)
LNGE	-2.8930(0)*	-2.700(0)	-2.9532(2)*	-2.7574(2)
LNTO	-2.4016(0)	-3.0775(0)	-2.3525(3)	-2.8532(5)
LNIS	-0.7159(0)	-1.8956(0)	-0.7233(1)	-1.8956(0)
First Difference	ADF Unit Root Test		PP Unit Root Test	
	Intercept	Intercept and Trend	Intercept	Intercept and Trend
LNED	-4.8287(0)***	-4.7496(0)***	-4.8287(0)***	-4.7496(0)***
LNFDI	-6.1275(0)***	-6.1220(0)***	-8.9561(30)***	-11.8229(30)***
LNGDP	-4.5308(1)***	-4.7772(1)***	-4.5333(0)***	-4.5876(2)***
LNGE	-6.6656(0)***	-6.3818(0)***	-6.6508(1)***	-6.4130(2)***
LNTO	-5.7853(0)***	-5.7065(0)***	-10.7418(30)***	-12.8064(30)***
LNIS	-5.5940(0)***	-5.5699(0)***	-5.6041(3)***	-5.6131(4)***

Note: 1. ***, ** and * are 1%, 5% and 10% of significant levels, respectively. 2.

Extra test was carried on validating the above results. As per the generated outcomes from KPSS, a mix stationarity of the data is evident and for the suggested variables at I (0) and I (1). Therefore, the outcome reconfirms the usage of ARDL estimation. The outcomes of this particular test revealed that all variables (LNFDI, LNED, LNGDP, LNGE, LNTO and LNIS) are significant at level at 5% or 1% at level except for FDI. Mix evidence of stationarity also occur at first difference. Thus, mix of stationarity in the data both at a level as well as at first difference was identified. Table 6 displays the findings of KPSS.

Table 6: KPSS Unit Root Tests for Model of External Debt

Variable	**KPSS**	
Level	Intercept	Trend and Intercept
FDI	0.1737(3)	0.1156(3)
LNED	0.5494(5)***	0.0989(4)
LNGDP	0.2669(4)	0.1430(4)**
LNGE	0.1997(4)	0.1748(4)***
LNTO	0.5105(3)***	0.1460(2)**
LNIS	0.6329(4)***	0.1482(4)***
First Difference	**Intercept**	**Trend and Intercept**
LNFDI	0.5000(31)***	0.5000(31)***
LNED	0.0941(1)	0.0838(1)
LNGDP	0.2809(1)	0.1159(1)
LNGE	0.2211(2)	0.0881(5)
LNTO	0.5000(31)***	0.5000(31)***
LNIS	0.0951(3)	0.0793(4)

Note: 1. ***, ** and * are 1%, 5% and 10% of significant levels, respectively

ARDL Bound Test

The long run or cointegration relationship between the variables. In doing so, F-test was conducted and the result is shown in the Table 7. The optimum lags were obtained using AIC which is in this case 4,3,3,1,1,3. Keeping in mind the critical value, the study employs the Narayan (2004) for the bounds F-test. This is because the observation of this study is 33, which matches with the predication of critical value proposed by Narayan (2004). Hence, the ARDL bounds of the model demonstrates the existence of a long run relationship as the F-statistics in the below table is greater that its upper bound (5.1677) at 1 percent significant level. Thus, it is confirmed that there is an existence of long run between the variables.

Table 7: ARDL Tests for Co-Integration for Model of External Debt

Model		**AIC (Lag order)**	**F Statistic**
LNED = F(LNGDP,LNGE,LNTO,LNIS)		(4, 3, 3, 1, 1, 3)	5.1677***
Critical Values for F-statistics#		Lower Bound, I (0)	Upper Bound, I (1)
	1%	3.41	4.68
k = 4	**5%**	2.62	3.79
	10%	2.26	3.35

Note: # The critical values are obtained automatically under Eviews 9, k is several variables (IV), critical values for the bounds test: case III: unrestricted intercept and no trend. *, **, and *** represent 10%, 5% and 1% level of significance, respectively.

To clear any doubt pertaining to the model, diagnostic tests were also performed such as the LM statistics which tested the serial correlation, the misspecification by RESET test, heteroscedasticity and normality tests. Besides that, the stability of the coefficients was examined by testing the CUSUM and CUSUMSQ whereby both fell inside the critical bounds (red) of five % significance as shown in Figure 1. This support the fact that the model is stable and the variables are structurally reliable in providing a proper forecasting without a major error. Refer Table 8 below.

Table 8: Diagnostic Tests for Model of External Debt

Model	**(A)** Serial Correlation (P-value)	**(B)** Functional Form (P-value)	**(C)** Normality (P-value)	**(D)** Heteroscedasticity (P-value)
LNED = F(LNGDP,LNGE,LNTO,LNIS)	0.1855 [0.8353]	2.1439 [0.1865]	3.1134 [0.2108]	1.3830 [0.3303]

Note. 1. The numbers in brackets [ ] are p-value. 2. The diagnostic test performed as follows A. Lagrange multiplier test for residual serial correlation; B. Ramsey's RESET test using the square of the fitted values; C. Based on a test of skewness and kurtosis of residuals; D. Based on the regression of squared fitted values.

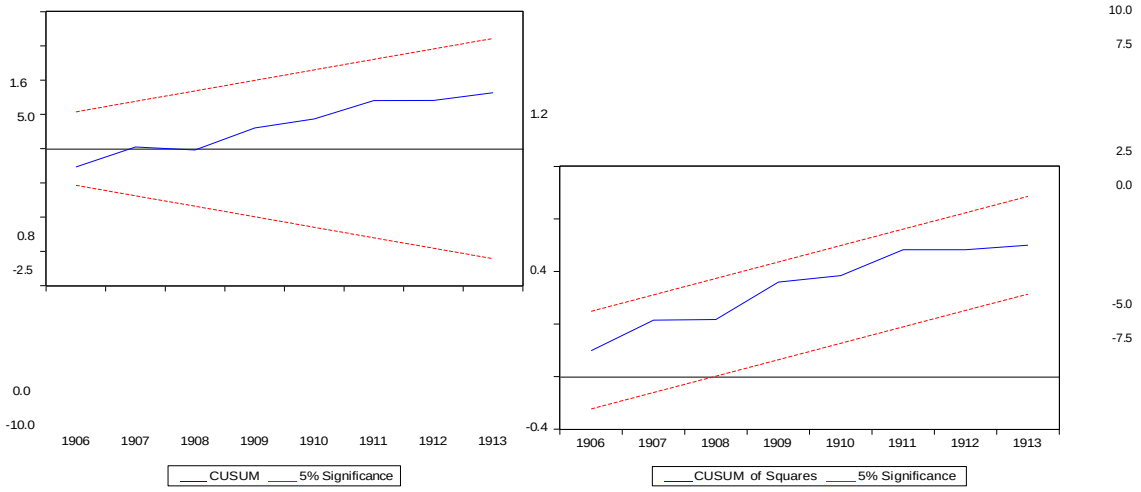

Figure 1: CUSUM and CUSUMSQ Stability Tests for Model External Debt

ARDL Estimation Results

In explaining the long run elasticities, Table 9 yields the outcome of the association between external debt (LNED) as dependent variable and (LNFDI, LNGDP, LNGE, LNTO and LNIS) as independent variables. To begin with foreign direct investment (LNFDI) which indicates a negative sign with a P-value (0.4087) which means that the association between the LNFDI and LNED does not exist. This result did not match with the findings of the first model where the FDI was the dependent and LNED was the independent. As a matter of fact, external debt and FDI are macroeconomic variables and hence they tend to strengthen the performance of an economy. This is due to their nature as both variables represent capital inflows that are needed to propel economic growth. In their study, Ostadi and Ashja (2014) found that external debt has significant negative effect on FDI inflow. They also argued that increasing foreign debt deteriorates the perception of foreign investors' vision and created negative expectations of the future economy. An interesting fact about FDI inflow is its ability to solve the problem of foreign accumulated debt in developing countries if the borrowed loans are channelled to the right path. This is because the excessive reliance on external debts is associated with tremendous risks. Unfortunately, OE witnessed a scenario whereby the state was under the threat of losing its sovereignty due to the foreign debts and the FDI projects were not able to shift the economy towards a better position.

Table 9: Long-run Elasticities for Model External Debt

Variable	Coefficient	t-Statistic	Prob.
LNFDI	-0.0111	-0.8718	0.4087
LNGDP	-1.5206**	-2.9092	0.0196
LNGE	0.5367***	5.7344	0.0004
LNTO	0.2382*	1.9435	0.0879
LNIS	-0.7751***	-14.9996	0.0000
C	6.4792	6.5971	0.0002

Note: (*), (**), (***) indicate significant at 10%, 5% and 1% significant level respectively.

Next, GDP per capita (LNGDP) revealed a significant negative sign whereby a 1% increase in GDP per capita led to a decrease in the external debt (LNED) by 1.5206%. Similar findings were found in prior research. In fact, a large number of studies have been conducted to assess the LNED & LNGDP nexus. It is widely accepted among economists that external debt has negative consequences due to poor management of these loans. The negativity surrounding the

consequences of debts tend to likely minimize any opportunity to better utilizing debt in more productive projects that will add value to the economy. In this regard, Presbitero (2012) provided empirical evidence that debt has a negative impact on economic growth when the debt is more than 90% of the GDP.

In another study, Calderón and Fuentes (2013) found a negative impact of external debt on economic growth in Latin America over the period 1970 & 2010. Akram (2011) and Rais and Anwar (2012) also come up with a similar conclusion for Pakistan for a period between 1972 & 2009. Ezeabasili et al. (2011) and Chikuba (2003) shared the same findings for Nigeria and Zambia, respectively. Umaru et al. (2013) and Ada et al. (2016) also reinforced this stance based on the outcomes of their studies in Nigeria. The explanation that is more plausible is that shortage in government revenue, low levels of investment, and balanced budget deficits are rational reason that trigger the decision to borrow from abroad. Such numerous evidences provide a solid platform to argue that the OE policy to engage in external borrowing was a terrible decision. Hence, it is obvious based on the generated result that the economic growth of OE suffered from the accumulation of debts that impede any economic reforms.

The impact of government expenditure (LNGE) on external debt (LNED) presents a positive and significant sign. In details, a 1 percent increase LNGE will increase the external debts with 0.5367 percent. The debate over the association between public debt in general and government expenditure is still an unsettled issue both conceptually and empirically. Referring to Ricardian Equivalence Theorem, the linkage between government expenditure and government debt tends to be positive and significant. According to David Ricardo (1817), the government spending is a total pool that is based on equivalence of debt and taxes (Alam & Taib, 2012). In their study, Kohler-Tolghofer and Zagler (2007) confirmed this fact as they found a positive relationship between government wage and government debt. They also found that reducing the in-government expenditure helps to improve the liquidity level and reduce the reliance on debts and tax revenue.

Observing the data of OE between 1881 & 1913 shown in the below Table 10, the average ratio of GE/ED was 5.4 percent, which indicates that the expenditures were financed by foreign loans and it reached its peak during the years of 1896 & 1904 with total debts of 4 billion pound sterling.

Table 10: Ottoman Empire Government Expenditure and External Debt 1881-1913
(Million pounds)

Years	Capital Inflows from New Borrowing	Total Debt Payments	Total government expenditure	Ratio
1880–1887	0.8	2.1	71.5	2.9%
1888–1898	0.9	3.4	67.2	5.1%
1900–1913	1.6	5.8	71.1	8.2%
Total	3.3	11.3	209.8	5.4%

This was a huge amount to be borrowed for a country that was having a poor management of capital inflows such as loan and tax. Thus, it is not surprising to find that LNGE is having a positive impact on LNED.

Moreover, the coefficient of the trade openness's (LNTO) influence on external debt shows a significant and positive sign. Based on this result higher openness to trade (TO) at 1 percent has improved the external borrowing by 0.2382 percent. This implies that a high dependence on exporting the primary goods and commodities will be more likely to augment the demand on external borrowing (Zakaria, 2012). Adding to that, Khattry and Rao (2002) contended that trade liberation and the free trade treaties between countries might lead to export price decrease due to an excess supply of similar products. Such trade condition can worsen the revenues

directly through reduced export revenues or in indirect way via having a lower income earned from exports.

The export data in the OE during the examined period shows a deficit by 100 million pound sterling. This export deficit was mainly driven by the fiscal policy in which the state was applying exemption on imported goods while the exported goods were subject to 12 percent tax. From a different perspective, Auboin (2004) found that trade openness is more likely to improve the allocation of resources at national and international levels, which in turn creates a shield against the external debt shocks. He went further by saying that TO can also affect the debt servicing capacity if the country increases the net exports and foreign direct investment, which ultimately enhance the foreign exchange reserves. Further, the neo classical economists hold the idea that trade liberation significantly affects the capacity of the saving's level and capital accumulation.

Lastly, this study tested the impact of interest service (LNIS) on the external debts (LNED). Table 9 presents the outcome of this linkage whereby a significant and negative sign was detected. A 1 percent increase in LNIS reduced the LNED coefficient to 0.7751 percent. This means that the higher payment of interest rate, the lesser level of applying for external loans.

A short-run elasticity was performed and subsequently presented in the Table 11. The estimates showed that LNFDI was not significant whereas the LNGDP depicts a significant and negative sign, which is matching with the long run elasticities. In terms of LNGE, the result here indicates a positive and significant linkage with LNED. Unlike LNTO, which shows a non-significant relation with LNED, the LNIS presents a strong negative and significant sign. Overall, all the variables interact in a similar manner in both the short run and long run with the exception of the variable LNTO. The ARDL analysis requires a further estimation for this model, which is the error-correcting term (ECT). According to Kremers et al. (1992), a significant and negative coefficient obtained for ECT is a good indication that the variables that interact with each other are consistent and reliable. Indeed, the ECT test is highly recommended to be significant, so the policy makers would have a better understanding on the long-term consequences of their decisions that involve the proposed economistic model. Hence, this study detects a statistically significant ECT at 0.6647 percent with a P-value 0.0020. This outcome is vitally important for the validity of the examined model. The adjusted R-squared value of ARDL estimation is 0.99

Table 11: Short run Elasticities and Error Correction Term for Model of External Debt

Variable	Coefficient	t-Statistic	Prob.
D(LNED(-1))	0.2166	1.1339	0.2897
D(LNED(-2))	0.2036	1.0475	0.3255
D(LNED(-3))	-0.2045	-1.7524	0.1178
D(LNFDI)	-0.0036	-1.0440	0.3270
D(LNFDI(-1))	0.0101	1.8306	0.1045
D(LNFDI(-2))	-0.0063	-1.5311	0.1643
D(LNGDP)	-1.3443	-3.4457	0.0088
D(LNGDP(-1))	0.3729	1.3973	0.1999
D(LNGDP(-2))	-0.4073	-2.2042	0.0586
D(LNGE)	0.2107	2.3055	0.0500
D(LNTO)	0.0796	1.0580	0.3209
D(LNIS)	-0.6715	-20.1110	0.0000
D(LNIS(-1))	-0.1550	-0.7552	0.4718
D(LNIS(-2))	0.3671	2.1941	0.0595
CointEq(-1)	-0.6647	-4.5047	0.0020
R-squared	0.999068	428.6336	
Adjusted R- squared	0.996737	0.0000	

Dependent variable is DLNED. (*), (**), (***) indicate significant at 10%, 5% and 1% significant level

Given these facts and based on the above results, it seems that the flow of funds was not in the favor of the Ottoman economy and this can be proven by the declaration of bankruptcy in 1875 which led to and partial control of the state's revenues by the creditors (Pamuk, 2014). Bearing in mind that the reliance on debt is an important aspect of examining the financial position of an organization (Masruki et al., 2018). This has ultimately led to the loss of financial sovereignty, which is manifested in the over-dependency of the foreign markets, leaving a state exposed to unprecedented risks. Indeed, with the establishment of Ottoman Public Debt Administration (hereafter OPDA) in 1881, the state had undergone several fiscal reforms to expand the revenue pool and help to regain international confidence in the Ottoman economy. The fiscal apparatus under the OPDA has devoted 35% of the revenue derived from the taxes on: stamp, spirits, and fishing taxes, the silk tithe, and salt and tobacco monopolies to settle the payment of incurred debts which are called in the Ottoman official documentation as regular debts (*duyun-i muntazama*) (Akarli, 1992).

With the lack of funds, the state was incapable of initiating projects that could elevate the livelihood of people and therefore, the poverty was something unavoidable. Related research such as (Conte & Sabatini, 2014) has shown that the weak economic and military position of OE prevented the birth of infant industries within the Ottoman territory. Pamuk (2004) contended that Ottomans paid a heavy price when they surrendered their revenues to OPDA. Birdal (2010) argued that the OPDA supports the colonization through facilitating external lending and securing the payment of these debts with its high-interest rate. According to Blaisdell (1929), the OPDA was "an outpost of European capitalism". More importantly, the loss of sovereignty is also manifested in the reforms adopted by the government and suggested by OPDA for the sake of bringing in a new western spirit. These reforms were not very welcomed by people which in turn led to a political turmoil and nationalist evolutions (Eldem, 1999). This is because the economic reforms that took place during the reign of Abdul Hamid was not productive in the sense of creating a conducive environment for a robust private, domestic and foreign investment (Pamuk, 2006). Hence, it is evident that the Ottoman economy was suffering from a serious sickness to the extent that the OE was named as 'sick man of Europe".

CONCLUSION

Given the fact that ED contributes to the capital accumulation, our ARDL estimation reveals a remarkable outcome. The main objective of this paper is to address the macroeconomic determinants of external debts within the context of OE. The econometric model includes GDP per capita (LNGDP), trade openness (LNTO), foreign direct investment (LNFDI), government expenditure (LNGE) and interest service (LNIS). The findings of the long run elasticities provide empirical evidences that the entire variables are statistically significant except FDI, which portrays a non-significant relationship with the LNED. Obviously, our empirical results confirm that seeking the capital's accumulation via the external debt policy was a damaging method to the Ottoman state. Losing sovereignty was one of numerous negative consequences. This was a clear example on the reliance on financing budget deficit using foreign loans. For the emerging economies, there should a certain restriction on getting loans. For instance, the countries should channel those obtained loans into sectors of the economy and projects with significant short and long run net positive returns. More importantly, the government and financial institutions should work together to achieve the sustainability of growth. This can be achieved via implementing a set of measures that safeguard these instructions' liquidity. Further, the monetary policies should also be revised from time to time to make sure that the central banks are updated with the development in the markets. An example of this is the emergence of cryptocurrency that revolutionised the online transactions and the interest level of such currency is increasing. The primary caveat to this research is the timeframe of the period. Using data from 1881 until 1913 seems to be short period and thus, it would be better if future research expands the duration. From the perspective of methodology, this study employs ARDL to estimate the correlations. Hence, future research might

opt to choose different approach that suit the nature of the data. For example, Vector Error Correction Model (VECM) is suggested and with outcomes of this method, we will be able to compare both methods.

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