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### ***"External and internal imbalances in South Mediterranean countries: Challenges and costs"***

***Directed by: Pr. Doaa Salman  
(October University for Modern Sciences and Arts, Egypt)***

*With Contributions by:*

*Pr. Vassilis Monastiriotis, European Institute, London School of Economics, UK*

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**FEM 42-13, " External and internal imbalances in South Mediterranean countries: Challenges and costs"**



**External and internal imbalances in South Mediterranean countries: Challenges and costs\***

**Doaa Salman**

**Professor of economics and finance**

**Head of economics department – Associate Dean**

**October University for Modern Sciences and Arts, Egypt**

**[dsalman@msa.eun.eg](mailto:dsalman@msa.eun.eg)**

**Vassilis Monastiriotis**

**Associate Professor of Political Economy**

**London School of Economics, UK**

**European Institute, LSE, Houghton Street, WC2A 2AE London,**

**[v.monastiriotis@lse.ac.uk](mailto:v.monastiriotis@lse.ac.uk)**

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## Executive summary

South – MED countries are characterising by non-diversified economic structures. Some are heavily dependent on oil resources to support their economic growth and development; while others are relying disproportionately on real estate, tourism and low-value added export products. This makes them vulnerable to external economic conditions. Together with the wider geo-political situation of the region, which fuels economic uncertainty, this creates significant threats and problems, including with regard to trade deficits and the current account (external imbalances). The domestic political situation is also not conducive to economic stability. Governments in South – MED countries are rather centralised and often lack –transparent and good-quality institutions. In the economic sphere, this contributes to exacerbating budget deficits and escalating government debts (internal imbalances). In conjunction, internal and external imbalances both reflect and reinforce the inability of these economies to climb up the value-added ladder, developing more competitive products and specialisations that will help them achieve more sustainable economic growth, balanced fiscal stances and trade account surpluses.

Within this context, and largely in response to the new risks that emerged in the financial sphere, with regard to both internal and external imbalances, after the global financial crisis, government policies in the South – MED adopted – sometimes harsh – economic reform programmes as a way to stabilise their economies and manage the associated risks. Adjustment programmes, however, are socially painful and may also have adverse effects on the economy, thus increasing further the fragility of these economies and threatening a further deterioration of their external position. This raises two analytically interesting and, in policy terms, very pressing questions about, on the one hand, the extent and nature of internal and external imbalances in these countries and, on the other hand, the appropriateness of the adjustment policies that were pursued.

This study provides an extensive analysis of these issues, focusing on the case of six South – MED countries, namely Algeria, Egypt, Jordan, Lebanon, Morocco and Tunisia. It examines in detail the internal and external imbalances of these countries, over the last three decades, both descriptively (through the use of graphs) and econometrically (through time-series econometric techniques). It subsequently reviews the range of adjustment programmes, austerity policies and other macro-economic adjustment mechanisms (e.g., exchange rate policies) that were deployed in these countries to deal with the internal and external threats to stability and, by reflecting on these two lines of

research, it provides useful insights about the effectiveness and appropriateness of these policy responses in addressing the problem at hand.

Stabilising economies with significant economic disadvantages and political-institutional weaknesses – let alone upgrading their comparative and competitive advantages – is not an easy task. Fiscal, financial and economic threats often combine with and reinforce each other, while on the other hand attempted policy solutions tend to be much less synergetic. For example, implementing fiscal consolidation (e.g., in order to fix a borrowing-costs or liquidity problem holding investment back) may actually reduce investment by depressing domestic demand and/or by lowering the provision of public goods that stimulate investment (e.g., infrastructure). Similarly, market and trade liberalisation policies, which are meant to increase competition and productivity and generate positive market-size effects, can often lead to a disproportionate increase in imports, thus destabilising the current account balance and, through this, perhaps also the government’s own fiscal stance. The same adverse effect may result from policies aiming at reducing currency uncertainty (e.g., to stimulate foreign direct investment) via maintaining a fixed (or pegged) exchange rate.

In recognition of this, it has come to be established in the international literature that an important pre-condition for successful policies, for both stabilisation and development, is the existence of good-governance institutions. This is of course a big challenge for countries such as those in the South – MED, which are still undergoing a transition process from economic and political centralisation to economic and political liberalisation and have relatively young democratic-capitalist institutions and relatively weak policy-making capacities. In this context, understanding the full nature of the challenges imposed by the external and domestic environment (e.g., as reflected in the values and trajectories of aggregates related to internal and external imbalances) becomes even more important as a precondition for successful and effective policy-making. The guidance that can follow from such an analysis can allow the development of a relevant and realistic policy vision and, consequently, the design and implementation of an appropriate strategy that will try to address the identified problems and achieve the targets set by policy.

As our review of the adjustment programmes and other policy measures show, the six South – MED countries studied here did not have the ability, or perhaps the time, to take such a policy approach. Threatened by fast deteriorating external and internal imbalances, in an international environment of heightened risks and uncertainty, the countries implemented rather hastily austerity programmes which combined tax increases with significant cuts in expenditures, including in price-subsidies which – in comparative terms – seem to play a large part of government policy in these economies.

Under the direct or indirect advice of international financing institutions such as the IMF, the removal of price (and other) subsidies was considered as a positive measure seeking to remove distortions from the economy which block the economy's modernisation by lowering the returns to productive investments. However, it also had negative consequences, both distributive-social (as it hurt most those who most needed the subsidies) and economic (as it depressed domestic demand). Thus, although in most of the cases stabilisation policies (i.e., policies aiming at reducing budget and current account deficits and stabilising the exchange rate) were relatively successful, the economic structures and main fundamentals of these countries remain largely the same – and, importantly, so do the overall external vulnerability of these economies and the domestic socio-economic problems of inequality and unemployment. Notably, also the general trajectories of the aggregates underpinning the internal and external positions of these countries do not seem to have changed drastically with the implementation of the adjustment programmes.

Overall, our empirical analysis presents a picture of large and persistent external imbalances, concerning the foreign debts of all countries and the net foreign asset positions of all but one (Egypt). However, and although they are broadly rather large, current account imbalances do not appear to be uniformly unsustainable across the six countries. Non-sustainability appears to characterise the cases of Algeria and Tunisia; but for countries such as Egypt and Morocco the evidence of current-account unsustainability is mixed, while for Jordan and Lebanon current account unsustainability is econometrically rejected. More importantly, internal imbalances, in the form of budget deficits and public debt, also do not seem to be an issue of major concern for the six South – MED countries. Non-sustainability in these aggregates seems to concern only Morocco and Egypt (for the fiscal balance only), while for Algeria, Lebanon and Tunisia there is only some very limited evidence of non-sustainability. Further, the causality analysis indicates that the fiscal positions are, not only broadly sustainable, but also not a cause (in a temporal sense) of external imbalances. Rather, the causality runs in the opposite direction, specifically from current account imbalances to fiscal derailments and from net foreign assets imbalances vulnerabilities destabilising government debt in the majority of cases.

Thus, although some cases do emerge, where fiscal risks became particularly heightened immediately after the global financial crisis and fiscal policy responses were relatively successful in controlling the rising deficits and debts, on the whole the analysis of internal and external sustainability presented here does not seem to justify the attention paid by many countries in the region to fiscal consolidation. Instead, emphasis on correcting currency misalignments and addressing issues of international competitiveness, exports and foreign investment appear much more relevant in relation to the

identified threats to these economies. But in the longer term the critical set of policies concerns not so much the monetary or fiscal domain but rather the set of interventions that can be applied in the real economy, to strengthen the skills-base there and to push towards economic diversification towards higher added-value activities; as well as with regard to the legal and institutional system (addressing problems of corruption, public management inefficiencies, economic informality, etc).

## Sommaire

*Les pays du sud de la Méditerranée* se caractérisent par des structures économiques non-diversifiées. Certaines structures dépendent fortement du pétrole afin de soutenir leur croissance et développement économiques, d'autres s'appuient sur le secteur immobilier, le tourisme, et les produits à faible valeur ajoutée ce qui les rend vulnérables aux évolutions économiques. La situation géopolitique de la région, qui alimente l'incertitude économique, crée d'importantes menaces et de grands problèmes, surtout en ce qui concerne le déficit commercial et la balance courante (déséquilibres extérieurs). La situation politique intérieure dans ces pays ne favorise pas non plus la stabilité économique. Les gouvernements des pays *du sud de la Méditerranée* sont plutôt centralisés et manquent le plus souvent d'institutions transparentes et de bonne qualité. Dans le domaine économique, cet état contribue à l'aggravation du déficit budgétaire et à l'augmentation de la dette publique (déséquilibres intérieurs). D'ajouter, les déséquilibres intérieurs et extérieurs reflètent et renforcent, à la fois, l'incapacité de ces économies à monter l'échelle des valeurs ajoutées, à développer des produits et des spécialisations plus concurrentiels, ce qui les aide à atteindre une croissance économique durable, des positions budgétaires équilibrées et des balances commerciales excédentaires.

Dans ce contexte, généralement en réponse aux risques émergents dans la sphère financière, concernant, à la fois, les déséquilibres intérieurs et extérieurs, après la crise financière mondiale, les gouvernements des pays du Sud de la Méditerranée ont adopté - parfois durement – des programmes de réforme économique en tant que moyen pour stabiliser leurs économies et gérer les risques associés. Toutefois, les programmes d'ajustement sont douloureux au niveau social et peuvent avoir des conséquences négatives sur l'économie, augmentant davantage la fragilité de ces économies et les menaçant d'une nouvelle détérioration de leur position extérieure. Cela soulève deux questions intéressantes, au niveau analytique, et très pressantes au niveau de politiques : l'étendue et la nature des déséquilibres extérieurs et intérieurs dans ces pays d'une part et la pertinence des politiques d'ajustement y suivies de l'autre.

Dans la présente étude, une analyse approfondie de ces questions se focalise sur le cas de six pays du Sud de la Méditerranée à savoir l'Algérie, l'Égypte, la Jordanie, le Liban, le Maroc et la Tunisie. L'analyse, à la fois descriptive (Des graphiques) et économétrique (Techniques de l'économétrie des séries chronologiques), étudie en détails les déséquilibres intérieurs et extérieurs dans ces pays au cours des trois dernières décennies. Elle examine, par la suite, la gamme des programmes d'ajustement, les politiques d'austérité et autres mécanismes d'ajustement macroéconomique (par exemple les politiques de change) dans ces pays visant à faire face aux menaces intérieures et

extérieures à la stabilité. En réfléchissant sur ces deux axes de recherche, l'étude fournit une vision utile concernant l'efficacité et la pertinence de ces réponses politiques visant à résoudre le problème en question.

Les désavantages économiques significatifs et les faiblesses politico-institutionnelles- et encore moins la mise à niveau de leurs avantages comparatifs et compétitifs- rend la stabilisation des économies une tâche difficile. Souvent les menaces fiscales, financières et économiques se combinent et se renforcent mutuellement, tandis que les tentatives de solutions politiques ont tendance à être beaucoup moins synergiques. Par exemple, l'instauration d'un régime de consolidation fiscale (pour résoudre un problème de coûts d'emprunt ou de liquidité freinant l'investissement) peut effectivement réduire l'investissement en diminuant la demande intérieure et/ou en diminuant la fourniture des biens publics qui stimulent l'investissement (par exemple l'infrastructure). De même, les politiques de libéralisation du marché et du commerce qui visent à accroître la concurrence et la productivité et à générer des effets taille de marché positifs, peut souvent mener à une augmentation disproportionnée des importations. C'est ainsi que la balance courante et peut-être aussi la position fiscale du gouvernement sont déstabilisées. Le même effet négatif peut résulter de politiques visant à réduire l'incertitude monétaire (par exemple, pour stimuler l'investissement direct étranger) en maintenant un taux de change fixe (ou indexé).

Partant, il a été établi dans la littérature économique internationale que la bonne gouvernance est une importante condition préalable à la réussite des politiques de stabilisation et du développement. Bien entendu, c'est un grand défi pour des pays comme ceux du sud de la Méditerranée qui se transforment encore de la centralisation à la libéralisation économique et politique, et qui ont des institutions démocratiques capitalistes relativement jeunes et de faibles capacités d'élaboration des politiques. Dans ce contexte, comprendre la nature toute entière de l'environnement extérieur et intérieur (par exemple, comme reflété dans les valeurs et les trajectoires économiques liées aux déséquilibres intérieurs et extérieurs) devient encore plus une condition préalable à l'élaboration réussie et effective des politiques. Les conseils qui peuvent découler d'une telle analyse peuvent permettre l'élaboration d'une vision de politique pertinente et réaliste et par conséquent, la conception et la mise en œuvre d'une stratégie appropriée qui essaiera de résoudre les problèmes identifiés et d'atteindre les objectifs fixés par la politique.

Selon notre analyse des programmes d'ajustement et d'autres politiques, les six pays du sud de la

Méditerranée (dont le cas est étudié) n'ont pas eu la capacité ou peut-être le temps d'adopter une telle approche. Menacés par la rapide détérioration des déséquilibres intérieurs et extérieurs, dans un environnement international d'incertitude et de risques et accrus, ces pays ont mis, rapidement, en place des programmes d'austérité qui combinent augmentation de taxes avec réduction importante des dépenses, y compris les subventions qui -comparativement- semblent jouer un rôle important dans les politiques du gouvernement de ces économies. Selon les conseils directs ou indirects des institutions financière internationale comme le FMI, supprimer les subventions (sous ses différentes formes) est considéré une mesure positive visant à éliminer les distorsions de l'économie, lesquelles bloquent la modernisation de l'économie en réduisant le retour sur investissement productif. Toutefois, la suppression de la subvention a eu des conséquences négatives sur l'échelle sociale (elle affecte les nécessiteux) et économiques (elle baisse la demande intérieure). Alors que, dans la plupart des cas, les politiques de stabilisation (c'est-à-dire les politiques qui visent à réduire les déficits du budget et de la balance courante et à stabiliser le taux de change) étaient relativement réussies, les structures économiques et les fondamentaux de ces pays restent largement inchangeables, et plus considérablement, la vulnérabilité externe de ces économies et les problèmes socio-économiques internes d'inégalité ou du chômage. De même, les agrégats qui soutiennent les positions internes et externes de ces pays ne semblent pas avoir changé radicalement malgré la mise en œuvre des programmes d'ajustement.

Dans l'ensemble, notre analyse empirique donne une image des déséquilibres extérieurs importants et persistants concernant les dettes extérieures et les positions des actifs nets étrangers de tous les pays sauf un (L'Égypte). Cependant, et bien qu'ils soient globalement assez importants, les déséquilibres des balances courantes ne semblent pas être, uniformément, insoutenables dans les six pays.

La non-durabilité semble caractériser les cas de l'Algérie et de la Tunisie ; mais pour l'Égypte et le Maroc, les preuves de l'insoutenabilité de balance courante sont mitigées, alors que pour la Jordanie et le Liban, l'insoutenabilité de balance courante est économiquement rejetée. Mais surtout, les déséquilibres internes, sous forme de déficits budgétaires et de dette publique, ne semblent pas non plus être une préoccupation majeure pour les six pays du sud de la Méditerranée. La non-durabilité dans ces agrégats semble concerner uniquement le Maroc et l'Égypte (pour la balance budgétaire seulement), tandis que pour l'Algérie, le Liban et la Tunisie, les preuves de non-durabilité sont très limitées. Par ailleurs, l'analyse causale indique que les positions budgétaires sont non seulement durables dans un sens global, mais ne sont pas non plus une cause (de façon temporelle) des déséquilibres extérieurs.

La causalité va plutôt dans le sens inverse, en particulier des déséquilibres de balance courante aux déraillements budgétaires et des déséquilibres des actifs nets étrangers, aux vulnérabilités qui

déstabilisent la dette publique dans la majorité des cas.

Ainsi, bien que certains cas émergent, où les risques budgétaires se sont, particulièrement, accentués juste après la crise financière mondiale et où la politique budgétaire a relativement bien réussi à contrôler les déficits et les dettes élevés. Globalement, l'analyse de la soutenabilité intérieure et extérieure, ici présentée, ne semble pas justifier l'attention que porte nombreux pays de la région à l'assainissement budgétaire. Mettre, plutôt, l'accent sur la correction des mésalignements de taux de change et s'occuper des questions de la compétitivité internationale, d'exportation et d'investissement étranger semblent être beaucoup plus pertinent par rapport aux menaces identifiées pour ces économies. Mais sur le long terme, l'ensemble critique de politiques ne concerne pas tant le domaine monétaire que budgétaire, mais plutôt l'ensemble des interventions qui peuvent être appliquées dans l'économie réelle, dans le but de renforcer les compétences de base et promouvoir la diversification économique vers des activités à forte valeur ajoutée ; ainsi qu'en ce qui concerne le système juridique et institutionnel (résoudre les problèmes de corruption, d'inefficacité de la gestion publique, d'informalité économique, etc...)

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Dr. Doaa Salman

*October University for Modern Sciences and Arts, Egypt*

Dr. Vassilis Monastiriotis

European Institute, London School of Economics, United Kingdom

### **Abstract**

This study provides a detailed analysis of the set of challenges that are affecting the stability and sustainability of internal and external (im) balances of South Mediterranean countries. It aims to do so, by exploring a number of inter linked questions, as follows: (a) what are the internal and external imbalances facing the South-MED countries, how large and persistent are they? (b) Are these imbalances sustainable in the long run and are they interlinked? (c) How have the South-MED countries tried to deal with these imbalances (e.g., through fiscal consolidation or through exchange rate adjustments), what policies (including austerity) were implemented? and, (d) do the policies that have been implemented appear to be appropriate in relation to the picture revealed from the previous questions concerning the nature and urgency of those countries' internal and external imbalances – in other words, were these policies necessary and do they make sense in relation to the external positions of these countries? Despite the obvious extensions that these questions may have with regard to wider social and economic issues (fairness, inequality, poverty), in this study we do not concern ourselves with the distributional consequences of fiscal consolidation and macroeconomic stabilization policies or with the political and discursive dimension of the issue. Instead, our focus is on the measurement/identification of external imbalances and the review and evaluation of the policies implemented in response to these in the recent context brought about by the Global Financial Crisis and the Arab Spring. To achieve these tasks, the study uses a combination of macro-econometric techniques (for the analysis of imbalances and sustainability) and document analysis (for the examination of the austerity and macroeconomic adjustment measures). Applied to a sample of six South-MED countries (Algeria, Egypt, Jordan, Lebanon, Morocco and Tunisia), the results show clear evidence of unsustainable foreign debt and net foreign assets positions (except for Egypt) but less systematic/universal evidence of non-sustainability in other aggregates (including budgetary and fiscal imbalances). Although policy-makers seem to have been effective in their diagnosis of this (i.e., correctly identifying problems with external than internal imbalances), the policy responses weighed disproportionately on the fiscal side, in some ways intensifying rather than resolving the identified problems, as they contributed to dampening domestic demand and investment.

## 1. Introduction

South-MED countries are still reeling from sporadic economic and political uncertainty. External and internal imbalances imposed by, and intertwined with, current political, demographic and social challenges, urge for targeted policies aiming at achieving sustainability. The importance of this has been made particularly visible following the economic turbulence that engulfed parts of the north Mediterranean after the Global Financial Crisis. Current account imbalances, as well as imbalances in net foreign asset positions, have been shown to be among the main channels through which economic and fiscal crises emerge. In the South-MED countries, such imbalances can be argued to create additional challenges, increasing the uncertainty of the transition steps, especially in light of the growing socio-economic problems and political instability after the Arab spring. Even prior to the Arab spring, the debt crisis that engulfed the Eurozone and the recessionary environment that ensued in the North Mediterranean presented a significant challenge for the countries of the South-MED. In the light of the signing of the Euro – Mediterranean Free Trade Agreements, the Eurozone crisis resulted in negative spillover effects on the South-MED, manifesting themselves in subsiding real GDP growth rates, declining trade and foreign direct investment inflows, and imported instability through the exchange rate channel. In this challenging environment, the Arab spring created additional challenges that intensified existing uncertainties concerning the transition steps of the South-MED, bringing to the front the fragility of the economies in the region, their political instability and the escalating socio-economic problems.

In recent years, South-MED countries suffered from multiple external and internal shocks that reveal gaps between revenues and spending and significant capital outflows. In turn, these have generated pressures on both the exchange rates and foreign reserves of these countries. Notably, South-MED countries were affected negatively from weak Eurozone growth rates (from 3.1 percent before the financial crisis to 2.1 percent in 2011 and 1.4 percent in 2014 – World Bank, 2016), with their gross public debt position deteriorating notably, at least in the majority of countries. As is well known, high levels of indebtedness create fiscal pressures, not only with regard to debt financing, but also more broadly, as they necessitate fiscal consolidation measures which inevitably hit on public expenditures and taxation. Additionally, external indebtedness often leads to currency depreciation and thus also to inflationary pressures domestically which in turn lead to real-terms increases in the level of external debt putting foreign-currency reserves under pressure.

Within this context, the significant changes that encompassed the region since 2010 (the ‘Arab spring’) obtain a different salience. Although to different degrees and in different qualities, political destabilization and economic turmoil characterized in one form or another all countries in the South-

Mediterranean region, as they entered a phase of difficult and uncertain transition. In some cases, this took the extreme form of violent conflict and state collapse (Libya, Syria). In others, changes have been less dramatic, although still the emerging new (or reformed) governments have struggled to find a balance between authoritarianism and economic efficiency (what in EU language is referred to as ‘effective and democratic government’) and between managing bottom-up pressures for reform and societal challenges from political and religious radicalization. In all cases, these changes, uncertainties and challenges, manifested to different degrees in social unrest, political crises and security tensions, affected negatively economic performance both domestic and for the region as a whole. This comes to add to already known problems of development and economic governance in the context of emerging or developing economies – such as high population growth rates, low levels of human capital, poor infrastructure, low private savings and investment, and low quality of governance (World Bank, 1994) – which are also very much present in the region.

Acknowledging this context, the present study is concerned with two broad sets of questions. First, what are the pressures and threats exerted by the external and macro-economic environment of the countries under study and how critical they are for the macroeconomic sustainability of their economies? Second, what are the policy responses to such pressures in terms of fiscal adjustment / austerity policies and how are their consequences mitigated (if at all) through wider social policy measures? To address these questions, the study focuses on a sub-set of the South-MED countries, namely Algeria, Egypt, Jordan, Lebanon, Morocco and Tunisia – which will henceforth be referred to as MENA-6. The study is organised as follows: the next section offers a concise review of relevant literature, which covers both key theoretical concerns from the literature and empirical studies focusing on the region. Following, in section 3 we offer an overview of macroeconomic (fiscal and external) trends in the MENA-6, using up-to-date data that we have collected and cross-validated from a range of sources, specifically for the purposes of this project. Section 4 presents the results of our detailed econometric examination of the sustainability of fiscal and external imbalances in each of the countries under study and discusses the implications and meaning of the obtained results. It further presents an analysis of the temporal-causal link between fiscal and external imbalances, aiming at identifying whether the drivers of overall macroeconomic imbalances have predominantly to do with internal (e.g., fiscal policy) or external (e.g., current account balance) variables. Building on this, in section five we engage in a critical discussion of the major directions of fiscal adjustment programs and structural economic policies implemented in the six MENA countries to tackle these imbalances; and, geared with our econometric results, we offer a critical evaluation of the appropriateness of such policies. The last section concludes with some implications for policy and a set of wider questions for further research.

## 2. Theoretical Framework and Empirical Literature Review

There is a large and varied literature on internal and external imbalances, concerning both questions of policy and more analytical questions that have to do with macroeconomic sustainability and performance. In our review of literature, we focus on two specific streams: first, studies on public debt and budget deficits (internal sustainability); and second, studies on current account (and foreign debt) risks (external sustainability).

### *2.1 Studies on public debt and deficits – internal sustainability<sup>1</sup>*

#### *Drivers of indebtedness*

Public deficits accrue when government spending exceeds government revenues. When these occur continuously, they accumulate year on year creating higher public debt. Reasons for such debt accumulation are not only economic. It is often observed that party-political considerations drive governments to lax fiscal policies during election periods thus leading, over many election cycles, to ballooning the public debt – although in the academic literature the weight of evidence on this issue is on the whole not fully conclusive (Alesina and Paradisi, 2016). Separately, debt accumulation, or deterioration, may occur suddenly as an ‘irrational’ (i.e., based on cognitive biases or ‘mood swings’) response by markets to small changes in economic, political or institutional parameters (Eichengreen and Mody, 1998; Turner, 2017). Economic reasons, however, play a key role in the dynamics of debt. This includes not only key economic fundamentals (e.g., levels of productivity, export orientation, international competitiveness, sectoral specialisations, levels of development, etc), but also secular dynamics in real economic aggregates (such as external borrowing by the private sector and households, or low productivity growth), developments in nominal aggregates (such as exchange rate depreciation, high interest rates and persistent inflation) and the cyclical behaviour of the economy (e.g., episodes of high unemployment and low growth). Weaknesses in competitiveness create conditions for heightened external borrowing; external borrowing creates a gap between revenues and expenditures domestically, putting pressures for public borrowing; with high public borrowing, any deterioration of nominal aggregates increases the cost of debt refinancing thus contributing to its accumulation; while cyclical downturns also create a gap between revenues, which decline in downturns, and expenditures (e.g., for unemployment benefits), which increase during downturns.

Besides debts, budget deficits can also have detrimental effects in an economy. As summarized by Kustepeli and Onel (2005), these can be through a number of factors, including shifts in economic behaviour due to expectations, e.g., about future tax/revenue policies; shifts in monetary policy, as

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<sup>1</sup> Our review here follows Baldacci et al (2012).

authorities may have to adjust to currency and liquidity pressures (which again may influence economic behaviour especially with regard to speculation in financial markets); and direct pressures on public finances that have to do with the refinancing of the accumulated debt. Such shifts may also have cumulative effects as they will affect the investment and savings decisions of economic agents, thus affecting also the government's ability to borrow domestically (and thus in its own currency) and the extent of economic activity (and thus also the tax-base) in the country.

On the whole, internal imbalances and threats to debt sustainability are linked to deterioration in primary fiscal balances, interest rate growth, sudden changes in asset-liabilities valuation (including due to exchange-rate depreciation), weaknesses in productivity growth, as well as to business and political cycles.

#### *Implications of indebtedness (on the economy)*

The existence of internal imbalances (public debts and budget deficits) is not necessarily a problem, barring episodes of hyperinflation and 'sudden stops' in financial markets. Although fiscal policy is naturally constrained by the requirements of expenditure and debt-refinancing, as has been argued extensively (see, inter alia, Quintos, 1995; Bohn, 2005), any pattern of deficit can be sustainable as long as the government is able to access liquidity in the financial markets uninterrupted and at reasonable costs. More technically, it can be shown that "*consistency requires that fiscal policy variables satisfy both a period-by-period or flow budget constraint and an intertemporal or solvency budget constraint. The first is always satisfied when the variables are correctly defined, while the second one is only fulfilled when the decisions of all the agents in the economy are mutually consistent*" (Marin, 2002, pp. 7). A more comprehensive definition of sustainability has been offered by Bohn (2005): "*A fiscal policy satisfies ad hoc sustainability, if it is on a trajectory such that the expected present value of future primary surpluses equals the initial debt*" (Bohn, 2005, pp. 7). In this regard, the government balances its budget inter-temporally by setting the current market value of debt equal to the discounted sum of expected future surpluses.

That noted, excessive public debts and budget deficits face the real constraint of refinancing and this may have important consequences for overall economic performance. A growing – although somewhat contested – literature exists showing that levels of debt, as a share of GDP, beyond a specific threshold lead to adverse developments with regard to growth and often to open economic crises. This is reflected most famously in the work of Reinhart and Rogoff (2009 and 2010) who, using long-history data for a large collection of countries, have showed statistically significant differences in median growth rates for low- (below 30 percent of GDP) and high-debt countries (above 90 percent of GDP). The authors concluded that higher public and external debts as percentage

of GDP are associated with reduced economic growth, a result which applies to both advanced and emerging economies (Reinhart and Rogoff, 2010). A similar message was offered earlier by Mendoza and Ostry (2008), who found that debt-to-GDP ratios above 50-60percent tend to produce negative growth effects; while Baum et al. (2013) reported a negative growth, effect picking up around the 70 percent threshold, with much of the effect operating via long-term interest rates. Thus, for this literature, ‘extreme’ values of debt – and, by implication, persistent deficits – not only threaten a government’s solvency (debt sustainability) but they do so cumulatively, by negatively affecting the growth potential and trajectory of the economy.

The explanation for such negative growth effects comes from a simple intertemporal reasoning and operating largely through the interest rate and/or savings: excess(ive) government borrowing tends to drive up interest rates thus decreasing private capital (investment). In this view, national debt is a burden on future generations as it impacts on long-term interest rates. Inversely, however, it is possible that the burden of national (public) debt may be offset – in part or in total – if debt finances government expenditure which successfully raises productivity, productive capacity and future incomes (in real terms) – as was noted already in the 1960s (see, inter alia, Modigliani, 1961). To a large extent, whether such an effect will prevail depends on the ability of public expenditure to generate positive multiplier effects which, in turn, in economic models, depends on the short-sightedness of market agents (e.g., money illusion) and the extent of leaks from the domestic economy (e.g., a higher propensity to import than to export). The conventional view implies that large and sustained budget deficits deeply affect savings, exchange rates and capital formation and, through this, also equilibrium employment and levels of income (including growth) as well as relative factor prices and the distribution of income within countries.

The ambiguous effect of debt on economic growth is to a large extent related to the diverse channels that stimulate growth. Mengisa and Pattillo (2004) have argued that the growth effects of public debt may be more directly related to (weaknesses with regard to) total factor productivity and the efficiency of investments, rather than to the level of debt per se. However, the negative growth effects of excessive public debt typically persist in empirical studies even after controlling for the rate of investment. Thus, it remains the case that higher public debts will tend to reduce potential economic growth. As noted earlier, this effect can be cumulative as high deficits require future borrowing in order to deal with interest payments associated to current loans/bonds.

*The link between public debt and external imbalances*

The above discussion has already highlighted that a close link exists between public debt and external imbalances. A standard model in international economics, the Mundell-Felming model, posits that fiscal deficits lead to current account imbalances by either stimulated income growth (under a sufficiently high marginal propensity to import) in a fixed exchange rate scenario or exchange rate appreciation (and thus lowering of exports) in a flexible exchange rate regime. With regard to the former (fixed exchange rates), note that increases in disposable income resulting from expansionary fiscal policies will tend to increase the purchasing power of consumers. Increased consumption expenditure will in turn lead to a deterioration of the trade (and current account) balance, as previously exported products may be shifted towards domestic demand and, more importantly, some of the increased domestic demand will be satisfied by imports. With regard to the latter case (flexible exchange rate regime), a deficit financed by expansionary fiscal policy will affect the trade balance via increasing the interest rate which in turn will cause the domestic currency to appreciate – so that exports will become more expensive and imports will become cheaper.<sup>2</sup> In addition, higher interest rates will tend to crowd out private investment, with further effects to output and growth, thus creating further downward pressures on exports.

These mechanisms illustrate the essence of the so-called ‘twin deficit’ problem, which is based on the positive co-movement between fiscal and external deficits. It is in this spirit that contemporary economic models<sup>3</sup> propose concertation, rather than a pure ‘division of labour’, between monetary and fiscal policy. The aim is for both policies to align in a way that achieves an appropriate policy mix which tries to keep both internal and external imbalances under control simultaneously – by fine-tuning the main policy instrument for external imbalances (monetary policy) with the main policy instrument for internal imbalances (fiscal policy). This claim has been strengthened with the Eurozone crisis, which dismissed the idea, infamously proposed in the early years of the Euro (Blanchard and Giavazzi, 2002), that current account deficits need not lead to cumulative pressures on fiscal positions, at least in the context of economic integration and accelerated capital mobility.

The counter-argument to this comes from the theory of Ricardian equivalence. In the simplest form of this theory, there is no positive co-movement between the two aggregates (fiscal and current account deficits) due to the fact that economic agents, who are assumed to be rational and fully-informed, will not raise their consumption in response to a current-period fiscal expansion, as they will fully anticipate that the government will increase taxes in the future to pay back for the cost of current-

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<sup>2</sup> See Afonso and Rault (2008) for some extensive empirical evidence for this.

<sup>3</sup> But see the origins of this as early as in Mundell (1962).

period borrowing.<sup>4</sup> Despite its appeal, especially in the 1980s and 1990s, this ‘Ricardian’ view has become more marginal recently, especially after the Global Financial Crisis but also with the rise of behavioural economics, which have challenged both empirically and analytically the assumption of perfectly-informed and forward-looking intertemporal utility-maximising individuals.<sup>5</sup>

### *Indebtedness and fiscal adjustment*

It has been a widely held view, at least until recently, that governments in both advanced and emerging economies can achieve debt sustainability through austerity measures, exercising restraint in spending (especially that, as tax rises are generally considered distortionary and thus efficiency-reducing). This was based on the view that, while fiscal consolidation inevitably would help reduce the level of the deficit (and debt); the cost in terms of economic growth would not be sufficiently large so as to render the fiscal consolidation effort ineffective.<sup>6</sup> Indeed, a large number of countries, both advanced and less developed, have in the recent past resorted to fiscal consolidation – especially with the Eurozone crisis – which at least until recently has been favored over other possible measures aiming at restoring debt sustainability (such as debt restructuring, inflation / debt monetization, and capital controls), which had been more common historically (Reinhart and Rogoff, 2013).

The literature on the expansionary effects of fiscal consolidation goes back to 1976, the year Robert Barro published his seminal article on Ricardian Equivalence; and received further support by the seminal contribution of Sargent and Wallace (1987) on the coordination of fiscal and monetary policy. The experience of countries such as Denmark and Ireland, both of which implemented very strict fiscal consolidation programmes in the 1980s but at the same time experienced an acceleration of economic growth, also served to strengthen the prevalence of, and policy-attention received by, this view. The view that fiscal consolidation can stimulate growth is of course in direct contrast to the Keynesian view of the economy and in particular the notion of the ‘multiplier’ effect. Thus, whether fiscal imbalances – and especially excessive debts – can be addressed by means of fiscal adjustment (consolidation) became an issue not only of empirical concern but also of a heated theoretical debate.

Alesina and Ardagna (2009) studied 107 large fiscal adjustments programmes in 21 OECD member-countries from 1970 to 2007. Their analysis revealed that a common characteristic in successful cases of fiscal consolidations was that they weighed heavily on the side of curbing public expenditures. A similar result was found by Biggs et al. (2010), who found that in episodes of successful fiscal

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<sup>4</sup> Note that, at the extreme, this implies that the very composition of the public budget (i.e., the composition of revenues and expenditures, for any given level of deficit) has no effect on monetary (real interest rates and the exchange rate) or real aggregates (aggregate demand, consumption) and thus also no effect on the current account.

<sup>5</sup> For an early empirical rejection of the Ricardian Equivalence hypothesis see Blanchard (1985).

<sup>6</sup> Essentially this requires that the absolute gain in terms of the rate of debt reduction (in money terms) is larger than the difference between the growth and interest rate of the economy (Monastiriotes, 2014).

consolidations the balance between expenditure cuts and tax/revenue increases was 85percent-15percent; whereas in unsuccessful programmes the balance was 47percent for expenditures to 53percent for revenue increases. The fiscal consolidation effects in the short-term were also examined by Devries et al. (2011) in a sample of OECD economies, who found that certain changes in fiscal policy can reduce the budget deficit without a negative effect on growth. This literature started drawing attention to the issue of fiscal policy mix as key ingredient for successful fiscal adjustments (Iltzetki et al., 2011; Baldacci et al, 2011). Fiscal consolidations that relied heavily on taxation reduced economic efficiency, increased the cost of capital (and of investment) and, through this, had a negative ‘market confidence’ effect – they thus tended to be associated with longer recessions. Instead, fiscal consolidations that relied more on expenditure cuts, were often linked to increased efficiency (as cuts were targeted where there was slack) and had a positive ‘market confidence’ effect (as expenditure cuts signaled a stronger commitment by governments) – and thus tended to have swifter recoveries. The policy advice emerging from this literature is, in result, one that favours wage moderation, ‘rationalisation’ of the benefits system and privatization, on the one hand; and public-sector rationalization (downsizing and efficiency gains) and supply-side structural reforms (in the labour market and elsewhere) on the other.

The crisis has of course illustrated that fiscal consolidations do not always work – and they can be in fact devastatingly recessionary. Since, a sizeable literature emerged that argues against austerity, reinvigorating the arguments of the Keynesian tradition (especially regarding the multiplier) and dismissing the predictions of the Ricardian Equivalence hypothesis (see, inter alia, Arestis and Pelagidis, 2010; Boyer et al, 2012; Holland and Portes, 2012; Krugman, 2013; and others), but also extending outside economics (e.g., Blyth, 2013). However, the majority of the literature has concentrated instead in examining closer the specific conditions and country circumstances that make some fiscal consolidations more successful than others – in ways extending well beyond the issue of composition discuss above. This includes factors such as whether the external environment is recessionary or not (Auerbach and Gorodnichenko, 2013), whether monetary policy is constrained (e.g., within a monetary union or with a currency board - Christiano et al, 2011; or with near-zero interest rates - Corsetti et al, 2012), the liquidity conditions (and extent of domestic savings) (Eggertsson and Krugman, 2012), as well as more structural factors such as the export capacity of a country and the quality of its institutions (Monastiriotis, 2014). In this respect, the issue has shifted from *whether* fiscal consolidations can address issues of domestic indebtedness to *how* can fiscal consolidations help achieve this.

## ***2.2 Current account (and foreign debt) risks – external sustainability***

Like for the case of internal imbalances, the literature on external imbalances is quite diverse. More so than in the case of internal imbalances, however, in the case of external imbalances there seems to be a historical dimension to economists’ views on how critical these may be for economic performance and for the sustainability of public finances. Standard theory predicts that current account deficits entail risks, unless they are used to support capital expansion and productivity growth in economies with low levels of development (low capital-labour ratios). Traditionally, however, current account deficits in excess of circa 4percent of GDP have been viewed as a potential risk signal, in the sense that they create balance-of-payments pressures that need to be financed by increased borrowing (either private or public) or significant capital inflows. However, economists’ views on this have evolved over time, in part due to lessons learned – or observations made – from different currency and balance-of-payment crises. Following the 1994 crisis in Mexico, the orthodoxy seemed to start placing more emphasis on the role of domestic savings and fiscal balances – both of which can help countries overcome the pressures accruing from external imbalances. Following the East Asian crisis of 1997, attention shifted even further to include, in addition to the role of domestic savings, the role of allocation. Specifically, attention shifted to the role of investment – both quantitatively (in the sense of public expenditures supporting investment over consumption) and qualitatively (in the sense of investments targeting high-return but sunk, rather than speculative and footloose, investments). With the Global Financial Crisis that erupted in 2007, attitudes towards external imbalances changed quite dramatically, with much more caution exercised on the extent of current account deficits, which eventually came to be considered as a permanent risk factor, almost irrespective of a country’s short-term fiscal position, its level of domestic savings, or its investment profile and capital-labour ratios.<sup>7</sup>

Despite these historical shifts of perspective, external imbalances (large current accounts deficits and external debts) have been empirically shown to have potential deleterious effects on both real economic aggregates (e.g., GDP growth) and on public finances. For example, it has been shown that aggressive trade openness often leads to increasing current account deficits which in turn put pressures on government tax revenues and, in the absence of an efficient tax system and appropriate tax reforms, can fuel budget deficits and worsen the debt position of a country (Lan, 2000). The specific and idiosyncratic role played by country-specific factors in this ‘transmission’ effect, from current account imbalances to fiscal imbalances and public debt, has also been documented empirically for large cross sections of countries, both developing (Chinn et al, 2000) and developed (Afonso and Rault, 2008). Concerning the growth effects, the literature has concentrated more on the external debt positions. Early studies on the topic have found a direct negative effect of external debts

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<sup>7</sup> This account is based on Frankel and Saravelos (2012).

on growth (see, *inter alia*, Smyth and Hsing, 1995, and Cohen, 1997). More recent studies have examined the linearity of the underlying relationship, finding that above a threshold level of external debt further increases in this are associated with lower rates of growth – similar to what was discussed earlier for the case of public debt – with estimates for this threshold ranging between 20-40 percent of domestic GDP (Pattillo et al, 2002; Nguyen et al, 2003).

Current account imbalances tend to be larger, more persistent and more frequent in developing and emerging economies – where they also entail more risk (Yelden, 2002). This is because some of the determinants of external imbalances, both in the sense of current account deficits and in the sense of excessive external debts, are structural and related more to economic fundamentals than simply to current indicators of economic performance. Thus, the level of economic – and especially industrial – development appears to be an important factor – as it relates both to the type and volume of exports of a country as well as the value-added contained in its exports (Calderon et al, 2002; Zamanek et al, 2010). The same can be said for purely institutional factors, including the quality of government, the level of corruption, etc. Despite this, current account and external indebtedness problems characterize also many advanced economies – including, historically, the USA (Bachman, 1992). The determinants of these are again much linked to country-specificities. However, some common patterns and specific economic performance factors have been identified in the literature. These include low savings and investment rates, very open net foreign assets positions and large shares of the public sector (weak private sectors) (Gehring, 2013).<sup>8</sup> They also include the size of the economy (GDP) and its level of development (GDP per capita), as well as short-term fluctuations and long-term trajectories of the exchange rate (Bollano, 2015).

Irrespective, however, of the determinants and country-specificities of external imbalances, the international literature leaves rather little doubt that external imbalances, and in particular current account deficits, are systemically linked with fiscal imbalances domestically (budget deficits and public debt) and with the accumulation of external debt. This is especially so if current account imbalances reflect real exchange rate misalignments: in such a case, external imbalances are harder to adjust to and put even more pressures on public finances domestically. In this context, countries with large external imbalances – relative to their economic size – are put in significant risk of sovereign default (e.g., due to ‘sudden stops’ in financial capital flows – capital reversals – or due to otherwise small changes in international prices). This means that, for such countries, the policy effort required is not only larger but also it has to be executed in a much riskier context. Thus, irrespective of whether a full-out crisis occurs, typically countries with large current account deficits and external debts, like

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<sup>8</sup> This link between savings, investment and net foreign assets alludes also to the so-called Feldstein-Horioka puzzle, which shows that low domestic savings are not automatically compensated by international investment movements. For a recent discussion of this see Khan (2017).

their over-indebted counterparts, are forced to implement austerity and fiscal consolidation policies, often proactively.

How this has played out recently in the North Mediterranean is well known. In countries like Greece, and to a lesser extent Spain, Cyprus and others, the sudden reversal of private capital flows led to fast increasing deficits, triggering or threatening sovereign defaults and creating at the end contagion effects throughout the EU. In response, significant institutional innovation occurred within a relatively short period of time. While some of the new institutions had a longer-term perspective on economic governance and the functioning of markets (e.g., Fiscal Compact, Banking Union), others had much greater immediacy and attention to maintaining sustainability in the ailing countries. This includes, among others, the Greek loan facility and bailout agreements and the establishment of the EFSF (European Financial Stability Facility) and the EFSM (European Financial Stability Mechanism) – all of which were established with coordinated international effort, including by supranational institutions (European Commission, IMF, European Central Bank). Through these, the northern Mediterranean region was able to maintain the necessary liquidity during the period of extensive – and, admittedly, very painful – adjustment. In the South Mediterranean, such facilities and instruments were not available. Development Banks and International Financing Institutions (EBRD, World Bank, IMF, etc) did take measures to offer protection from the crisis and its transmission mechanisms, but these were nowhere near the scale seen in Southern Europe. Thus, the countries of the South Mediterranean found themselves in some ways more exposed to the challenges of the Global Financial Crisis – and, later, the Eurozone crisis – and continued to experience a deterioration of their external and internal positions for longer – and, still, to date. In this context, and in the absence of large-scale financial and political support externally, the countries were slower, and found it more difficult, to implement deep economic reforms to restructure their economies. Fiscal consolidation programmes, also aiming at improving the external imbalances, were put in place in most countries. But the effectiveness of these is still an open matter for discussion.

### ***2.3 Empirical studies on external sustainability***

To conclude our review of the literature, we present in this sub-section a brief review of studies in the international and South-MED literature concerning the examination of the sustainability of external imbalances. The international literature on the topic is very large and rather diverse, ranging from policy studies that examine, often descriptively, the temporal trajectories of relevant aggregates (e.g., current account deficits) to academic studies which use often highly advanced and complex econometric techniques. Interestingly, the definition of sustainability in these two broad streams is

very different (for a discussion of this, see Monastiriotis and Tunali, 2016). A generally accessible definition of sustainability is that deficits, of any type, do not increase over time (see on this Easterly et al, 1994). In a more technical language, Frenkel and Razin (1996) defined sustainability as a policy stance whose "continuation in the infinite future does not violate solvency (budget) constraints"; while Bohn (2005) defined sustainability as being "on a trajectory such that the expected present value of future primary surpluses equals the initial debt". As the time-series econometrics literature advanced, this notion of sustainability also evolved in parallel with the evolution of the notion of stationarity in time series. The central claim, however, remains essentially the same: sustainable is a deficit which does not follow an exploding trajectory over time. For policy, however, sustainability has a very different meaning. As we noted previously, in policy terms any level of deficit can be sustainable as long as the government is able to access liquidity in the financial markets uninterruptedly and at reasonable costs. Thus, for policy, sustainability is more directly linked to country risks and the external environment (market confidence, international economic conjunction) that to either the *level* or the *trend* of the aggregate under question.

**Table 1. Survey in previous studies examined Sustainability**

No	Author	Country	Time period	Type of analysis	Methodology	Main results
1.	Baglioni and Cherubini (1993)	Italy	1979-1991	Time series	Cointegration tests	Unsustainable
2.	Caporale (1995)	10 EU countries	1960-1991	Time series	Stationarity tests for deficit and debt	Mixed results
3.	Fountas and Wu - 1996	Greece	1958-1992	Time series	Cointegration tests between spending and revenues with breaks	Unsustainable
4.	Payne (1997)	G-7 countries	1949-1994	Time series	Cointegration tests between spending and revenues	Mixed results
5.	Artis and Marcellino-1998`	E.M.U	1963-1994	Time series	Stationarity tests for debt	Mixed results
6.	Papadopoulos and Sidiropoulos (1999)	5 EU countries	1961-1975	Time series	Cointegration tests between spending and revenues	Mixed results
7.	Makrydakis (1999)	Greece	1958-1995	Time series	Cointegration tests between spending and revenues with breaks	Unsustainable
8.	Afonso (2000)	E.M.U	1968-1997	Time series	Stationarity tests for debt, Cointegration tests between spending and revenues	Mixed results
9.	Cippolini (2001)	U.K.	1963-1997	Time series	Cointegration tests between spending and revenues with breaks	Sustainable
10.	Green et al. (2001)	Poland	1989-1997	Time series	Stationarity tests, Cointegration tests	Sustainable
11.	Bravo and Silvestre -2002	11 EU countries	1960-2000	Time series	Cointegration tests between spending and revenues	Mixed results
12.	Hatemi-J (2002)	Sweden	1963-2000	Time series	Stationarity and Cointegration tests between spending and revenues	Sustainable
13.	De Castro et al. 2004	Spain	1964-1998	Time series	Cointegration tests between debt and deficits with breaks	Sustainable
14.	Bajo-Rubio et al. (2004)	Spain	1964-2001	Time series	Stationarity tests, Cointegration tests	Unsustainable
15.	Radulesku (2003)	Roumania	1992-1999	Time series	Cointegrating tests	Unsustainable
16.	Ehrhart and Llorca (2008)	Six South MED countries	1978-1999	Panel data	Stationarity and Cointegration tests	Sustainable
17.	EL-Mahdy (2009)	Egypt	1981-2006	Time series	Stationarity and Cointegration tests, public debt	Sustainable
18.	Neaime (2010)	MENA Countries	1970-2013	Time series	Stationarity tests, public debt and exchange rate	Mixed results
19.	Neaime (2015)	Lebanon	1970-2013	Time series	Stationarity tests, public debt , exchange rate , current account and gov. debt	Unsustainable
20.	Brady et al. (2017)	Italy	1947-2013	Time series	Stationarity tests show that public debt	Unsustainable

With this clarification, we present in Table 1 a list of some indicative studies that have examined the issue of sustainability following the econometric definition of the concept.<sup>9</sup> The Table gives not only bibliographic details (name of author, year of publication, etc), but also details about the analysis implemented (tested period, type of analysis, sample of countries tested, main conclusion). As can be seen, in the econometric literature of sustainability there is no single conclusion that can be drawn: some studies find evidence of sustainability; some find evidence against sustainability; while some others obtain mixed results.

As can be inferred from the Table, variability in these studies does not concern only the direction of the obtained results. Studies differ on whether they examine the issue for individual countries or in a panel setting. More importantly, studies differ in the types of tests they apply to test for sustainability: from simple stationarity tests to cointegration analysis and error correction models; and from simple linear tests (e.g., Augmented Dickey-Fuller) to ones that allow for non-linearities (e.g., the so-called KSS test) and one or more, exogenously determined or endogenously estimated, structural breaks.<sup>10</sup>

A broadly similar observation can be made for the studies in the literature that examine the issue of internal and external imbalances and sustainability for the six MENA countries which are the focus of this study. Studies employ different tests and focus on different variables or aspects/definitions of sustainability, often arriving at disparate results. Despite this, some general patterns about the six MENA countries can be derived from the recent literature on the topic, which show significant variations across countries. Starting with the issue of fiscal sustainability, Neaime (2010) has provided evidence of strong sustainability in Tunisia, which he associated to the fiscal restraint policies there, but only weak evidence of fiscal sustainability in Egypt – while the results for Morocco and Jordan were either mixed or pointing towards non-sustainability. The finding of strong fiscal sustainability in Tunisia was more recently confirmed by Ahmad et al (2015), who also found however, evidence of non-sustainability for Egypt and Morocco. For the case of Lebanon, Neaime (2015) has also found evidence of non-sustainability, both for the fiscal budget (deficit) and for government debt. The same conclusion was also reached for the case of external sustainability for Lebanon, by the same study, as both the current account and the foreign debt did not appear to be statistically sustainable (stationary). Similarly, the analysis by Ahmad et al (2015) for Tunisia, Egypt and Morocco also found evidence in favour of external (current account) sustainability for Tunisia and of non-sustainability for Egypt and Morocco. In a study examining a different form of vulnerability, for the case of Algeria, Guechari (2012) found evidence showing that the real effective

<sup>9</sup> Table 1 has been adapted from Brady and Magazzino (2017).

<sup>10</sup> We do not discuss further the technical details of this literature in this report. The interest reader is directed to the excellent review by Monastiriotis and Tunali (2016).

exchange rate (REER) impacts on the trade balance (with appreciations linked to higher trade deficits) and thus that changes in international prices and the price of key commodities such as oil have the potential to transmit instability into the current account. Last, concerning the link between internal and external sustainability, the results are again mixed. Neaime (2015) examined this for the case of Lebanon, finding that internal imbalances ‘cause’ external imbalances (i.e., from the budget deficit to the current account). In contrast, two other studies have found mostly evidence in favour of the ‘twin-deficit’ hypothesis (two-way causality): this was the case for Algeria (possibly linked to oil exports) and Egypt in the study of Eldemerdash et al (2014) and again for Egypt and Morocco in the study of Ahmad et al (2015). Both studies, however, found evidence consistent with Ricardian Equivalence for the case of Tunisia (and, in the case of Eldemerdash et al, 2014, also for Jordan). The analysis that follows in the next two sections extends these investigations, providing more comprehensive and systematic evidence which is fully comparable across the six countries.

### **3. Overview: external and internal imbalances in South-MED, 1990- 2015**

This section presents a descriptive analysis of the fiscal and macro-economic performance of the six MENA countries over the long period of which data is available.<sup>11</sup> As noted earlier, outside the econometrics literature fiscal and external sustainability are better understood as an issue of level, i.e., they are evaluated on the basis of the extent to which current aggregates deviate from a threshold which is perceived as ‘sustainable’. Although no explicit measure of such a threshold exists, our discussion here provides a contextual assessment of the size of the deviations and thus of the risks they may entail with regard to macro-economic sustainability. Our discussion covers all key aggregates linked to macro-economic sustainability – namely the current account and trade balances, net foreign assets and external debts, budget (fiscal) deficits and government debt. For completeness – and to give a more contextual picture of the macro-economic situation in the six MENA countries during the period under study – we start our discussion with a review of the performance of these countries with regard to economic growth (measured in terms of annual changes in real GDP).

#### ***3.1 Economic Growth***

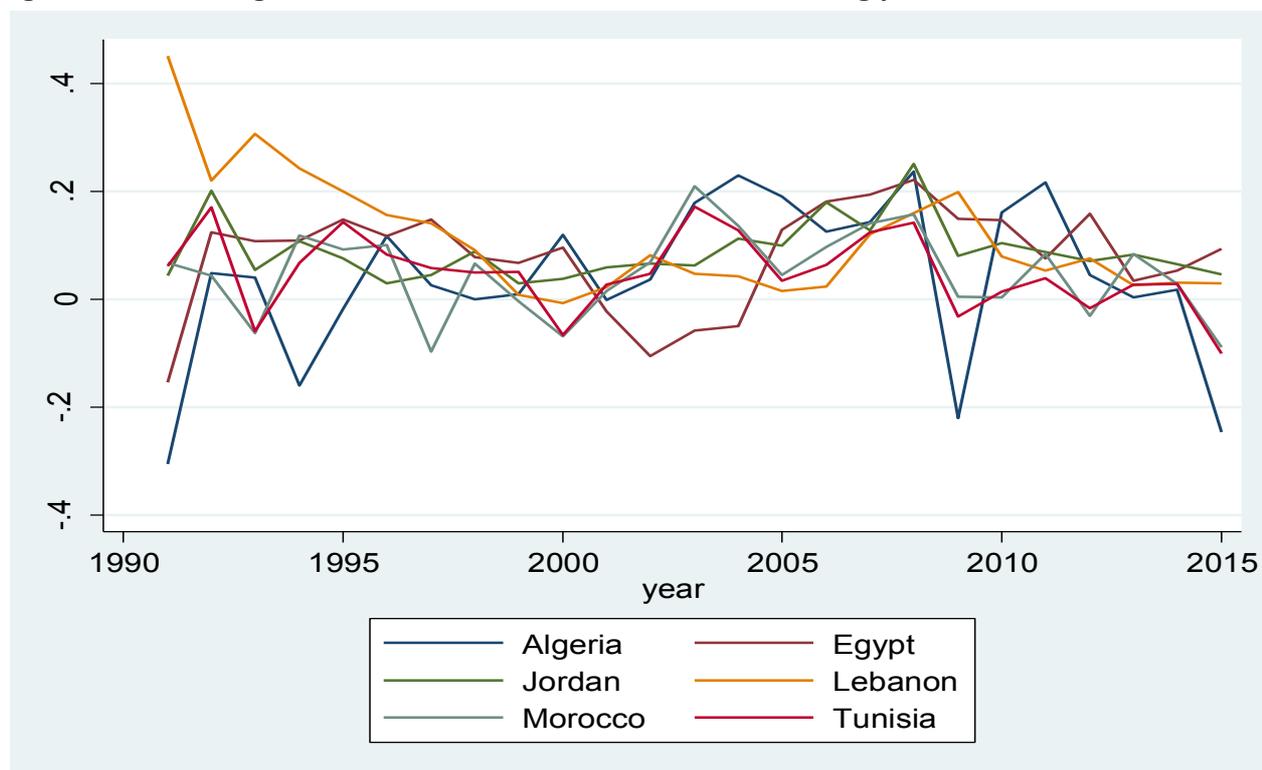
As noted earlier, the six MENA countries can be characterized as young transitioning economies, with still relatively low levels of development. As such, their production structures are in many respects not sufficiently –diversified and not particularly dynamic. This creates a number of vulnerabilities,

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<sup>11</sup> The data presented here have been compiled for the purposes of this project drawing on a variety of official sources. The main source is the IMF International Financial Statistics series. This has been complemented with data from the World Bank International Debt statistics, the IMF Historical Public Debt Database, and the Statistical Offices of the countries concerned. Depending on availability, data have been collected for the period 1970-2015. The presentation here is restricted to the period 1990-2015, so as to ensure equal coverage for all variables and countries.

also with regard to economic growth. To a large extent, growth depends on the international business cycle, e.g., due to the reliance on exports of services (such as tourism) and natural resources (such as oil) or due to fluctuations in international prices and foreign direct investment flows. Various other economic and institutional impediments to growth also exist. As summarized recently by Cardwell (2011), this includes "the existence of often binding non-tariff measures; the absence of harmonized financial, customs, transport, intellectual property rights, conflict resolution procedures, or the weakness of cross-border infrastructure, which complicates the transport of goods and the movement of people". The establishment of deeper economic relations with the European Union was in part supposed to contribute to removing some of these obstacles and to help accelerate growth in these countries, not least due to the increased openness to trade facilitated by these agreements. Despite this, the countries in the region remain today at low levels of diversification and their growth depends on a relatively limited range of sources – for example, revenues from oil exports for Algeria (and Libya) and Suez Canal rents for Egypt – and from trade with the European Union, which on average accounts for some two thirds of the total volume of exports.

With these observations in mind, Figure 1 presents the evolution of real GDP growth in the six MENA countries since 1990. Algeria and Tunisia started the early-1990s period with a crisis, in part owing to the aftermath of the huge adjustment in oil prices since 1985. Since then, economic growth has been positive for Algeria, until the eruption of the financial crisis which resulted in a sharp decline in growth in 2009 – while growth also dropped significantly in 2015. Egypt experienced a period of recession in the early 2000s, but its growth rates have been less affected by the global financial crisis, the Eurozone crisis and the turbulence of the Arab spring, remaining at least positive – albeit declining – throughout this period. Tunisia and Morocco have also seen deterioration in their growth rates during the period of these crises, and growth has turned negative in various occasions since 2009. In contrast, Jordan and Lebanon have maintained positive growth rates throughout the period since the 1990s and although their growth rates have declined recently these two countries are amongst the best performance in terms of growth in the six MENA countries.

**Figure 1: Real GDP growth for the six South MED countries during period 1990-2015**

Sources: IMF, *World development indicators*

Besides these evolutions, the growth trajectories presented in Figure 1 show a rather heterogeneous pattern of growth. During the full period, growth rates have fluctuated hugely, ranging broadly between -20% and +20%. This variation reflects of course two general forces that have a big impact on the performance of these economies: on the one hand, the exchange rate (the GDP data underpinning Figure 1 are in US dollars) and on the other hand, population growth (the GDP data underpinning Figure 1 are not in per capita terms). But while measuring growth in domestic prices and in per capita terms would naturally produce a much lower fluctuation in growth rates, Figure 1 allows us to present the extent of variability induced by these two dynamics (exchange rates and population growth). Besides this, however, Figure 1 also reveals some general patterns that have characterized the period since the early 1990s. For the group as a whole, growth was rather subdued in the late 1990s and early 2000s, but it picked up, at least for some of these countries, after the early-2000s. At the point of the eruption of the global financial crisis, average growth rates in the six MENA countries were the highest that these countries had recorded for years. However, this trajectory was abruptly interrupted with the crisis and since then all countries have experienced declining growth, with rates of growth in 2015 not exceeding 5% for any of these countries except Egypt and being significantly negative for three of them (Algeria, Morocco and Tunisia). For the period 2010-2015, average growth rates for these countries, in constant US dollars were as follows: 9.3% for Egypt; 7.6% for Jordan; 4.9% for Lebanon; 3.3% for Algeria; 1.3% for Morocco; and -0.2%

for Tunisia. The same figures for the period 2000-2007 were 8.1%, 8.8%, and 11.2%, 4.0%, 4.8% and 5.0% respectively. On the whole, the picture presented with regard to the growth performance of these economies is one of frequent and deep fluctuations, reflecting the presence of some strong vulnerabilities and external exposure. As further testament to this, in 2016 and 2017 oil exporting countries such as Algeria have suffered hugely from the drop of international oil prices. Algeria's economic growth fell to 1.5% in 2017 and is projected to reach 0.8% in 2018 (WDI, 2017). On the other hand, oil importing countries have benefitted by the same developments and, perhaps also due to this, they have found room to introduce various economic reforms (e.g., structural reforms in Egypt aiming at improving the business environment in the country, or the introduction of Islamic banking services in Morocco).

### *3.2 Fiscal imbalances*

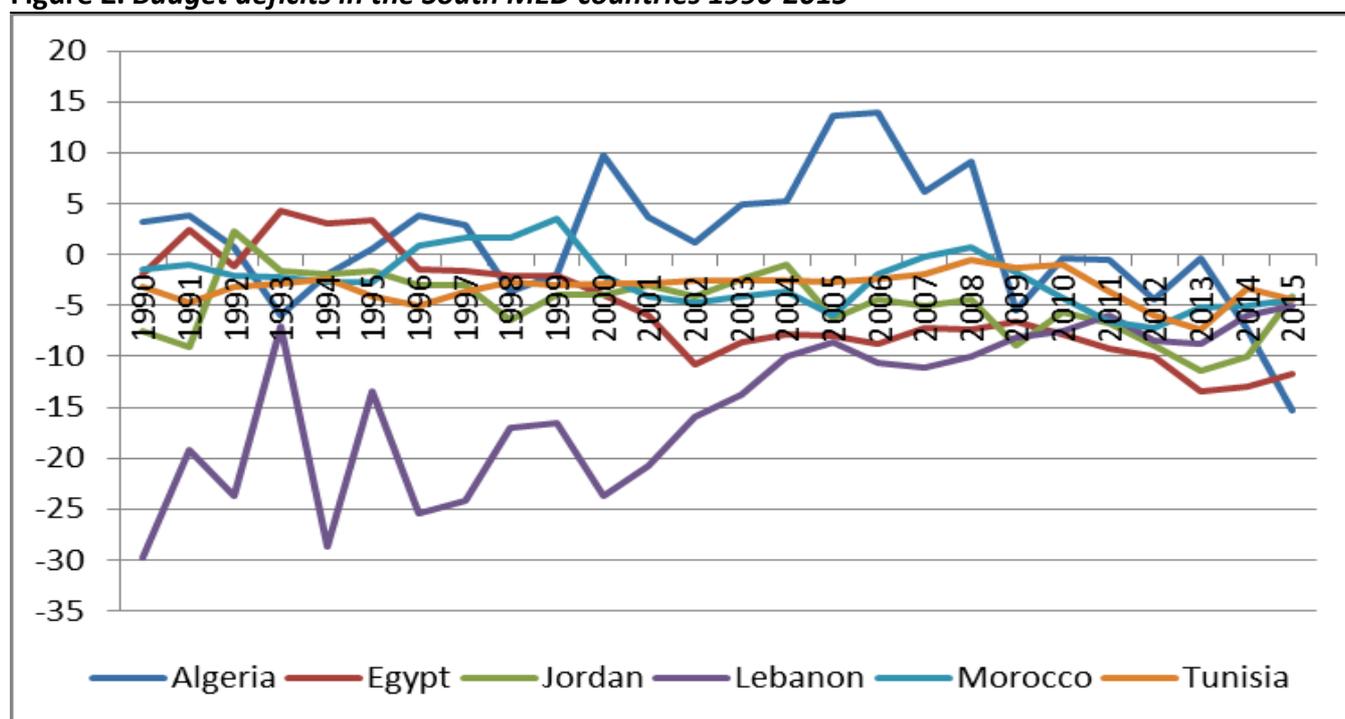
Besides the problems of production structure and institutional capacities mentioned earlier, the fiscal position of the six MENA countries has historically been affected also by some other features of the countries in the region. One of them concerns the relatively high prevalence of subsidies and public-sector wages in the budget. Government spending on subsidies and wages has been historically a tool for gaining acceptance from the citizens and maintain social peace and the stability/legitimacy of the political system. Another feature concerns the fact that typically these countries have very high military expenditures. It has been estimated that in 1990 military spending in these countries was about 20 percent of total government spending (Abed and Davoodi, 2003). A third feature concerns the generally low tax rates and a very low tax base. Especially with regard to the latter, weak administration in the tax system, widespread corruption and economic informality create a very weak tax base from which to draw for resources to fund government spending. Combined, these features create conditions for continuous budget deficits and reliance on external borrowing.

With these observations in mind, Figure 2 presents how the fiscal position of the six MENA countries has evolved in the period 1990-2015. The country-specific patterns in the figure are dwarfed by the very large deficits and surpluses experienced by Lebanon and Algeria, respectively, until the early/mid- 2000s and in the 2000s, respectively. For Lebanon, the particularly poor starting position has of course to do with the political and security situation in the country and the wider region carrying forward from the 1980s. For Algeria, the episode of very large budget surpluses has of course to do with the period of the hike in oil prices which ballooned government revenues from oil (and liquid gas) exports. But even at this level of detail, one can see that for the remaining four countries, the fiscal position follows a rather secular long-term trend of decline, meaning that over time these countries have moved from maintaining budget surpluses to running budget deficits. This

is in addition to the cyclical fluctuations which are also evident in Figure 2 and which, on the whole, do not seem to be particularly un-synchronised.

Over 2018-19, growth in oil exporters is estimated to improve as oil prices start recovering. For different reasons (mainly, the easing of fiscal consolidation but also expectations about a rebound of agricultural production, e.g., wheat), a positive outlook is also expected for the oil importing countries. Economic growth is expected to improve to between 3% and 3.7 % in Morocco and Tunisia; while Egypt, which already recorded a growth rate of 4.3 % in the fiscal year 2017, is expected to reach or surpass growth rates of 5% in the next two years (also supported by the gradual implementation of business climate reforms and improved competitiveness). On the other hand, Jordan and Lebanon continue to suffer from the conflict in Syria, which hinders their business environment and affects negatively domestic consumer confidence, while the continued flow of refugees is draining public finances. Projected growth for these two countries is in the range of between 3% and 3.6% (WB, 2017).

**Figure 2. Budget deficits in the South MED countries 1990-2015**



Sources: IMF, World development indicators, fiscal monitors

Looking at the particular country cases, and starting from Algeria, one can see clear evidence of cyclicity in the fiscal position, even in the presence of the huge increase in surpluses in the 2000s. Until the mid-2000s, the budget position in the country seemed to follow a four-year cycle, with troughs experienced in 1993/4, 1998 and 2002. The budget position of the country saw a dramatic decline with the eruption of the crisis, reaching a 15-year low of -5.5% in 2009 and – despite a minor recovery since, which as we also discuss later was the result of a significant fiscal consolidation effort

– plunging to a historical record-low of -15% in 2015 (and remained to this level in 2016 with current projections bringing the 2017 deficit at 8%). This level of budget deficit is clearly unsustainable, at least in the policy (non-econometric) sense of the term.

Similar with Algeria, Egypt has currently levels of budget deficit which are considered well unsustainable in policy terms. Although currently on a declining trend (11% reportedly in the fiscal year ending 2017), the country has seen excessive deficits for over a decade, with the 2001-2015 values averaging -9.1% and the deficit reaching -12.9% of GDP in 2014. Unlike Algeria, however, this position has not been the result of a deviation from a historical trend. The country had a short-lived period of budget surpluses in the mid-1990s but saw a substantial deterioration of its budget position reaching -14 percentage points of its GDP in the space of 7 years and despite the stabilization effort of the 2000s, it went on a steep downward path once again with the eruption of the various crises.

A secular negative trend also characterizes Jordan. Starting from a huge fiscal correction in the early 1990s, leading to a surplus of 2.3% of GDP in 1992, the country followed a downward spiral ever since, and well before the crisis, reaching a deficit of -11.5% in 2013. Since, adjustment has been rather impressive, also thanks to the fiscal consolidation efforts, with the deficit projected to reach a value of -2.5% in 2017. If successful, this would represent an impressive reversal from a trend that seems to have started already in the early 1990s. As with Algeria and Egypt, in this case too, the conclusion from the descriptive analysis is that the budget position had reach unsustainable levels (in the ‘policy’ definition of the term) and thus policy measures to achieve a fiscal correction was necessary.

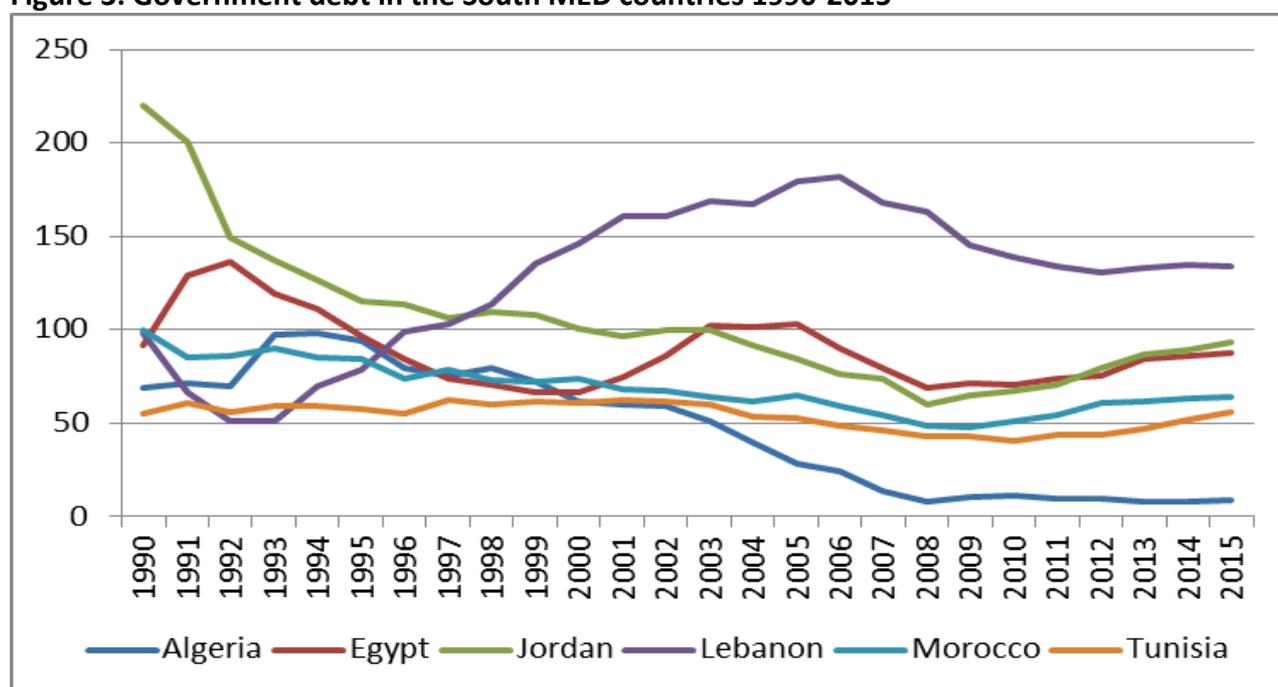
The case of Lebanon is much different. As was mentioned earlier, the country started the period under analysis from a catastrophic fiscal position, with budget deficits well below -20% of GDP. The long-term trajectory, however, has been positive (e.g., reaching -16.5% in 1999) and in an accelerated fashion especially in the early 2000s (contracting by 15 percentage points between 2011 and 2005). Since the mid-2000s, the rate of decline of the budget deficit has decelerated, but – unlike the previous cases – the trend did not seem to have been particularly affected by the crisis. The situation, however, changed dramatically more recently (but outside the period covered in Figure 2), with the deficit reaching 9.6% in 2016, not least due to the Syrian crisis, and current projections in the area of 8.3% for 2017.

Somewhat similar is the picture with regard to Tunisia. The country has had historically persistent budget deficits, averaging about 4% of GDP in the period 1990-1997, but improving notably in the late 1990s and staying rather stable at between -2.5% and -3% until the mid-2000s. The period

immediately prior to the crisis saw a dramatic improvement in the fiscal position of the country (with the deficit reaching a historical low of -0.6%), but this was followed by an even more dramatic collapse in the fiscal position after the crisis (reaching -7.4% in 2013). The correction efforts since then seem to have had some impact, bringing the current deficit at a projected value of 5.5% for 2017.

Last, Morocco’s budget position has shown historically some notable cyclicity, albeit on an overall declining trend. Starting from small deficits of less than -2% in the early 1990s, the country reached a deficit of -6% in 2005 and of 7.3% in 2012 – even though in period in-between there were episodes of huge fiscal correction (by 6.2 percentage points between 1996 and 1999 and by 6.6 percentage points between 2006 and 2008). As with other countries, policy efforts to control public finances have resulted in a reduction in the budget deficit more recently, expected to reach around -3.5% in 2017.

**Figure 3: Government debt in the South MED countries 1990-2015**



Sources: IMF, World development indicators, fiscal monitors

Turning to the debt position of these countries, rather unsurprisingly year-on-year fluctuations here are less evident and country differences appear more permanent. By far the most vulnerable position in terms of government debt is exhibited by Lebanon. As we saw in Figure 2, Lebanon accumulated a significant amount of debt during the 1990s; surpassing 150% of GDP in the early 2000s (see Figure 3). Although the country made efforts to control its debt levels ever since the eruption of the crisis, the current destabilisation of the broader region has brought again projected debt levels close to the 150% threshold. Compared to debt levels in other cases, both in six MENA countries and with regard

to the economies which experienced fiscal problems inside the Eurozone, it is rather clear than, in policy terms, the level of debt of Lebanon is unsustainable. The opposite picture of that is the case of Algeria. The country has benefitted by the very sizeable and persistent accumulation of budget surpluses during the 2000s and prior to the crisis and this is well reflected in Figure 3 – with the level of debt falling to values below 10% of GDP in the aftermath of the crisis and only increasing to close to 15% with the more recent fall in international oil prices.

The remaining countries seem to group into two categories. On the one hand, Egypt and Jordan seem to have a rather synchronised trajectory in their debt profile and especially after 2003 they seem to be on very comparable levels of debt (as a share of GDP) moving from around 100% of GDP in 2003 to around 70% in 2011 but increasing, in both countries, closer to 90% more recently. On the other hand, Morocco and Tunisia seem to form a group of their own, again with very similar trends since the mid-1990s and comparable values almost throughout the period. Interestingly, the two countries have debt levels well below the Eurozone average and below or just about the Maastricht threshold for entry into the Eurozone.

It follows from the evidence presented in Figure 3 and discussed here that, in terms of the ‘policy’ definition of sustainability, most of the six MENA countries do not face any problems with debt sustainability. With the exception of Lebanon, government debts have remained, even after the crisis, non-explosive (they have increased on average by 10 percentage points in the last 8 years) and are today at relatively good levels by comparison to other countries, including in Europe. This contrasts with the early conclusions drawn in relation to Figure 2. There, we saw a picture of general unsustainability and heightened risks. Given, however, the natural link between deficits and debts (flow versus stock), it seems that a more qualified conclusion is due on the balance of the evidence of Figures 2 and 3. The fiscal positions of most countries in the region are vulnerable to domestic and – especially – external risks and fluctuations, including changes in oil prices, destabilization in neighbouring countries (e.g., Syria) and economic recessions in the main trading partner countries (EU). But for many countries period deteriorations in fiscal positions do not seem to have led to exploding (and thus unsustainable) debts. In the only country where debts can be said to be unsustainable (Lebanon), the fiscal position is in fact quite strong and certainly less ‘unsustainable’ than in other six MENA countries (at least prior to the Syrian crisis). It thus seems that, whereas fiscal imbalances ought to be a matter of concern for policy-makers, the risks of solvency

(sovereign debt crisis) are rather low and thus also low should be the risk of a liquidity crisis erupting in response to a sudden increase in the budget deficit.<sup>12</sup>

### *3.3 External imbalances*

Our analysis of external imbalances concerns four aggregates, which we treat in pairs due to their close analytical and technical links. The first two aggregates are the current account and the trade balance, both showing the balance of terms of incomes spent and incomes received to and from abroad. A current account or trade surplus (net exports) shows that the country produces more than it consumes and thus makes extra incomes from international trade and/or labour flows. In turn, a current account or trade deficit shows that the country consumes more than it produces – which, in the long run, is bound to be unsustainable (and, as was discussed in section 2, can also lead to fiscal derailment). The second pair of aggregates are the net foreign assets (NFA) position of the country (the difference between the total value of the assets owned by local residents abroad minus the total value of assets owned by foreigners domestically) and its total external debt (private plus public). Both aggregates measure the extent of indebtedness of the country, but each from a different perspective: NFA measures the stock of wealth owned; while external debt measures the overall liabilities of local residents abroad. Large and accumulating external debts negative NFA positions generate pressures on the local currency which can destabilize also the trade balance as well as the cost of borrowing for the government. Negative NFA positions, in turn, show the cumulative position in the current account and can be seen as early-warning indicators for the solvency of governments and the probability of a sovereign default (Lane and Milesi-Ferretti, 2007). Thus, both of these indicators can be seen as wider indicators of long-term macro-economic (in) stability and potential vulnerabilities.

We start by looking at the first pair of aggregates, as depicted in the two panels of Figure 4. Starting from the case of the current account, it can be seen that for most countries current account deficits were well into single-digit numbers, at least for the period 1995-2005. The picture is broadly similar in the second panel, i.e., in relation to the trade balance which is invariably the main component in the current account (the other being the financial account which includes different sources of income, for example from remittances, rents, profits or government transfers). The exception to this picture of relatively moderate current account and trade deficits is Lebanon, which had extreme trade and

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<sup>12</sup> ‘Sudden stops’ in deficit financing (government borrowing), and thus a liquidity (or balance-of-payments) crisis can happen in countries which show a very fast deterioration in their borrowing profile (budget position). This is because a fast deterioration in budget positions is interpreted as a signal for the future trajectory of a country’s debt profile. It follows that this becomes a more critical issue for countries which are already considered to be over-indebted than for countries which are at ‘normal’ levels of debt – e.g., as defined by the Maastricht criterion or as found in the literature reviewed in section 2.

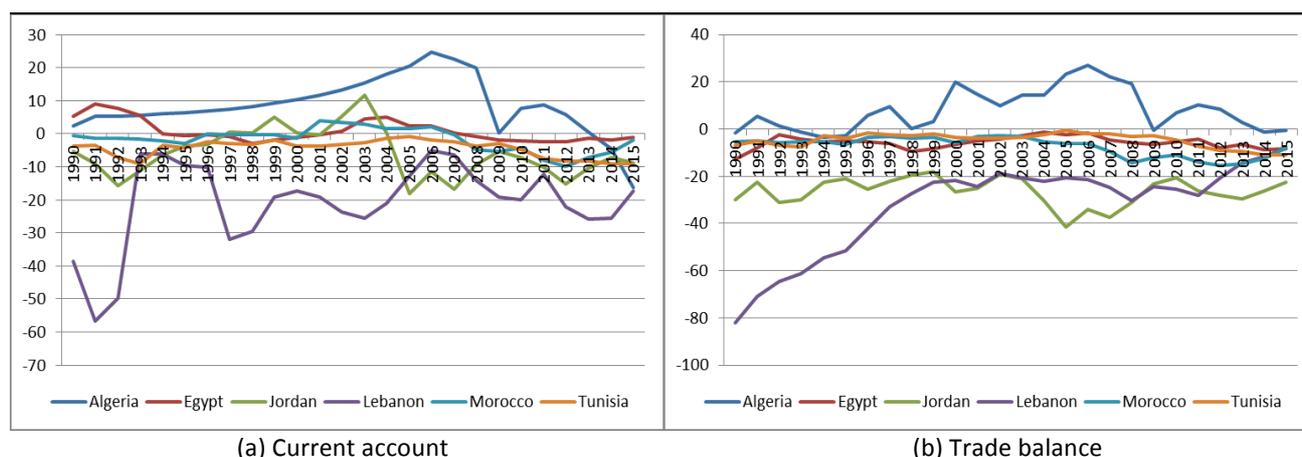
current account deficits in the early 1990s, mirroring the picture shown earlier with regard to budget deficits (Figure 2). Trade deficits in Lebanon declined steadily stabilising at around 20% of GDP in the 2000s; while the current account has been more volatile, albeit with a similar trajectory overall. In the case of the trade balance, Jordan is also another case of historically high deficits, with values fluctuating between -20% and -40% over the whole of the period. In contrast, as was the case with picture shown earlier with regard to the internal imbalances, Algeria shows current account and trade surpluses throughout the period – reaching sometimes extremely high levels (around 25% of GDP in 2006).

In all cases, however, the graphs show that the crisis resulted in a deterioration of these external balances for all countries in the region and for both aggregates depicted in Figure 4. Between 2008 and 2013, the current account position of the six MENA countries declined by between 12% (in Jordan) and 120% (in Tunisia), with all other countries registering rates of deterioration of at least 42%. Of course, given the different starting positions of each of these countries, the deterioration in terms of percentage points of GDP was not always as dramatic as these figures (rate of change) suggest. For example, the current account deteriorated by only 0.4 percentage points in Egypt and by between 1 and 4.5 percentage points in Jordan and Morocco; but it registered a remarkable deterioration, even in those terms, in Lebanon (-11.6 percentage points of GDP) and Algeria (-19.3 percentage points). The situation with regard to the trade balance is only mildly different. Here, too, countries such as Tunisia and Algeria registered significant deteriorations (-6.3 percentage points and -16.5 percentage points, respectively); but some other countries even registered improvements in their trade balance, with the extreme case of Lebanon where the trade deficit reportedly improved by 15 percentage points during this period. The more recent years (2014 and 2015) saw some improvements in the current accounts and trade balances of most countries, with perhaps the most striking exception being the current account position of Algeria (and, less so, its trade balance), which moved into negative territory (deficit) in the last two years of our sample.

Despite these fluctuations (e.g., near-universal deterioration with the crisis, partial bounce-back more recently), it is quite clear that with the exception of Jordan and Lebanon, where large deficits have persisted for more than a decade, for most countries these external imbalances should not be a particularly major source of concern – especially given our earlier comments and discussion, about the weaknesses of production structure and the young of their transition process. As is well understood, as countries of low and intermediate levels of development open up to international trade and liberalise their markets, they are expected to experience transitory (trade and) current account imbalances especially as capital flows in to take advantage of the investment opportunities and, by doing so, to upgrade the production base and export capacity of these countries. In this sense, the

extent to which these imbalances are counter-mirrored by developments in capital flows is crucial for the derivation of inferences about the very sustainability of such imbalances and the risk that such imbalances may entail.

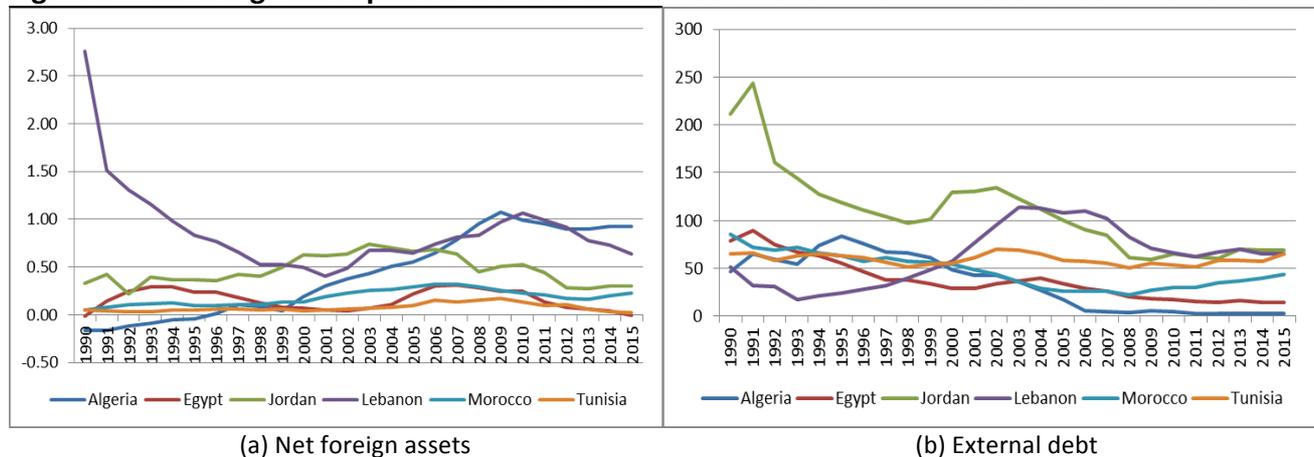
**Figure 4. Current account and trade balances in the South MED countries 1990-2015**



Sources: IMF, World development indicators, fiscal monitors

We look at this issue in Figure 5. As can be seen, net foreign asset positions are on the whole positive in all six MENA countries, with the exception of Algeria in the first part of the 1990s.<sup>13</sup> In line with the observations made earlier about Algeria’s budget position and current account, the country’s NFA position improved steadily since the late 1990s and, although experiencing a relative retraction since the crisis, remains today at strongly positive territory (at around 100% of GDP). A similar trend since the early 2000s and a similarly strong position, albeit on a faster deteriorating trend more recently, is found for the case of Lebanon. An also strong position, albeit with quite sizeable deterioration in the last 10-15 years has been registered by Jordan, with its NFA position dropping from 74% of GDP in 2003 to 30% in 2015. Morocco also had a similar trajectory in its MFA position and, although starting from a historically much less strong position (e.g., 13% in 2000 and 32% in 2006), it maintained quite a strong position also through the crisis (23% in 2015). For the remaining two countries (Egypt and Tunisia), NFA positions have been in recent years (i.e., after the crisis) very close to zero (e.g., 5.8% of GDP in either country in 2013), while Egypt has moved more recently to a net foreign liability position (negative NFA). Read as an indicator of future sovereign debt and balance-of-payments difficulties, it is clear that the NFA positions of the six MENA countries are not a sign of concern in any respect – despite their recent deterioration and negative trajectory.

<sup>13</sup> More recently (for post-2015 data), some significant shifts have been registered in some countries. For example, Egypt saw a drop in its NFAs by almost 300bn between 2014 and 2016. We do not analyse such movements in this section, as they fall outside the period under study.

**Figure 5. Net foreign asset positions and external debt in the South MED countries 1990-2015**

Sources: IMF, World development indicators, fiscal monitors

The picture concerning external debt is generally also not particularly alarming. In line with their generally advantageous NFA positions, all six MENA countries have external debts that are not particularly high, at least not by comparison to the levels seen in some major capitalist economies, such as the United Kingdom, Ireland and others.<sup>14</sup> In the 1990s Jordan had a particularly acute problem with its external debt but over time its position with regard to this improved substantially, passing below the 100% of GDP threshold in 2005 and stabilising at around 69% in 2013-2015. A comparable level of external debt was registered in the same period by Lebanon and Tunisia. Lebanon's external debt had been increasing quite fast in the late 1990s and early 2000s, reaching above 100% of GDP by 2003, but it has been declining almost continuously ever since. In contrast, Tunisia's external debt has been much more stable over this period, hovering between 50% and 70% of GDP throughout the 2000s and 2010s. The three remaining countries (Algeria, Egypt and Morocco) have experienced declining external debts since the 1990s, starting from a position of moderately high external debt (between 50% and 75%) and declining to below or even well-below 25% of GDP by the beginning of the crisis (in 2008). Since then, Morocco's external debt has followed an increasing path, reaching 44% of GDP by 2015; while that of Algeria and Egypt remained stable at 3% and 14%, respectively. Quite clearly, neither the level of external debt in these countries, nor their overall responsiveness to the crisis, seems to suggest any problems with sustainability.

<sup>14</sup> Unlike these cases, the external debt in the six MENA countries is predominantly, and has been historically, owned by the government, i.e., it is public rather than private. Owing to the history of capital restrictions and late banking sector liberalisation in these countries, private households and businesses had much lower opportunities to draw on external borrowing for their consumption or investment. This accounts to some respect for the relatively low levels of external debt in the six MENA countries compared to more advanced capitalist economies.

### ***3.4 Interim conclusions***

The descriptive review of the aggregates describing the internal and external risks and vulnerabilities of the six MENA countries gives us a first sense of the extent and urgency of these risks and vulnerabilities. On the whole, the picture is not particularly worrisome. Government debt positions, with the exception of Lebanon are not particularly high by international standards. In this case, the vulnerability comes not from the level of the debt but from the increasing trend that has been seen recently in some of these countries, especially Egypt and Jordan. This trend is naturally reflected also in the fiscal balance. In regard to this aggregate, as we saw, virtually all countries experienced deterioration in the aftermath of the crisis, some reaching levels that would certainly be seen as alarming, especially given the context of the Southern European countries in the same period.

A broadly similar picture is obtained for the case of the current account balance and in some cases also for the trade balance. As we saw, the current account deteriorated in virtually all countries in the aftermath of the crisis. That noted, however, on the whole the current account positions of these countries (with the exception of Lebanon), even at their lowest point, do not seem to be particularly problematic relative to those seen in the pre-crisis environment in countries such as Greece or Spain or even such as those seen today in the Balkans. Moreover, in many cases, the deterioration starts clearly prior to the crisis, in some cases as early as 2003 and it is thus not too evidently related to the crisis – at least in a temporal sense. Still, and as we discuss in more detail in section 5, it was the deterioration in these two aggregates – the fiscal balance and the current account – within the environment of the global financial and Eurozone crises that predominantly raised the alarm in the six MENA countries (and elsewhere in the region) and paved the way for the implementation of fiscal consolidation and structural reform measures. This is because all other aggregates of external performance (external debt and NFA positions) show a relatively good position for the majority, if not for all of, these countries. As noted above, the same can be broadly argued also for the case of government debt.

In the next section, we take these observations on board, as we move to an econometric investigation of the question of sustainability and of the link between internal and external imbalances. This shift in method implies also a shift in the underlying notion of sustainability. Specifically, as noted earlier, in the econometrics tradition sustainability is understood as the condition of non-exploding (fiscal and external-balance) aggregates – in other words, the condition of stationarity. This has two implications. First, for each of the aggregates under study, their level per se does not matter. Second, deviations from a particular pre-existing path, no matter how big in absolute terms, also do not matter, as long as they are transitory and as long as they are not large relative to similar deviations in the past. Put

differently, neither the mean nor the variance of the series matters for the condition of stationarity, as long as the variance itself is constant around a fixed mean (or a trend). Although this definition of sustainability is quite technical, and seemingly rather detached from the previous, it is in fact rather intuitive: for example, countries with a long history of high debts (high mean) but without episodes of default or other adjustments (constant variance), are deemed to have sustainable debts similar to countries with lower-levels of debt but similar stability in their trajectory; similarly, countries that experience frequent derailments in their public finances (high variance) but manage to return back to their ‘equilibrium’ levels (constant mean) are also deemed to have sustainable debts similar to countries with less dramatic derailments but similar records of adjustment. In this sense, the econometric definition of sustainability captures a set of attributes and characteristics of the aggregates under study which simple observation (and visual inspection) may be less effective in capturing.

#### **4. Internal and external sustainability: econometric analysis**

##### ***4.1. Empirical approach***

As was discussed in section 2, the literature employs an array of tests and techniques for the examination of the issue of stationarity. This includes both single-series tests, which look at the stationarity of the aggregate of interest per se (for example trade balance; unit root tests), and tests which examining stationarity by testing the co-movement of two constituent components of the aggregate of interest (for example, exports and imports; cointegration tests). In either of these two categories, an important question that has to be addressed a priori, is whether the temporal trajectory of the aggregate of interest is characterised by a smooth continuous path or if it instead exhibits one or more structural break, i.e., a discontinuity in its temporal path. This is an important question in the particular issues analysed here, as the interest is not only on the question of sustainability per se but also, importantly, on whether the multiple crises of the period 2008-2011 (global financial crisis, Eurozone crisis, Arab spring) have affected the sustainability of internal and external aggregates in the six MENA countries.

To examine these questions, we proceed as follows. We start by looking at the sustainability of internal and external imbalances by means of a series of unit root tests. Among the many alternatives which have been proposed in the literature, we use the Augmented Dickey-Fuller (ADF) test (with the MacKinnon, 1996, critical values), which is the standard test in this literature; the Ng-Perron test (Ng and Perron, 2001), which is part of the modified information criteria (MIC) family of tests and is considered more efficient; the Zivot-Andrews (1992) test, which allows for an endogenously

determined structural break<sup>15</sup>; and the ClemIO and ClemAO tests (Clemente et al, 1998), which allow for endogenously determined breaks which can be either purely transitory (additive outlier – AO) or temporally persistent (innovational outlier – IO). For the first two tests (ADF and Ng-Perron) we apply two versions of the test-statistic, one that assumes a non-zero mean (constant) but no trend and one that assumes a non-zero mean (constant) with a trend. This allows us to test whether a series is trended and whether, subject to the trend, stationarity is detectable. In that case, the econometric ‘diagnosis’ (stationarity) would be at odds with the economic ‘diagnosis’ (non-sustainability, if on an upwards trend). For the Zivot-Andrews test we examine only the latter case (constant and trend), as our interest is in detecting the presence (and, if so, the time) of a structural break. However, we relax the assumption of a trend (so as to have a more conservative test of sustainability) in the last two tests (ClemIO and ClemAO). We implement these tests for the six-series covered in section 3 (budget deficit and government debt for the internal imbalances; and trade balance, current account, NFA and external debt for the external imbalances) and for each of the MENA-6.

In a second step, we complement the previous analysis with a set of cointegration tests on pairs of variables that together make up two of the variables analysed previously, one standing for internal imbalances and the other standing for external imbalances.<sup>16</sup> These are: exports versus imports (trade balance – external); and revenues versus expenditures (fiscal budget – internal). As with the unit root tests, we implement a number of alternative cointegration tests, both with and without allowing for structural breaks. The simple tests (no structural breaks) are by use of the Johansen cointegration approach. We examine both the Trace and SBIC (Bayesian Information Criterion) statistics and test for cointegration fewer than three alternative assumptions: restricted constant (no deterministic trend and no intercept in the VAR), unrestricted constant (linear deterministic trend and intercept in the VAR) and restricted trend (linear deterministic trend with no intercept in the VAR). For the analysis of structural breaks, we use the Gregory-Hansen approach (Gregory and Hansen, 1996). Here we report the ADF and Z statistics and test for cointegration under four alternative assumptions: that the shift occurs in the level (constant); that it occurs in the level and the trend; that the shift occurs in the markov properties of the series (regime change); and that there is a regime change and a shift in the trend.

The cointegration tests offer an alternative way of testing for the sustainability of internal and external imbalances, giving further, or diminished, faith into the results obtained from the unit root analysis. We complement these two pieces of analyses with a deeper investigation into the issue of sustainability, by testing additionally a more restrictive version of this. Specifically, we follow the

<sup>15</sup> The test uses a different year-dummy sequentially, for each possible break date. The break date is selected where the t-statistic from the ADF test of unit root is at a minimum (most negative).

<sup>16</sup> We present the background unit root analysis for these variables in the Appendix.

notion of ‘effective sustainability’ (Fisher, 1995), which posits that for any debt series (here, external and public debt), effective sustainability requires not that the series themselves are stationary (as shares of GDP) but that their evolution relative to the country’s exports has a unit root. This essentially allows for explosive paths / non-stationarity in the debt series as long as the underlying export performance of the country also follows a similarly explosive path, reflecting the view that export-financed debts are sustainable. For this analysis, we apply the ADF and Ng-Perron tests to the two debt-to-exports series (government and foreign debt, respectively).<sup>17</sup>

Our last step concerns the analysis of causality, examining the question as to whether internal and external aggregates are inter-linked and, if so, in which direction of causality. As noted, this allows us to determine whether, at least in a temporal sense, changes in one of the two types of aggregates (the internal versus external balance) ‘causes’ changes in the other; and whether the twin deficits hypothesis holds (the two aggregated are inter-linked) or if instead the data validate the Ricardian Equivalence hypothesis (the two series are independent). To investigate this, we apply a simple ‘Granger-causality’ analysis. We avoid fitting a full error correction model, as is common in more elaborate analysis of Granger-causality in the ‘twin deficits’ literature, because our examination here is exploratory as our main focus is on the issue of sustainability rather than on the issue of causality.

#### **4.1 Internal and external sustainability – unit root tests**

We start the presentation of our unit-root results with the ADF and Ng-Perron tests for the case of the internal balance variables. The results from these tests are presented in the top panel of Table 2, separately for each test, each fiscal stance variable, and each country. As can be seen, in the vast majority of cases the tests fail to reject the null hypothesis of non-stationarity. This implies that the tests point towards absence of fiscal (internal) sustainability. For Algeria, we find that neither the budget deficit nor the government debt are sustainable, irrespective of whether we allow the tests to test stationarity over a trend or not. For the other countries, there is at least one test which rejects non-stationarity, although in no case do we get the majority of tests to point in this direction. Egypt shows no sustainability for the budget deficit, but the null of non-stationarity is rejected (showing sustainability) for the case of government debt by the ADF tests (but marginally not by the Ng-Perron tests). For Jordan and Lebanon, the ADF with constant and trend test rejects the null of non-stationarity for the budget deficit, while the ADF test without trend rejects the null of non-stationarity

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<sup>17</sup> There is a separate notion of ‘effective sustainability’, which posits that for any debt series (here, external and public debt), effective sustainability requires not only that the series has a unit root but additionally that it is independent to the (growth-corrected) flow variable corresponding to the debt aggregate (e.g., in the case of government debt, that this is independent of the growth-adjusted fiscal position of the country). Analysis of this is by means of a ‘feedback-augmented’ unit root test as has been proposed by Feve and Henin (2000). We do not examine this notion of ‘effective sustainability’ in this analysis.

for the government debt; but all other tests, including all Ng-Perron variants, points towards non-sustainability. The results are broadly similar for Morocco and Tunisia, with Morocco not showing evidence of debt sustainability in any of the tests and Tunisia showing evidence of fiscal-balance sustainability in the Ng-Perron, rather than the ADF, test.

**Table 2. Unit root tests for internal sustainability (fiscal variables)**

Model	Budget Deficit	[break]	Govt Debt	[break]	Budget Deficit	[break]	Govt Debt	[break]
	<b>Algeria</b>				<b>Lebanon</b>			
ADF(t), c	-1.7441 (0)		-0.2159 (0)		-1.2115 (1)		-3.3973* (5)	
ADF(t), c/t	-1.7965 (0)		-2.4365 (0)		-6.5071** (0)		-0.6690 (0)	
NgP(Zt), c	-1.5528 (0)		-0.4588 (1)		-0.3330 (1)		-1.1649 (2)	
NgP(Zt), c/t	-1.7400 (0)		-1.3662 (0)		-2.3739 (0)		-1.5788 (2)	
	<b>Egypt</b>				<b>Morocco</b>			
ADF(t), c	-0.9066 (0)		-4.5670** (2)		-1.9054 (0)		-2.5893 (0)	
ADF(t), c/t	-3.2812 (0)		-4.0325* (2)		-4.7302** (5)		-1.5825 (0)	
NgP(Zt), c	-0.7937 (0)		-1.8164 (2)		-1.6821 (0)		-0.5624 (0)	
NgP(Zt), c/t	-2.0944 (0)		-2.5268 (2)		-2.9846* (1)		-1.1845 (0)	
	<b>Jordan</b>				<b>Tunisia</b>			
ADF(t), c	-1.2115 (1)		-5.7506** (0)		-2.4331 (0)		-3.6872* (4)	
ADF(t), c/t	-6.5071** (0)		-3.1204 (0)		-2.3827 (0)		-3.3030 (4)	
NgP(Zt), c	-0.3330 (1)		-0.3508 (0)		-2.0063* (0)		-1.2244 (4)	
NgP(Zt), c/t	-2.3739 (0)		-1.7544 (1)		-2.0177 (0)		-0.4385 (4)	
	<b>Algeria</b>				<b>Lebanon</b>			
ZA(t), c/t	-4.940 (0)	[2005]	-3.024 (1)	[2011]	-8.554** (0)	[2003]	-4.670 (2)	[2005]
ClemIO(t), c	-0.165 (4)	[2007]	-2.471 (0)	[2001]	-3.316 (5)	[2002]	-3.675 (2)	[1992]
ClemAO(t), c	-3.108 (0)	[2011]	-2.452 (0)	[2002]	-8.783 (0)	[2002]	-3.042 (1)	[2002]
	<b>Egypt</b>				<b>Morocco</b>			
ZA(t), c/t	-4.351 (0)	[2007]	-3.756 (2)	[2010]	-4.086 (1)	[2000]	-5.545* (0)	[2008]
ClemIO(t), c	-2.780 (0)	[1994]	-4.727* (1)	[1993]	-3.372 (0)	[1998]	-2.641 (0)	[2000]
ClemAO(t), c	-3.144 (0)	[1998]	-4.913** (1)	[2003]	-3.573* (1)	[1997]	-3.357 (0)	[1998]
	<b>Jordan</b>				<b>Tunisia</b>			
ZA(t), c/t	-5.048 (0)	[1994]	-2.149 (0)	[1994]	-4.000 (0)	[2011]	-1.638 (2)	[1997]
ClemIO(t), c	-4.527* (0)	[2007]	-2.480 (0)	[2002]	-0.535 (3)	[2009]	-4.824* (4)	[2002]
ClemAO(t), c	-4.729* (0)	[2006]	-4.238* (0)	[2006]	-2.723 (0)	[2013]	-2.387 (0)	[2005]

Notes: \* and \*\* show significance at 5percent and 1percent, respectively. ADF(t) is the t-statistic of the Augmented Dickey-Fuller test [MacKinnon (1996) critical values at 5percent level as follows: -2.9862 (0 lags with constant), -2.9919 (0 lags with constant and trend); -3.6032 (1 lag with constant); -3.6122 (1 lag with constant and trend); -2.9981 (2 lags with constant); -3.6220 (2 lags with constant and trend); -3.0049 (3 lags with constant); -3.6329 (3 lags with constant and trend); -3.0124 (4 lags with constant); -3.6450 (4 lags with constant and trend); -3.0207 (5 lags with constant); -3.6584 (5 lags with constant and trend)]. NgP(Zt) is the MZt statistic of the Ng-Perron test [Ng and Perron (2001) 5percent critical values: -1.98 (constant) and -2.91 (constant and trend)].

**Table 3. Unit root tests for external sustainability**

Country	Model	Trade Balance	[break]	CA	[break]	NFA	[break]	Foreign debt	[break]				
ALG	ADF(t), c	-2.1350	(0)	-0.2245	(0)	-1.0795	(1)	-0.2638	(0)				
	ADF(t), c/t	-1.8832	(0)	0.0022	(0)	-1.9630	(1)	-2.7279	(0)				
	NgP(Zt), c	-1.6851	(0)	-0.5281	(0)	-0.4546	(1)	-2.7135**	(3)				
	NgP(Zt), c/t	-1.7054	(0)	-0.5805	(0)	-2.5959	(1)	-8.0695**	(3)				
	ZA(t), c/t	-4.721	(0)	[2009]	-3.765	(0)	[2009]	-3.604	(1)	[2007]	-3.252	(1)	[2011]
	ClemIO(t), c	-2.669	(0)	[1998]	-2.718	(2)	[2009]	-3.103	(0)	[1998]	-2.761	(2)	[1998]
	ClemAO(t), c	-2.561	(0)	[1997]	1.222	(4)	[2010]	-2.634	(0)	[2003]	-3.004	(0)	[2002]
EGY	ADF(t), c	-3.3523*	(0)	-1.7334	(0)	-3.2178*	(4)	-4.5583**	(1)				
	ADF(t), c/t	-3.1570	(0)	-1.7204	(0)	-3.0619	(4)	-3.5880	(1)				
	NgP(Zt), c	-1.4956	(0)	-1.1786	(0)	-2.0696*	(1)	-0.2421	(1)				
	NgP(Zt), c/t	-1.5972	(0)	-1.5843	(0)	-2.4473	(4)	-1.2763	(1)				
	ZA(t), c/t	-3.558	(0)	[2003]	-3.171	(1)	[2009]	-6.851**	(1)	[2005]	-3.013	(1)	[1996]
	ClemIO(t), c	-3.381	(0)	[2013]	-3.828	(4)	[2005]	-4.428*	(1)	[2009]	-3.544	(1)	[2004]
	ClemAO(t), c	-3.926*	(0)	[2011]	-3.832*	(1)	[2001]	-4.218*	(5)	[2014]	-2.068	(0)	[2007]
JOR	ADF(t), c	-2.6732	(0)	-5.4429**	(1)	-2.5918	(4)	-2.2731	(0)				
	ADF(t), c/t	-2.6856	(0)	-5.1316**	(1)	-1.2418	(0)	-5.0448**	(1)				
	NgP(Zt), c	-2.0693*	(0)	-1.8956	(0)	-1.2610	(0)	-0.6027	(0)				
	NgP(Zt), c/t	-2.0836	(0)	-2.0852	(0)	-1.2151	(0)	-1.5766	(1)				
	ZA(t), c/t	-4.339	(1)	[2004]	-6.022**	(0)	[2005]	-4.500	(0)	[2003]	-6.032**	(2)	[2008]
	ClemIO(t), c	-3.550	(0)	[2002]	-3.665	(0)	[2002]	-2.188	(0)	[2010]	-2.036	(0)	[2003]
	ClemAO(t), c	-4.224*	(1)	[2005]	-2.967	(0)	[2005]	-2.460	(4)	[2013]	-2.934	(0)	[2005]
LEB	ADF(t), c	-3.4377*	(0)	-5.4429**	(1)	-1.6460	(3)	-2.0838	(1)				
	ADF(t), c/t	-2.4793	(3)	-5.1316**	(1)	-1.4742	(3)	-1.6330	(1)				
	NgP(Zt), c	-0.2626	(1)	-1.8956	(0)	0.2391	(1)	-1.4879	(1)				
	NgP(Zt), c/t	-3.8614**	(3)	-2.0852	(0)	0.8998	(3)	-1.7768	(1)				
	ZA(t), c/t	-3.512	(0)	[1996]	-5.246*	(1)	[2006]	-8.321**	(1)	[2009]	-5.161*	(2)	[2001]
	ClemIO(t), c	-2.025	(0)	[2010]	-6.780**	(1)	[1991]	-2.137	(3)	[2005]	-3.236	(2)	[1996]
	ClemAO(t), c	-3.112	(0)	[1997]	-6.308	(1)	[1994]	-3.212	(3)	[1992]	-3.341	(1)	[2004]
MOR	ADF(t), c	-1.3014	(0)	-4.1560**	(5)	-1.6027	(1)	-1.3678	(1)				
	ADF(t), c/t	-1.7197	(0)	-4.2625*	(5)	-4.4526*	(4)	-0.0463	(0)				
	NgP(Zt), c	-1.2124	(0)	-1.4153	(0)	-1.3339	(1)	-0.8225	(2)				
	NgP(Zt), c/t	-1.5245	(0)	-1.5319	(0)	-7.7105**	(2)	-1.8498	(2)				
	ZA(t), c/t	-2.147	(0)	[1996]	-2.609	(0)	[2001]	-4.329	(2)	[2001]	-3.348	(0)	[2003]
	ClemIO(t), c	-3.751	(0)	[2005]	-4.489*	(5)	[2006]	-3.297	(1)	[1999]	-2.241	(2)	[1999]
	ClemAO(t), c	-3.747*	(1)	[2009]	-2.409	(0)	[2009]	-3.017	(1)	[2000]	-3.029	(0)	[2000]
TUN	ADF(t), c	-0.6671	(0)	-1.2677	(0)	-2.7655	(3)	-3.6930*	(3)				
	ADF(t), c/t	-1.2494	(0)	-1.5176	(0)	-4.4497*	(4)	-3.7550*	(3)				
	NgP(Zt), c	-1.3539	(2)	-1.2406	(0)	-7.6537**	(3)	-1.7305	(0)				
	NgP(Zt), c/t	-1.7406	(2)	-1.5071	(0)	0.1882	(4)	-2.8933	(3)				
	ZA(t), c/t	-4.468	(0)	[2005]	-3.974	(0)	[2004]	-4.303	(0)	[2006]	-2.853	(0)	[2008]
	ClemIO(t), c	-3.977	(3)	[2009]	-2.914	(0)	[2009]	-4.457*	(4)	[2000]	-2.887	(0)	[2003]
	ClemAO(t), c	-3.216	(0)	[2011]	-2.698	(0)	[2012]	-0.742	(5)	[2014]	-2.374	(0)	[2006]

As noted, our analysis includes additional tests which allow us to test whether sustainability has been obscured by shifts that may have occurred in the last 10 years or so, related to the various crises of the period, including the financial upheaval of the 2007-2008 financial crisis and the political changes instigated by the Arab Spring of 2011. Our interest in doing this is twofold. On the one hand, to examine whether indeed the presence of sustainability (stationarity) is obscured by the existence of structural breaks in the relevant series. On the other hand, to explore whether a structural break is indeed detectable around the period of the Global Financial Crisis and/or of the Arab Spring, i.e., whether these political and economic shocks caused a change in the behavior of the relevant series. The endogenous-breaks unit root tests presented in the bottom panel of Table 2 allow us to explore this issue by identifying not only whether stationarity may be present in the presence of a structural break, but also the year at which the break occurs.

Starting again from the case of Algeria, it is evident that the inclusion of structural breaks does not make a difference to our sustainability analysis. Moreover, the estimated structural breaks spread across the period 2001-2011 and thus there also does not seem to be any compelling evidence of a significant impact from the political and economic crises of 2008-2011. Similarly, for Egypt the tests confirm the previous evidence of debt sustainability (but no sustainability of the fiscal balance), but the structural breaks do not link to the period of the recent crises. This pattern broadly generalizes for all of the remaining countries. For Jordan, we find evidence of fiscal and debt sustainability in the IO and AO tests, but the structural breaks all predate the crisis. For Lebanon, we find evidence only of fiscal sustainability, with a structural break in 2003; while for Tunisia we find evidence only of debt sustainability, with a structural break in 2002. For Morocco it appears that, subject to a structural break that seems to have occurred around 2008, there is some limited evidence of debt sustainability, but in these tests the evidence of fiscal sustainability in fact weakens when we consider the presence of structural breaks.

On the whole, while the evidence of sustainability is anything but overwhelming, there are only seven cases where we find no evidence of sustainability in external-balance aggregates. These include: the trade balance, current account and NFA position for Algeria; the NFA position for Jordan; the external debt for Morocco; and the trade and current account balances for Tunisia. For Egypt and Lebanon, there is at least one test for each of the external balance aggregates that reject non-sustainability. To these, we can add the three cases for which we find no evidence of internal sustainability: the case of the budget deficit and the public debt for Algeria; and the case of the budget deficit for Egypt. For Jordan, Lebanon, Morocco and Tunisia, we find at least one test that rejects non-sustainability for each of the two series of the internal balance. We thus find that the evidence from the unit root tests is rather mixed – with few overwhelming cases of non-sustainability and many

for which the overall conclusion depends largely on the test employed. One, rather safe, conclusion that can be drawn, however, is that the evidence on structural breaks, on the whole, does not seem to point to a particular year, or collection of years, that we could associate to the crises and which would seem to capture a common ‘shock’ taking place for all/most series in all/most countries.

## 4.2 Internal and external sustainability – cointegration tests

Given the relative ambiguity resulting from the unit root tests, we move on to the analysis of the cointegration tests, which focuses on two indicators of external and internal balance, namely the exports-imports (trade balance) and revenues-expenditures (budget deficit) series, respectively. As noted, we perform different variants of two cointegration tests (Johansen and Gregory-Hansen). The results for these tests are presented in Tables 4 and 5.

**Table 4. Johansen cointegration tests for external and internal sustainability**

Country	Stat	<i>Restricted constant</i> (no deterministic trend / no intercept in VAR)		<i>Unrestricted constant</i> (linear deterministic trend / intercept in VAR)		<i>Restricted trend</i> (linear deterministic trend / no intercept in VAR)	
		Rank 0 (r=0)	Rank 1 (r<1)	Rank 0 (r=0)	Rank 1 (r<1)	Rank 0 (r=0)	Rank 1 (r<1)
<b>Exports versus imports (of goods and services)</b>							
ALG	Trace	9.1803*	2.9669	8.7205*	2.7040	10.9527*	3.1176
	SBIC	10.69834*	10.96482	10.93745*	11.08306	10.93745*	11.13907
EGY	Trace	16.0367*	1.3248	15.3308*	1.0956	17.5057*	2.6999
	SBIC	9.267881	9.194425*	9.497155	9.314013*	9.497155	9.419942*
JOR	Trace	14.3072*	4.6914	12.8447*	3.4803	17.1198*	3.7091
	SBIC	11.73272*	11.86311	11.93173*	11.94342	11.93173	11.91032*
LEB	Trace	25.4936	4.7261*	13.8637*	0.3412	22.7572*	5.2967
	SBIC	12.56119	12.24551*	12.3535	12.19887*	12.3535	12.1701*
MOR	Trace	7.4817*	1.8845	6.7655*	1.1965	28.9724	5.2593*
	SBIC	8.69983*	8.99096	8.928689*	9.092196	8.928689	8.495185*
TUN	Trace	8.0803*	2.0814	7.8198*	1.9461	12.9770*	5.2168
	SBIC	9.129924*	9.404985	9.377013*	9.528329	9.377013*	9.581627
<b>Revenues versus expenditures (of general government)</b>							
ALG	Trace	10.0855*	4.4892	8.5020*	3.3176	18.1904*	4.9236
	SBIC	10.84869*	11.13986	11.04286*	11.22175	11.04286	11.02721*
EGY	Trace	11.0187*	0.9985	10.2957*	0.6153	25.2703*	9.6770
	SBIC	9.061324*	9.175537	9.289914	9.288964*	9.289914	9.181203*
JOR	Trace	19.2744*	3.3588	17.7376	2.1815*	22.0116*	5.7195
	SBIC	9.59951	9.477903*	9.795549	9.55957*	9.795549	9.658886*
LEB <sup>#</sup>	Trace	9.5506*	3.0335	6.3117*	2.6685	10.1803*	2.6912
	SBIC	10.24869*	10.50682	10.37858*	10.62403	10.37858*	10.59621
MOR	Trace	6.8193*	1.2772	6.3743*	0.9000	12.2334*	5.2114
	SBIC	7.736608*	8.029946	7.976319*	8.143611	7.976319*	8.210461
TUN <sup>#</sup>	Trace	27.6768	3.1483*	27.6532	3.1282*	28.3485	3.7839*
	SBIC	6.669184	6.17684*	6.933038	6.308419*	6.933038	6.43919*
Crit. values (5%)		19.96	9.42	15.41	3.76	25.32	12.25

Starting with the results from the Johansen cointegration tests, we note that the evidence of sustainability obtained here is generally not too dissimilar to the one produced by the unit root tests

for the case of the external balance. As was the case before, we find that a co-integrating relationship between the exports and imports series exists in all countries except Algeria and Tunisia. In contrast, for the case of the internal balance the results differ. Here, we find that a co-integrating relationship exists between the government revenues and expenditures series in all countries except Lebanon and Morocco; while in the unit root tests the evidence of non-sustainability concerned mainly the cases of Algeria and Egypt. Tunisia returns in this case very strong and consistent evidence of internal sustainability (in the unit root tests this was much weaker), while also strong is the evidence of internal sustainability in Jordan and of external sustainability for Egypt (SBIC test only), Lebanon (especially in the restricted constant model) and Morocco (in the restricted trend model only). Overall, however, as was the case with the unit root tests, the evidence of internal and external sustainability from the Johansen cointegration tests is not particularly overwhelming for the six MENA countries as a whole: sustainability is supported in only 10 out of the 36 tests for the case of external imbalances and in 13 out of 36 tests in the case of internal imbalances.

**Table 5. Gregory-Hansen cointegration tests for external and internal sustainability**

Country	Stat	Model 1 (Change in level)		Model 2 (Change in level and trend)		Model 3 (Change in regime)		Model 4 (Change in regime and trend)	
		Statistic [Lags (BIC)]	Break- point	Statistic [Lags (BIC)]	Break- point	Statistic [Lags (BIC)]	Break- point	Statistic [Lags (BIC)]	Break- point
<b>Exports versus imports (of goods and services)</b>									
ALG	ADF	-4.03 [1]	2001	-3.82 [1]	2010	-4.04 [1]	2001	-5.41* [1]	2004
	Z(t)	-3.48.	2000	-3.49 .	2011	-3.42 .	2000	-4.37 .	2005
EGY	ADF	-4.04 [0]	2007	-5.05** [0]	2001	-4.03 [0]	2009	-6.83***[5]	2007
	Z(t)	-4.89** .	1993	-5.22** .	2001	-5.00** .	1993	-5.89** .	2000
JOR	ADF	-4.81** [2]	1999	-5.26** [2]	2005	-4.59 [1]	2010	-5.63** [2]	2006
	Z(t)	-4.13 .	1998	-4.47 .	2006	-4.21 .	2003	-5.12 .	2006
LEB	ADF	-2.83 [0]	1995	-4.58 [3]	2005	-2.77 [1]	2005	-5.42* [3]	2006
	Z(t)	-3.09 .	1995	-3.63 .	2006	-2.75 .	2004	-4.26 .	2008
MOR	ADF	-4.45* [1]	1998	-4.43 [0]	2007	-4.52 [1]	1998	-4.70 [1]	2006
	Z(t)	-3.93 .	1999	-4.52 .	2007	-3.89 .	1998	-4.67 .	2007
TUN	ADF	-2.96 [0]	2010	-3.54 [0]	2010	-2.99 [3]	2010	-3.98 [0]	2005
	Z(t)	-3.01 .	2011	-3.67 .	2010	-3.01 .	2010	-4.06 .	2005
<b>Revenues versus expenditures (of general government)</b>									
ALG	ADF	-4.25 [0]	2000	-4.70 [1]	2011	-4.22 [0]	2000	-6.04***[0]	2006
	Z(t)	-4.34* .	2000	-4.74* .	2011	-3.31 .	2000	-6.17*** .	2006
EGY	ADF	-4.09 [5]	2001	-4.35 [2]	1997	-3.91 [5]	2001	-4.04 [2]	2003
	Z(t)	-4.15 .	2000	-4.59 .	2000	-4.29 .	1996	-5.37* .	2000
JOR	ADF	-6.24*** [5]	2005	-5.55*** [5]	2010	-7.05***[5]	2005	-5.47* [5]	2005
	Z(t)	-4.13 .	2007	-4.23 .	2001	-4.21 .	2007	-4.51 .	2001
LEB <sup>#</sup>	ADF	-4.75** [0]	2003	-5.53*** [0]	2010	-4.69* [0]	2000	-6.59***[0]	2002
	Z(t)	-5.78*** .	2002	-5.89*** .	2010	-6.00*** .	2002	-7.16*** .	2002
MOR	ADF	-3.98 [1]	2003	-3.82 [1]	2003	-4.24 [1]	2004	-4.77 [1]	2005
	Z(t)	-3.99 .	2004	-3.98 .	2004	-4.21 .	2005	-4.48 .	2005
TUN	ADF	-3.86 [0]	2008	-4.77 [0]	2006	-4.56 [0]	2008	-4.80 [0]	2006
	Z(t)	-3.94 .	2008	-4.87 .	2006	-4.66 .	2008	-4.90 .	2006
Crit. values (5%)		-4.61		-4.99		-4.95		-5.50	

The cointegration tests presented in Table 4 do not take into account the possibility that there may a structural break in the series under consideration. The Gregory-Hansen tests reported in Table 5, instead, allow for this possibility. Furthermore, as already noted, they estimate the structural break endogenously, at the point where the statistical power of the cointegration test is maximised. As can be seen from Table 5, the picture obtained with regard to the evidence in favour of sustainability is only marginally strengthened when we allow for structural breaks. In this case (Gregory-Hansen tests), evidence of sustainability is found in 12 out of 36 tests for the trade balance (external sustainability) and 17 out of 36 tests for the budget balance (internal sustainability). For Algeria, we find some evidence of external sustainability (but only in Model 4, allowing for a change in the regime and trend, around the year 2004) and also find rather strong evidence of internal sustainability, with a break in the series occurring in 2006. In contrast, for Egypt we find strong evidence of external sustainability (with a structural break in 2006) but only one out of the eight test-statistics supports the hypothesis of internal sustainability. For Jordan, the evidence of sustainability is rather consistent (but only for the ADF statistic) for both external and internal balances, much more consistently than was the case for the Johansen and unit root tests, with a structural break appearing around 2005. Strong evidence of internal sustainability is also found for Lebanon, for which all tests indicate cointegration (sustainability) with a structural break most likely around 2002, in sharp contrast to what was found under the Johansen cointegration test which did not allow for any structural break in the series. Evidence of external sustainability for this country, however, is much weaker, with only one out of the eight test statistics returning a statistically significant value. Finally, for the two remaining countries (Morocco and Tunisia), we find no evidence of internal sustainability. For Tunisia, this contrasts sharply the Johansen result, indicating that the influence of the structural break (estimated by the Gregory-Hansen test to be around 2006-2008) worked in the opposite direction (failing the cointegration hypothesis when the structural break is accounted for). Concerning the case of external sustainability, the results are more similar to the Johansen tests, with no evidence of sustainability for the case of Tunisia and only limited evidence of sustainability for the case of Morocco.

### **4.3 Interim conclusions**

The results obtained so far point in many respects to different directions and are generally difficult to make sense of. For this reason, and before we proceed with the analysis of the causal link between internal and external imbalances, we offer here a short discussion of the results obtained from the sustainability analyses. To facilitate this, we offer a summary of these results in Table 6.

As noted already, the evidence in favour of sustainability is not overwhelmingly consistent across tests. Still, some general patterns and conclusions can be derived. Starting from the case of sustainability in the external financial/capital flows (NFA position and foreign debt), for which no cointegration analysis was possible, our results have found consistently very little evidence in favour of sustainability across countries. Strong, i.e., consistent across tests, evidence of sustainability was found only for the case of the NFA position for Egypt. Besides this, some evidence of sustainability was obtained also for Tunisia (3/7 tests for the NFA and 2/7 tests for the external debt) and perhaps Lebanon (sustainability in both NFA and external debt, but only under the Zivot-Andrews test). For all other countries, evidence of sustainability concerned only two tests or less and in all cases these tests concerned only one of the two series examined: two tests showed external debt sustainability for Algeria and Jordan, but all seven tests rejected sustainability for the NFA position; while for Morocco two tests supported NFA sustainability but no test supported foreign-debt sustainability.

**Table 6. Summary of unit root and cointegration results**

<b>Country</b>	<b>Government stance</b>	<b>External balances</b>	<b>Foreign assets/debt</b>
<b>Algeria</b>	Some (fiscal only with structural break in 2006)	No sustainability	No NFA sustainability; limited evidence for debt sustainability
<b>Egypt</b>	Some (debt, ADF & Clem; scattered for cointegration)	Strong (co-integration only)	Strong (NFA only)
<b>Jordan</b>	Rather strong / consistent	Some (CA + co-integration with breaks (2005))	No NFA sustainability; limited evidence for debt sustainability
<b>Lebanon</b>	Strong (fiscal, only co-integration with structural breaks (2002, 2010))	Some (CA + co-integration SBIC)	Very limited evidence for sustainability (Z-A only)
<b>Morocco</b>	Weak (unit root tests) or no (cointegration tests) evidence of sustainability	Some (co-integration with restricted trend)	Very limited evidence for sustainability (NFA only)
<b>Tunisia</b>	Strong (fiscal, co-integration only; otherwise no sustainability)	No sustainability	Weak evidence for sustainability, mainly NFA

In the case of the trade-related external imbalances (trade balance and current account), there is rather convincing evidence that these are not sustainable in the cases of Algeria and Tunisia. This was confirmed for these two countries by both types of tests (unit root and cointegration), both with and without structural breaks. For the other four countries, we found evidence of external sustainability at least in some cases. For Egypt, this evidence was very strong in the case of the cointegration tests,

even though the same evidence in the case of the unit root tests was rather weak. For Jordan and Lebanon, the evidence from the unit root tests was stronger; while the evidence from the cointegration tests was, on balance, also in favour of sustainability. Last, for Morocco the evidence in favour of sustainability was less overwhelming, concerning mainly the Johansen cointegration tests for the trade balance under the ‘restricted trend’ model and the unit root tests for the current account in the ADF and IO models.

Concerning the issue of internal imbalances (fiscal position and government debt), the evidence is somewhat more difficult to categorise. For Algeria, the unit root tests offer no evidence of internal sustainability and the same is broadly true for the fiscal balance in the Johansen tests; but the Gregory-Hansen tests return ample evidence of sustainability, with a very strong test result emerging under the assumption of a shift in the regime and trend of the model, estimated at year 2006. For Egypt, there is evidence of sustainability for the government debt series but no evidence of sustainability in the fiscal balance in the unit root tests; but the cointegration tests return some statistics suggesting fiscal balance sustainability (cointegration between government revenues and expenditures). Jordan, in turn, returns evidence of internal sustainability rather consistently, across the unit root and cointegration tests, suggesting that at least for the case of the fiscal budget sustainability for this country is not an issue. The evidence of internal sustainability, and in particular sustainability of the fiscal budget, is even stronger in the case of Lebanon. In this case, we find consistent evidence of sustainability in the Gregory-Hansen tests (with a structural break around 2002 in most tests) and in the ADF and Zivot-Andrews unit root tests (with a structural break also near 2002). Read in conjunction with the Johansen tests, which show no sustainability, this implies that the fiscal balance in Lebanon experienced a significant (regime and trend) shift in the beginning of the 2000s but that, subject to this shift, the fiscal position of this country is sustainable. A similar conclusion is reached for the case of Tunisia. Here, the evidence of debt sustainability in the unit root tests is somewhat stronger (with a break also in 2002), while for the fiscal balance the evidence points towards sustainability without a structural break, especially in the cointegration tests. Last, for the case of Morocco we find some evidence of fiscal sustainability and very limited evidence of debt sustainability in the unit root tests, but we fail to find any evidence of fiscal sustainability in any of the cointegration tests – leading to an overall conclusion that internal sustainability in this country is at best weak.

In sum, some evidence of internal sustainability has been found essentially for all of the six MENA countries examined here. For the external trade-related balances, evidence of sustainability is weaker, but it still applies to the majority of cases – and in some cases (Egypt, Jordan) this is rather strong and consistent. For external capital-based balances, however, the evidence of sustainability is generally

weaker, with most of the countries showing unsustainable external debts, with the exception of Algeria and Jordan, where some (limited) evidence of foreign debt sustainability was found. NFA positions also appear vulnerable, with the exception of Egypt, where NFA sustainability appears strong, and to a lesser extent those of Tunisia and Morocco. It thus appears that, for the six MENA countries as a whole, external sustainability is more of an issue, especially concerning capital flows and in particular the external debt (and in Algeria and Tunisia also trade-related flows). In contrast, internal sustainability, especially with regard to the fiscal balance, is in relative terms much less of an issue. Reading these results horizontally (for each country at a time), the following additional points can be made. Egypt and Lebanon seem to be in a relatively good position overall, with at least some evidence of sustainability found for each of the three types of balances across tests. Jordan and Morocco seem to be in a reasonably good position with regard to internal and trade-related external sustainability, but quite evidently their sustainability with regard to their NFA positions (especially Jordan) and external debt (especially Morocco) is more vulnerable. Last, Algeria and Tunisia show consistent evidence of fiscal (internal) sustainability, but they show problems with their external imbalances, concerning both the trade (e.g., current account) and capital flows (e.g., external debt).

#### **4.4 Internal and external ‘effective’ sustainability – further analysis**

As a last piece of analysis in this direction, we have examined the sustainability of the export-adjusted debt series, to capture the notion of ‘effective sustainability’ as described by Fisher (1995). The results from this analysis are presented in Table 7.

In this case, evidence of sustainability is obtained for the case of the government debt for Algeria in the non-trended tests; for the case of both foreign and government debt in Jordan; and for the case of foreign debt in Morocco and, less so, Egypt. The results for Algeria are broadly consistent with the evidence gathered previously, where we saw evidence of internal but not external sustainability. For Egypt, the weak result for external sustainability is consistent with what was found previously; but the ‘effective sustainability’ test seems to suggest that government debt is not sustainable when considered together with the dynamics of exports (suggesting problems mainly with the latter than with the former), unlike what was found previously in the simple unit root tests. The opposite seems to hold true for Jordan. For this country, the traditional unit root tests gave some limited evidence of sustainability in the external and public debt series and this evidence becomes statistically stronger (at least in the trended Ng-Perron test) when considering the behaviour of these series vis-à-vis exports. Also, additional/stronger evidence of sustainability under the ‘effective sustainability’ test, this time in terms of external debt, is found for the case of Morocco, for which no evidence of foreign debt sustainability was obtained in the traditional tests – suggesting that developments with exports tend to

compensate for the non-stationarity of the foreign debt series. Finally, for Lebanon and Tunisia, where the traditional tests showed essentially no evidence of sustainability in the debt aggregates<sup>18</sup>, the ‘effective sustainability’ tests also return no evidence in favour of sustainability.

**Table 7. Fisher (1995) ‘effective sustainability’ test**

Country	Indicator	ADF(t), c	ADF(t), c/t	NgP(Zt), c	NgP(Zt), c/t
ALG	Foreign debt	-0.4998 (2)	-1.7057 (2)	-1.5401 (4)	-2.6606 (4)
	Government debt	-5.3028*** (5)	0.1317 (5)	-4.1729*** (5)	-2.2422 (5)
EGY	Foreign debt	-3.4328** (0)	-2.4536 (0)	-0.1349 (0)	-1.0716 (0)
	Government debt	-0.9566 (1)	0.5552 (0)	-1.8186 (1)	-1.8783 (1)
JOR	Foreign debt	-3.3251** (1)	-2.4234 (0)	-0.9591 (1)	-3.6276*** (2)
	Government debt	-2.7286* (0)	-0.2669 (0)	-0.7333 (0)	-3.8090*** (2)
LEB	Foreign debt	-1.4573 (0)	-1.6467 (0)	-1.3946 (0)	-1.5502 (0)
	Government debt	-1.0353 (0)	-1.8574 (0)	-1.0718 (0)	-1.4576 (0)
MOR	Foreign debt	-2.6488* (3)	0.6053 (0)	-3.1930*** (3)	-10.9230*** (3)
	Government debt	-1.5679 (0)	-0.3128 (0)	-0.3258 (1)	-0.7321 (0)
TUN	Foreign debt	-1.7587 (0)	-1.5673 (0)	-1.5723 (0)	-1.6078 (0)
	Government debt	-1.2214 (0)	-1.4026 (0)	-1.1996 (0)	-1.2436 (0)

Notes: \* and \*\* show significance at 5% and 1%, respectively. ADF(t) is the t-statistic of the Augmented Dickey-Fuller test [MacKinnon (1996) critical values at 5% level as follows: -2.9862 (0 lags with constant), -2.9919 (0 lags with constant and trend); -3.6032 (1 lag with constant); -3.6122 (1 lag with constant and trend); -2.9981 (2 lags with constant); -3.6220 (2 lags with constant and trend); -3.0049 (3 lags with constant); -3.6329 (3 lags with constant and trend); -3.0124 (4 lags with constant); -3.6450 (4 lags with constant and trend); -3.0207 (5 lags with constant); -3.6584 (5 lags with constant and trend)]. NgP(Zt) is the MZt statistic of the Ng-Perron test [Ng and Perron (2001) 5% critical values: -1.98 (constant) and -2.91 (constant and trend)]. All tests implemented in EViews. Optimal lag selection based on the SBIC, using a maximum of 5 lags.

All in all, the results from this additional test do not seem to offer a stronger picture of sustainability, for the region as a whole, than before. With the exception of a perhaps only one case (foreign debt in Morocco), no new information is added by the ‘effective sustainability’ tests and the previous results hold as presented in summary form in Table 6. Exports seem to play a role, in terms of balancing the un-sustainability of public and foreign debts, only in the case of Morocco (for external debt) and less so in Jordan.

#### 4.5 The direction of causality

Having established the patterns of sustainability in the main aggregates concerning internal and external balances for the MENA-6, we now turn our attention to the question of the inter-temporal link between external and internal imbalances. Traditionally, this link is explored by testing for so-called Granger causality<sup>19</sup> between the fiscal balance and the current account or between the fiscal and trade balances. A complementary test can be made for the stock (debt) and capital variables, namely examining the Granger causality relation between public debt and foreign debt, or between public

<sup>18</sup> As noted earlier, this is except the single case of the foreign debt variable for Lebanon, only in the Zivot-Andrews test.

<sup>19</sup> Granger causality is a temporal definition of causality whereby if lagged values of one variable, say X, are found to be statistically significant in a VAR model of another variable, say Y, the conclusion follows that “X Granger-causes Y” (and vice versa). When both lagged values of X ‘Granger-cause’ Y and lagged values of Y ‘Granger-cause’ X, this is referred to as ‘two-way’ or bi-directional causality (whereby X ‘causes’ Y and Y ‘causes’ X).

debt and a country’s NFA position. In this section, we implement the full set of these tests, for each of the MENA-6. Given that our interest is not to have a full description of the relationship underpinning the behaviour of a(ny) pair of aggregates, but simply to examine what is the direction of causality (if any) in this relationship, we apply a simple form of the Granger causality test, without specifying and estimating the underlying error correction model. We present the results of our analysis for the flow variables in Table 8 and those concerning the stock variables in Table 9.

**Table 8. Granger causality tests for the flow variables of internal and external balance**

	<b>F-statistic</b>	<b>p-value</b>	<b>F-statistic</b>	<b>p-value</b>	<b>Verdict</b>
	<b><i>Fiscal deficit Granger-causes trade deficit</i></b>		<b><i>Trade deficit Granger-causes fiscal deficit</i></b>		<b><i>Fiscal--Trade</i></b>
ALG	0.0233	0.977	0.0645	0.938	No causality
EGY	0.8684	0.436	1.3061	0.294	No causality
JOR	0.8753	0.433	0.9046	0.421	No causality
LEB	0.4420	0.649	0.5534	0.584	No causality
MOR	0.8712	0.435	0.9840	0.392	No causality
TUN	0.2650	0.770	2.9094	0.079	One-way from trade
	<b><i>Fiscal deficit Granger-causes CA deficit</i></b>		<b><i>CA deficit Granger-causes fiscal deficit</i></b>		<b><i>Fiscal--CA</i></b>
ALG	0.1083	0.898	3.7848	0.041	One-way from CA
EGY	1.4217	0.266	7.3864	0.004	One-way from CA
JOR	1.0510	0.369	0.4363	0.653	No causality
LEB	0.4926	0.619	7.7397	0.004	One-way from CA
MOR	1.2464	0.310	0.4113	0.669	No causality
TUN	0.2978	0.746	2.8966	0.080	One-way from CA

In the top panel of Table 8 we test for the relationship between the fiscal and trade balances. As can be seen in all six cases, we find no evidence that the fiscal balance ‘Granger-causes’ the trade balance. For all countries, the obtained F-statistics are very low and the corresponding p-values (which show the joint statistical significance of the lags of the fiscal balance in the trade balance VAR) are always well above the 10% threshold. No evidence of causality is also found in the opposite direction (trade causes fiscal), except for the case of Tunisia, where the F-statistic is significant at the 10% (but not at the 5% – p-value=0.079). Thus, we have to conclude that in the very narrow sense of the ‘twin deficits’ hypothesis, our sample shows no evidence of a link between the two aggregates and it is thus more in favour of the Ricardian Equivalence hypothesis. When we look, instead, at the traditional form of the ‘twin deficits’ hypothesis (testing for the relationship between the fiscal balance and the current account – see the bottom panel of Table 8), we do find some evidence of a causal relationship. Evidence of causality from the direction of the fiscal balance continues to be non-existent; but this time we find evidence that the current account Granger-causes the fiscal balance in four out of the six countries examined – namely Algeria, Egypt, Lebanon and Tunisia. As this is a more traditional test for the ‘twin deficits’ hypothesis, we are forced to conclude that in the majority of the six MENA countries, Ricardian Equivalence does not hold. However, the

results clearly indicate that the direction of causality runs uni-directionally from the external balance (current account, and apparently for income flows not related to trade) to the fiscal balance. In other words, internal (fiscal) imbalances seem to be driven by imbalances in income flows (e.g., remittances) in four out of the six countries studied here; while in no case do we find current account or trade imbalances to be caused by the domestic fiscal stance.

There is, however, one case where we find internal imbalances to ‘Granger-cause’ external imbalances. This concerns the case of the government and foreign debts. As is shown in Table 9, we find that for half of the six MENA countries (namely, Algeria, Jordan and Morocco), past values of the government debt are a statistically significant determinant of current values of the foreign debt; while there is no evidence suggesting the inverse direction of causality for any of the MENA-6. Given the fact that governments in the six MENA countries rely typically on external borrowing to finance their debts, the apparent causal link between government debt and foreign debt (running from the former to the latter) comes as no surprise. Rather, it is more surprising that for countries such as Tunisia, Lebanon and Egypt we find no evidence of a link between the two debt aggregates.

**Table 9. Granger causality tests for the stock variables of internal and external balance**

	<b>F-statistic</b>	<b>p-value</b>	<b>F-statistic</b>	<b>p-value</b>	<b>Verdict</b>
	<b>Govt debt Granger-causes foreign debt</b>		<b>Foreign debt Granger-causes govt debt</b>		<b>Govt--Foreign</b>
ALG	18.4221	0.000	2.1549	0.143	One-way from govt
EGY	1.7834	0.195	0.3457	0.712	No causality
JOR	3.1755	0.065	0.2739	0.763	One-way from govt
LEB	0.6114	0.553	2.4105	0.117	No causality
MOR	3.1132	0.068	1.7197	0.206	One-way from govt
TUN	0.7934	0.467	0.8648	0.437	No causality
	<b>Govt debt Granger-causes NFAs</b>		<b>NFAs Granger-cause govt debt</b>		<b>Govt--NFA</b>
ALG	3.3910	0.055	3.2964	0.059	Two-way
EGY	0.7800	0.473	1.8176	0.190	No causality
JOR	0.4816	0.625	4.3529	0.028	One-way from NFAs
LEB	6.7973	0.006	6.8656	0.006	Two-way
MOR	0.1729	0.843	5.0671	0.017	One-way from NFAs
TUN	1.4738	0.254	7.9794	0.003	One-way from NFAs

We obtain a very different picture about causalities when we examine the relationship between government debt and the NFA position. Here, in five out of the six countries we find the NFA position to ‘Granger-cause’ government debt – and the result for the sixth country (Egypt) is rather marginally outside the 10% threshold (p-value=0.19). In two cases – Algeria and Lebanon – we find that the relationship is bi-directional (i.e., also running from government debt to NFA). This bi-directionality seems to perhaps relate to the specific characteristics of these two countries, namely the oil-exports dependency of Algeria and the crisis-related indebtedness of Lebanon. Albeit for different reasons, in both cases instability (changes) in government debt would plausibly translate to

subsequent adjustments in the NFA position. But with the exception of these two cases, the main message here, as was the case with the results from Table 8, is that for the majority of countries internal imbalances do not seem to cause external instability. Rather, the opposite holds for the case of NFA.

On the whole, the causality analysis seems to raise relatively little concern for fiscal imbalances. At no point do we get any evidence that a government’s fiscal stance (budget deficit) ‘causes’ external imbalances, either with regard to trade or with regard to the current account. Government debt has been found to be a potential source of instability with regard to external debt, but only in three out of the six countries examined (Algeria, Jordan and Morocco); while even thinner evidence was there to suggest that government debt can destabilise the NFA positions of the countries examined here. Rather, vulnerabilities with regard to NFA positions were found to have the potential to destabilise government debt (except for the case of Egypt); while current account imbalances were found to ‘Granger cause’ fiscal pressures in the majority of countries (except for Jordan and Morocco). Thus, it appears that as a general rule, internal imbalances do not seem to be the core driver of external imbalances. Rather, it is external imbalances that more often than not may threaten to destabilise internal balances. These external imbalances seem to concern mainly income flows (current account excluding the trade balance) and stocks of asset holdings (NFA). They are thus less linked to real or nominal domestic aggregates (e.g., productivity, inflation) and more linked to external variables, such as world prices and growth rates (but also including the exchange rate).

#### **4.6 Discussion**

The extensive analysis in pursuit of econometric evidence for external and internal sustainability in the six MENA countries presented in the previous sections has revealed a number of interesting results. At a first look (i.e., based on the unit root tests), evidence of internal sustainability was found for only 23% of the cases examined (19 out of the 84 tests applied for internal sustainability and 38 out of 168 tests applied for external sustainability). However, closer examination, including various cointegration tests for some of these aggregates (fiscal and trade balances) and tests of ‘effective sustainability’ for the debt aggregates (public and foreign) gave altogether some more systematic evidence of sustainability. In this, internal sustainability appeared to be more widely accepted for most of the countries considered (except Morocco), while evidence of external sustainability was somewhat scarcer, especially as far as the external debt was concerned. This is an important finding as – as we showed subsequently – much of the link between internal and external imbalances runs from the latter to the former and not vice versa. The main exception to that concerned the case of government debt (accumulated fiscal imbalances), which was found to be unsustainable for more

cases than was the case with the fiscal balance and which was further found to Granger-cause external debt in three out of the six countries examined. We read this evidence as suggesting that internal fiscal imbalances are not the main source of concern for the six MENA countries and should not be viewed as such. In this regard, the relatively mild fiscal derailments seen in many of the six MENA countries in the period after the recent crises (2008-2011), as shown in the descriptive analysis of section 3, although of course worthy of policy attention, especially in the short run, should not be seen as the main problem facing policy-makers in the region in the longer-run. In the longer-run, the main problems concern the current account, external debt and NFA positions of these countries, and especially aspects relating to income flows. This is of course a conclusion stemming out from a historical analysis (examining trends in the relevant aggregates over a quarter of a century). For day-to-day policy-making, fiscal derailments in an environment of heightened uncertainty, as was the one that characterised the period immediately following the crisis, are of course highly important. In the next section, we review the policy responses to these risks in the six MENA in the period since 2008.

## **5. Fiscal policy responses – austerity measures**

As noted earlier, imbalances in the six MENA countries push governments to opt for economic reforms as a solution and a way out to achieve economic growth and development. However, high consumption levels, the low level of domestic saving, and the low level of investments forced many countries to borrow to finance their plans. The ideology towards government expenditure is unchanged; it leads to the misuse of the borrowed funds which place countries in a - vicious cycle. Countries need to rationalise their governmental expenditure. In the following section, we will investigate each country fiscal responses.

### **5.1 Algeria**

The drop of oil prices in 1985 urged Algerian government to opt for open economy as a solution aiming to attract investment- a step the economy was not ready for as it requires fast adaptation and a competitive edge. In this transitional period, Algeria applied financial and monetary reforms, in which it resorted to the International Monetary Fund (IMF) and the Monetary and Loan Act of 1990. These constituted a fundamental turning point in the reform of the Algerian banking system. The proposed reform program conditioned with applying a free trade, market system and withdrawing the government from the economic activity. Accepting the IMF reform conditions let Algeria benefit from a loan worth of 315.2 million SDR (\$ 360 million). This loan helped to ease the burden of internal debt that exceeds 60 percent of GDP, (Djilali, 2001). In the 1990s, Algeria started to increase exporting non oil products with a noticeable growth rate that was achieved during the period 1995-2003 (except 1997, 1998) after Kuwait invasion which affected Algeria exports negatively. Through

the period 2001-2004, a fiscal stimulus policy was introduced by increasing government expenditure in investment where they allocated more than \$ 7 billion for this sector. During 2005- 2009, the government adopted a stabilization policy to control government imbalances (Benhafsi, 2008).

Algeria has adopted an expansionary fiscal policy to promote aggregate demand and get out of recession. During that period, the government spending increased (private and/ or public, consumer and/ or investment) in order to stimulate production (encouraging enterprises to invest to meet the increase in demand), thereby supporting growth and absorbing unemployment. The expansionary policy pursued was based on the public investment programs implemented or ongoing throughout the period; such as: the Economic Recovery Support Program (2001-2004), the Supplementary Growth Support Program (2005-2009) or the First Five-Year Plan, The Economic Growth Consolidation Program (2010-2014) or the Second Five-Year Plan. Results showed a clear fluctuation in GDP growth during the period (2001-2009) (Massai, 2010). Such fluctuation reflects that the reasons of the problems remained without solution and these programs are analgesics for economic problems. Algeria's fiscal balance has deteriorated very fast recording a deficit of 4.1 percent to increase to 12.9 percent during the period from 2012- 2015. But, they are still managing the public debt at low level - 8.2 percent of the GDP in 2008 and 7.9 percent of GDP in 2014 (Greg et al., 2017). The most prominent measure taken at this stage is to cut investment spending, an increase in fuel taxes, as well as a freeze on many infrastructure projects and a halt to civil service employment across the country. Algeria government had a tightened monetary policy to prevent upsurge in prices as money growth dropped from 4.8 percent in 2009 to 2.7 percent in 2015. Using tight monetary policy showed its' effectiveness (Escribano, 2016). The government has shown a clear reluctance to accept the austerity measures and has delayed fiscal tightening that targeted to drop public spending by 9 percent in 2016. Fiscal consolidation should entail over the medium term a gradual reduction in the wage bill, as a percent of GDP, to levels that prevailed before 2011. These shocks reflect on the external trade balance to record a deficit in the first time of the history of Algeria to record 10.2 percent of GDP in 2015. Algeria experienced a drop in oil prices as it widened budget deficits to 17.9 percent in 2016, depleted currency reserves, triggering a balance of payments crisis. In 2016, investment spending reduced by 9 percent and increased taxes on fuel products, and freezing several infrastructure projects and recruitment. Adopting tighten monetary policy prevented upsurge in prices as money growth dropped from 4.8 percent in 2009 to 2.7 percent in 2015. Recently, the new budget bill also includes a rise in value-added tax (VAT) to 19 percent, taxes on property rentals increased by 10 percent (IMF, 2016).

History showed that Algeria is vulnerable to oil shocks owing to its dependence on the oil and gas since 1990; GDP depends on oil more than 95 percent and the government revenue depends on oil

with more than 60 percent and by 2014, the hydrocarbon represent 60 percent of the fiscal revenue and 97 percent of the total exports (Lopez-C. *et al.*, 2016). However, the impact of the economic expansion policy on growth in Algeria was not as strong as expected. The hydrocarbons sector was still a major component of GDP -growth outside hydrocarbons- and the contribution of industry (the basis of all real and lasting growth) to economic growth is weak. The expansionary fiscal policy lacks effectiveness, as one of the main objectives of this policy is to achieve real and sustained growth outside the hydrocarbon sector, which will have a strong impact on the overall operation and development. The internal imbalances can be attributed to the absence of a clear and comprehensive economic strategy to overcome it and exploit the comparative advantages available to be more effective and competitive economy. The inappropriate institutional environment under which the private sector currently operates encourages more to search for sources of rent, rather than creativity and productive activities.

In 2016, Algeria's trade deficit exceeded \$ 20 billion (the balance of payments was in deficit in excess of \$ 26 billion). Owing to large accumulated exchange reserves, the external position of the country remains stable. However, exchange reserves are depleting fast (reportedly, from \$ 193 billion in May 2014 to \$ 105 billion in July 2017). Besides this external position, internal imbalances are also appearing, as government finances are being squeezed by the reduced revenue collection of petroleum. The Revenue Control Fund was recalled in February 2017 while the Treasury has also resorted to supplementary resources during the last two years, such as the exceptional profit payments by the Bank of Algeria and an external loan from the African Development Bank (worth 100 billion dinars). The outlook for 2018 appears thus rather risky (WD, 2017).

## **5.2 Egypt**

Since 1990s, the Egyptian government has based its policies on expanding the role of the private sector in economic life and reducing the role of the public sector. The state followed the market economy and launched the program of economic reform and structural adjustment in 1991. The average economic growth rate decreased during the period of economic reform compared to the period before the economic reform. Egypt's internal debt continues to increase to record 84.4 percent in 1991 and continue to increase hitting 129.7 percent of the GDP in 1993, by 2001, domestic debt started to increase recording 118.2 percent in 2005, see figure 1. This resulted in the accumulation of international reserves combined with increasing domestic debt. Egypt as a rental economy suffered from the collapse of tourism sector, working remittances and Suez Canal returns dropped which represent main sources of hard currency. In 2007, domestic debt started to decline than 100 percent

from GDP to record 77.6 percent in 2010 to increase to reach 104% of GDP in 2016 (Abdel-Khalek, 2007).

After 2011, the Egyptian revolution and the subsequent political changes drastically affected the economy which suffered many setbacks due to businesses closures and local producers and exporter’s reduced exports and increased imports resulting in further imbalances<sup>20</sup>. This resulted in growth in the unemployment and increase in the domestic public debt to exceed 100 percent of GDP. This was carried out by adopting austerity measures via cutting energy subsidies, floating exchange rate, increasing revenue by applying 14 percent VAT Tax instead of the sales tax, and increasing the custom duties for 230 categories of goods. The country income tax was reduced from 25 to 22.5 percent. The government increased electricity fees by 10 percent in January 2014, then again by a further 10 percent in May 2014 (CBE, 2016).

In fact, Egypt will have to make concessions to receive three installments of this loan<sup>21</sup>, targeting to ease the impacts of the imbalances. The total rates of unemployment at 12.5 percent in mid-2016 (up from 9 percent prior to 2011) is a particular concern, with higher rates among the youth and women (World Bank, 2016). In addition, the implementation of floating exchange rate reflected on high inflation reached 20.2percent in the same month, CBE (2016). This decision is a double facet. Firstly, it increases the country competitiveness and the Egyptian government should therefore take advantage of this reduction as much as possible through the revitalization of the industry and create a good environment for increasing production, as they should work seriously to overcome difficulties that hinder the flow of investments. Secondly, this decision affected the prices, which was the highest in the past seven years. The issue negatively reflects the purchasing power. Government liberalization of the exchange rate in November 2016 has contributed significantly to the increase in prices, especially with no control of the domestic market. This had led to the resort of the Central Bank of Egypt to use the weapon of raising interest rates three times since the Bank announced floating exchange rate of the local currency. The first time was associated with floating decision where the interest rate was raised by 3% once, the main interest rate had stabilized around the 12.25% rate throughout the fiscal year 2015/2016 which ended in late June 2016 (CBE, 2016). The more government demand for finance is borrowed from banks, the higher the interest rate will be pushed through public treasury bills. We have no doubt whatsoever that government demand for liquidity is the main driver of higher interest rates in Egypt. By linking the position of the internal Egyptian debt with the state's fiscal

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<sup>20</sup> For further details ECES,2015

<sup>21</sup> After the Egyptian economy continued to suffer from a severe deterioration in its various indicators, after the January 2011 revolution, Egypt succeeded in obtaining a new loan from the Fund on 11 November 2016 using the Expanded Facility (EFF) 2019, with a total value of about SDR 8.5966 billion (SDRs) of about US \$ 12 billion or 422% of Egypt's share, International Monetary Fund (2017b).

policy, it turns out that the increase in the interest rate leads to an increase in the burden of the state towards paying the increased interest on its scheduled dates, and it has to increase the debt service with the proposed budgets in the next financial years.

No one can deny that the applied flexible exchange rate results in: ending the phenomenon of the parallel market, stopping the problem of non-availability of foreign currency, increasing central bank reserves. Egypt recovered investor confidence, which was reflected in the large demand for dollar bonds issued by Egypt in January 2017 (IMF, 2017). Theoretically, the devaluation must increase competitiveness and the exports increases compared to the previous year, but the volume of exports is still less than the volume of Egypt's exports before the revolution. This is due to the dependence of many Egyptian industries on the foreign component. Although the current balance deficit is low, the size of the deficit is estimated to be twice the size of the deficit in 2010/2011. The cost of economic reforms was high as many citizens are suffering from inflationary pressures, knowing the continuation of plans to increase revenues by raising the price of VAT and the completion of the plan to raise energy subsidies. To overcome the social burden, the government provided "Takaful and Dignity Program" to include 1.6 million families, approximately 8 million people (women receive 92% of their benefits)<sup>22</sup>. The core of this program is to compensate the poor from the negative effects of economic reform.

In the fiscal year 2017/2018, the Egyptian government aims to improve the performance of the tax system by: activating the implementation of the law of ending tax disputes; the completion of standardized preparation to simplify the tax treatment of medium and small enterprises; completion of preparation of the law of standardization of tax procedures, which contributes to the existence of full consistency between procedures; and achieving tax stability and work to expand the tax base, thereby increasing state resources.

From this previous review, we can conclude that the policies advised by the Fund depended on the ability of the Egyptian authorities to contain inflation and stabilize prices while maintaining the target growth rates (which the fund pointed out to be the biggest challenge). Inflation in its current form is a

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<sup>22</sup> The program is based on: expanding the school meal program to accommodate all public schools, increasing government spending on the nursery program, increasing the value of transfers of cash support provided through smart cards - from 21 to 50 Egyptian pounds per capita, increasing transfers of support for infant formula and pediatric medicines, extending the social solidarity pension network to cover medical coverage, new gas connections in slums, exceptional bonus for government employees due to high inflation, and collaborating with the private sector to launch an innovative program that provides safe transportation.

threat to economic stability and a burden on the poor, but the Fund has praised the direction of the bank to absorb liquidity by increasing interest rates (which will negatively affect investment). More importantly, government needs to allocate government expenditures for economically viable projects to ensure sustainable growth and encouraging investment (not wasting government spending).

Finally, to assess the impact of the financial reform program on the development of the budget deficit and the public debt in Egypt, any financial and economic reform program needs years to be adequately assessed, but the previous presentation can provide an initial assessment of the implications of what has been implemented in the recent period.

The obvious positive impacts of the economic reform program concern the following:

1. A reduction in the size of the budget deficit and public debt and lower dependence on dollar-denominated borrowing with stabilisation of the foreign exchange reserves and the potential to raise the outlook of Egypt's sovereign credit rating, which in turn will allow for cheaper borrowing and less risky international loans.
2. An improvement in the competitiveness of Egyptian exports and a general improvement in the investment climate, increasing FDI inflows and net foreign exchange reserves, with consequent opportunities to attract more targeted foreign investments that will substitute imports for domestic production.

But the translation of these reforms into real growth and investment that reaches all segments of society is still unclear.

1. On the one hand, fiscal consolidation has been costly in terms of disposable incomes and, possibly, income distribution; economic reforms also have distributive consequences and may hurt particular segments in society much faster and much more intensely than they help uplift the economy as a whole.
2. On the other hand, the stabilisation of external accounts in an environment of low exchange rates and difficult-to-control inflation creates room for new fiscal expansion which may re-burden public finances and lead to the accumulation of more debt. Fiscal prudence and stability, as well as continuation with selected structural reforms, seem therefore to be necessary.

### **5.3 Lebanon**

Since early 1990s, the Lebanese government resorted to deficit financing from the domestic and international financial markets through issuing treasury bills. The inadequate collection of taxes and

the heavy governmental expenditures on infrastructure and uncontrolled spending led to the escalating of the internal imbalances. The absence of a state spending plan during 1993 and 2009 and the absence of general bureau meetings placed Lebanon in endless insecurity. By the end of 2013, the total public debt recorded around US\$ 63 billion of about 150 percent of GDP (Neaime, 2014). Since early 1990s, Lebanon's current and capital account started registering significant surplus. In 2004, that capital inflow started rising and remained stable. During 2005, these capital account surpluses offset the current account deficit. External debt continued to increase during the 2000s which implies that Lebanon will continue depending on external finance pushes for further deterioration of its current account and budget deficit triggered with more pressure enforced by the fixed exchange rate. After the decades of long war in Lebanon, the state foundations were debilitated and the economy witnessed growth in the GDP that range between 5 and 4 percent annually after 1990. In April 1996, the economic activity dropped dramatically due to security instability and the real GDP grew at an average annual rate of less than 3 percent per year for 1997 and 1998 and only 1 percent in 1999. Given the frequent security turmoil it has faced and the financial crisis, the Lebanese economy experienced continuing resilience, growing 8.5 percent in 2008, 7 percent in 2009 and 8.8 percent in 2010. Furthermore, the Syrian war and the region instability contributed to lower the growth in the region (see figure 1).

During 2016, consultation focused on three key themes: (i) starting the process of fiscal adjustment immediately; ii) standing ready to increase interest rates to support financial inflows, if needed; while safeguarding financial stability; and (iii) laying the ground for higher-quality and more inclusive growth. Fiscal measures includes: (i) an increase in the corporate income tax rate (from 15 to 17 percent); (ii) the introduction of a capital gains tax (make sure all singular or plural) on real estate; (iii) an increase in the rate on interest income tax (from 5 to 7 percent, though timing may depend on deposit behaviour); (iv) an increase in the VAT rate from 10 to at least 11 percent; (v) an increase in tobacco excises; and (vi) new stamp duties and fees (IMF, 2016). During 2017/ 2018 the lebanese economy will maintain the same challenges.

#### **5.4 Tunisia**

Tunisia's experience is one of the most successful experiences in the area of reforms. It was able to create an open economy with an external orientation where economic growth rate reached 5 percent during 1995-2000. The economy knows how to resist the constraints and showed a great ability to adapt - achieving growth of 5.5 percent. In 2008, a positive result that led to the decline of poverty and the expansion of the middle class. The recession in the euro region shifted to the MED countries

main trading partner to the EU. In 2012, growth declined to 3.7 percent (especially after Jasmine revolution in 2010). It kept declining to reach 2.8 percent in 2013, 2.3 percent in 2014 and 0.8 percent in 2015.<sup>23</sup> Later, in 2014, authorities applied a new pricing formula for petrol to reflect moves in international oil prices. The authorities also intended to boost government revenues by approximately 1.5 percent of GDP a year in the medium term through a tax reform due to be implemented in 2016<sup>24</sup>. Furthermore, the government officials started a tax reform plan to create greater equity, mobilization of government revenue, and simplification of procedures. Tunisia's monetary policy is a two-edged sword. Despite the role it played in reducing inflation rates by a small percent they imposed a great financial pressure on the Tunisian economy such as pressure on institutions and the difficulty of obtaining bank financing. Thus, it has to simplify VAT tax, reducing exemptions, removing specific products list, and rationalizing custom duties from 7 to 3 levels. Also, government targeted fairness through widening the tax base, making the personal taxation more progressive and taxing small enterprises in simpler way (Apergis, 2015).

In order to reduce the deterioration of the Tunisian economic situation, the structural reform program came with a series of reforms aimed at removing the Tunisian economy from its internal imbalances. The Tunisian government took short-term measures aimed at curbing the deterioration of the economic situation and medium-term measures aimed at increasing the consideration of the mechanisms of the market. Therefore, the structural reform program focused on reforming the budget deficit in order to reduce the budget deficit and give greater efficiency to public expenditure. According to Haouas, *et al.* (2011) they showed that before Jasmine revolution the unemployment rate tripled especially for those who had masters and college diplomas. This high rate of unemployment was mainly caused by demography where the youths were growing at a faster rate than that of the economy. Tunisia Public debt has continued recorded more than 60 percent GDP in 2016. Measures have taken by the authorities in the 2017 to reduce the overall fiscal deficit modestly to 50.9 percent by 2019. Government froze hiring in the public sector, suspension of a salary increase that had already been agreed upon with the Tunisian General Labor Union, with an aim to reduce the Public sector wage bill from 13.5 percent of GDP in 2015 to 11 percent by 2018, and raise taxes on companies and certain professions.

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<sup>23</sup> After revolution, the economy was performing very poorly last year in all sectors except in agriculture which witnessed a boom with the help of strong rainfall. The sluggish growth of demand in European Union held back the production from the textiles industry and the mechanical and electrical goods industry as well- which are the fundamental manufacturing sub sectors in Tunisia. As well, output of mining grew by 12% as a result of the sit-ins and strikes that hit a few phosphate mines but kept 40% below the levels that existed pre-revolution. On the other hand, oil and gas production was performing at a very low level since that investment was held back by some foreign firms following contractual disagreements or conflicts with the authorities (Card, 2015).

<sup>24</sup> In September 2016, the parliament adopted a law on investment (No.71/2016), which will take effect in April 2017, granting private enterprises tax incentives.

## 5.5 Jordan

The successive economic reforms were also adopted in Jordan due to the region instability that affects its economic growth which relies on the services (around two thirds of its GDP). Manufacturing is the second important sector (about one fifth of GDP); agriculture's contribution to GDP is low- namely 3 percent. Jordan also relies on high workers' remittances and public grants (22 percent of GDP). The remittances reflect the large number of Jordanians working abroad, in the Gulf region in particular. Nonetheless, Jordan still faces relatively large unemployment rates (14 percent in 2006), with low labor productivity (Dali, 2013). During 2000-2007, the economic growth record 5.9 percent, inflation of 3.1 percent reflecting the impact of reforms that contribute to reducing the Public debt from 98.4 percent of GDP in 2002 to 60.3 percent. By the end of March 2008, Jordan attracts US\$ 3,121 million foreign direct investment (FDI) in 2008 (World development indicator, 2016). Similarly, Jordanian government adopted an austerity budget that cut both current expenditure and development investment (Kanaan, & Kardoosh, 2002). Similarly, an economic reform was applied based on the openness of trade, privatizing nonprofit government activities, and eliminating some fuel subsidies. All these procedures achieve economic growth by attracting foreign investment and creating some jobs. In 2011 and 2012, the Jordan government approves two economic relief packages and a budgetary supplement, meant to improve the living conditions for the middle and poor classes.

The Government of Jordan has introduced social protection systems and reformed subsidies, creating the conditions for public-private partnerships in infrastructure and making tax reforms. More work was needed and in order to accomplish this, the focus - in 2015- was on identifying steps towards enhancing the investment climate and ease of doing business which can lead to concrete outcomes (World Bank, 2016). Unfavorable territorial advancements - specifically the Syrian and Iraqi emergencies- remained the biggest late shock influencing Jordan<sup>25</sup>. After four years of steady recovery, Jordan's economy slowed down in 2015 for the first time since 2010, largely due to the effects of security spillovers from the regional crises<sup>26</sup>.

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<sup>25</sup> This is reflected in an uncommon refugee influx, in disturbed exchange routes, and in lower investment and tourism inflows. The vast number of Syrian refugees entering the nation is strongly affecting the nation's economy and social texture. Other significant difficulties confronting Jordan include high unemployment, a reliance on grants and settlements from Gulf economies and additionally proceeded with pressure on common assets.

<sup>26</sup> On August 24, 2016, the IMF Board of Directors approved a three-year extended arrangement under the Extended Fund Facility (EFF) for Jordan to support the country's economic and financial reform program. This program aims at advancing fiscal consolidation to lower public debt and broad structural reforms to enhance the conditions for more inclusive growth. Moving forward, it will remain critical for Jordan to continue diversifying its energy supply in the medium term in order to reduce its macroeconomic vulnerabilities. Sound economic policies and growth-enhancing reforms will also be necessary to reduce the country's sensitivity to external shocks. Finally, creating conditions for increased private investment and improved competitiveness will remain indispensable for Jordan to stimulate job-creating growth (World Bank, 2016).

## 5.6 Morocco

Similarly, Morocco<sup>27</sup> has been experiencing a changeable GDP economic growth during the period 1990 -2015, range between 5 percent and 3 percent. In 2015, it recorded 4.5 percent growth. The GDP growth in Morocco has been fluctuating, but the government's main concern has always been to have a stable macroeconomic performance. Since 1990s, by the time king Mohamed VI took the throne, he adopted various political and economic reforms targeted more openness to the world especially to foreign trade and investment and privatizing state-owned companies (Rochac, 2013). The Moroccan experience with the transition did not include that much of violence and damage as other countries in the region like Egypt, Tunisia and Libya. This led to the fast and new constitution reforms that had changes in the structure of the government which are largely responsive (Zemrani, & Lynch, 2013). Through the transition period in Morocco, the IMF program included commitment by authorities to reduce fiscal deficits and rationalize subsidies. After these negotiations - at the end of 2012 - some measures were taken such as a series of price increases and tax changes, so the IMF backed this economic reform program (Pinner and Symons, 2013).

Morocco has requested the Fund's assistance four times<sup>28</sup>: on August 3, 2012, on 28 July 2014 and on 22 July 2016 and ends by 21 July 2018 (International Monetary Fund 2017c), with a total value of about SDR 2.504 billion (SDRs), or about US \$ 3.47 billion or 280% of the IMF's (mention one name only) International Monetary Fund (2016). Over the past three years, economic imbalances have considerably been reduced as the authorities have implemented a package of economic reform policies that were supported by the IMF precautionary and liquidity line to help address the economic vulnerabilities. They were particularly able to achieve a significant reduction in the fiscal deficit and moved ahead with an impressive reform to the subsidy system, so as a current account deficit has also narrowed and foreign exchange reserves have increased. In 2014, the Moroccan authorities adopted a new green budget law. This was expected to strengthen and modernize the budget framework, also a new banking law was adopted which broadens the regulatory and supervisory role of Morocco's central bank (Boudla, 2015).

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<sup>27</sup> The service sector accounts for 50% of the GDP and mining, construction and manufacturing for an additional 25%. The major contributors to country's growth are tourism, telecoms, and textiles. Morocco is the world's third-largest producer of phosphorus. The reason behind the drops in the GDP growth every couple of years is the drop-in harvest of crops so that's why the country has recently becoming less dependent on agriculture because of the decreasing amount of rain that was the main source of water to these crops. This is because the government has always been concerned with economic growth that it developed cluster initiatives in the sectors in which it saw that it had comparative advantage in which are tourism, food processing, automobiles and business process outsourcing, and moreover the government increased public investment on infrastructure and transportation.

<sup>28</sup> through the "precautionary and liquidity line-PL" tool, beginning on August 3, 2012, which ended on July 27, 2014, and the second agreement started on 28 July 2014 and ended on July 21 2016, and finally the third convention began with the same instrument on 22 July 2016 and ends on 21 July 2018 (International Monetary Fund 2017c).

From the major gains for Morocco - after the transition- was the increase in the governance quality and transparency in both the private and public sectors. This has improved and strengthened business climates since there has been a more efficient registration process and better competition policies. Also, the government has adapted a better insolvency regime which reduced the risk associated with entrepreneurship along with better credit information systems, (Ejoh, 2015). Morocco has continued eligibility to obtain the program "line of prevention and liquidity". The government needs to adopt austerity fiscal policies to reduce public debt to 60% of GDP by 2020, reduce the budget deficit by about 2% gradually from GDP by accelerating tax reforms, make the system more equitable, eliminate tax exemptions on large agricultural sectors, and simplify VAT. These reforms are expected to increase revenues in the medium term by 1.5% to 2% of GDP. Also, accelerating the implementation of reforms in the pension system will include raising the retirement age and reducing privileges to ensure continuity of the system, decreasing the wage bill by implementing a broader reform of the civil service, and decreasing the fuel subsidizing and food as well, applying flexible exchange rate and maintaining Morocco's competitiveness in the global market, promoting growth by encouraging the private sector, and including encouraging small and medium-sized enterprises by improving access to finance and credit. There is an option of lowering interest rates while inflation rates remain low. Finally, applying labor market reforms and active labor market policies to address rising youth unemployment and low female participation in the labor force should take place.

Regardless of all these reforms and according to the second review by the IMF, Morocco remained exposed to internal and external risks that may result from external shocks or a result of the effects of economic reform policies. In this context, the "line of prevention and liquidity" remains an effective safeguard against external shocks and a means of supporting economic policies that the authorities are implementing (IMF 2017c).

Thus, we can conclude that the economic performance won the satisfaction of the Fund through granting the three-fold prevention and liquidity facilitation and the completion of the audits - was not significantly affected by instability problems (Morocco is repeated many times). In view of the growth rates and the high rates of exports and revenues, the importance of production and the direction of investments are evident in order to encourage economic diversification. Morocco's reform plans aimed at increasing economic diversification have led to the emergence of new industries in Morocco with greater value added (cars, aviation and electronics). Morocco has higher export revenues than traditional sectors such as agriculture and phosphate (IMF, 2016).

Morocco puts a lot of focus on improving its human capital development after the transition. This means both pushing for higher primary and secondary school enrolment and education in interaction with local universities. Also, the government puts a lot of focus on improving its local infrastructure. The policies that the Moroccan government had to adapt in agreement with the IMF focused on the gradual reduction of the fiscal deficit specifically through slowly reforming the extensive system of subsidies, maintaining monetary stability to keep inflation low, improving the balance of payments position by attracting FDI and borrowing in the international capital markets (Khan & Mezran, 2015).

## **6. Conclusion and policy recommendation**

In an environment of heightened economic and political uncertainty, both domestically and internationally, macroeconomic imbalances is, and should be, a cause of concern for any government – in small and large countries; in advanced, emerging or developing economies; and in countries with dynamic or stagnating demographics (e.g., in terms of population growth). Traditionally, external imbalances have been seen as a signal of either problems of domestic competitiveness (e.g., productivity) or problems with regard to currency misalignments and capital flows. In turn, internal imbalances are often associated with fiscal profligacy and domestic problems of economic dynamism and administrative capacity (e.g., with regard to tax evasion). Often, however, internal and external imbalances are interlinked – both causally, i.e., in the sense of one driving the other, and through the economic behaviour of markets (e.g., as perceived signals of domestic vulnerability to external shocks).

Still, governments often have imperfect information about their macroeconomic sustainability and the severity (let alone the causes) of their internal and external imbalances. This is not only (or, often) an issue of capacity. The concept of sustainability is in many respects rather elusive and different notions of it may lead to very different readings of a country’s position. In policy terms, sustainability (and thus macroeconomic risks) is often defined with regard to some ad hoc pre-determined threshold – for example, a current account deficit above 6% of GDP or a public debt level above 60% of GDP. In the econometrics literature – and, underpinning this, in terms of the temporal dynamics of the relevant aggregates – the notion of sustainability is rather viewed as something related to the long-term trend of the relevant aggregates and of their variance in particular, thus closely linked to the statistical notion of (non) stationarity. In practice, however, it is well understood that any level of debt, deficit or other type of imbalance is sustainable, as long as the resources are there to finance this imbalance. The question, in this respect, is of course whether the position a country finds itself in will remain manageable once the external environment deteriorates (e.g., owing to a ‘sudden stop’ in global financial markets).

Due to this, it is often – especially after the lessons drawn from the global financial and euro zone crises – that policy-makers will try to respond to any deterioration of fiscal or external aggregates with urgency and immediacy, so as to avoid the identified derailment – be it permanent, temporary, or simply perceived – to lead to a fully-blown crisis. In this context, the small deteriorations registered with a number of macroeconomic indicators in the six MENA following the global financial crisis and with the eruption of the Arab spring, even though – or perhaps especially because – they came as a halt to a previous trend of rather steady improvement from the situation in the 1980s and early 1990s, led domestic governments to undertake significant adjustment programmes often with the support, if not the encouragement, of international financing institutions such as the IMF.

The measures taken were rather varied across countries. These ranged from public sector hiring freeze and cuts in energy subsidies in Algeria; public sector pay-cuts and VAT hikes in Egypt; rationalisation of tax exemptions and implementation of various structural reforms in Jordan; rather small tax increases in Lebanon; pension cuts in Morocco; and other expenditure cuts in Tunisia. On the whole, however, across all these cases, policy measures followed to one extent or the other the standard dual strategy of fiscal consolidation (austerity) and structural reforms – as well as some price (including exchange rate) adjustments – aiming at rationalising public finances and at liberalising and modernising the economy. Given the international environment (including pressures from ‘international advice’), the usefulness – let alone the appropriateness – of such a response was hardly questioned; while also little discussion was afforded *ex ante* to its social and distributional consequences. In any case, the adjustment programmes in the six MENA countries seem largely to have worked, in the sense that no significant liquidity, balance of payments, or solvency crisis emerged and fiscal and current account imbalances appear to have largely been contained. At the back of this rather successful policy response, however, there is a general perception that economic outcomes may have become somewhat less equitable, hurting disproportionately the poor and the most vulnerable groups in society. With this background, the present study undertook to assess the extent and severity of external and internal imbalances in the six MENA countries in the period 1990-2015 as a means of evaluating the appropriateness and usefulness of the policy efforts for fiscal and external adjustment.

Our descriptive review of the historical patterns characterising the main macroeconomic aggregates of the six MENA countries revealed a rather optimistic picture, with few cases of – mainly chronic – problems (e.g., debt levels in Lebanon) but also many cases showing a secular improvement, at least in the period immediately pre-dating the eruption of the global financial crisis. The crisis saw a rather mild deterioration in the fiscal balance for a number of countries and perhaps a stronger deterioration in public and external debt levels – although not universally in the region. The evidence from the

econometric analysis, however, pointed more often than not towards internal (fiscal) sustainability and tended to suggest that the main problems of macroeconomic sustainability were related to the external balance, especially with regard to income and capital flows. It moreover showed that it is exactly these types of imbalances that can transmit to the internal balance, threatening fiscal sustainability. In conclusion, our analysis presented no clear evidence for the need of urgent and extensive fiscal consolidation; rather, the long-run imbalances observed seem to call for targeted structural reforms aiming to raise domestic productivity (for improving export performance) and domestic savings (as a means to help de-link government debt from external debt, which we found to be causally linked in three out of the six countries). This diagnosis, which comes rather robustly out of our very extensive econometric analysis of sustainability, is however rather far from the diagnoses that seem to have underpinned the policy responses to the (rather minor) fiscal derailments of the early 2010s. Rather, policy was focused exactly on the fiscal ‘symptoms’ and only secondarily on the external imbalances which, econometrically, showed stronger signs of vulnerability.

It is of course easy to stand critical against a policy response which had to operate with urgency in an environment of high uncertainty and in the absence of full knowledge about the underlying economic fundamentals and dynamics. At the end, the policy responses seem to have worked – at least to some extent – keeping the six MENA countries out of any severe crises and managing to correct some of the derailment of the late 2000s / early 2010s. The measures implemented, however, were socially costly, causing increasing strain in rather vulnerable segments of the population. We posit that the main lesson that can be drawn from this experience is that the policy-makers of the future ought to be more proactive, both in identifying the macroeconomic problems and vulnerabilities even in seemingly ‘good times’ and in understanding the limits of policy responses that may seem economically desirable on the aggregate but which may have significant distributional consequences – and thus be rather undesirable socially.

The recent (i.e., beyond our data coverage) destabilisation of countries such as Algeria, owing almost exclusively to external developments with regard to international oil prices, help to emphasise this point further. Despite the improvements registered through the implementation of fiscal consolidation measures and the general resilience shown by the MENA-6 countries during and after the financial crisis (at least vis-à-vis countries in the northern Mediterranean), the fact remains that the MENA-6 have generally a large exposure to external financial threats which can quickly destabilise not only their external balances but also their fiscal positions. To address this issue, longer term policy responses are needed, that will seek to first and foremost enhance and diversify these countries production base and, through this, assist with the modernisation of key sectors of the economy (including agriculture) and with a much-needed and economy-wide rise in productivity. At the same

time, policy efforts should also concentrate on strengthening the domestic side. On the one hand, expanding the tax base and improving tax collection measures, so as to strengthen and make more resilient the public finances and to afford the space for a more effective tax scaling – which, in turn, will allow for a further expansion of the tax base via reduced informality and tax evasion. On the other hand, encouraging private entrepreneurship and investments (including via targeted public investments and government subsidies) in key sectors of the economy that will expand the production base of the country and help reduce the import dependence (and high import propensities) seen in most of these countries. Production diversification and a more effective tax system can contribute immensely to rising productivity (and export competitiveness), declining import-dependence (and current account deficits) and, through these, to reduced vulnerability to external shocks.

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## Appendix

**Table. Stationarity test for government revenue and expenditure and exports and imports for goods and services (1990- 2015)**

Country	Model	G_REV	G_EXP	EXPGS	IMPGS
ALG	ADF(t), c	-2.1846 (0)	-1.0444 (0)	-1.8423 (0)	-1.7650 (0)
	ADF(t), c/t	-2.1243 (0)	-2.5331 (0)	-1.4884 (0)	-3.0837 (1)
	NgP(Zt), c	-1.6794 (0)	-0.5862 (0)	-1.3792 (0)	-1.5954 (0)
	NgP(Zt), c/t	-1.8876 (0)	-2.0696 (0)	-1.5073 (0)	-2.0778 (0)
EGY	ADF(t), c	-1.3560 (0)	-3.0061* (0)	-3.8363** (5)	-2.3537 (1)
	ADF(t), c/t	-3.1381 (0)	-3.1523 (0)	-3.7852* (5)	-2.2708 (1)
	NgP(Zt), c	-1.2336 (0)	-1.6247 (0)	-34.475** (3)	-1.8346 (1)
	NgP(Zt), c/t	-2.3317 (1)	-2.1387 (0)	-20.236** (3)	-1.9537 (1)
JOR	ADF(t), c	-1.4227 (0)	-3.3459* (0)	-1.9354 (0)	-2.0351 (0)
	ADF(t), c/t	-2.4017 (0)	-3.6683* (0)	-2.0606 (0)	-1.9965 (0)
	NgP(Zt), c	-0.8542 (0)	-1.4133 (0)	-0.8123 (0)	-1.3266 (0)
	NgP(Zt), c/t	-2.0250 (0)	-2.1240 (0)	-1.5847 (0)	-1.6122 (0)
LEB	ADF(t), c	-2.7803 (0)	-1.6721 (1)	-0.0083 (0)	-2.8131 (0)
	ADF(t), c/t	-2.7784 (0)	-3.3734 (5)	-2.8776 (0)	-2.8592 (0)
	NgP(Zt), c	-0.8896 (0)	-1.2696 (1)	0.0107 (0)	-0.9296 (0)
	NgP(Zt), c/t	-1.7557 (0)	-2.4349 (0)	-1.6847 (0)	-1.0132 (0)
MOR	ADF(t), c	-1.0813 (0)	-1.0098 (0)	-0.9368 (0)	-0.9927 (0)
	ADF(t), c/t	-2.3200 (0)	-2.5280 (0)	-3.7785* (0)	-2.7677 (0)
	NgP(Zt), c	-1.0142 (0)	-0.9247 (0)	-0.7804 (0)	-0.8504 (0)
	NgP(Zt), c/t	-1.7084 (0)	-1.8021 (0)	-2.2113 (0)	-1.8708 (0)
TUN	ADF(t), c	-2.5063 (3)	-2.5546 (2)	-1.8742 (0)	-1.6735 (0)
	ADF(t), c/t	-2.9458 (3)	-1.7015 (0)	-2.1346 (0)	-2.7580 (0)
	NgP(Zt), c	-11.754** (3)	-1.3826 (0)	-1.6923 (0)	-1.5384 (0)
	NgP(Zt), c/t	-13.090** (3)	-1.4233 (0)	-1.7985 (0)	-1.8550 (0)