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Determinants of Sovereign Debt Default: Some Evidence from FCAS and MENA Countries

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Question

Please provide an overview of key factors affecting debt defaults in FCAS/MENA?

Contents

1. Overview

Sovereign debt defaults, sometimes simply labelled as debt crises, arise when debtor countries miss their debt related payments (i.e. interest or principal) to their creditors (see Section 2 for a definition).

Debt vulnerabilities have amplified in recent years in many developing countries – including many fragile and conflict-affected states (FCAS) and those in the Middle East and North Africa (MENA) region (see Section 3). Many of these economies often have a inadequate capacity to raise public revenue and carry debt – making them more susceptible to debt distress or default (IDA, 2019; Zeaiter and El-Khalil, 2016). Countries with weak macroeconomic policy frameworks witnessed the fastest rise in debt, in recent years. This is particularly the case for FCAS countries that are commodity-dependent for their exports**.** These countries have failed to apply growth-enhancing reforms to broaden their exports and build cushions to tackle the effect of external shocks – thereby increasing their dependency on debt. (IDA, 2019; Chervalier, 2011)

Debt defaults in FCAS, MENA or other group of developing countries can be the consequence of either bad financial and macroeconomic policymaking at home, and/or because of external shocks such as a sudden rise in global interest rates, crises in financial centre countries (e.g. US and Eurozone), commodity price volatility, or natural disasters (see Section 4). However, a clear distinction between internal and external causes is difficult. Despite this, it is useful to summarize the findings from the early warning literature on sovereign debt defaults by looking at domestic determinants and external determinants separately (see Section 4.1 and 4.2). Some occurrences of debt default or crises may be characterized by a crisis of economic fundamentals and irresponsible over-borrowing by domestic politicians, while others may be triggered by the role of cross-border contagion, debt runs by foreign investors, self-fulfilling default expectations and legal drivers of default (see Section 4.3). (Ams et al., 2018)

There is a large body of literature on debt defaults. However, there are very limited number of empirical studies that explicitly highlight the issue for FCAS or MENA countries. Much of the literature on sovereign debt default and its determinants have focused on High income countries or emerging economies with well-developed capital markets. Furthermore, the limited pool of research on the topic that makes some passing mention of FCAS and MENA countries rarely studies them separately. Instead, these studies (that often utilize multi-country panel datasets) study FCAS/MENA countries together with other countries. Some multi-country studies employ dummy variables or specific control groups for countries. However, these efforts are usually limited to the separation of developing or emerging countries from advanced economies – or low-debt countries from high-debt ones. Conversely, many studies simply lump all countries together in their panel dataset (see Section 5).

This rapid literature review is limited to some academic publications as well as reports issued by international financial and development agencies. **The review of influential empirical studies (see Section 5) has identified several useful determinants or indicators for sovereign debt defaults in FCAS, MENA and other countries. Some of these indicators include:** total debt to GDP ratio, debt to exports ratio, external debt as percentage of reserves, external debt as percentage of gross national income, short-term debt to reserves ratio, debt service to revenues ratio, debt service to reserves ratio, new financing needs, GDP growth, GDP per capita, trade openness, institutional quality, inflation rate, currency overvaluation, treasury bill rate, current account as percentage of reserves, primary deficit, volatility of fiscal policy, etc.

These determinants/indicators of sovereign debt default can be universally used by most countries. However, countries will differ on how well-placed they are on these indicators. Compared to countries with more robust institutions, countries with weaker institutions (e.g. many FCAS countries and poorer MENA countries) may witness debt distress and default at relatively lower levels of sovereign debt.

2. Sovereign Debt Defaults - Brief Definition

The study on the determinants of sovereign or public debt defaults depends on the very definition of debt defaults. Many empirical studies commonly use debt crises synonymously with debt defaults for simplicity. However, as Pescatori and Sy (2007) note, this can be problematic especially in the post 1990s period. This is because of the development of sovereign bond markets and far fewer incidence of debt defaults in recent decades – even in the face of heightened debt distress in many countries (including those in FCAS and MENA region). Another key factor Pescatori and Sy (2007) cite is the diminishing importance of liquidity indicators in explaining debt defaults in the post 1990s period.

A popular definition of sovereign debt defaults has been the criteria used by rating agencies (e.g. Failure to pay interest, distressed debt exchange, and unilateral change in payment terms – as used by Moody's (2018)).

Well recognized **definitions of sovereign debt default by two prominent rating agencies** are given below:

- **Moody's defines a sovereign issuer (i.e. a government or country) as in default when one or more of the following circumstances are met: There is a missed or delayed disbursement of interest and/or principal, even if the delayed payment is made within the grace period, if any** (Moody's Investors Service, 2003). A distressed exchange happens, where the issuer proposes bondholders a new security or package of securities that amounts to a reduced financial obligation, such as new debt instruments with lower coupon or par value; or the exchange had the purpose of assisting the borrower evade a ''stronger'' event of default (such as missed interest or payment).
- Likewise, **Standard & Poor's (S&P) defines default as ''the failure of an obligor to meet a principal or interest payment on the due date (or within the specified grace period) contained in the original terms of the debt issue''** (Chambers and Alexeeva, 2003). For local and foreign currency bonds, notes, and bills, each issuer's debt is deemed to be in default either when a scheduled debt-service payment is not carried out on the due date or when an exchange offer of new debt comprises of less favourable terms than the original issue. For bank loans, when either a planned debt-service payment is not settled on the due date or a rescheduling of principal and/or interest is arranged to by creditors at less favourable terms than those of the original loan. Such rescheduling agreements covering short- and long-term bank debt are seen as defaults – even where creditors deem forced rollover of principal to be voluntary, for legal or regulatory reasons. (Pescatori and Sy, 2007)

Yet, as Ams et al. (2018) note, there are several other ways to define sovereign debt default. For instance, the definitions could be based on:

- Contractual events of default or market instruments (e.g. debt suspension/cancellation, refund, acceleration on official bilateral and multilateral credits);
- Type of the debt involved (e.g. domestic debt vs external debt);
- Credit events on sovereign credit default swaps (CDS) (e.g. failure to pay, obligation acceleration, obligation default, moratorium, and restructuring (ISDA, 2003; 2014))
- Type of creditor that is being affected (e.g. default on official and private creditors; default on domestic and foreign creditor; default on banks and bondholders)
- Type of debtor action (e.g. technical default, repudiation, hard (non-negotiated) default, soft (negotiated) default, partial default, full default, etc.)

Such differences in the definition of debt defaults leads to differences in the empirical set-up of studies. Together with the use of different country samples and different time periods by different studies, this sometimes leads to different or inconclusive findings.[1]

3. FCAS and MENA Countries – Their Unique Vulnerability to Debt Default and Crises

FCAS Countries

Fragile and conflict-affected states (FCAS) present unique difficulties and opportunities for public debt management experts. Important challenges include difficulty in prioritization of debt-related policy and institutional reforms; sustaining and deepening reforms already in place; and weak implementation capability (which has big implications for likelihood of debt default). Simultaneously, debt relief eligibility process (which at times follows defaults) and implementation of debt management programs (which may avert severe indebtedness, and thus, default) may provide some opportunity to address some of the underlying causes of fragility and conflict (e.g. economic and governance reforms). (Chervalier, 2011)

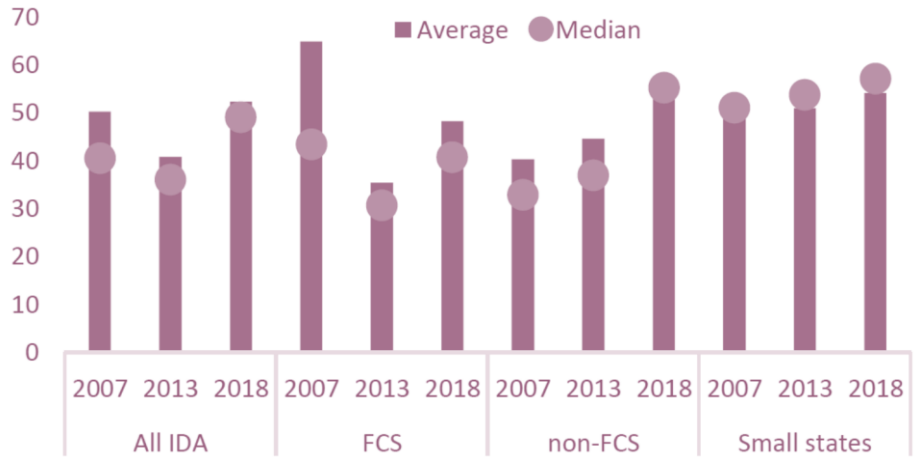
Public debt levels in many developing countries (FCAS and non-FCAS) have ascended significantly over the past few years. Having fallen gradually for many years by taking advantage of strong growth and debt relief, starting from 2013, median public debt in countries of the International Development Association (IDA) group rose by 14 percentage points of GDP to hit about 50 percent of GDP in 2018. The rise in public debt levels was broad-based across IDA-eligible countries (as seen in the figure below). The rise in sovereign debt was slightly larger among commodity exporter countries. Conversely, the increase in debt levels for FCAS countries was slightly lower than for countries not affected by conflict – nine percentage points in FCAS vs. 13 percentage points for non-FCAS countries. (IDA, 2019)

A breakdown of public debt dynamics across FCAS countries (and others) reveals several reasons for the rise in likelihood of debt defaults or debt vulnerabilities. These include – limitations in fiscal policy frameworks (including, feeble domestic resource mobilization and low efficiency of public expenditures); changing configuration of sovereign debt portfolios towards more expensive and riskier sources of financing; and bad debt transparency. Furthermore, debt

[1] The literature explaining defaults varies depending on the definition of defaults, explanatory variables used and methods of estimation. Nonetheless, they generally describe default as a probabilistic event, where the probabilities can be estimated with reference to some debt or debt-service indicator. (Kruger and Messmacher, 2004)

problems deteriorated in many countries that were affected by conflict (e.g. Yemen and Burundi experienced upsurges in the public debt-to-GDP ratio) and in countries that faced shocks (e.g. following the Ebola epidemics in the case of Sierra Leone and Liberia, the public debt-to-GDP ratio rose by about 20 percentage points between 2013 and 2017). (IDA, 2019)

Figure: Sovereign Debt by country groupings (IDA, FCAS, non-FCAS, small states), in % of GDP



Source: IDA (2019). *Addressing Debt Vulnerabilities in IDA Countries:Options for IDA19.* © World Bank. http://documents.worldbank.org/curated/en/296411555639304820/pdf/Debt-Vulnerabilities-in-IDA-Countries-Policy-Options-for-IDA19.pdf. License: Creative Commons Attribution license (CC BY 3.0 IGO)

The list of FCAS countries – according to the World Bank's latest report on 'Harmonized List of Fragile Situations' for Fiscal year 2019 includes the following countries (categorized by debt type eligibility).[2] Economies are divided into IDA, IBRD, and Blend countries based on the operational policies of the World Bank. International Development Association (IDA) countries are those with low per capita incomes that lack the financial ability to borrow from the International Bank for Reconstruction and Development (IBRD). Blend countries are eligible for IDA loans but are also eligible for IBRD loans because they are financially creditworthy.[3]

- **IDA eligible:** Afghanistan, Burundi, Central African Republic, Chad, Comoros, Congo Dem. Rep., Congo Rep, Côte d'Ivoire, Djibouti, Eritrea, Gambia, Guinea-Bissau, Haiti, Kiribati, Kosovo, Liberia, Mali, Marshall Islands, Micronesia Fed. Sts, Mozambique, Myanmar, Solomon Islands, Somalia, South Sudan, Sudan, Syria, Togo, Tuvalu, Yemen.
- **Blend**: Papua New Guinea, Timor-Leste, Zimbabwe.
- **IBRD Only**: Iraq, Lebanon, Libya.

[2] http://pubdocs.worldbank.org/en/892921532529834051/FCSList-FY19-Final.pdf
[3] https://datahelpdesk.worldbank.org/knowledgebase/articles/378834-how-does-the-world-bank-classify-countries

MENA Countries

The Middle East and North Africa (MENA)[4] region contains countries with complex and diverse political and economic characteristics. However, two general economic structures are visible in the region. On the one hand, there are oil-dependent MENA countries such as Algeria, Iraq, Libya, etc. On the other hand, the region also hosts primarily non-oil economies such as Egypt, Morocco, Jordan and Tunisia.

The differences among MENA countries appears clearer when investigating the level of debt, the ease to borrow at international capital markets, the share of foreign debt on the total public debt and the variations of exchange rates. Non-oil economies (e.g. Jordan) may face economic challenges that are by nature the same as those of highly oil-dependent economy (e.g. Algeria). However, non-oil economies may use/have different financing tools than countries with considerable petroleum-based revenue streams. For instance, non-oil MENA countries are more likely to resort to borrowing and become more vulnerable to debt default. (Zeaiter and El-Khalil, 2016)

Brief highlights of debt related vulnerabilities in some MENA countries include:

- Jordan's debt is mainly denominated in foreign currency (68% in 2013), which is regarded as the riskiest for debt management – i.e. more prone to debt default.
- Egypt recorded the highest debt to GDP ratio in the history of the MENA region with 600% in 1981. Since then, it has succeeded in reducing the ratio to 92% in 2013 (although this is still considered to be very high – increasing the likelihood of default).
- Morocco witnessed an increase in public borrowing (particularly during the 1970s and the early 1980s) that led debt to GDP to reach 110% in 1990. Nevertheless, Morocco has partly succeeded in bringing down the debt to GDP ratio to 77% in 2013.
- Tunisia's debt to GDP ratio has hovered below 60% since 1970s (i.e. making default 'relatively' less likely). Macroeconomic policies in Tunisia have been accommodative of fiscal stability (keeping the fiscal deficit within manageable limits) – a task in which the government has been largely successful. Fiscal revenue has been enhanced by steady real GDP growth and by measures taken to improve tax collection. (Zeaiter and El-Khalil, 2016)
- Lebanon is considered to be the most indebted country in the MENA region – with 144% debt to GDP ratio in 2014.
- The global financial crisis (2008/09) adversely affected the non-oil MENA countries through reduction in export revenues and workers' remittances from oil-producing MENA countries. Investments in the real-estate sector had also taken a hit, thereby lowering the rate of growth of GDP in the region. This led to higher measures of indebtedness (e.g. higher debt-to-GDP ratio) and heightened the likelihood of default – as countries borrowed more to offset their diminished revenue streams. (Zeaiter and El-Khalil, 2016)

[4] The list of MENA countries (according to the World Bank) generally includes the following – Algeria, Bahrain, Djibouti, Egypt, Arab Rep., Iran, Islamic Rep., Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Malta, Morocco, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, Tunisia, United Arab Emirates, West Bank and Gaza, Yemen Rep. https://data.worldbank.org/region/middle-east-and-north-africa

4. Determinants of Sovereign Debt Defaults

4.1 Key Standard Internal Determinants

To study the domestic determinants of sovereign default, Manasse and Roubini (2009) – who explored a large group of countries including MENA countries such as Algeria, Egypt, Morocco, Oman and Tunisia – **differentiate between liquidity and solvency. Their analysis revealed that the risk of default due to illiquidity is particularly high if short-term debt surpasses 130% of reserves.** Beyond this threshold, defaults can even happen at moderate levels of debt to GDP. Liquidity crises are episodes with rollover problems, implying challenges in refinancing short-term debt, while solvency crises are characterized by a high debt burden.[5]

Manasse and Roubini (2009) find that the danger of default is principally high in case of a high stock of external debt (in excess of 50% of GDP). Conversely, they hint that the level of total public debt to GDP is a less useful warning indicator – unlike external debt. In line with this, Reinhart et al. (2003) – who studied MENA countries Egypt, Iran, Iraq and Morocco together with other emerging and advanced economies – showed that a high public debt burden by itself is not a good predictor of when and why countries default. Using long-run data they reveal that some countries are "debt intolerant" and have defaulted at debt-to-GDP ratios of just 20%, while others have endured debt stocks above 100% of GDP for decades without running into distress. Furthermore, the authors show that the credit history of a country is a key predictor of default. All else equal, developed economies and emerging market countries that have never defaulted are less likely to face debt problems than what they call "serial defaulters", i.e. countries with a high historical default probability.

The risks of external debt were also explored by Catao and Milesi-Ferretti (2014) – who study FCAS countries such as Republic of Congo, Sudan, Libya, Syria, Yemen and oil-dependent MENA countries within a large multi-country panel data. **They showed that the ratio of net foreign liabilities to GDP is a key predictor of sovereign debt crises, particularly if this ratio surpasses 50%.**

Reinhart and Trebesch (2016) – who studied emerging economies (including some MENA countries such as Jordan, Morocco, Egypt, etc.) together with advanced economies – **noted that external dependence is a leading indicator for serial debt problems in many countries that have depend on foreign debt and defaulted repeatedly** (Reinhart and Trebesch 2016).

Catao and Kapur (2006) – who looked at emerging markets, including MENA countries like Egypt. – **identified domestic macroeconomic volatility to be an important determinant of default**.

Reinhart and Rogoff (2011) – using 200 years of data – covering 70 countries in different continents, including FCAS countries such as Myanmar and Zimbabwe as well as MENA states such as Algeria, Egypt, Morocco, Tunisia, etc. – **showed that domestic banking crises are often followed by a sovereign debt crisis, partially because of big fiscal costs linked to financial crash.**

Kohlscheen (2007) – who look at various defaulter countries, including MENA countries like Morocco and Jordan – **showed that domestic political and institutional factors have also proved to be useful drivers of sovereign risk**. Comparable evidence has been given by van Rijckeghem and Weder (2009) who list the debt default and restructuring history of different

[5] For sovereign debtors, the difference between illiquidity and insolvency is vague, as liquidity crises can result in a case of insolvency, while crises of insolvency are often triggered by refinancing problems.

countries, including MENA states like Algeria and Morocco. A similar finding has also been presented by Enderlein et al. (2012) whose sample included MENA countries such as Algeria, Jordan and Morocco.

In recent years, broadening fiscal deficits are playing a key role in rising public/sovereign debt seen in FCAS countries. Commodity-dependent FCAS (and non-FCAS) IDA countries have witnessed considerable fiscal deficits during the commodity price boom. Failure to build adequate buffers during that period left countries with the hard choice between higher borrowing and sharp fiscal adjustment when prices of their export commodities (and with them their revenues) dropped. Most counties chose the former option in such circumstances. For countries less dependent on commodities, primary deficits were also a key component of debt dynamics. However, recent changes in debt ratios of these countries came to be driven ever more by currency depreciation as well as a higher contribution from interest spending. The rise in interest spending is the result of growing borrowing in non-concessional sources of financing. In FCAS countries, primary fiscal balances have particularly deteriorated in recent years. (IDA, 2019)

4.2 Key Standard External Determinants

Kaminsky and Vega Garcia (2016) note that external shocks are the main reason why countries default on their debt, particularly during systemic debt crises that arise in multiple countries at the same time. Hilscher and Nosbusch (2010) – who study MENA countries such as Morocco, Tunisia, Egypt and Lebanon together with other emerging economies in different parts of the world – show that the volatility of terms of trade shocks are a key driver of sovereign bond spreads. The effect of sudden stops in capital flows is further investigated by Mendoza (2010), while the link between commodity prices and sovereign risk is assessed by the recent work of Mendoza and Restrepo-Echavarria (2018) – who study FCAS oil-economies such as Iraq, Libya, Sudan, Syria, Yemen, etc. and MENA countries like Algeria, Egypt, Iran, Kuwait, UAE, Qatar, Oman, etc.

Sturzenegger and Zettelmeyer (2006) – who study the main sovereign default clusters of the last 200 years – find external factors to be decisive, especially a deteriorating terms of trade; a recession in core countries that provide capital; a rise in international borrowing costs, e.g., because of tighter monetary policy in creditor countries; and a crisis in a major country that leads to contagion across trade and financial markets. These findings are in sync with Reinhart et al. (2016) who show that a collapse of international capital flows and commodity markets are strong predictors of sovereign debt default. Five of the six main waves of external debt default by many nations since 1815 happened after a “double bust”, where a sudden stop in global capital flows occurred together with a collapse in global commodity prices. Some of these default waves also touched some MENA and FCAS states, as has been seen over the past few decades.

4.3 Other Particular Determinants

4.3.1 Weak Debt Management Capacity

Greater dependence on debt financing in combination with weaknesses in debt management, may lead to heightened risks from debt servicing and refinancing in FCAS and MENA countries – making debt defaults more likely. FCAS states (and more generally IDA countries) have amplified their reliance on financing from non-traditional sources in recent years. Since 2010, for example, 18 IDA countries have issued a growing amount of international bonds, partly due to the low interest environment in advanced economies as well as the search

for higher yields by international investors.[6] Commodity dependent countries, including some Heavily Indebted Poor Country (HIPCs) and FCAS, constitute the majority of these issuers. Simultaneously, non-Paris Club creditors have become a more important source of financing over the past decade, particularly in commodity-dependent countries. In 2017, non-Paris Club debt constituted about one-fifth of the total Public and Publicly Guaranteed (PPG) external debt in IDA countries. (IDA, 2019)

The shift in the debt composition in FCAS, MENA and the broader developing country group has heightened the likelihood of debt defaults (i.e. portfolio risks). To begin with, more reliance on commercial debt has elevated refinancing, exchange rate, interest rate and capital reversal risks. The share of variable interest rates debt within gross external debt has swelled while the share of variable rate debt in gross external debt currently surpasses 25 percent in 13 IDA countries. Simultaneously, a more diverse creditor base has amplified the challenges of debt resolution. The stock of debt owed to commercial and non-Paris Club creditors more than doubled in the period between 2010 and 2017. (IDA, 2019)

Notwithstanding the rise in sovereign debt and a shift towards riskier debt portfolios, debt management capacity in FCAS and other IDA countries remains feeble. The World Bank's Country Policy and Institutional Assessment (CPIA) shows that the quality of the debt management policy and institutions in about half of IDA countries is below the 3.5 rating (on scale of 1-6) for which countries are considered to have "adequate" capacity. Areas of main concern include: flaws in debt management governance; poor coordination with fiscal policy; weaknesses in public financial management as well as in regulatory frameworks for domestic borrowing, loan guarantees, on-lending and derivatives; deficiency in operational risk management; poor quality of debt data; and inadequate staff capacity in debt management offices, to properly assess fiscal and debt risks and cope with a diverse array of investors and emerging creditors. (IDA, 2019)

4.3.2 Weaknesses in Debt Recording, Monitoring, and Reporting

Current public debt statistics in FCAS suffer from limited debt data coverage and debt transparency – despite the significant improvements in debt data in recent years. This is mostly the case for debts to State-Owned Enterprises (SOE), contingent liabilities related to Public Private Partnerships (PPPs), and collateralized debt. At the same time, the public sector is one of the most diverse categories in terms of variety of definitions – individual countries differ in regard to the level of centralization or federalization, and the associated budgetary and regulatory frameworks. The combined elements of these country-specific conditions are also important determinants of weak debt data. (IDA, 2019)

Certain FCAS countries also suffered from hidden SOE debts due to considerable weaknesses in the management and supervision of SOEs and deep-rooted governance challenges. In Mozambique, two state-guarantees issued in 2013 and 2014 by the Minister of Finance to SOEs incorporated as private enterprises – amounting to US$1.15 billion (nine percent of GDP at end-2015) – were not communicated to the debt management staff and the public, and broader governance issues appear to have been an issue. In Togo, the government

[6] For more recent evidence on growing issuance of government bonds (including those in local currency) see Essers et al. (2016).

had pre-financed debt - a form of de facto sovereign debt, which did not appear in official government debt statistics, estimated at seven percent of GDP by end of 2016. (IDA, 2019)

The use of unconventional debt and debt-like instruments has also been rising, adding to debt distress – which may lead to debt default in some cases. To overcome financing limitations, some FCAS countries have borrowed via collateralizing future receivables and other creative ways, offering protection of creditor rights (e.g. Chad, Republic of Congo, and Liberia). Public and Private Partnership (PPP) transactions are often structured so that they do not look like a direct debt of the government. However, they can constitute considerable contingent liabilities for the government unless they are well managed. In times of severe debt distress, debt restructuring might be needed. Unfortunately, the existence of collateralized debt makes the debt restructuring process highly complicated. This heightens debt vulnerabilities as seen in countries that collateralized petroleum exports and went into debt distress when oil prices dipped in 2014. An important issue in dealing with collateralized debt is transparency (both on the size as well as type of the debt obligation). Growing borrowing from non-Paris Club and commercial creditors may lead to coordination difficulties for debt resolutions in the future. This might make the debt distress and default even more disruptive for FCAS countries in the years to come, especially in countries where debt is collateralized. (IDA, 2019)

4.3.3 Political Factors, Corruption and Lack of Transparency

Zeaiter and El-Khalil (2016) – who studied sovereign defaults in the MENA region using data from Egypt, Iran, Jordan, Lebanon, Morocco, Sudan, Syria, Tunisia, and Yemen over the 1970 to 2010 period – **note that countries in the region with high corruption and democratic accountability risks are more likely to accumulate debt arrears, making them more prone to defaults**. The authors note that including political indices in their analysis did not have any effect on the results of other standard economic indicators of default. Their finding showed that debt accumulated arrears can be perceived as an early signal of sovereign debt default and can serve as early warning signals for MENA policymakers – helping them to prevent total failure or at least alleviate the severity of defaults. In addition, the authors advise debtors in the MENA region to:

(i) acquire extra foreign reserves via adjusting domestic policies and regulations of investment,
(ii) follow proactive fiscal policies, and
(iii) tackle corruption and promote democracy.

Insufficient legal frameworks, limited capacity, and governance challenges are the main causes for the lack of debt transparency in many FCAS and some MENA countries. Reliable and comprehensive data recording and monitoring of public debt needs a legal framework with clearly stated instruments and institutional coverage, well-defined organizational structures that avoid conflicts of interest, internal controls that ensure laws/procedures are followed. Further, a secure debt recording system is needed. Simultaneously, adequate capacity is needed at every step to record, monitor, and report public debt data, as well as to audit and conduct internal control functions (see also Section 4.3.2). (IDA, 2019)

Lack of transparency in FCAS countries also obstructs their ability to attract creditors and private finance. Enhancing debt transparency helps countries to reduce a risk of negative debt surprises, therefore, creditors are more likely to lower interest on debt to reflect reduced risk premia. (IDA, 2019)

4.3.4 Expectations as Determinants: Self-Fulfilling Debt Crisis and Defaults

Sometimes, the probability of debt default may largely depend on investor expectations. Lorenzoni and Werner (2016) note that extreme sovereign debt accumulation and weak economic fundamentals can leave sovereign borrowers at the mercy of self-fulfilling upsurges in interest rates – due to unfavourable investor sentiments. Precautionary policies can help countries to avoid entering this "crisis zone" in the first place, e.g. through a fiscal rule (e.g. Conesa and Kehoe 2016; Lorenzoni and Werner 2016). De Grauwe and Li (2013) also present evidence that at the peak of a sovereign debt crisis, sovereign spreads could be driven by market sentiment and that they may decouple from macroeconomic fundamentals or risk indicators such as the debt-to-GDP ratio.

5. Evidence from Some Leading Empirical Studies (large multi-country studies)

Some of the influential empirical works analysing the determinants of debt defaults – and that also include some FCAS/MENA countries in their dataset – will be briefly **discussed below.**

Study 1: Bandiera et al. (2011)

Brief Summary:

- Data type/scope: annual panel data of 46 emerging market countries for 1980–2004 period
- Country list from FCAS/MENA: Includes MENA countries such as Algeria, Egypt, Jordan, Morocco, Oman, etc.
- Group identifier or dummy variable for FCAS/MENA: NO

Key Determinants Identified:

- External debt as percentage of reserves (+)
- Institutional quality CPIA index (-)
- GDP growth (-)
- Openness (-)
- External debt as percentage of gross national income (+)
- Inflation rate (+)
- Effective interest rate (-)
- U.S. Treasury Bill rate (+)
- Current account as percentage of reserves (-)
- Primary deficit (+)

Note: (+) implies direct or positive relationship between an indicator and debt default, where a rising value of the determinant is associated with higher likelihood of debt default. Conversely, (-) implies indirect or negative relationship between an indicator and debt default, where rising value of the determinant is associated with lower likelihood of debt default.

Key Findings:

- The study noted that the probability of default is robustly linked only with the level of indebtedness (using their full 46 country sample).
- For those countries with debt to gross national income ratios below 50 percent, the quality of policies and institutions becomes relevant.
- In countries with external debt above 50 percent of gross national income, inflation and indebtedness are positively correlated with a higher probability of debt default.

- The role of institutional settings and quality of policies becomes less relevant for countries with higher levels of debt.
- Variables representing debt costs and rollover risk do not appear robust as predictors of debt default.

The results largely confirm the broad view in the literature that only a few macroeconomic and institutional quality variables are vital in predicting defaults (as also noted by Kraay and Nehru 2006). The authors noted that more analysis will be needed to determine the importance of debt management in lowering the probability of default.

Study 2: Tomz and Wright (2007)

Brief Summary:

- Data type/scope: Annual data on 106 countries, 1820–2004
- Country list from FCAS/MENA: country list not explicitly stated – but the data on 106 countries would likely include several FCAS and MENA countries
- Group identifier or dummy variable for FCAS/MENA: NO

Key Determinants Identified:

  - GDP (-)

Key Findings:

- The authors find a negative but unexpectedly weak relationship between economic output in debtor countries and default on loans from private foreign creditors.
- They note that, throughout history, countries have defaulted not only during bad times (i.e. when output was relatively low), but also when their economy shape was favourable. In addition, some countries have maintained debt service – even in the face of adverse shocks.
- The authors acknowledge that their findings constitute a puzzle for standard theories of international debt, which predict a much closer negative relationship as default provides partial insurance against falling economic output.
- The study contends that default may be the optimal response to significant reductions in exports, government revenues, or the output of the tradeable sector of the debtor country. Further, default may help countries to withstand increases in the cost of capital. Thus, defaults may be more likely to occur when global interest rates rise.
- The authors note that, logically, defaults offer the most relief when economic downturns cannot be smoothed through more borrowing.

The authors argue that new economic models could help explain the otherwise puzzling fact that declines in output trigger default in some historical episodes but not in others. They hope that new studies (with newer models) may help to explain why, over the past two centuries, defaults have occurred in waves, with the largest surges being seen in the 1820s, 1870s, 1890s, 1930s, and 1980s.These waves, as the authors speculate, occurred when recessions in borrowing countries overlapped with contractions in key creditor nations.

Study 3: Pescatori and Sy (2007)

Brief Summary:

- Data type/scope: Several samples, 1975–2002

- Country list from FCAS/MENA: Several countries – including MENA countries such as Algeria, Egypt, Lebanon, Morocco, Tunisia.
- Group identifier or dummy variable for FCAS/MENA: NO

Key Determinants Identified:

- Openness (-)
- Short-term debt to reserves ratio (+)
- Overvaluation (+)
- GDP growth (-)
- Total debt to GDP ratio (+)
- Inflation (+)

Key Findings:

- The study is based on the definition of debt crises as events occurring when either (i) a country defaults or (ii) its bond spreads are above a critical threshold.
- The authors note that typical theoretical determinants of debt-servicing difficulties (i.e. solvency and liquidity measures, as well as macroeconomic control variables) better explain their broader definition of debt crises.
- They find that, when information from bond markets is included, standard indicators (i.e. indicators of solvency, liquidity, and macroeconomic state) are also significant.

The authors, however, stress that typical empirical models of debt-servicing problems fail to explain debt crises when they are defined solely as defaults, especially in the period after 1994. Particularly, liquidity indicators are significant in explaining their definition of debt crises – even though they do not play any role in explaining defaults after 1994.

Study 4: Kraay and Nehru (2006)

Brief Summary:

- Data type/scope: Data on 94 crisis episodes in low-income countries, 1970–2001
- Country list from FCAS/MENA: country list not exhaustively listed. However, the study includes (among many others) MENA countries such as Algeria, Egypt, Tunisia and FCAS countries such as Congo Dem. Rep., Congo Rep.
- Group identifier or dummy variable for FCAS/MENA: NO

Key Determinants Identified:

- Debt (Pres. Val.) to exports ratio (+)
- Debt service to revenues ratio (+)
- Debt service to reserves ratio (+)
- Institutional quality CPIA rating (-)
- GDP growth (-)
- Rule of law (-)
- Depreciation (-)
- Terms of trade growth (-/+)
- GDP per capita (+/-)
- Inflation (+/-)

Key Findings:

- This is a very influential study – particularly for debt related issues in developing countries (with close to 300 citations on Google Scholar so far).
- The authors empirically examined the determinants of ‘debt distress’, which they define as periods in which countries resort to exceptional finance in any of three forms:
  (i) significant arrears on external debt,
  (ii) Paris Club rescheduling, and
  (iii) non-concessional IMF lending.

- The authors note that the above three factors explain a considerable fraction of the cross-country and time-series variation in the incidence of debt distress: the debt burden, the quality of policies and institutions, and shocks. The study also explored the quantitative implications of the findings for the lending strategies of official creditors such as World Bank.

The authors derive three essential policy implications based on their findings:

- **First Policy implication: there is a considerable value-added in assessing the quality of policies and the severity of shocks – apart from indicators of debt burden** – when investigating the probability of debt distress of individual countries. The results from their empirical exercise clearly show that policy performance and the severity of shocks matter a lot in predicting which countries are likely to suffer debt distress.
- **Second policy implication: using a single debt threshold for all low-income countries to identify countries that are vulnerable to debt distress disregards the importance of policies and shocks.** Country-specific debt thresholds reflecting policies and shocks are more suitable.
- **Third policy implication: the risk of debt distress should be taken into account when deciding the terms and modalities of resource transfers to low-income countries** – which constitute many FCAS nations. The idea here is to ensure that resources are provided in such a way as to keep debt distress probabilities at controllable levels, while at the same time guaranteeing that aid is targeted to countries with good policies and institutions.

Study 5: Kruger and Messmacher (2004):

Brief Summary:

- Data type/scope: Annual data on 42 countries, 1970–2001
- Country list from FCAS/MENA: Included 6 MENA countries – Algeria, Morocco, Oman, Egypt, Tunisia, Jordan
- Group identifier or dummy variable for FCAS/MENA: NO

Key Determinants Identified:

- New financing needs (+)
- Current account deficit to GDP (-)
- GDP growth (-)
- Debt to exports (+)
- Growth rate of terms of trade (-)
- Long-term debt service to reserves (+)
- Export growth (-)
- Long-term debt service to GDP ratio (+)
- U.S. three-month interest rate (+)
- Short-term debt to reserves ratio (+)

Key Findings:

- The study developed a financial vulnerability indicator that is consistent with the theoretical literature on determinants of defaults. The vulnerability indicator is based on the amount of new foreign financing that is needed by a debtor country to avoid a default or an import adjustment, expressed as a proportion of the country's sources of foreign currency. As the need for new foreign financing rises, so does a country's financial vulnerability.
- **The study's financial vulnerability indicator has a higher correlation with default episodes than other indicators used in previous studies.** Furthermore, the level at which it leads to a high probability of default is comparable across countries.

- **The results of this study show that a reduction in the debt-to-GDP ratio is followed by a decline in the probability of default.** However, the authors also suggest that there is no robust relationship between a specific level of the debt-to-GDP ratio and the probability of a default – as do many of the other empirical studies.[7]

Study 6: Catão and Sutton (2002):

Brief Summary:

- Data type/scope: Annual data on 25 emerging markets, 1970–2001
- Country list from FCAS/MENA: Egypt
- Group identifier or dummy variable for FCAS/MENA: NO

Key Determinants Identified: [8]

- Terms of trade (+)
- Real interest rate on U.S. bonds (+)
- Government balance over GDP (-)
- Real effective exchange rate (+)
- Real GDP growth (-)
- Total external debt service to export (+)
- Foreign exchange reserves to debt (-)
- Volatility of fiscal policy (+)

Key Findings:

- This paper presents new econometric estimates for a panel of 25 emerging market countries over 1970-2001, separating aggregate volatility into its external and domestic policy components.
- **The study found that countries with historically higher macroeconomic volatility are more likely to default, and particularly so if part of this volatility is policy-induced.** Reducing policy volatility, therefore, appears to be instrumental to improving a country's credit standing.
- **If policy volatility stems from political volatility, the authors advise lowering political insecurity** or at least minimizing its effects on economic policy thus seem important to reducing sovereign risk.[9]
- The paper also emphasises that – the higher a country's terms-of-trade volatility or the more volatile its politics, the greater the role of economic policy will be in ensuring that "bad" shocks and related liquidity deficits do not cause a default.
- **The authors argue that some governments in developing countries (FCAS, MENA and elsewhere) have at times overexposed themselves to risks** – based on their observation of the typical behaviour of international reserves and budget balances in the run-ups to debt crises. They contend that, institutional arrangements (both national and international) that

[7] A popular approach to analysing debt sustainability is based on the intertemporal budget constraint (IBC). Given a set of macroeconomic assumptions, the debt burden is seen as sustainable if the debt-to-GDP ratio declines over time. For more on debt-sustainability issues in developing countries, see (Arnone and Presbitero, 2016 and 2007; Megersa, 2015; Serieux, 2018; Megersa and Cassimon, 2015 and 2017; Panizza, 2008; and Kraay and Nehru, 2006)

[8] Other determinants by the study also included Short-term debt, Openness, Foreign exchange control index Volatility of terms of trade, Volatility of money base coverage, and Volatility of capital control.

[9] Many emerging markets (spanning many MENA countries and some FCAS states) have advanced in this direction in recent years – for instance, by enhancing public sector transparency and enacting fiscal responsibility laws. Nevertheless, the possibility that these advances may be reversed by a future administration or during a period of difficult political transition implies that those institutional reforms still need to be further consolidated.

persuade governments to more fully internalize default costs and manage their countries' international liquidity and fiscal policies seem crucial to lessening sovereign risk.

Study 7: Detragiache and Spilimbergo (2001):

Brief Summary:

- Data type/scope: Annual data on 69 countries, 1971–98
- Country list from FCAS/MENA: Included 5 MENA countries – Algeria, Egypt, Jordan, Morocco, Sudan and some FCAS countries – such as Burundi and Congo Dem. Rep.
- Group identifier or dummy variable for FCAS/MENA: NO

Key Determinants Identified:

- Short-term debt (+)
- Concessional share of debt (-)
- Debt coming due (+)
- Multilateral share of debt (+)
- Foreign exchange reserves (-)
- Interest rates (+)
- Total debt to GDP ratio(+)
- Overvaluation (+)
- Commercial share (+)
- Openness (-)

Key Findings:

- **The study finds that less liquid countries are more likely to default on their external debt.** Specifically, for given level of total external debt, the probability of a crisis rises with the proportion of short-term debt and debt service coming due and diminishes with foreign exchange reserves.
- The study also indicates that **countries with a larger external debt and a larger share of debt towards multilateral lenders are more likely to witness a crisis and default**. The latter result likely reflects the fact that countries going through balance of payments difficulties are more likely to borrow from multilateral lenders. Countries with more overvalued exchange rates and a lesser measure of openness are also have a higher likelihood to default. However, the study reports that there remains a considerable amount of unexplained variation in the default probability.

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About this report

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