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Marga Peeters
Nidal Sabri
Wassim Shahin *Editors*

Financial Integration

A Focus on the Mediterranean Region

Springer

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Marga Peeters • Nidal Sabri • Wassim Shahin
Editors

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Editors
Marga Peeters
Netherlands Institute for
Advanced Study
Wassenaar, Zuid-Holland
Netherlands

Nidal Sabri
Faculty of Commerce and Economics
Birzeit University
Birzeit, Palestine

Wassim Shahin
School of Business
Lebanese American University
Byblos, Lebanon

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This book has as theme the topical issue of financial integration with a focus on the Mediterranean region. It is composed of contributions by authors who participated in the workshop of the 13th annual meeting of the Mediterranean Research Meeting in Montecatini (Italy) in March 2012 that was organised by the Robert Schuman Centre for Advanced Studies of the European University Institute in Florence. At that occasion, a great and diverse number of experts from the region gathered to analyse the pros and cons of further international financial integration in view of the recent global financial crisis for this growing but vulnerable region, also taking into account the political events after and during the Arab upheavals.

This book provides an overview of our main findings. Starting with the general concept of financial integration, it discusses new ideas and developments in monetary and fiscal policymaking, banking in some North African countries, cutting-edge research on financial markets and risk management and then moves towards social aspects, including international trade analyses. This book does not only highlight the South Mediterranean region that covers the Northern African and Middle Eastern economies, but it also provides special attention to the Gulf countries, the Western Balkans, the European Union and other main international financial or trading partners of the Mediterranean region.

The approach of discussing this topic of financial integration is thus broad, as is the geographical coverage, and the number of countries of origin and the backgrounds of the authors. The broadness provides the added value of this book, as a contribution to the literature on financial integration.

We thank the organisers of the Mediterranean Research Meeting as well as all those colleagues from the various institutions for stimulating the discussion on financial integration, reading our research and policy work and providing us with helpful comments. We furthermore thank *Springer Verlag* for publishing this book.

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Part I
Introduction

Chapter 1
Introduction

Marga Peeters, Nidal R. Sabri, and Wassim Shahin

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Abstract This chapter explains the concept of financial integration and provides some statistics of the individual Mediterranean economies.

Keywords Financial integration • Assets • Liabilities

1.1 Financial Integration

Financial integration and especially *international* financial integration has become popular terminology only in recent decades, triggered by the globalisation glut across nations worldwide. In this book we define financial integration as the traffic of financial transactions, through which a country's financial markets become more interconnected. Economies that have many cross-border transactions, with many other countries, on more or different financial markets are highly financially

M. Peeters (✉)
Netherlands Institute for Advanced Studies, Meijboomlaan 1, Wassenaar, The Netherlands
e-mail: huber@tinamargapeeters.eu; marga.peeters@gmail.com

N.R. Sabri
Birzeit University, Ramallah, Palestine
e-mail: nsabri@birzeit.edu

W. Shahin
Lebanese American University, P.O. Box 36, Byblos, Lebanon
e-mail: wshahin@lau.edu.lb

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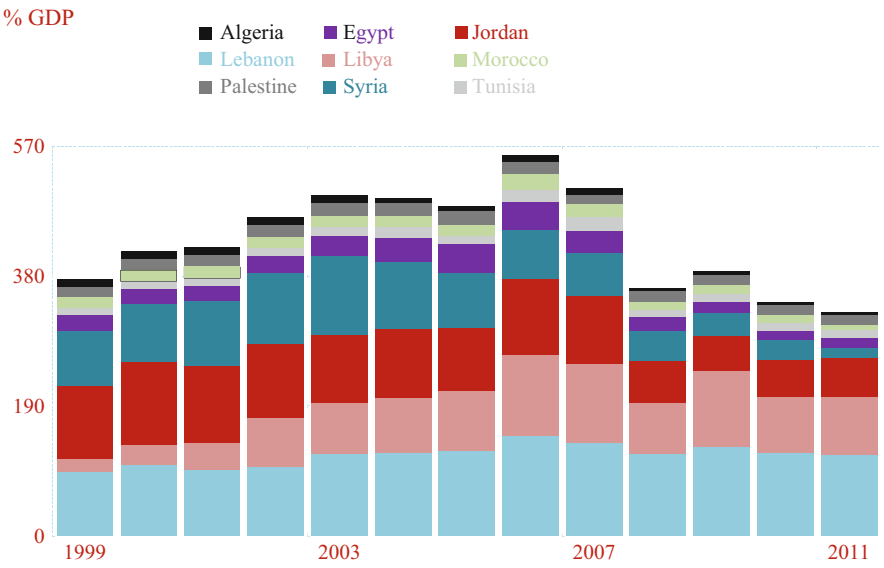
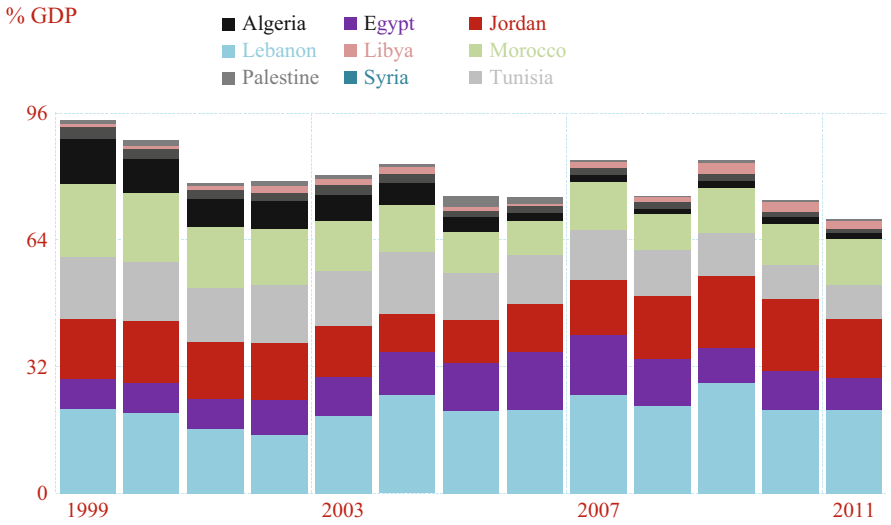


Graph 1.1a Cross-border bank assets of South-Mediterranean countries (*Source*: Peeters and Sabri (2012) on the basis of the database of the Bank for International Settlements, the IMF World Economic Outlook and the Central Bureau of Statistics of Palestine. These are accumulated assets and liabilities across the countries)

integrated (see for instance Peeters and Sabri 2012, or Graphs 1.1a and 1.1b on the development of cross-border bank assets and liabilities).

Up until the global financial crisis, there was a strong belief among economists in developed economies that higher degrees of financial integration contribute positively to economic growth and henceforth welfare. During the 1990s and the early 2000s, developed economies had become more and more financially interlinked. The long economic boom period in the United States with high economic growth, low consumer price inflation, booming equity, bond and housing markets was regularly referred to as the Goldilocks' years (see Peeters 2000). Other regions in the world, among which the Mediterranean one, showed a slower pace of economic growth, having at the same time a far lower degree of financial integration.

The global financial crisis, originating in the sub-prime mortgage loans in the United States, unfolded rapidly and unprecedentedly after the fall of Lehman Brother's in September 2008. Due to the high degree of international financial integration, those countries that had strong financial links with the United States were affected negatively instantaneously. Other less financially-linked regions in the world, such as the Mediterranean, suffered far less or much later. On the negative side, in terms of welfare, they had not taken advantage of the opportunities of deepening and broadening international financial ties. On the positive side, these less-financially integrated regions escaped from the deep recessions that the developed regions faced.



Graph 1.1b Cross-border bank liabilities of South-Mediterranean countries (*Source:* Peeters and Sabri (2012) on the basis of the database of the Bank for International Settlements, the IMF World Economic Outlook and the Central Bureau of Statistics of Palestine. These are accumulated assets and liabilities across the countries)

1.2 A Focus on the Mediterranean

In our view, the region of North Africa and the Middle East, or the *South-Mediterranean*, deserves more attention in the scientific literature. While the literature is scarce, these are emerging or developed economies that impact significantly the world economy. The economies of the North-African rim, that is Morocco, Algeria, Tunisia, Libya and Egypt have become more exposed to the global economy during the decades 1990s and 2000s. The same holds to some extent for the Middle Eastern economies of Palestine and Syria, while Jordan and Lebanon and also the Gulf countries have become open economies to the same degree as developed economies (see also Graphs 1.1a and 1.1b). The integration in the world economy of this South-Mediterranean region, from an economic and financial perspective, has therefore deepened. Moreover, the strong demographic growth in comparison with developed economies makes this region an economic and political clout on the globe. Further to this, the political Arab upheavals and regime switches, triggered by developments in Tunisia at the end of 2010, has put this region prominently in the news.

We acknowledge that the countries of the South-Mediterranean are diverse. They have different exchange rate regimes, monetary policy objectives and fiscal policy characteristics. Some are oil-exporters while others are not, some have other dominant sectors such as industry or finance. Most of these countries trade with many regions in the world in goods and services, not the least with Northern-Mediterranean countries. The European Union (EU) and the Western-Balkan are thus highly relevant and deserve substantial attention in our analyses. The financial ties between the South-Mediterranean and the Gulf countries – that is Saudi Arabia,

the United Arab Emirates, Bahrain, Kuwait, Oman and Qatar – have also tightened due to the high flows of migrant workers in the Gulf and the increase in foreign direct investments of these oil-rich countries. While our focal point remains the South-Mediterranean, we analyse also developments in the North-Mediterranean and Gulf regions.

1.3 The Outline of This Book

Apart from this introductory chapter, the structure of this book falls into five themes. First, there is *monetary policy*. Second, there is its counterpart, *fiscal policy*. Third, there are the *financial markets*. Fourth, the specific issue of *banking* that has received so much attention in the literature in the developed economies but far less in developing economies. Fifth and last, there is *social policy and trade integration*. We will discuss the contributions in this book to these five fields here consecutively.

In the field of *monetary policy*, this book has three main chapters on monetary unions (Chap. 2), on foreign exchange reserves (Chap. 3) and on consumer price inflation (Chap. 4). The chapter on the monetary union elaborates on the idea of a common monetary union, hence a common currency like the European Economic and Monetary Union (EMU) in the form of the euro, for a group of the Middle-Eastern and North-African (MENA) countries. The Gulf Cooperation Council countries (GCC) are treated separately, as they have already been envisaging a common currency union for some time. A main question that this chapter tries to answer is to what extent the MENA-countries would gain from aligning their exchange rates, inflation and interest rates as well as their public deficits and debts. This hypothetical analysis sets out and underlines the differences in the degrees of financial integration, not only among the MENA-countries (see also Sabri et al. 2012, on the impact of exchange rate volatility in three MENA-countries). It also highlights the regional specifics of the MENA-countries in comparison with the EU and the GCC countries. The chapter on foreign exchange reserves shows differences among MENA-countries that originate from commodity resources. Oil-exporting economies generally have higher foreign exchange reserves and lower public debt stocks. Two extreme countries in this respect are compared, oil-rich and low-indebted Algeria and Tunisia that is growth-driven by its manufacturing industry and more indebted. Research points at the divergence in optimal monetary policies to tackle these countries' fiscal stance. The chapter on consumer price inflation studies the pass-through of global food prices on the domestic consumer price inflation in Egypt, since its liberalization in the early 1990s. It empirically tests for the impact of global food price shocks, using a two-step regression model and a VAR-model. This is a highly topical issue, relevant to not only Egypt as the regularly soaring global food prices seem to push inflation in Mediterranean economies upward. This impacts the purchasing power in these low- or medium income countries, puts pressure on governments to subsidise food and plays a prominent role in monetary policy.

In the field of *fiscal policy*, this book has a contribution on tax coordination between the EU and other countries (Chap. 5) and the fiscal factor in the Mediterranean countries (Chap. 6). The chapter on tax coordination proposes a tax ruling system

across borders, such as the border between the South-Mediterranean countries and the EU. The implementation of a harmonized advance tax ruling systems, like the customs duties, would be one step forward towards a global tax harmonisation that provides more transparency, at the national and international level. The chapter about the fiscal factor in the Mediterranean concentrates on the impact of taxation on financial integration. Apart from custom duties, there is the Tobin tax on international capital flows between countries, of the taxation of foreign direct investment. A special focus is on double taxation, in the country of origin and the country of destination, that hampers cross-border investments. In a comprehensive way this chapter thus also promotes harmonisation, like the previous chapter, with a view to financial integration.

In the field of *financial markets* there is a chapter on stock markets' integration in some South-Mediterranean countries and a chapter on financial risk management. The chapter on stock markets' integration examines the situation of Egypt, Tunisia, Jordan and Morocco, being the Agadir Agreement countries and each of these countries' trade with the United States, the EMU, the United Kingdom, Japan and the GCC. It specifies an econometric model for the daily stock price indices and uses co-integration techniques to test for the change in the degree of integration. Apart from interesting findings on the domestic markets, the results point at significant differences in cross-border stock trading before and after the Agadir Agreement. The chapter on financial risk management introduces a Liquidity-Adjusted Value at Risk model for financial trading portfolios. It pioneers with risk assessment and management techniques to the GCC and some MENA-countries. The modelling techniques can assist stakeholders in the financial markets to assess the handling of risk exposure of equity prices meticulously and up-to-date. It can ultimately aid further international financial integration.

The section on *banking* consists of a chapter on liquidity banking in Morocco and a chapter on banking competition in several MENA-countries. Both chapters use micro data. The chapter on Morocco presents, at the bank level during the period 1993–2007, the liquidity situation of banks. It shows that there is a regular excess liquidity. Despite the use of monetary policy instruments, this points at an interbank market that is dysfunctional. Further to this, it investigates the conduct of foreign banks on the Moroccan market. The chapter on banking competition uses individual bank balance sheet data during the period 1990–2009 and tests for the impact of global financial liberalisation on the bank structures. The econometric model accounts for country-specific effects.

The section on *social aspects and trade integration* contains a chapter on solidarity in the Mediterranean economies and a chapter on the trade integration of the Western-Balkans in the world economy. The chapter on solidarity addresses the role of openness of an economy and solidarity, or human factor among the citizens within the domestic economy. The recent global financial crisis and the Arab upheaval are taken as examples where the solidarity changes. The chapter on trade integration shows for the battle for economic prosperity for the peculiar region of the Western Balkans, despite the fact that it has Association Agreements with the EU and that it is geographically well-positioned.

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Part II
Monetary Policy Issues

Chapter 2
Prospects for Monetary Coordination in the Mediterranean Region: More or Larger Monetary Unions?

Wassim Shahin and Elias El-Achkar

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Abstract The purpose of the paper is to analyze some convergence criteria in the geographic region extending from the EMU all the way to the GCC including most MENA countries with the objective to determine the possibility of coordination between the EMU and the promised gulf monetary union and between other countries in the MENA region that are operating independently of other countries and the GCC. The aim is to conclude whether the EMU and the GCC can coordinate policy and whether the region can have another viable monetary union such as the gulf one or a larger one by having some other MENA countries join the GCC monetary union. The analysis shows that the GCC countries have successfully met most if not practically all of the convergence criteria necessary for monetary integration. The paper reflects that coordination between the EMU and the GCC can take place at many levels except the exchange rate regime as the EMU follows an independent freely floating exchange rate with the GCC pegging to a different

W. Shahin (✉)
School of Business, Lebanese American University, P.O. Box 36, Byblos, Lebanon
e-mail: wshahin@lau.edu.lb

E. El-Achkar
Association of Banks in Lebanon, Gouraud Street, ABL Bldg, P.O. Box: 976, Beirut, Lebanon
e-mail: elias@abl.org.lb

M. Peeters et al. (eds.), *Financial Integration*,
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currency. The paper mostly addressed the possibility that other MENA countries coordinate individually with the GCC to join the union once established. The results of the model as well as casual empiricism show that a more efficient possibility exists for oil-producing MENA countries over non-oil producing ones based on performance concerning the convergence criteria and the initial position of each group and the GCC's target variables.

Keywords Financial integration • Monetary union • GCC and MENA countries

2.1 Introduction

The paper aims at discussing possible policy coordination and cooperation between the European Monetary Union (EMU) and the Middle-East and North Africa (MENA) countries east and west of the Mediterranean Levant. Specifically, we will divide the countries into three groups, namely the EMU, the Gulf Cooperation Council Countries (GCC) that are attempting a monetary union and a sample of other MENA countries representing oil and non-oil producing ones that are not even coordinating policies among each other or any other union.

In order to attempt this monetary and fiscal policy cooperation and coordination, a strategy of meeting a set of convergence criteria or conditions will be necessary among members of each group. These criteria include rules governing monetary policy variables such as exchange rates, inflation rates and interest rates as well as fiscal policy variables reflected in government debt and budget deficits in relationship to the size of each economy measured by its Gross Domestic Product (GDP). In addition, coordination may cause changes in the monetary policy framework among these countries reflected among other things in the nature of the exchange rate regime to be adopted and the choice of the anchor currency if any. Coordination and cooperation may also require changing various policy objectives and priorities for various individual countries causing them to incur major costs and obstacles. In this respect, the paper analyzes the possibility of cooperation and coordination among the set of countries considered by examining a set of convergence criteria, studies and recommends a conduct of monetary policy and exchange rate arrangements necessary for cooperation, coordination, and for a potential GCC monetary union if possible and examines the future prospects and the necessary conditions for creating a larger monetary union at a later stage among several MENA countries including the GCC. Additionally, the paper relies on a simple economic model showing various costs and obstacles facing some countries depending on the proximity of their criteria to the ones of monetary unions. Such costs and obstacles determine whether coordination or even some cooperation is to take effect.

The paper is organized into five sections. After the introductory one, section two discusses various stages of monetary integration with differences between policy cooperation, coordination and unions. Additionally, this section discusses the set of convergence criteria adopted by the EMU and the GCC and examines each criterion for the EMU and the potential GCC monetary union to determine the similarities that could lead to cooperation and possibly coordination. Section three analyzes the nature

of exchange rate policies in the EMU, GCC, and a set of other MENA countries. Exchange rate arrangements play a crucial role in the success of policy coordination. The fourth section links the conditions needed for a monetary union with the ones currently prevailing in these countries. Specifically, the countries will be divided into two groups. The first includes ones approaching the convergence criteria levels such as the EMU and the GCC and the second, the group of some selected MENA countries. The second group is divided into two sub-groups representing a sample of oil producing countries and non-oil producing ones. A technical model is used to determine the costs and obstacles involved in achieving coordination policies between the two groups. Section five contains concluding remarks on the possible success of coordination and on the prospects of a larger GCC monetary union based on the costs and obstacles involved and the nature of exchange rate arrangements to be adopted.

2.2 Convergence Towards a Monetary Union: EMU, GCC and the Convergence Criteria

The academic literature on monetary integration specifies that countries that usually enjoy geographic proximity ought to pursue macroeconomic coordination requiring them to adopt a cooperative set of policy changes. These changes are based on agreements leading to coordinated solutions that are Pareto-improving leaving all countries better-off. However, International policy cooperation rather than coordination refers to the sharing of information given that countries establish their macroeconomic objectives and policies independently. Cooperation can take the form of consultation, informal or partial coordination, and other activities that do not require a policy-making coordinating group. Therefore, policy coordination requires cooperation but not vice-versa.

The implementation of policies leading to integration usually takes effect in three stages.[1] First, nations must agree on the nature of changes they are willing to consider and the ones they would like each other to undertake. The second stage is one where countries negotiate the distribution of the gains from coordination by agreeing on policy economic indicators. This stage possibly represents the current state of the GCC as the convergence criteria constitute the policy economic indicators. The third stage is an enforcement stage where countries have to abide by various specifications of agreements. This is the stage of the EMU.

To achieve a successful European monetary union, a strategy was developed to support the arrangements through a coordination of monetary and fiscal policies by all member countries. The degree of coordination is measured by meeting a set of convergence conditions or criteria outlined in the Maastricht Treaty. The criteria are based on rules governing exchange rates, inflation rates, interest rates, budget deficits and government debt. The purpose of setting-up the convergence criteria in the EMU was to achieve a high level of policy coordination on the way to full-integration.

[1] A discussion of the three stages of international policy coordination is found in Frankel (1988), 2-5

Thus, the rationale for establishing convergence criteria necessary for the achievement of the EMU was to ensure price stability and sound public finances across member states after ensuring economic and institutional unity. Setting-up similar economic criteria and conditions significantly minimizes the prospects that countries with high inflation and interest rates and/or ones with high budget deficits and public debt will join a union requiring exchange rate coordination, low inflation levels and sound public finances. In fact, Article 3a of the Maastricht Accord made the EMU part of the European Community's principles.

In this same spirit, the history of policy coordination among GCC countries started as early as 1981 with the establishment of the Gulf Cooperation Council (GCC) composed of six countries: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates. Later this year, the GCC Free Trade Area was established. At the end of 2001, GCC countries revised the economic agreement to advance economic integration and to establish a Common Market and Economic and Monetary Union by 2010. In fact, the common market was launched at the beginning of 2008 as a prelude for barrier reduction across countries.[2] However, Oman made a decision in February 2008 not to join the monetary union, while the United Arab Emirates made also a decision in May 2009 to withdraw from Gulf Arab plans for the monetary union.

Lately, in its meeting of December 15, 2009, in Kuwait city, it was reiterated that the 2010 deadline for the establishment of the monetary union will be extended and another 10 years might be needed before a common and unified currency is introduced.

To achieve this union, the GCC countries have introduced mechanisms for international monetary coordination like the convergence criteria to help countries coordinate their policy designs following the launch of the European monetary union based on the Maastricht treaty.[3]

The conditions or convergence criteria that the GCC set-up represent a slightly modified version from the one used by the European monetary union. They are five outlined broadly as follows[4]:

First, a country's inflation rate must not exceed the average rate of the six countries by more than 2 % points. Second, the long-term interest rate of any member state must not exceed the average interest rates of the three member countries with the lowest rates by more than 2 % points. Third, foreign exchange reserves should be at least in excess of 4 months imports. Fourth and Fifth, member countries are to keep their budget deficit to GDP ratio at no more than 3 % or 5 % when oil prices are weak and their total public debt to GDP ratio at less than 60 %. Figures 2.1, 2.2, 2.3, and 2.4 on inflation rates, interest rates, deficit to GDP and debt to GDP summarize the performance of the GCC countries over the last 11 years i.e. from 2000 till 2010. Given that the economic and monetary union leading to a single currency may not be achieved before 10 years, we

[2] See Khan (2009)

[3] The history of the Maastricht Accord, the stages of implementation and the rules of the convergence criteria are discussed in Fratianni et al. (1992), 7-10

[4] See Khan (2009)

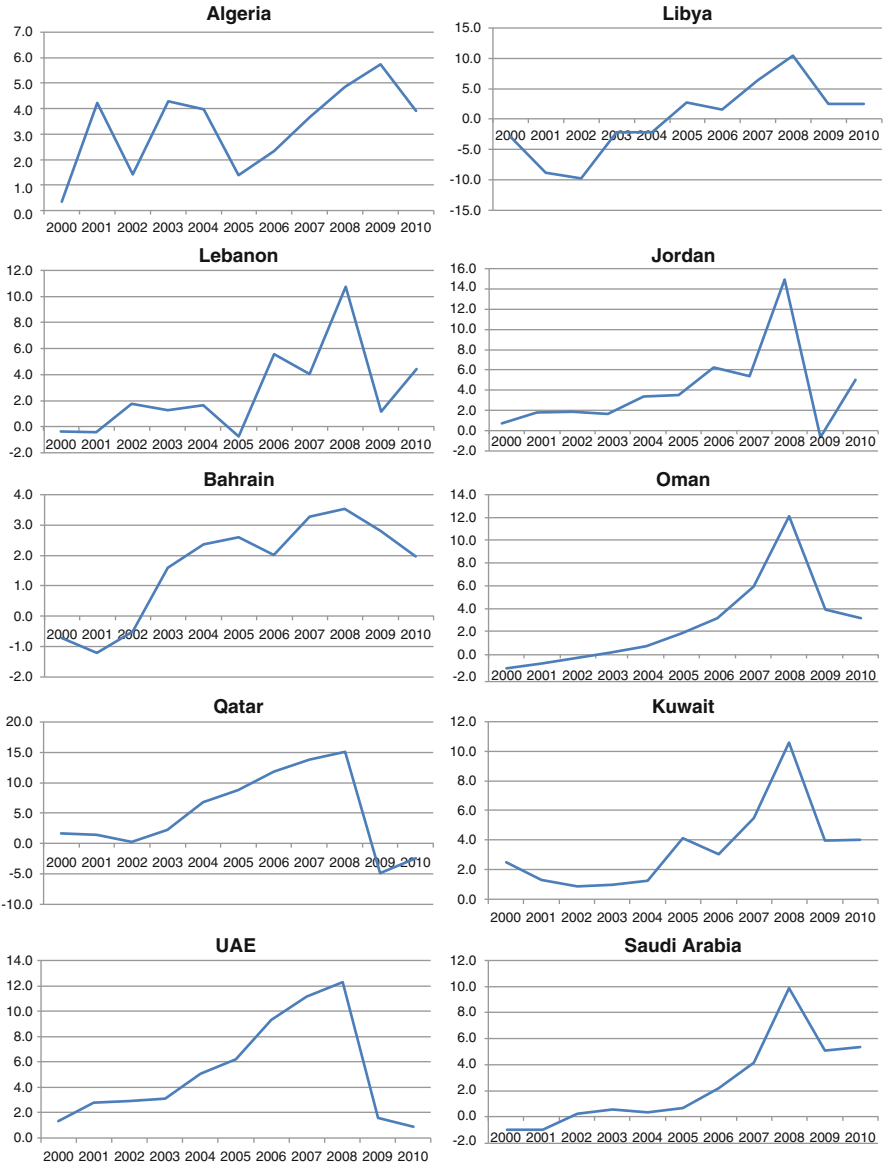

Fig. 2.1 Inflation (percent change of period average consumer prices) (*Source*: *International financial statistics*, IMF, for all countries except Lebanon and UAE. *World economic outlook databases*, IMF, for Lebanon and UAE)

felt more appropriate to look at the average of the last several years of data for each variable included in the convergence criteria. The six countries of the GCC have the strongest performance concerning the fiscal policy variables reflected in deficit and debt as percent to GDP. For the last 5 years, the deficit variable is in fact a surplus most of the

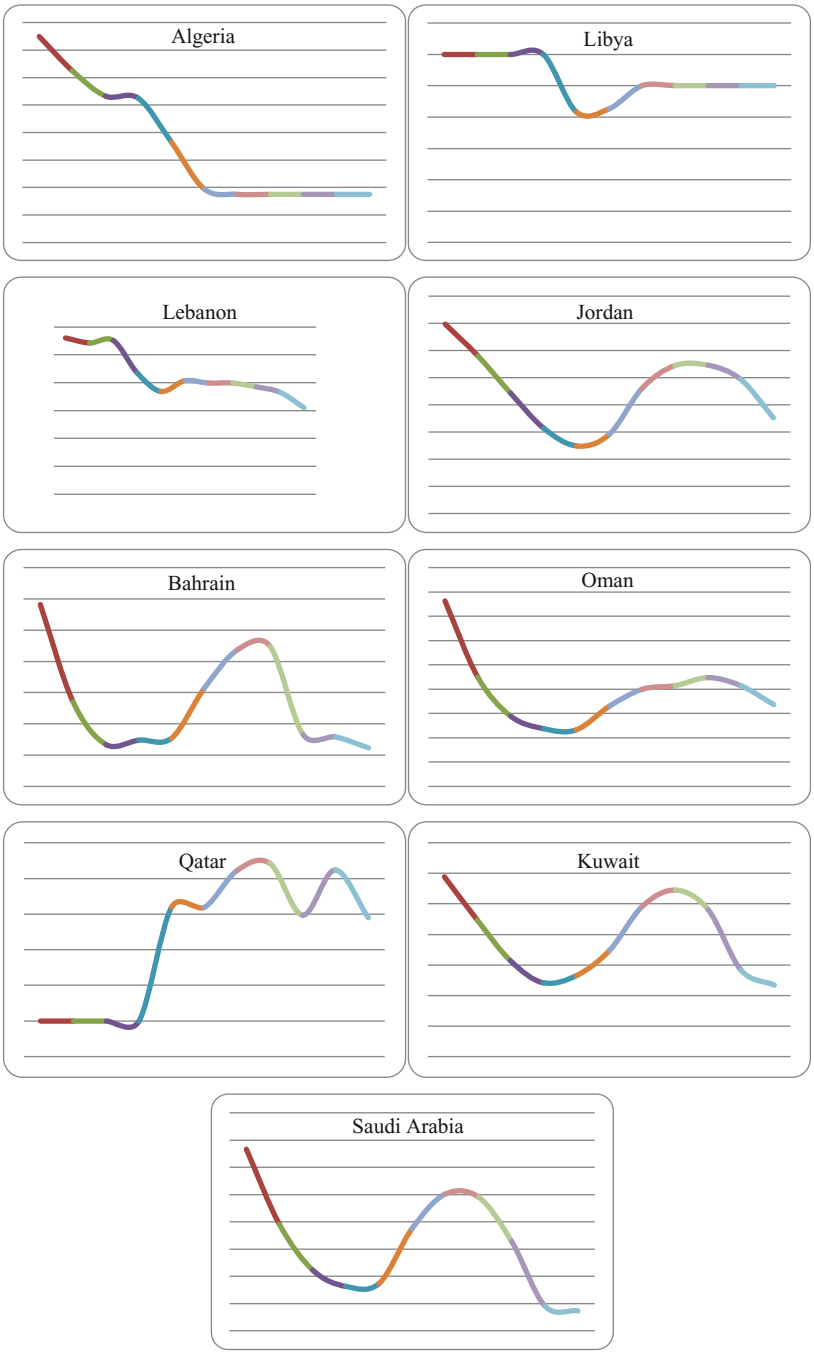

Fig. 2.2 Interest rates (nominal time deposit rate on the domestic currency, percent per annum) (*Source*: *International financial statistics*, IMF, for all countries except Saudi Arabia. SAMA *annual and statistical reports* for Saudi Arabia)

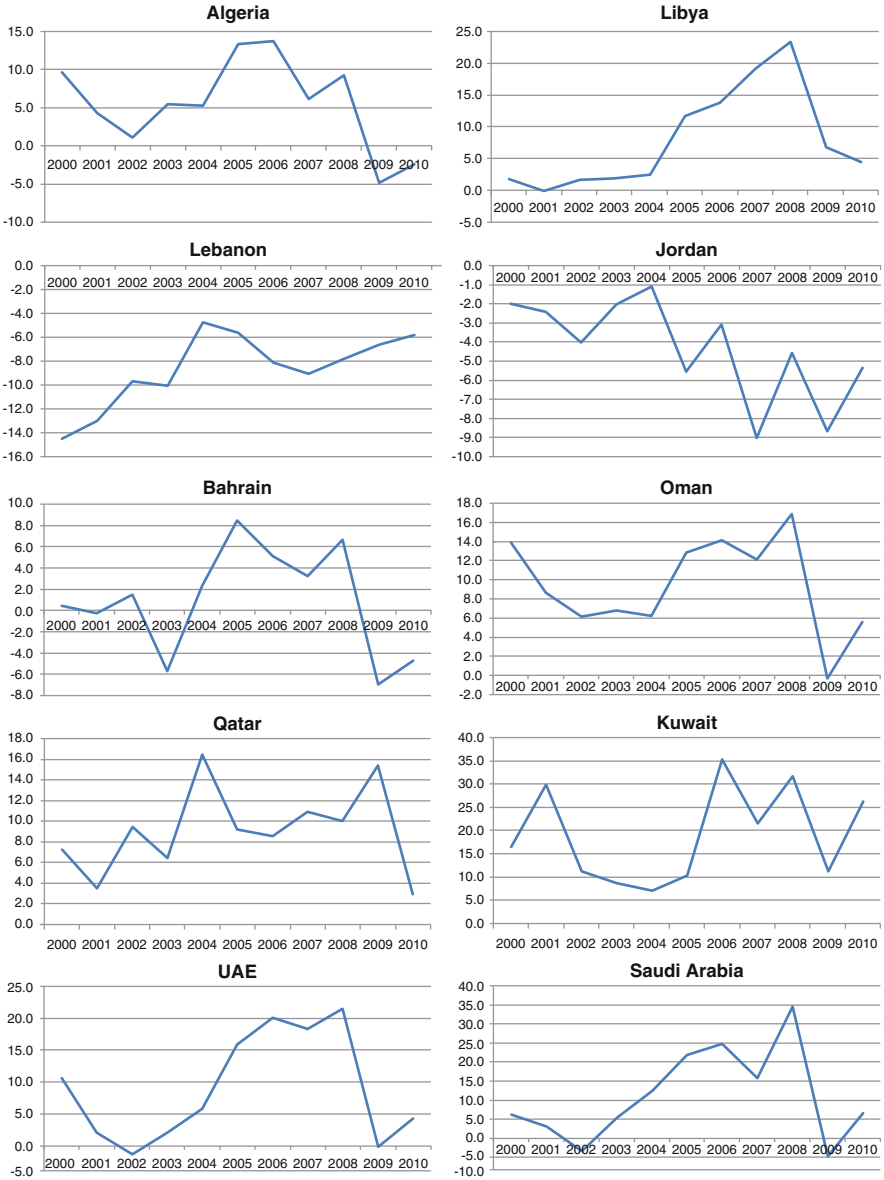

Fig. 2.3 Government surplus/deficit to GDP (in %) (*Sources*: *International financial statistics*, IMF, for Algeria, Jordan, Bahrain, Kuwait, and Lebanon. *World economic outlook databases*, IMF, for Libya, Oman, Qatar, UAE, and Saudi Arabia)

time, yet Bahrain had a deficit averaging 5.9 % for the years 2009 and 2010, exceeding the maximum 5 %, whereas the debt to GDP ranges between a minimum of 4.7 % for Oman and a maximum of 34.1 % for Bahrain, well below the 60 % ceiling. The average

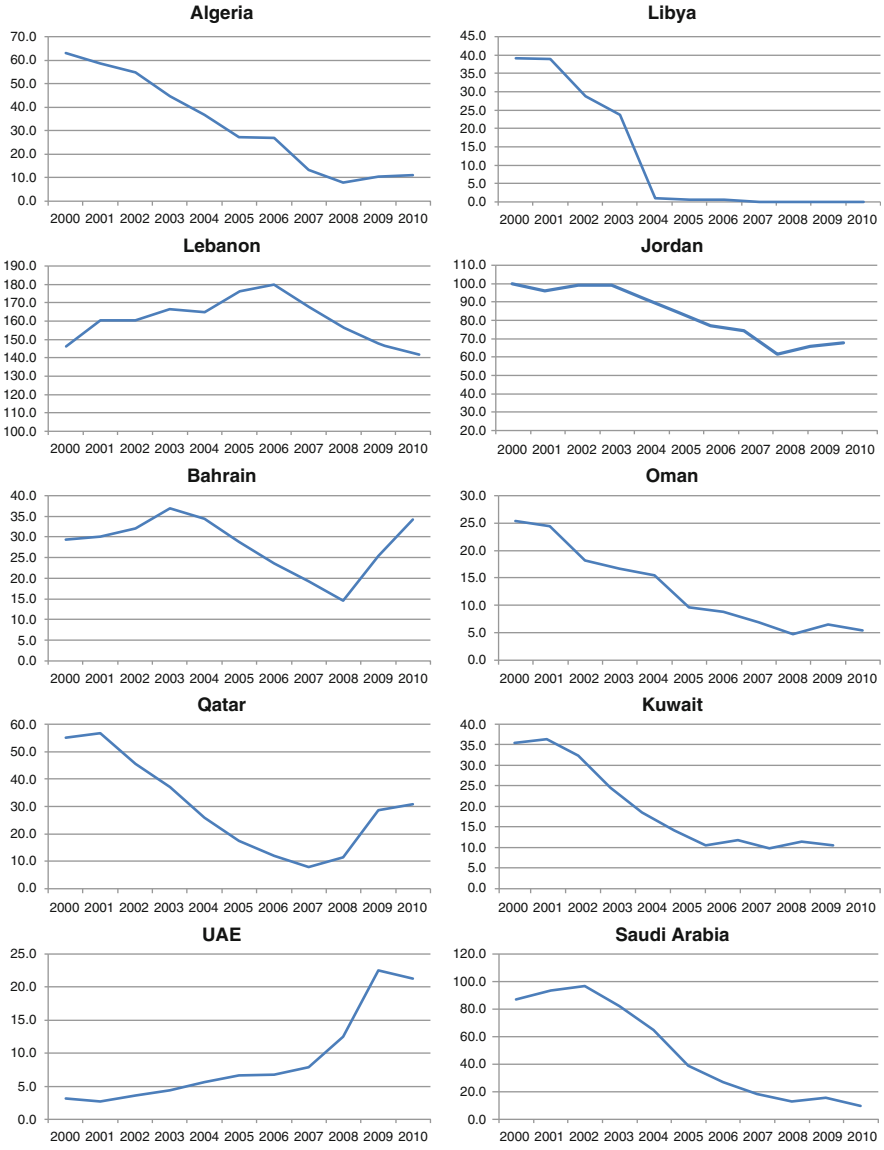

Fig. 2.4 Gross public debt to GDP (in %) (*Source*: *World economic outlook databases*, IMF)

lowest three countries' interest rate (Saudi Arabia, Bahrain and Qatar) is 3.13 % meaning that countries meeting the convergence criteria ought to have their interest rates less than 5.13 % which is the case for all countries except the United Arab Emirates where data sources are not available. The average inflation rate for the six countries is 5.5 % implying that countries need to have a rate lower than 7.5 % which is not missed by any GCC country after 2008. The foreign exchange reserves in excess of 4 months

imports is missed by Bahrain in 2006 and 2008, by Qatar in 2006, and by the UAE in 2006, 2008, 2009 and 2010. Given however 2010 data, the ratio of total official reserves minus gold to monthly imports ranges from as low as 3 times for UAE to as high as 13 times for Kuwait, 17 times for Qatar, and 55 times for Saudi Arabia, much surpassing the criteria. It is worth to mention, however, that on average, large oil exports revenues and current account surpluses have helped GCC countries to accumulate over the years considerable foreign exchange reserves necessary to reinforce the peg credibility, limit currency fluctuations, and discourage speculation on their currencies.

As far as the EMU is concerned, many countries have lately missed the fiscal policy variables as a result of the current crisis in Europe. This does not apply only to Greece, Spain, Portugal, Ireland and Italy but to some others such as Belgium, Germany and France. However, it is believed that through proper fiscal discipline, planning and austerity measures, the EMU countries will return back to their convergence criteria. The methods of moving back towards these stable levels are beyond the scope of this paper. Additionally, given one European central bank, the one exchange rate, interest rates and inflation rates seem to remain within the convergence criteria. The comparative figures between the EMU and the GCC show that there exists ample room for coordination as the GCC have adopted and achieved the convergence criteria established by the EMU. One single issue though remains concerning the nature of the exchange rate arrangement of the GCC countries and the euro which is the subject of the next section.

2.3 Monetary Policy and Exchange Rate Arrangements

The EMU has established the European Central Bank to conduct monetary policy and achieve the goal of price stability in a hierarchical mandate style where the inflation rate has to be less than 2 %. In order for the European Central Bank to adjust interest rates to achieve its inflationary and very few times lately its growth targets, the Euro freely floats on international currency markets following the fundamentals governing this currency.

Exchange rate arrangements for the GCC for the last decades have followed a United States dollar peg except for Kuwait since 2007 which pegs to a basket of currencies. Thus, it is believed that the peg can maintain macroeconomic stability, strengthen confidence in the economies of the council, and allow GCC member countries to go into the single currency at the existing parities.[5] Along these lines, in 2001, GCC countries decided to establish by the first of January 2010 a monetary union and chose the exchange rate regime for their single currency. It is the conventional fixed peg arrangement against one currency or more specifically the use of a US dollar peg as an external anchor for monetary policy. In fact, GCC currencies have been de facto pegged to either one currency, the US dollar, or a basket of currencies for decades, inconsistent most of the time with the de jure, or the officially declared to the

[5] See for example Abed et al. (2003), and Khan (2009)

IMF, except for Kuwait and Oman. According to IMF various Financial Statistics sources, from 1980 until 2001, Saudi Arabia, UAE, Qatar, and Bahrain currencies were formally pegged to a basket of currencies, the SDR (The IMF's Special Drawing Rights), but effectively they were fixed to the U.S. dollar. Kuwait and Oman currencies were both officially and actually pegged to an undisclosed basket of currencies and the U.S. dollar respectively. Based on a joint decision taken during a summit meeting at the end of 2001, all GCC members have officially pegged their currencies to the US dollar by the end of 2002 as an advanced step toward the monetary union, but in May 2007 Kuwait announced its intention to shift from the dollar peg to an undisclosed currency basket peg again, without dishonoring its commitment to the monetary integration and the common currency. Figure 2.5 shows that since 2001, the currencies of the GCC countries have been pegged to a single dollar value for each. The de facto classification of exchange rate regimes in Bahrain, Oman, Qatar, Saudi Arabia, and UAE has been therefore Conventional fixed peg arrangements against a single currency. The Kuwaiti de facto regime shifted between Conventional fixed peg arrangement against a composite and Conventional fixed peg arrangement against a single currency.

In light of the above mentioned facts, it was natural therefore for GCC to consider the dollar peg for the gulf monetary union as the countries have practiced this policy for more than two decades.

The fact that the peg to the dollar in the past turned-out to be successful does not necessarily imply that a union should also peg to the currency of one country. Many believe that unions classify as large countries that should either peg to a vast basket of currencies or adopt managed floating arrangements.[6] Thus, EMU and GCC cannot coordinate on the exchange rate front as the first pursues a policy of free floating while the other pegs to a different currency. Coordination possibilities will improve when the GCC countries start pegging to a basket in which the euro weigh heavily or when they adopt a managed or freely floating arrangement.

2.4 Coordination Between MENA Countries, GCC and EMU: Convergence Criteria and Obstacles

As was stated in the introduction, the paper analyzes the geographic region extending from the EMU all the way to the GCC including other MENA countries. One of the aims is to analyze whether the region can have a larger monetary union by having some other MENA countries join the GCC gulf monetary union. Thus, this section analyzes two issues. First, we discuss the internationally accepted convergence criteria for forming economic and monetary unions for a set of selected four MENA countries representing oil and non-oil producing ones and relate the performance to figures on GCC and EMU criteria analyzed in Sect. 2.2. The purpose is to link these MENA figures with GCC and EMU data in order to draw conclusions on the possibility of

[6] See Khan (2009)

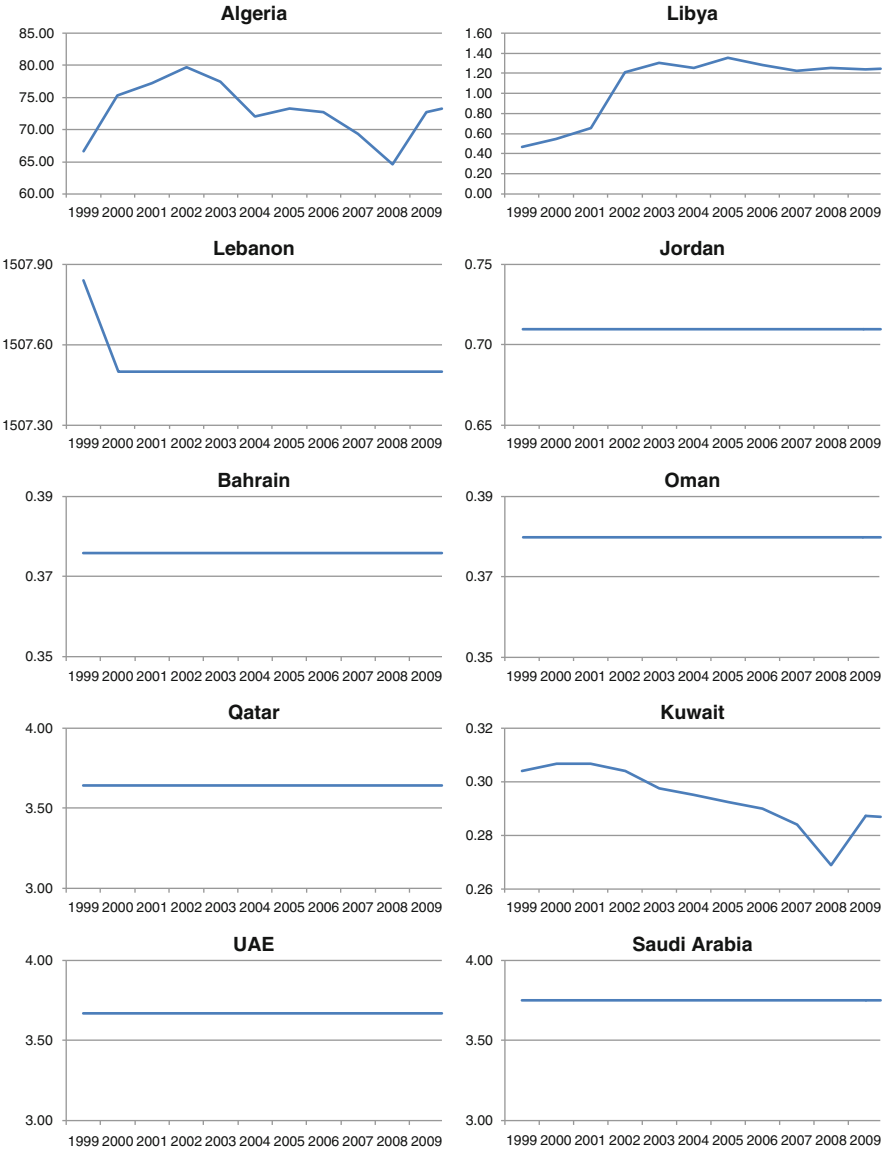

Fig. 2.5 Exchange rates (national currency per USD, period average) (*Source*: International financial statistics, IMF, various issues)

coordinating policies between the two groups based on conditions stipulated for entry to monetary unions. Second, we use a theoretical framework to discuss many obstacles faced by these four MENA countries if they attempt to coordinate policies with GCC and EMU. This is the reason we divide the MENA group into the oil producing countries and the non-oil producing ones as it is believed that the oil

producing countries may have closer economic characteristics to the GCC than the other countries. For convenience, rather than conducting the analysis on a country by country basis, we select Libya and Algeria to represent the first group (group one hereafter) and Lebanon and Jordan to represent the second one (group two hereafter). Additionally, the comparison will be conducted based on GCC figures instead of both GCC and EMU since both GCC and EMU meet similar criteria except for exchange rate arrangements which will be mentioned accordingly. Viewing data for countries in groups one and two from Figs. 2.1, 2.2, 2.3, and 2.4 on interest rates, inflation rates, and fiscal policy variables reveal the following. For both Libya and Algeria, viewing the average for the last 5 years of data, the four major criteria are met. To meet the GCC condition, inflation rates have to be less than 7.5 % and interest rates less than 5.13 %. Inflation figures show an average of 4.6 % for Libya and 4.1 % for Algeria, while interest rates figures show 2.50 % for Libya and 1.75 % for Algeria. Therefore, both countries in group one meet the conditions. Fiscal policy figures also meet the conditions as there exist a surplus in budget for Libya and a recent acceptable deficit following surpluses for Algeria, averaging 3.6 % for the period 2009–2010, in addition, the debt to GDP is almost nil for Libya and well below the 60 % for Algeria (around 11 %).

Average results for the last 5 years of data are not the same for group two including Jordan and Lebanon. Jordan meets the interest rate criterion (4.8 %) and the inflation criterion (6.2 %), but fails both the deficit/GDP (6.1 %) and the Debt/GDP (68.3 %). Lebanon meets only the inflation criterion (5.2 %) but does not meet the other three criteria of interest rates (7.43 %), Deficit/GDP (7.5 %) and Debt/GDP (158.7 %). Regarding the exchange rate criteria, both Lebanon and Jordan are de facto pegging against a single currency which is the US dollar. This is similar to the practice of most GCC countries. Libya pegs de facto against a composite currency basket while Algeria follows a de facto managed exchange rate arrangement. It is not clear what exchange rate policy will the GCC adopt after a single currency is agreed upon. Later on, if the GCC chooses to adopt a peg against the US dollar, Lebanon and Jordan will be following the same policy, making coordination easier. However, if gulf monetary union pegs against a composite basket or pursue a managed floating arrangement, Libya and Algeria will have an easier task respectively. This will place the last two countries closer to the EMU and the first ones closer to the GCC.

An important question then becomes the issue of the ability of both groups to coordinate with the GCC based on their performance in the convergence criteria. The answer is threefold: First, a comparison of the initial position of each of the groups to GCC countries shows that group two stands at a distance from the convergence criteria especially in public finances. Group one meets all convergence criteria. Second, the objectives and goals of both groups however, may differ from GCC members. Different countries may place different weights on policy objectives and goals, especially concerning output growth. Third, a major obstacle for coordination regards the cost that group two is willing to incur to move closer to the convergence criteria as compared to the benefits from international economic policy coordination. To meet the conditions for entry, for example, group two has to reduce public spending

risking lower growth and higher unemployment, and has to lower interest rates in the case of Lebanon thus endangering currency stability.

To highlight the issues more, we use a theoretical framework to address the obstacles facing policy coordination between both groups and the GCC. Assume that a certain group and GCC set goals for price stability and output growth and rely on the convergence criteria to achieve them in a situation of an economic slow-down under a system of pegged exchange rates pursued by these countries. In the absence of coordination and if a certain group uses expansionary fiscal policy to stimulate economic activity, output growth may be achieved but the group could in the process deviate from the convergence criteria for deficits, debt and price stability. Under a system of policy coordination, and had this group and the GCC agreed to achieve output growth simultaneously through expansionary fiscal policies, the average price level would increase in all countries and there would be a similar relative deviation from fiscal policy criteria.

For the previous example to hold, the given group and GCC must have achieved similar convergence criteria and are ready to coordinate policies to gain from the exchange while preserving each country's relative position with respect to others. The analysis of the convergence criteria shows that this is only valid for group one only which would have to conduct specific changes to move closer to the convergence criteria. Therefore, two major questions arise for any of the groups: The costs of the policy changes to this group and the uncertainties regarding which criteria rules are of interest to the group.

Therefore, three issues are to be determined by any of the groups before considering coordinating policies with GCC through meeting the convergence criteria: the initial position of the group relative to the optimal values of the target variables of GCC, the correct weight to put on these variables, and the effect of each unit change in the group's or the GCC's macroeconomic policy instruments on the targets. These issues were discussed and formalized in a general manner in models developed by Frankel (1988) and Humpage (1990).[7]

Let there be a function of two target variables for a group specified in Eq. 2.1 and a similar one for the GCC in Eq. 2.2.

$$XG = 1/2\ w_y Y^2 + 1/2\ w_P P^2 \tag{2.1}$$

$$XGC = 1/2\ w'_{y'} Y'^2 + 1/2\ w'_{P'} P'^2 \tag{2.2}$$

Where X represents a quadratic loss to be minimized, G stands for group and GC for GCC, Y is output expressed relative to its optimum, P is the inflation rate expressed relative to its optimum, w_y is the relative welfare weight placed on output and w_P is the relative welfare weight placed on the inflation, and a ($'$) denoting the

[7] The models used in both studies slightly differ but could be extended to many countries, targets and instruments. The results reached are very similar. This model was also used in Shahin (1996)

analogous variable for the GCC. Y and P represent two target variables viewed as policy ones, although the specification could include more.

We will use one policy instrument (even though the model allows for many): g, standing for government expenditure as a percentage of GDP approximating the criteria for fiscal policy convergence or the budget deficit to GDP ratio. The marginal welfare effects of changes in these policy variables are given by:

$$dXG/dg = w_y(Y)Y_g + w_P(P)P_g \tag{2.3}$$

$$dXG/dg' = w_y(Y)Y_{g'} + w_P(P)P_{g'} \tag{2.4}$$

$$dXGC/dg = w'_{y'}(Y')Y'_g + w'_{P'}(P')P'_g \tag{2.5}$$

$$dXGC/dg' = w'_{y'}(Y')Y'_{g'} + w'_{P'}(P')P'_{g'} \tag{2.6}$$

The policy multiplier effect of government expenditure on output is given by Y_g and of government expenditure on the inflation by P_g etcetera. The model could be solved by setting the derivatives equal to zero with the target variables Y and P first expressed as linear functions of the policy variables g and g' etcetera.

If a certain group and the GCC take the policies of each other as given, which is currently the case in a non-coordination situation (Nash non-cooperative equilibrium), one needs only Eqs. 2.3 and 2.6. Equations 2.4 and 2.5 do not enter as each country ignores the effects that its policies have on the other country. Cross-country effects enter only in the coordinated solution which is the standard reason why the non-coordinated equilibrium is sub-optimal.

If policies were to be coordinated, the above system of equations would illustrate the uncertainties or the main obstacles preventing a successful international policy coordination deal: uncertainty regarding the initial position of the target variables Y, Y', P, P'; the welfare weights w_y, $w'_{y'}$, w_P, $w'_{P'}$; and the government expenditure policy multipliers Y_g, $Y_{g'}$, P_g, $P_{g'}$, etc. The results in the previous studies of Frankel (1988) and Humpage (1990) show that uncertainties are so large that the signs of the cross effects in Eqs. 2.4 and 2.5 cannot be determined with confidence. This implies that, for example, a certain group cannot be sure whether it should ask the GCC to expand or contract its government spending variable g' to increase the group's own welfare. These uncertainties represent serious constraints on the attempts at policy-coordination.

Given these obstacles, and considering the data analysis on the convergence criteria of groups one and two and GCC discussed at the beginning of the section, three major issues are necessary to make coordination beneficial: First, the theoretical literature specifies that both groups, the larger entity such as the GCC and the smaller group or country that is seeking coordination need to start discussion on where to move their targets. Here, the difference between groups one and two considered in this section arises. The criteria met by group one are similar for the GCC ones whereas the ones for group two differ. Second, each group such as group one or group two must study the costs and benefits of moving into a direction set by the GCC criteria. The costs may not

be existent for group one but could be high for group two. Third, each group must determine the initial position of its and the GCC's target variables (similar for group one and different for group two), the appropriate weights of the targets, and the policy multipliers to prevent coordination from reducing welfare instead of increasing it. Therefore, based on the previous analysis, coordination seems more beneficial and easier to achieve for group one and may be possibly harmful and costly for group two. Therefore, there may exist some serious stumbling blocks for the success of policy coordination between group two and the GCC. Major obstacles for group two in the form of the initial positions of target variables, the appropriate weights of various targets, and the size of policy multipliers may cause very little gains from coordination and, under some assumptions, possible potential losses.

2.5 Conclusion

The purpose of the paper is to analyze the convergence criteria in the geographic region extending from the EMU all the way to the GCC including most MENA countries with the objective to determine the possibility of coordination between the EMU and the promised gulf monetary union and between other countries in the MENA region that are operating independently and the GCC. The purpose is to conclude whether the EMU and the GCC can coordinate policy and whether the region can have another viable monetary union such as the gulf one or a larger one by having some other MENA countries join the GCC. The analysis shows that the GCC countries have successfully met most if not practically all of the convergence criteria necessary for monetary integration. This convergence of various GCC economies especially in public finances and exchange rate arrangements should pave the way for interest rate and price stability in the GCC after ensuring economic and institutional unity. Setting-up the institutional framework necessary for the fulfilment of these criteria is beyond the scope of this paper. As far as exchange rate arrangements and the nature of the chosen exchange rate regime after the union are concerned, many believe that the peg to the US dollar remains the most viable policy option to GCC countries for achieving macroeconomic and external stability under existing conditions of various economies. Given this case, coordination between the EMU and the GCC can take place at many levels except the exchange rate regime as the EMU follows an independent freely floating exchange rate with the GCC pegging to a different currency. This may hinder the possibility of coordination. Should current conditions change in the future with a shift to a peg to a currency basket in which the euro is heavily weighed, or to a managed or freely floating regime, the possibility of coordination becomes very plausible and feasible based on the convergence criteria.

The paper also addressed the possibility that other MENA countries coordinate individually with the GCC to join the union once established. The results of the model as well as casual empiricism show that a more efficient possibility exists for oil-producing MENA countries such as Libya and Tunisia over non-oil producing ones such as Lebanon and Jordan based on performance concerning the convergence

criteria and the initial position of each group and the GCC's target variables. However, the oil-producing countries have to change their exchange rate arrangements in line with the gulf monetary union once established if this union adopts a dollar peg arrangement. Additionally, Lebanon, Jordan and other non-oil producing countries may not be able to embark on high levels of policy coordination with the GCC and the EMU given several costs and obstacles in moving their targets permanently towards the convergence criteria. They could, on the other hand, and possibly should cooperate in terms of many criteria while establishing their macroeconomic objectives and setting their economic policies independently. The cooperation could take the form of consultation, exchange of information, informal or partial policy coordination, and some other activities. Based on the model presented in the previous section these countries could, for example, exchange full information on the size and signs of policy multipliers and on the initial positions of target variables. Both groups could agree for example on avoiding sharp swings in the level of real exchange rates by sharing information about global economic conditions, shocks and various policy instruments. The economic literature suggests gains from policy cooperation especially that such cooperation is relatively costless in terms of economic as well as national sovereignty.

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Chapter 3
Foreign Exchange Reserves' Accumulation and the Impact on the Economies of Algeria and Tunisia

Fatiha Talahite and Samouel Beji

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F. Talahite (✉)
Centre de Recherches Sociologiques et Politiques de Paris, 59-61 rue Pouchet, 75849 Paris Cedex 17, France
e-mail: fatiha.talahite@gtm.cnrs.fr

S. Beji
Teaching Assistant at University of Versailles-Saint Quentin (France), 55 rue Marin Marie, Saint Lô 50000, France
e-mail: samouel.beji@gmail.com

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Abstract This chapter addresses the issue of foreign exchange reserves in Mediterranean countries. We study the case Algeria and Tunisia in particular, two contrasting examples with respect to this issue. Algeria has accumulated substantial foreign exchange reserves (up to exceed the GDP), thanks to the surplus from the sale of hydrocarbons. To what extent is this large accumulation of foreign reserves justified and what impact does it have on the domestic economy? Tunisia has experienced before the crisis an episode of growth driven by manufactured goods exports, thanks to increased competitiveness, enhanced by what Artus called "semi- mercantilist" behaviour aiming to avoid an excessive appreciation of its currency. Tunisia absorbed relatively well the shock of the international financial crisis, in terms of macro-finance. But another dramatic shock occurred a short time later, subsequent to the revolts that started in January 2011, which may have a greater impact on its public finances and external debt. Finally, this paper addresses the question of a possible alternative policy to the accumulation of foreign reserves, not only in terms of international balances, but primarily from the perspective of the national economies of the region.

Keywords Algeria • External financial balance • Foreign exchange • Oil revenus • Tunisia

3.1 Introduction

The financial crises, known by some emerging economies since the end of the 1990s until the beginning of the 2000s, has created a debate in the literature about their causes, consequences and means to prevent them. Feldstein (1999) referred to some of the Asian South-Eastern countries and argued that they did well by not relying neither on IMF reforms nor wise policies, since even well-managed countries were affected by contagion. He advised the detention of international liquidity as an auto-defence option. In fact, countries having a high level of foreign liquid assets are the most sheltered from prompt outflows and panic waves on financial markets. International liquidity accumulation is possible in three ways: the reduction of short term debt, the creation of collateralized credit facilities and the increase of the Central Bank foreign exchange reserves (Rodrik 2007).

The 2008 financial crisis has revealed the importance of foreign exchange (FOREX) reserves of emerging-countries and, more generally, the big accumulation of foreign assets by these countries. In 2008, Arab countries held 1,400 billion dollars of foreign assets and China detained about 1,800 billion dollars, essentially American assets. These assets requested to finance the growing American deficits, also represented an important liquidity source for international markets. They allowed the rise of the consumption among European and American households until the

subprime crisis on 2007–2008.[1] At that moment, the Arab sovereign wealth funds (SWF) contributed to stabilize the American financial system. China and the Arab countries have not been reluctant to invest in American and European assets while there values were collapsing. However, this has raised concerns about the imbalance in the international economy between the heavily indebted countries (essentially OECD countries including the USA and the European Union) and the emerging and oil countries that are big creditors to the rest of the world.

Measures have been proposed to dissuade the countries with surpluses to accumulate foreign exchange reserves. In 2011, as part of G8 and G20, the United States, supported by France, proposed to limit both deficits and surpluses (to respectively −4 % and 4 % of GDP). The spirit of these measures is inconsistent with the philosophy of international financial institutions. In fact, these institutions defended during the three last decades the principle of auto-regulation of markets without any assistance or hindrance. With the subprime crisis, they set an institutional mechanism to overcome the balance of payments disequilibrium. This proposal dates since 1944 and was inspired from the International Clearing Union (ICU) defended by Keynes in Bretton Woods.[2] He suggested the establishment of a new international currency (BANCOR) to manage current imbalances. It consists of implementing institutional mechanisms of exchange rate adjustment and creating a progressive tax (according to predefined surplus thresholds) on countries having surpluses to finance those with deficits. A target for the deficit or surplus is also defined for each country. Above this target, a country having a deficit is allowed to devaluate its currency. This mechanism gives incentives to countries with surpluses to buy from those with deficits. In this perspective, the surplus is not considered as a good economic policy outcome but as one of a non cooperative strategy of unilateral competitive advantage exerted over others. This proposal, which does not help major exporters like China, Japan or Germany, has not succeeded.

Why did emerging economies choose this policy of large foreign exchange accumulation? Why do these countries choose to use their surpluses as well? The purpose in this paper is to address the issue of FOREX in the case of Mediterranean countries. We study the case of two countries, Algeria and Tunisia, which are two contrasting examples relative to this issue. Algeria has accumulated substantial foreign exchange reserves (up to exceed the GDP), thanks to the surplus from the sale of hydrocarbons. To what extent is this large accumulation of foreign reserves justified and what impact does it have on the domestic economy? The second country, Tunisia, can as yet not be considered an

[1] The average debt of American households increased from 84 % to 133 % as percentage of income per capita between 1990 and 2007.

[2] One may wonder if this proposal is compatible with the goal of inflation reduction adopted by Central banks. For Hamouda (2009, p. 12), "The approach taken by the US Federal Reserve System under Ben Bernanke, a representative Keynesian, is one in which fiscal policy is subjugated to monetary policy and monetary policy itself is constrained by the objective of containing inflation. Price inflation at the general level was not an issue for Keynes".

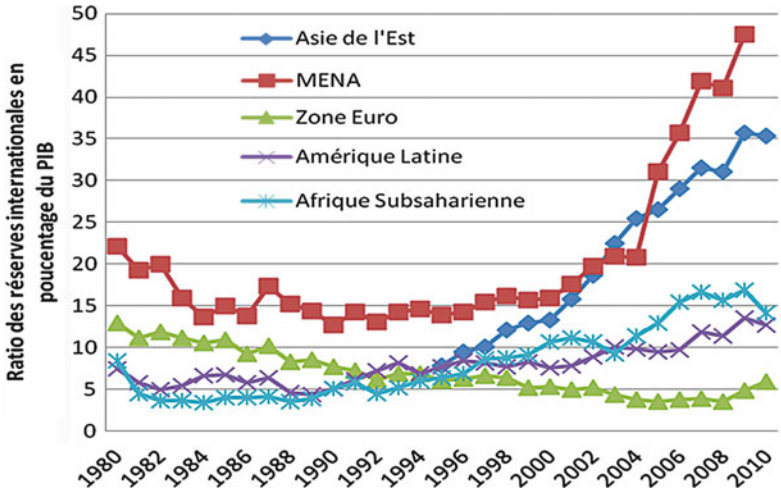

Fig. 3.1 The development of FOREX. *Foreign exchange reserves as percentage of GDP* (*Source*: World Bank. World Development Indicators)

emerging economy. Nonetheless, it experienced before the international financial crisis in 2008 an episode of growth driven by manufactured goods exports, thanks to increased competitiveness aiming to avoid an excessive appreciation of its currency. Tunisia absorbed the effects of the crisis relatively well, in terms of macro-finance. But another dramatic shock occurred a short time later, subsequent to the events of January 2011, which may have ultimately a greater impact on its public finances and external debt. Finally, we investigate a possible alternative policy to the accumulation of foreign reserves, not only in terms of international balances, but primarily from the perspective of the national economies of the region.

3.2 Accumulation of Foreign Exchange Reserves

3.2.1 The Extent

The last decade are characterized by a significant increase of FOREX accumulation from both developed and developing countries. Figure 3.1 shows that the rise of foreign exchange accumulation began after the end of the financial crisis episode known by some developing countries at the end of the 1990s.[3] The higher levels are reached by Asian and Middle Eastern and Northern African (MENA) countries, respectively 35 % and 47 % for 2010. Asian countries relied on that accumulation to

[3] Zombanakis (1980) is one of the first authors that anticipated this phenomenon.

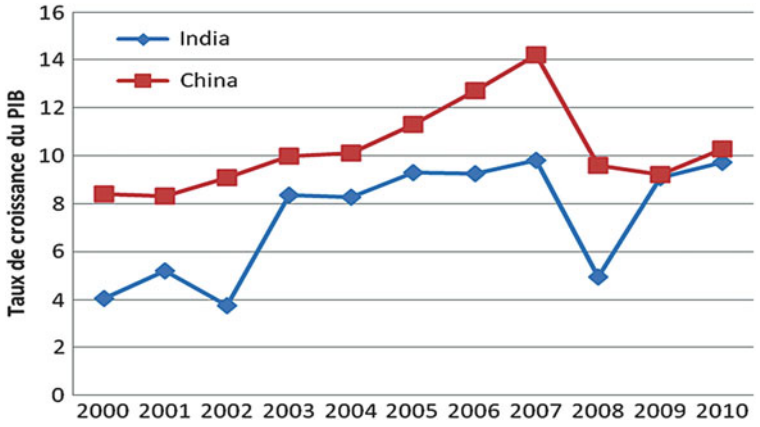

Fig. 3.2 Growth rate in China and India (*Source*: World Bank. World Development Indicators)

support their exports led policies based on the depreciation of their exchange rate compared to the American dollar. There are also some institutional factors that explain these high levels. Let us take the Chinese example that shows a long period of large current surpluses. This situation induced important foreign exchange inflows. However, Chinese citizens and firms were allowed to hold only a limited quantity of foreign assets. Capital controls and forbidding residents to detain banking accounts abroad led trade surpluses to end up in the Central bank accounts through deposit banks. Further, expectations of Yuan appreciation gave incentives to firms and residents to convert their foreign exchange assets into local currency (Vujanovic 2011). For MENA countries, large foreign exchange accumulation was mainly due to the increasing demand of oil and gas from Asian emerging economies. As shown by the Fig. 3.1, the year 2004 recorded a significant change in foreign exchange accumulation in the MENA countries. It represents a rise in the oil demand following a strong economic growth in India and China as shown in Fig. 3.2. Oil prices jumped to 150 dollars per barrel in July 2008 due to a wave of financial speculation that touched hydrocarbons and natural resources markets. This situation was profitable for oil producer countries, which exploited this opportunity to fund their SWF and optimize the oil revenues investment (Chevalier 2009; see in this paper e.g. 3.3.1).

World FOREX reserves increased considerably, going from 2,000 billion dollars in 2001 to 5,000 billion dollars at the beginning of 2007, and to 9,000 billion dollars in 2011. As Table 3.1 shows, the shares in total foreign exchange reserves of the emerging Asian economies are the most important among the top 20 largest countries by FOREX reserves.

We notice that the ranking is dominated by the emerging Asian economies (China, Japan, Taiwan, South Korea, India and Hong Kong) and the oil and natural resources exporters. We also notice the absence of the industrialized European countries from the first ranks. The first European country is Germany at the 11th place, followed by Italy and France. This observation confirms the accumulation

Table 3.1 Foreign exchange reserves by country

Rank	Countries	International reserves (in billions of US dollars)
1	China	3,181.14 (December 2011)
2	Japan	1,295.84 (December 2011)
3	Saudi Arabia	541.02 (December 2011)
4	Russia	498.64 (December 2011)
5	Taiwan	400 (April 2011)
6	Brazil	354.67 (January 2012)
7	Switzerland	321.11 (November 2011)
8	South Korea	310.97 (October 2011)
9	India	293.25 (January2012)
10	Hong Kong	285.4 (December 2011)
11	Germany	238.85 (December 2011)
12	Singapore	237.73 (December 2011)
13	Algeria	185.9 (December 2011)
14	Thailand	174.9 (December 2011)
15	Italy	173.3 (December 2011)
16	France	172.2 (December 2011)
17	United States	147.31 (January2012)
18	Mexico	147.18 (November 2011)
19	Malaysia	133.64 (January 2012)
20	Great Britain	93.54 (December 2011)
	Total	9,213.29

Source: IMF (2011): Data template on international reserves and foreign currency liquidity and various Central Bank reports

strategy of the European countries shown in Fig. 3.1. Indeed, the European countries are among those that accumulated the least FOREX reserves. Their current and public deficits explain this trend. As discussed in a later section, these countries have chosen to avoid the costs associated with the holding of foreign assets while pursuing policies to stimulate growth. Concerning our case study, we notice the (advanced) twelfth rank of Algeria that is not considered as an emerging economy. What are the reasons behind that choice? More generally, what are the reasons for the accumulation of foreign assets among countries that are economically different?

3.2.2 Analysis at the Level of the Global Economy

This phenomenon of accumulation FOREX reserves began to grow from the end of the financial crises of 1997–2000. It was fostered, on the one hand, by large trade surpluses achieved by emerging countries, due to raw materials price increases (including oil whose price is up significantly from 2004) as well as an increased industrial competitiveness (Asia, China, Latin America), and secondly, by surplus capital, which outweighed the deficits (India, Eastern Europe, CEE).

3.2.2.1 Protection Against Financial Speculation and Sovereign Debt Crises

Emerging countries that experienced financial crises in the late 1990s- early 2000s (Mexico 1995, Southeast Asia 1997, Russia 1998, Turkey 1994 and 2001, Brazil 1999, Argentina 2002), caused by massive influx and then sudden withdrawal of hot money (short speculative capital flows), deliberately accumulated reserves in order to face possible further speculative attacks. To defend their currencies they had to raise their interest rates and subsequently faced a growth collapse. Accumulating exchange reserves was the only way for them to be protected against such speculative attacks on foreign exchange markets. Some of them largely open to global finance restored control mechanisms on inflows in order to meet the possible new influx of capital fleeing the affected markets of the West but were still likely to leave as suddenly as they came.

However, this cautious behaviour is also the reason that some of the developing countries partly or not at all integrated into international financial markets and that they have not experienced such speculative attacks. Those countries that faced difficulties in their balance of payment and had to borrow funds on the international capital market – sometimes at very high rates – had often to request rescheduling of their external debt and underwent in return structural adjustment programs. In particular, countries without assistance or protection of a regional or international mechanism[4] had to cope alone with their creditors and the IMF. This was the case with Mediterranean countries.

This takes us back to earlier episodes that still can be remembered. It is indeed possible to draw parallels between the current situation and the 1980s. The latter was preceded by a period of sharply rising oil prices that caused a massive injection of petrodollars into the global economy. This increase in the barrel price did not lead to lower demand from Western countries, where the energy-consuming model of mass consumption was expanding. The oil purchase had been financed by a massive creation of petrodollars, facilitated by the US decision to end the gold convertibility of the dollar in July 1971.[5] The financial systems of developed countries were still largely dominated by bank financing. Petrodollars deposited in Western banks had inflated the assets of these banks, boosting the credit in developed countries and beyond.

[4] This kind of mechanism exists for countries with a currency pegged to the US dollar as they benefit from US assistance in the case of financial difficulties, and also for those of the euro area (as well as of the CFA zone, event though the euro did not replace the French franc as guarantor, CFA currency is yet guaranteed by the French Central Bank) since they receive loans from the European Central Bank and from the new European Stability Mechanism created in 2010. Countries of the Gulf Common Market (created in January 2008) have established a Gulf Monetary Council but did not yet achieve the single currency that was supposed to be established in 2010.

[5] The abandonment of the parity rule of fixed exchange rates, previously maintained since Bretton Woods Agreement in 1944, plunged the international monetary system into instability and increased risk, especially commodity markets, particularly sensitive to currency fluctuations.

Indeed, the excess of resources of Western banks brought them to expand their credit activity toward the newly industrialized countries (NICs), whose economies were booming then, thus contributing to industrial development and to the rise of the middle classes (by consumer credit) in these countries. As petrodollars flowed, banks had no liquidity problem, and thus they achieved a credit policy more and more lax that led to a situation that got out of control until oil market price started falling in the 1980s. This led to debt crises in many developing countries, first in Mexico in 1982. Banks changed their behaviour in granting credit, due to increasing difficulties for reimbursement. Moreover, losses affected also the oil-producing countries funds deposited in these banks.

Oil-rich countries spared no spending, even beyond what was allowed by their oil revenues, to the extent that, as they were among the most credit-worthy, they also benefited greatly from credit. So, they had to face large deficits in the 1980s, following the collapse of oil prices, when at the same time rising interest rates were making international credit more expensive.[6] It was also the case of Algeria: it was insolvent in the early 1990s and so had to reschedule its debt on behalf of the Structural Adjustment Plan between 1994 and 1998. This explains why from 2004, at a time when oil prices began to rise, the Arab oil-rich countries took the opportunity to repay their debt in priority and then began to accumulate financial surpluses. The IMF estimates that today they spend only 15 % of their surplus oil revenues, against 70 % in the 1970s (World Economic Outlook, April 2006, p. 80).

One can hardly imagine that such a huge accumulation of foreign exchange reserves may remain idle. This money logically seeks to be placed in profitable assets and thus creates an influx of liquidity in capital markets, which makes some people say that there would be excess liquidity in the global economy, attributed mainly to the polarization of trade balances in favour of emerging countries. Thus, despite restrictive money creation policies (around the world, central banks target a limited level of inflation[7]) and the fact that medium overall volumes of savings in the northern countries have not changed significantly there is an explosive accumulation of cash reinvested in the markets.

Why are not these funds used to finance development, particularly in the Arab world, as it happened in South America and Asia in the 1970s? Here we must consider radical changes that occurred in the financial system in the 1980–1990s, with the rise of financial capital markets and the Financialization.[8]

States that hold these assets prefer low-risk investments, that is why oil-rich countries and emerging countries like China have purchased massive amounts of US Treasury securities, thus financing the expansion of consumer credit to U.S.

[6] In the late 2002, the debt of Saudi Arabia reached 97 % of GDP (then reduced to 75 % after an adjustment of foreign assets).

[7] Nevertheless, this has been changing since 2010 with the multiple unconventional injections of liquidity by European Central banks to the banking system and by the U.S. Federal Reserve to the markets, in order to contain the crisis and relaunch business.

[8] As well as the new phenomenon of *hot money* that destabilized emerging economies.

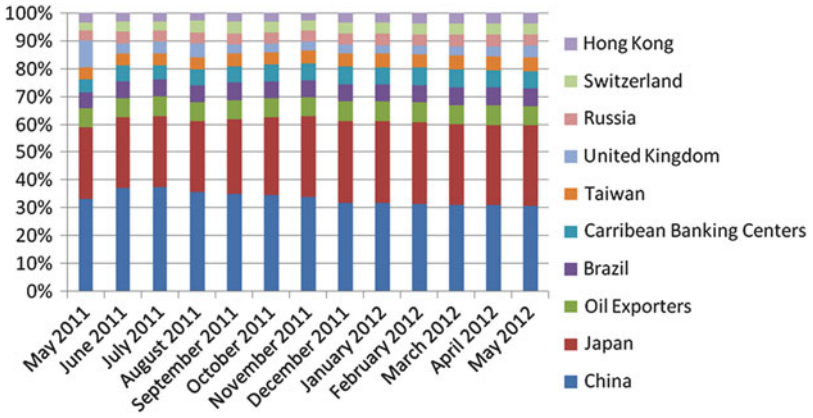

Fig. 3.3 Major foreign holders of treasury securities (*Source*: Treasury.gov/tic/mfh.txt)

households as shown on Fig. 3.3. However, a small group of oil producing countries which have established SWFs have embarked on risky investments.

3.3 How Do Arab Countries Use These Funds?

3.3.1 Arab SWFs

All Arab oil-rich countries did not simply spend their windfall. In the 1970s some of them created SWFs to which they allocated a share of their oil surpluses. This implied that they could retain control over the placement of their petrodollars, and for some countries, such as Dubai, it allowed investments that would contribute to their development. With the existence of such funds (the first one, the Kuwait Investment Authority, was established in 1953) these countries gained experience and expertise in international finance and diversified their investments. Nowadays, the oil rents received by these countries are distributed among several countries and funds and profits are invested in a wide range of assets. Although initially of modest size, these funds have grown since 2004. The most important ones are in the Gulf States (Kuwait, Qatar, United Arab Emirates) and in 2008 the Abu Dhabi Investment Authority (ADIA) estimated the largest Arab sovereign fund at $800 billion. Dubai, whose oil reserves are significantly lower than most Arab oil-rich countries, manages several funds and is also involved in business enterprises, which in turn have contributed to the development of the emirate. The Kuwaiti Fund KIA, which in 2008 represented $260 billion in assets, bought shares of BP and Mercedes-Benz. After the war against Iraq, the country's regeneration was partly financed by fund dividends. The Qatar Investment Authority is assessed to $50 billion. Saudi funds are managed by the Saudi Arabia Monetary Agency (SAMA) and the Ministry of

Finance. In 2008, this country created a small sovereign wealth fund of $5 billion. Libya also created a fund in 2006 of $40 billion.

These funds lay the foundation for a future without oil and made Arab investors a new force in the global economy. As such, their success is considered by Simpfendorfer (2009) as one of the most important innovations of the past century in the Arab world. Other Arab countries have followed the lead and began to establish SWFs, especially from the raise of oil prices in 2004. However, the countries of the Gulf, with their artificial British-made borders, are sparsely populated and in these countries these funds are often inseparable from the ruling family's fortunes. These funds are managed as private ones, which allows risky investments. In other countries of the region, despite the lack of democracy and accountability, leaders cannot go as far as managing the oil revenues as if they were their private assets and place them in overseas investments. For example, Egypt and Syria hold respectively 34 and 20 billion worth of foreign assets which are managed by their respective central banks. However, these countries have not created any fund.

For decades, the Arabs recycled most of their oil revenues in the developed countries markets. Before September 11/2001, Arab funds had invested billions in the U.S. After that date, U.S. law-makers lashed out fiercely to the Arabs and between 2003 and 2004 nine bills targeting Arab countries were filed. Even if they were not adopted, the damage was done. In particular, many Saudi investors began to doubt the safety of their investments in the United States. Arab SWFs now expect to see their investments periodically threatened, also in view of a terrorist attack on American soil. They turned away from the US dollar to buy Euros and pounds sterling,[9] so that the value of both currencies peaked in 2008. They also turned to currencies in the Arab world. Intra-Arab investments started to rise after 2001. Ninety percent of these investments went to very few countries such as Lebanon, Syria, Saudi Arabia and UAE, where they mainly go to the real estate sector which neither creates jobs nor generates taxes. In Egypt Gulf capital accounted for 26 % of direct foreign investments during the 2006–2007 fiscal year and these funds are now beginning to go to services and the industry. The resulting companies are similar to the SWFs and have often acquired Western companies. They also seek to acquire new technologies.

Since 2007, the Arabs have undertaken a strategy to diversify their investments. DIC took 3 % of the capital of the first Indian bank, ICICI Bank.[10] Once the opportunities in their home market exhausted, companies in the Gulf countries,

[9] The UK did not close its door to Arab investors after the attacks of September 11/2001 or after those in London in 2005. QIA bought Sainsbury's for $21 billion. Arab investors have invested in the London property market and they own nearly 10 % of the luxury property. These capital inflows have pushed the British pound as well. In December 2007, £1 equaled $2.

[10] Simpfendorfer (2009) notes that these investments' geographical distribution follows what he calls the "Islamic corridor": Djibouti, Guinea, Kenya, Malaysia and Pakistan, which are former business partners in the Arab world. "Sovereign wealth funds and Arab merchants explore a familiar market. They walk in the footsteps of their ancestors by investing along the same old roads."

began to seek opportunities for expansion and investment in neighbouring countries. The footprint of Dubai is now extending to the countries of North Africa and the East, Turkey, Central Asia and as far as South East Asia.

This diversification strategy crystallized following the subprime crisis and the bankruptcy of a number of U.S. banks, which resulted in significant losses for Arab investors. This crisis affected their trust in business and American values and made them more cautious over the medium term with U.S. assets. It led them to diversify their investment portfolios[11] and to move towards developing countries, particularly in the Arab world, China, or the "Islamic corridor". The Arab world, in which raising oil incomes and economic reforms have created opportunities, is starting to become attractive. However, even if their significance is not limited to the financial dimension but also refers to a geographical, cultural and historical proximity, these investments are primarily based on the risk-return ratio. They are designed as an alternative – in terms of diversification – not a substitute to Western markets, which remain the first destination of the Arab capital.

After the 2008 crisis, while Chinese and Arabs tried for various reasons, to turn away from the U.S. market and seek to diversify their investments, a new opportunity has offered itself to them in the 2010–2011s with the pressing need for funding public Euro area countries debt. This strong demand is in direct competition with potential investments in developing countries, including in Arab economies.

3.3.2 The Algerian Income Regulation Fund (FRR)

Sometimes presented in the literature as a sovereign fund (Chevalier 2009), the Algerian Income Regulation Fund (FRR[12]) is actually a simple regulation mechanism of hydrocarbons revenues. Its main objective is to accumulate the foreign exchange surpluses when the prices of oil and gas are high, to compensate for any decline in these prices in the future (government budget deficit and public debt).[13] In fact, it is a special Treasury account unpaid and local currency denominated, managed by the Ministry of Finance. The Fund makes no financial investment neither abroad nor within the country and does not accumulate foreign exchange reserves.[14] The decision by the

[11] Also by investing in euro. However, the decision of the Euro Area countries to tax financial transactions from August 2012 could slow this movement.

[12] In French this is called the *Fonds de Régulation des Recettes*.

[13] Price of the Algerian gas is indexed to the oil price for long term contracts. But these contracts are challenged by the liberalization in Europe and the development of the *spot* markets where the high competition implies the decline of the oil price (with the rise of the Qatari oil production and the shale gas exploitation in USA). See Ainas et al. (2012, p. 18).

[14] Only the Bank of Algeria that is independent from the government is allowed to make financial investment abroad, investments that mainly include U.S. Treasury bonds and SDRs issued by the IMF. Capital outflows are controlled and residents are not permitted by the law to hold foreign capital, so levels of foreign reserves are high.

Algerian authorities in 2000 to create the FRR was motivated by the sharp decline in oil prices on 1997–1998. In the second half of 1998, oil prices had fallen to their lowest level since the 1970s (U.S. $10–12). At that period, the country ended a difficult episode of Structural Adjustment Program (1994–1998) following the rescheduling of its external debt. Algeria suffered from intense pressure from International Financial Institutions (IFIs) to engage in a new restructuring program. This plan was narrowly avoided thanks to the international reversal in oil prices in early 1999. However, nothing ensures that the upward trend would be maintained for a long time. The authorities focus was then to implement a mechanism smoothing the effects on the economy of sudden shocks of upward or downward in oil prices on international markets. This mechanism was designed for a period characterized by significant price wobbles with harmful effects on the whole economy. Oil prices disturbances immediately have an impact on public revenues. This phenomenon is more pronounced in Algeria where revenues are more volatile and unstable than expenses (especially hydrocarbons revenues).[15]

Established as a trust account of the Treasury, the FRR records the capital gains tax arising from a level of oil prices higher than budgeted.[16] In the expenditures, it records the public debt reduction and the expenses and budget balance regulation fixed by the annual Finance Act.[17] The Finance Act of 2004 indicates that the compensation by the FRR is limited to "losses resulting from a level of oil tax revenues below expectations of the Finance Act", thus excluding losses related to other incomes. Even if it concerns only a small part of the budget (e.g. in 2011, the taxation of oil is 69.8 % of total budget revenues), this precision shows the interest of maintaining FRR revenues and expenditures linked to strict cyclical fluctuations in prices on oil markets. Mainly, it shows the desire to diversify the state revenues. It also represents a signal against the propensity to uncontrolled increase in government spending, characteristic of oil economies in boom times. However, the fact that, since its inception, the Fund has been used to prepay the debt was already considered as a departure from the strict mechanism of "fiscal balance regulation".[18] Other sprains were made and the FRR deviated from its initial objective. At the origin of that deviation, the continuous oil prices upward along the 2000s and

[15] A World Bank (2007) study shows that non-oil GDP is less unstable than total GDP and that investment and functioning expenses are more stable than GDP on 1990–2005.

[16] The Finance Act forecasts are based on reference price tax fixed by the authorities.

[17] The FRR also plays indirectly a role in the monetary regulation as it freezes assets in Algerian Dinars, thereby sterilizing a portion of the money supply. Algeria has indeed a problem of excess liquidity due to the influx of oil revenues, so the monetary policy conducted by the Bank of Algeria is mainly to slow money creation in order to fight against inflation.

[18] One can interpret this as a temporary measure to purify a situation inherited from the past (the same happened in 2007 for the repayment of an advance to the Bank of Algeria prior to the Fund creation). However, the decision in 2004 to allow the FRR receive advances from the Bank of Algeria for the "active management of external debt" opens the door to financing government debt by the FRR beyond its resources. It shows its gradual transformation into a budget bis of the State. Moreover, the media are not mistaken when they speak of "black box" of the State about the fund.

maintaining an unrealistic reference price.[19] It entailed the accumulation of large amounts by the Funds and created a problem for their use.[20] It would have been necessary to introduce another device, targeting not only the regulation of fiscal balances, but also the investment of surpluses, with the dual aim of financing the development (including infrastructure) and to achieve savings for future generations. But in the form of trust account without legal or financial autonomy, it remains inappropriate. In 2006, the Finance Act considered a definition of budget deficit including non-oil revenues (Article 25). This decision allows the Fund to finance growing deficits of the State which are not related to cyclical fluctuations in oil prices. Largely artificial because of maintaining a tax reference price per barrel much lower than the annual average of the market, these deficits result from an uncontrolled increase in government spending. These expenditures are escaping any monitoring device since they are covered by reserves accumulated by the Fund. Indeed, by this procedure, budget deficits are allocated with an absolute discretion and in total opacity concerning their ventilation. This evokes institutional or political reasons behind that drift and is a reminder of the circumstances in which the FRR was created. Trust accounts of the Treasury, designed to reach a special aim for a sector or a particular transaction, are generally limited in time and closed once the goal is achieved.[21] Yet, it does not match with the function of a "device of budget balance regulation" for the long term, as specified by the FRR.[22] The FRR is created as a result of political choice to allocate a share of tax revenues to cover emergency expenses. In that case, this allocation should be publicly debated and submitted to parliament vote. Established by regulation (Supplementary Budget Law 2000) without a parliament vote, the FRR has worked on a discretionary basis until its subscription in the Finance Act 2004 while it already existed *de jure*. Its inception was characterized by an opaque procedure, and even after its operation, the decision on the amounts allocated to it is not subject to *ex ante* control of parliament. It was only 4 years later, on the occasion of the budget review law discussion, that some accounts (not all, because of the lack of means) were audited. In fact, the FRR has never been monitored. Thus, a large and growing share of State expenditures, for public debt payment or for budget deficit financing, is free of external control. The FRR also avoids any internal control procedures which are limited and inadequate

[19] The tax reference price per barrel was maintained at U.S. $19 from 2000 to 2008 (except in 2002 when an attempt to raise it to $22, while the average price per barrel fell to $25.3, drove down revenues of the FRR). Over the entire period, the gap widened with the average price per barrel, reaching a ratio of 1–5 in 2008. The authorities then passed to $37 in 2009.

[20] This increase in oil revenues masks stagnation or recession in the production of this sector the last few years.

[21] The "special Treasury accounts", legacy of the French system of national accounts have been created for tracking simple interim movements. But, in France, a 1959 ordinance gave their creation to the Finance Act (not the rules). They are subject to the rule of annuality (even if their balance is reported to the following year) and parliamentary control.

[22] What does not match with the definition of the FRR from its inception especially nowadays given its role in financing budget deficits.

for Trust accounts of the Treasury. These accounts were not designed to achieve strategic missions such as financing the budget deficit or to prepay the public debt. The control means available are insignificant given the large amounts managed by the FRR, which surpass the total State budget revenues.[23] This exceptional state has lasted for 12 years. A proposed solution would be to give an institutional status to the FRR with legal representation and financial autonomy in order to make profitable investments (with a budget set on a reasonable basis respecting the budget universality principle and then implementing internal and external monitoring mechanisms on the allocation of State resources).[24]

It then opens the debate about the need to create a sovereign wealth fund (Hadj Nacer 2009) and the shape it should take.[25] Until today that debate has not lead yet to any decision, what we can explain by many reasons:

- The low financial development level in Algeria hinders the domestic opportunities of profitable investment, the projects of development from the private sector and the public-private partnerships (domestic and international). The authorities chose to slow the financial system modernization and to lead funding development programs to public investment (infrastructure and industry).[26] This step back to 1970s and 1980s policies, prior to reforms period (Talahite and Hammadache 2011) is a de jure situation, not totally adopted because of the Algerian international commitments (EU and IFI agreements, current negotiations with WTO, etc.) and the absence of an internal political consensus about that new orientation (Mezouaghi and Talahite 2009). In that context, the use of FRR and other trust accounts is considered as a roundabout way to finance massive investments on the State budget without going through the legislative body, but putting safeguards to prevent the use of public debt as this happened in the 1980s.
- A financial investment strategy abroad was considered, but the debate has stalled since the outbreak of the global financial crisis because of the increased risks inherent to such investments.
- Finally, the prospect of investing in projects to fund development at the regional level (North Africa, MENA), regularly considered, is itself compromised. It is because of the feeble deepening of the financial markets in the region, but also by the political context. Even on this ground, there is a "wait and see attitude", particularly related to the uncertainty created by the turn is taking the "Arab Spring" (Table 3.2).

[23] A World Bank report on (2007) recommends converting the FRR "in a savings and funding account fully integrated to the budget."

[24] The allocation of unpaid surpluses to the FRR and to others trust funds makes impossible to calculate the profitability of their use.

[25] Mouhoud et al. (2005) proposed the French "Caisse des Dépôts et Consignations" model yet adopted in Morocco.

[26] An increasing share of these expenses is through trust funds that have proliferated in the 2000s, with the stimulus of the economy to support investment, non-oil exports, the regulation of agricultural production, transportation and renewable energies, and so on.

Table 3.2 Assets and liabilities of the FRR 2000–2011 (billions of Algerian Dinar)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Remaining on 01/01	0	232	249	276	568	722	1,843	2,931	3,216	4,280	4,317	4,843
Gains on oil taxes	453	124	27	449	623	1,369	1,798	1,739	2,288	401	1,318	2,300
Advance Bank of Algeria[a]	–	–	–	–	0	0	0	0	0	0	0	0
Public debt repayment	221	107	0	156	470	248	618	314	465	0	0	0
Advance Bank of Algeria repayment	–	–	–	–	0	0	0	608	0	0	0	0
Financing treasury deficit	0	0	0	0	0	0	92	532	758	365	792	1,761
Remaining on 31/12	232	249	276	568	722	1,843	2,931	3,216	4,280	4,316	4,843	5,382
In % of GDP	*5.6 %*	*5.9 %*	*6.1 %*	*10.8 %*	*11.7 %*	*33.1 %*	*34.4 %*	*34.3 %*	*38.6 %*	*43 %*	*40.2 %*	*37.4 %*

Source: IMF, Minister of Finance

[a]A provision of the Finance Act 2004 allows the FRR receive advances from the Central Bank

3.4 Theoretical Framework and Empirical Facts of the Foreign Exchange Reserves Accumulation

In a number of countries, especially emerging market economies, the public sector has in recent years been accumulating sizeable cross border financial assets, mainly in the form of official foreign exchange reserves since 2002. The impressive pace of reserve growth has become an important issue on the international policy agenda and has been considered from various perspectives (ECB 2006, p. 5). Then, it is necessary to highlight the theoretical reasons backing the choice of accumulating foreign exchange and the rationality of that policy. Also, we will verify in the following section if Algeria is considered as hoarder countries, by checking the benchmarks commonly admitted in the literature and by comparing its statistics with Tunisia as a control country.

3.4.1 Incentives Behind Hoarding Behaviour

Artus (2009) explains that the accumulation of foreign exchange reserves relies on two basic logics:

- A mercantilist logic that targets the voluntary depreciation of the exchange rate in order to boost exports and gain market shares. This is a thesis defended by Dooley et al. (2004) that parallels the *fear of floating* model especially in the countries with currency denominated debts (Reinhart and Rogoff 2004). In fact, Dooley et al. (2004) consider that the "new Bretton Woods" as they call it, can explain the imbalance tendencies of current accounts and accumulation of reserves. These authors stipulate that the emerging Asian countries rely on an under-evaluation of the exchange rate in order to achieve a growth that is supported by the expansion of exportations, while financing the current U.S. deficit; the United States being one of their major partners. They equally argue that significant exchange reserves could have been accumulated as a guarantee to foreign direct investments. This interpretation highlights the shared responsibility of the consumption profiles in the U.S. and of the growth dynamics in emerging Asia in the formation of global imbalances of current transactions;
- A logic of caution that aims at deterring speculative movements. The accumulation of exchange reserves additionally aims, according to this model, at protecting the country from the versatile nature of financial markets that is characterized by abrupt losses of capital (especially capitals with short-termed maturity). This logic can be assimilated to an insurance against risks related to the peg of currencies of several emerging countries to the American dollar. In fact, following the financial crises of the 1990s, the emerging countries initiated reserve asset accumulation policies. The objective of these policies remains the protection against eventual speculative attacks and the reinforcement of their ability to

counter the shocks induced by brutal interruptions of capital entries. This auto-insurance aimed equally at limiting the future need to resort to a bailout by the international community. Even for countries that have not directly been affected by the financial crisis, these incentives have probably played a crucial role in that a certain degree of liberalization of the financial account would have perhaps been envisaged from that point. Nevertheless, the persistence of large current account surpluses has caused, with the time, an unprecedented accumulation of official reserves (Trichet 2007).

There is an additional incentive, that of hoarding, mentioned by Vidon (2007), which is totally different from that of the mercantilist approach. It is the case of an analysis through exchange terms. This theory stresses that the estimation of the exchange rate can be a means of enrichment, as opposed to the mercantilist perspective that considers the depreciation of the exchange rates a beneficial impact on the growth of exportations. Within the scope of a favourable specialization strategy, the external balance, and even the accumulation of trading surpluses is possible in the case of improvement of the terms of exchange, i.e. with a more rapid increase of exportation rates than of importation rates. For a domestic economy, one can then speak of an increase in the purchasing power of imported goods. It is a form of relative enrichment as it allows the consumption of imported goods at lower costs. In the case of emerging economies that are in a "catching-up" stage, characterized by significant gains in productivity in the tradable sector, the estimation of the real exchange rate reflects in itself a balanced situation (the Balassa-Samuelson effect). In order for this real estimation of the exchange to be not only spurred by a national inflation that is superior to those of the principal partners, a certain extent of fluctuation in the nominal exchange rate is essential within the scope of a progressive estimation. In this manner, the gains of the exchange terms can be combined with a management of the inflation and rebalancing of the growth at the profit of internal demands (Vidon 2007).

3.4.2 Are Foreign Exchange Reserves Excessive in Algeria and Tunisia?

The required level of foreign exchange holding is empirically estimated to 3 months of imports. Following the experience of the late 1990s, when the stop in capital inflows caused the financial crisis, the capacity of debtor countries to repay the debts service has become an essential criterion. Thus, there was the adoption of minimum threshold, namely the Greenspan-Guidotti rule recommending that the foreign exchange reserves can cover the entire short term foreign debt. The empirical literature shows that, nowadays, the reserves level reached by some emergent countries is excessive according to these two rules (Trichet 2007). Is that true for Algeria and Tunisia?

Table 3.3 International criteria of foreign exchange accumulation

Criteria	Benchmark value
Reserves/short term debt	1
Reserves/M2	0, 05–0, 2
Reserves/months of imports	3

Source: Rizvi et al. (2011, p. 59)

3.4.2.1 The Benchmarks

After exploring the theoretical reasons of foreign exchange accumulation, we should check if Tunisia and Algeria have experienced a massive holding of foreign assets. At first glance, it is the case of Algeria – an oil exporting country – if we refer to its rank on Table 3.1. This is not applicable to Tunisia since it is not a natural resources exporter. Further, the Tunisian economy has not recorded high current surpluses as Asian emergent economies have done through their industrial competitiveness. However, we should also refer to the minima to check whether the foreign exchange reserves are excessive compared to the benchmarks. Table 3.3 shows the three international criteria according to Green and Torgerson (2007).

Figure 3.4 shows that according to the first criterion, Algeria is covering easily its short term debt with its foreign exchange reserves. The year 2004 recorded the highest level of the ratio foreign exchange reserves/short term debt, which reached 2,5. This year coincides, as explained above, to an improvement in the market conditions for oil and natural resources exporter countries. The direct consequence was an important increase in oil revenues and then foreign assets accumulation. It was not the same situation for Tunisia that especially relies on FDI inflows, tourism revenues, income of phosphate exports, income of textile exports and income food products exports as foreign exchange sources. The hydrocarbons revenues are not high in Tunisia; it doesn't allow the government to put in place a foreign exchange accumulation policy as it is the case in Algeria. Indeed, Tunisia is only the 54th oil producer in the world and the 50 s for gas production, while Algeria is respectively the sixteenth and the tenth. As indicated in Fig. 3.4, Tunisia was always away from reaching the threshold put by Guidotti and Greenspan. Tunisia's best result was recorded in 1981 when it reached a ratio level of 0,051 for a required level of 1. This observation is confirmed by Fig. 3.5 relative to the foreign exchange reserves to external debt ratio.

This figure points out the significant difference between Tunisia and Algeria according to the foreign liabilities of the two countries. Figures 3.6 and 3.7 are also telling a story consistent with the previous two graphs and show that Algeria has surpassed all the minima commonly accepted about foreign exchange holdings.

Tunisia recorded the highest level of foreign exchange reserves in 2009. Therefore, according to the foreign exchange reserves to M2 ratio, Tunisia reached in that year the level of 0.42 %, which is enough higher than the requested threshold of 0.2 % as indicated in Fig. 3.6. These results were achieved in a difficult international context, especially for the industrialized European countries, which are the country's main economic partners. In this way, Tunisia achieved in 2009 a growth rate of 3.1 % and a

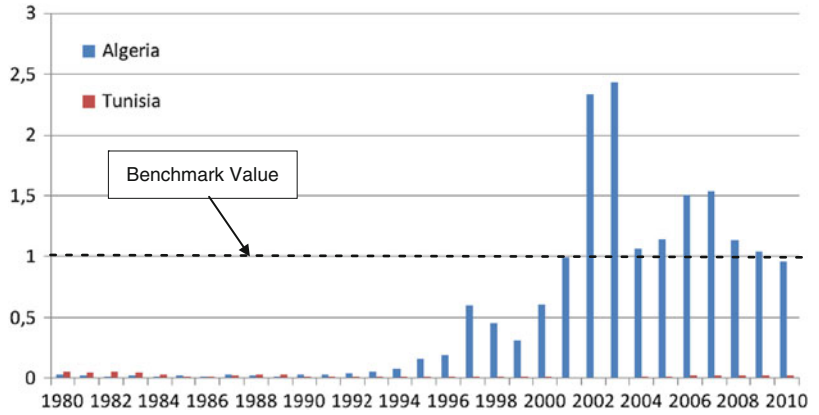

Fig. 3.4 Foreign exchange reserves as share of short term debt (*Source*: World Bank. World Development Indicators)

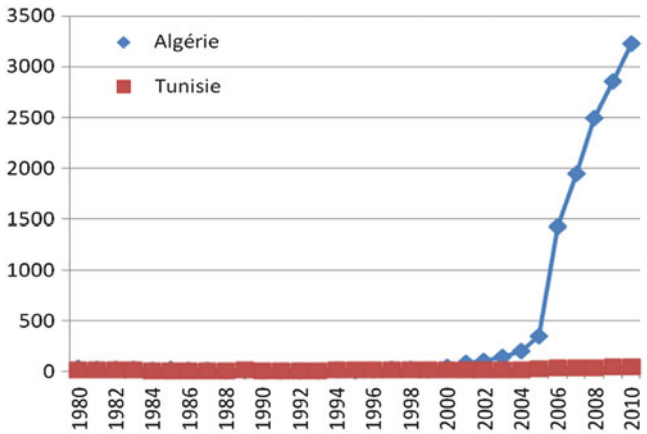

Fig. 3.5 Foreign exchange reserves as share of external debt (*Source*: World Bank. World Development Indicators)

decrease in the current deficit to 2.8 % as share of GDP. It also experienced a large rise of capital inflows implying a level of foreign exchange reserves in months of imports of 186 days instead of 139 days at the end of 2008. Tunisia relied on a good agricultural crop and an increase in tourist arrivals from Libya and Algeria who filled the void left by European tourists hit by the global recession. The increase in natural resources prices enhanced the purchasing power in Libya and Algeria. This evolution has indirectly improved the foreign exchange reserves in Tunisia. Since 2009, Tunisia knew a sensitive decrease in its foreign assets, until reaching a level of 113 days in months of imports in January 2012. This trend that will probably continue is attributed

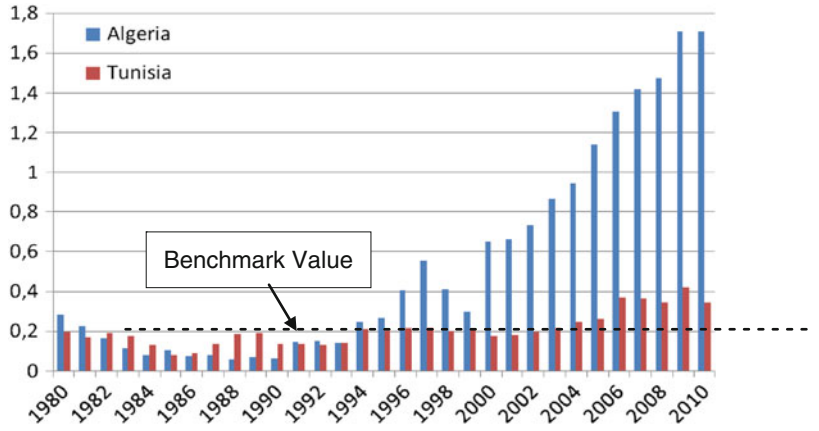

Fig. 3.6 Foreign exchange reserves as share of M2 (*Source*: World Bank. World Development Indicators)

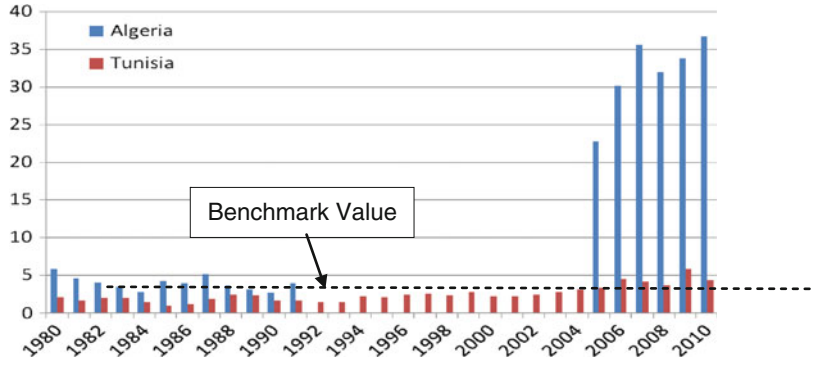

Fig. 3.7 Foreign exchange reserves in months of imports (*Source*: Banque centrale de Tunisie, different reports)

to some political and social turmoil launched in late 2010 and at the beginning of 2011. This special state has generated a significant drop in tourism income and a slowdown in export activities after many stops and closures of multiple production units. Popular protests, sit-ins, social movements, strikes and the climate of expectation and insecurity in the country contributed to deteriorate the external balances of the Tunisian economy.

Some countries like Algeria are facing an eventual exhaustion of its mining and underground resources. In the absence of insurance schemes and a diversified economic framework, the Algerian authorities should anticipate a solution to such a possibility. The creation of a special savings fund for the future generations becomes a necessity for an intertemporal smoothing of the consumption according to Vidon (2007). However, foreign exchange accumulation is sometimes excessive and

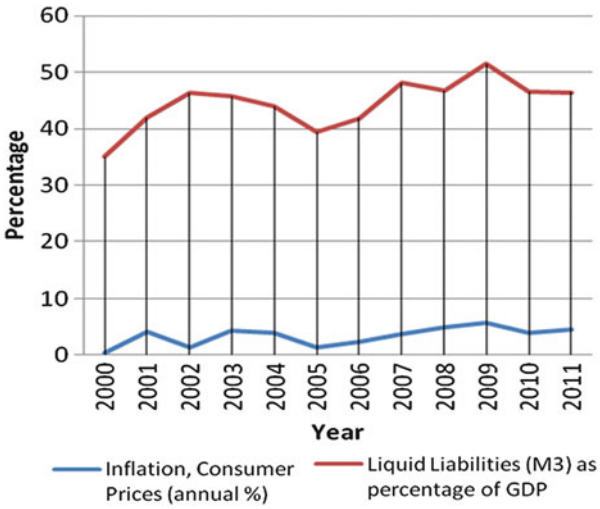

Fig. 3.8 Inflation rate and M3 aggregate trends in Algeria (*Source*: World Development Indicators. CD-ROM and Beck, T., & Demirgüç-Kunt, A. (2009))

generates holding costs. Indeed, Vidon (2007) states that sterilization operations that occurred after capital inflows result in a cost, especially when domestic interest rates are higher than those of foreign exchange investment. Further, when sterilization is not enough, another macroeconomic cost appears as it generates a loss of control over prices evolution. Actually, unsterilized foreign exchange intervention increases the monetary base and thus the M3 aggregate (liquid liabilities). It results in a high inflation in consumer prices as shown in Fig. 3.8.

Vidon (2007) finally adds that foreign exchange stock can be inflated by speculative inflows attracted by interest rates differences or expectations of short term exchange gain. The sudden outflow of these capitals could cause a harmful volatility for external balances.[27] Algeria does not fit with that configuration since inflows and outflows are controlled and the financial market is not liberalized.[28] Therefore, the risk of instability could be among the obstacles to financial reforms discussed above.

In Sect. 3.1.3 we analyzed the reasons why some countries adopt a hoarding behaviour. Mainly, they aimed to be protected from currency crises or to maintain competitiveness by depreciating the local currency against the Dollar or the Euro. However, some of them have several problems specific to developing countries such as the lack of public infrastructures, the weak social protection, the failure of health systems, the deteriorating quality of public services (such as education and transport), etc. This situation fits with that of some African countries among OPEC members

[27] Vidon (2007): op. cité., p. 31.

[28] In 2009, the additional Finance Act took some measures to oblige importing firms and foreign investors to open their capitals up to Algerian investments (respectively 30 % and 51 % minimum). Restrictions on transfers of foreign investment gains were established and the prerogatives of the National Council of Investment were enhanced (Mezouaghi and Talahite 2009).

(Angola and Nigeria), Latin American countries (Venezuela and Ecuador) and in North African countries like Algeria. The other reason behind the choice of a hoarding behaviour is the lack of local financial investment opportunities given the limited size of their financial systems (which is explained by institutional and political reasons). It is therefore necessary to study the financial and political features of those countries, on the basis of statistics and some stylized facts.

3.5 MENA Region: FOREX Reserves Accumulation and Financial Background

Another reason that further explains the foreign assets accumulation by Arab countries is the weak absorptive capacity of their economies. This is in fact valid for less populated countries such as those in the oil Gulf region. Yet it is also the case of the more populated oil countries such as Saudi Arabia and Algeria. This latter is an extreme case, given that on the one hand, it is more populated than Saudi Arabia and, on the other, it is not considered as a major oil producer. Hence, if the domestic capital is unable to be invested in the country how can one expect foreign capital to be invested, even coming from Arab countries? On the other side, other developing countries such as Tunisia, that really lack capital, can be considered as a serious alternative for Arab or Chinese funds that are looking for diversifying their investments. This weak absorptive capacity of Arab economies is analyzed in the literature from a specific perspective. It is mainly due to the inefficiency and inability of their banking and financial systems to align the supply and demand of funds. Such a view resuscitates interest in examining the financial reforms in these countries.

3.5.1 Banking Reforms, Openness and Growth

Research on the development of the MENA countries during the last two decades unanimously concludes that these countries are not taking off. These works purposefully question the reasons behind such a deceiving, erratic, volatile and unstable growth (El Badawi 2004) in comparison with South East Asian countries. Some explain such discrepancy by the slow integration of these economies, compared to countries with a similar development level, in a globalized world (Looney 2005). Among the various causes addressed to explain the growth deficit in the region is the controversial issue related to the link between financial liberalization and development.

A significant number of these views are about the necessary modernization of domestic financial systems, which low performances hamper financing the development. In various countries, mainly oil-producing ones, the delay in development would not essentially be a problem related to financial resources. If these countries

do not absorb the revenues from hydrocarbon exports it would be due to a misallocation of the loanable funds (of internal and external savings), by a non-performing financial system such as in the case of Algeria. The same goes for the financial systems of non-oil countries that have to be modernized in order to gather and allocate domestic saving and attract foreign capital.

Throughout the last decade, this theme has contributed to a debate that has primarily been oriented towards the opportunity of opening financial sectors. Omran and Bolbol (2003) support the fact that financial reforms should precede the opening to direct investments and the promotion of FDI policy. For these authors, the FDI positive impacts depend on the capacity of absorption of an economy which directly depends on financial development. They apply their hypothesis on Arab economies with predominant banking finance and they demonstrate that the FDI in these countries could favourably affect growth. However, they put the condition that FDI must interact with three thresholds levels of financial development.

On the opposite side, for Alouani (2008) the financial reform, which is considered one of the most important reforms prescribed by the IMF within the scope of Washington's consensus, has to be implemented in the last step of the economic liberalization process. Also for Beji (2007), trade liberalization has to be implemented prior to financial openness. His work was about setting institutional development thresholds from which financial openness can achieve financial development. Beji (2007) considers that given the current state of the institutional and legal environment in the Southern Mediterranean countries, the financial openness would be detrimental to the financial development.

This debate seems to have been settled – at least momentarily – by the financial crisis of 2008. Actually, although a number of economists agreed to advocate for opening the financial systems, the astounding resilience of Arab economies to the impacts of the international financial crisis of 2008 seems to be engendered by their frail integration in the global finance. This conclusion corroborates the claims of those who feared the openness of financial systems and called for a gradualist approach instead. In Algeria, for example, the government undertook an array of measures to modernize the financial system and postponed its privatisation and liberalization. These measures have led to an improvement of the efficiency-cost trade-off in Algeria. Ayadi and al. (2011) considers that some North African countries, especially Algeria and Egypt, are suffering from a financial underdevelopment due to:

> *the heavy presence of the state, [...] in the form of public debt in banks' portfolios. For 2008–09, the market shares of public banks range from a low of one-quarter of total banking assets in Morocco and Tunisia to highs of 67 % and over 90 % in Egypt and Algeria, respectively. These ownership structures and the underlying conditions, such as the high returns that the government debt earns in Egypt, are likely to crowd out the credit to private enterprises. Indeed, public debt and loans, including loans to public enterprises, account for nearly one-third of the total balance sheets of the Algerian and Egyptian banks, surpassing the share of the private credit. Aside from crowding out private credit and constraining*

financial development, the state's dominant role in the banking sector appears to have a serious negative impact on credit quality. Indeed, the ratios of non-performing loans to gross loans for the Southern Mediterranean countries are among the highest globally.[29]

The issue of reforming the domestic banking systems is still unresolved, in terms of modernization, if not liberalization, considering their feeble capacity to mobilize savings, give credits and finance the economic activity.[30] From this perspective, Bhattacharya and Wolde (2009) consider the lack of access to funding as the top constraint facing the local companies of the MENA region, which negatively affects economic growth.

If an institutionalist gradualist approach allows to establish the distinction between modernization of domestic financial institutions and openness of the financial sector to international finance, the most urgent strategy to adopt is openness for the countries lacking sufficient exportable natural wealth and needing external savings.

In addition to the issues raised by the pace of reforms and openness agenda one might also examine the content of these reforms. Considered from this angle, most of the MENA countries have globally adopted the standard that was put forth by the international financial institutions (Murshed 2009). These reforms are in fact implemented with the help of these institutions' expertise, as well as the European Union countries, within the scope of association agreements. Ayadi and al. (2011) adds that:

Some of the newer standards, such as the Basel II capital requirements, have been conceived with developed nations in mind and may not be appropriate, due to a variety of deficiencies in information-sharing and institutional and disclosure mechanisms. A key aim of the upcoming reforms should be to look for ways to reduce the role of government in banking sector while ensuring that the regulatory framework and the relevant institutional development adequately respond to the market imperfections.

Fundamentally, some question the relevance of this model for the MENA countries. In this respect, Cobham (2010) asserts that[31]:

None of these countries are anywhere near the type of monetary architecture which would be necessary for a 'modern' monetary policy of the inflation-targeting type. And [..] it should be recognised that while there are benefits to be obtained from a move towards the modern polar type there are also costs in terms of the employment of scarce capital, intellectual and physical resources. Research is needed to estimate those costs and compare them with the likely benefits. It should also be recognised that for some of the MENA

[29] Owing to the relatively limited role of the state, Morocco is once again an exception, with the lowest NPL ratios among the four countries. Moreover, the four countries have implemented policies to improve the quality of loans, including privatization improvements in credit information systems, loans repurchase programs and other plans to clean balance sheets (Ayadi and al. 2011, p. 3).

[30] Barajas et al. (2010) relate the recent decrease in credit in the MENA to three factors: the magnitude of the boom in the preceding period; the importance of the role of banking funds and the fact that the decrease in deposits and external loans is sometimes covered by an expansionist monetary policy. The basics that explain the differences in credit growth between banks and countries of the region being the level of capitalization and the number of loans.

[31] See also Boughzala and Cobham (2011).

countries, particularly the smaller ones, the strategic monetary choice so far made, to fix the exchange rate as a substitute for a serious monetary policy, may not be inappropriate.

Certainly, the authorities of these countries are sovereign and their flexibility, though limited, exists.[32] Yet considering the slow pace of these reforms one can speculate, for the time being, on whether this delay is not originally intended to slow the rythm and block or postpone the implementation of certain measures.

3.5.2 Lack of Financial Investment Opportunities

Artus (2007) considers that pursuing reform in public policies could lead to a reduction of the external imbalances, which is considered as a positive factor for the social welfare of a given country. Algeria and Tunisia need to take more qualitative and quantitative efforts in public spending, especially Algeria that high level of foreign exchange reserves and external surplus enables it. This observation is propped up by the downtrend in the general government expenditures (as share of GDP) as shown in Fig. 3.9. For Algeria, as well as in other energy exporting economies, given its need in the fields of social welfare, education and government investments, the hoarding behaviour is difficult to understand.[33]

This choice becomes more difficult to understand when we check the foreign holders of the Federal Treasury Securities. Indeed, as shown in Fig. 3.3 we notice that the oil exporters are occupying the third rank among the major foreign holders of U.S debt after China and Japan. We can wonder if it is profitable for Algeria to invest in such securities rather than investing in strengthening its public infrastructures and improving its social protection system. The same goes for the quality of public education or health, which remains below general international standards, and even below levels achieved by other emergent countries. The situation is similar in Tunisia, what reveals the need of the country to finance its investment given the lack of domestic capitals and internal financial resources. Then, the question to ask is if financial systems of both countries offer profitable opportunities to invest and if they are resilient enough to withstand eventual financial disruptions. Cobham (2010) gives a partiel answer by making a brief description of the financial systems in Algeria and Tunisia.

He notices a low financial openness degree in both of the countries and the fact that Algeria has a small banking sector dominated by the public element, whereas Tunisia has a medium-sized banking sector which is difficult to enter, as it is concentrated with a less large public sector component Fig. 3.10.

[32] At this stage, there is a need to establish an analysis in terms of political economy taking into consideration the nature of regimes in order to identify the incentives behind the power coalitions to conduct the reform process in this manner at the expense of alternative strategies.

[33] Artus (2007, p. 13).

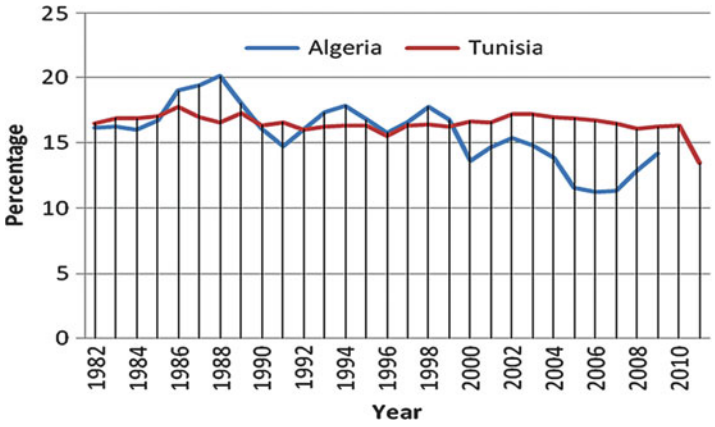

Fig. 3.9 General government expenses (% of GDP) (*Source*: World Development Indicators)

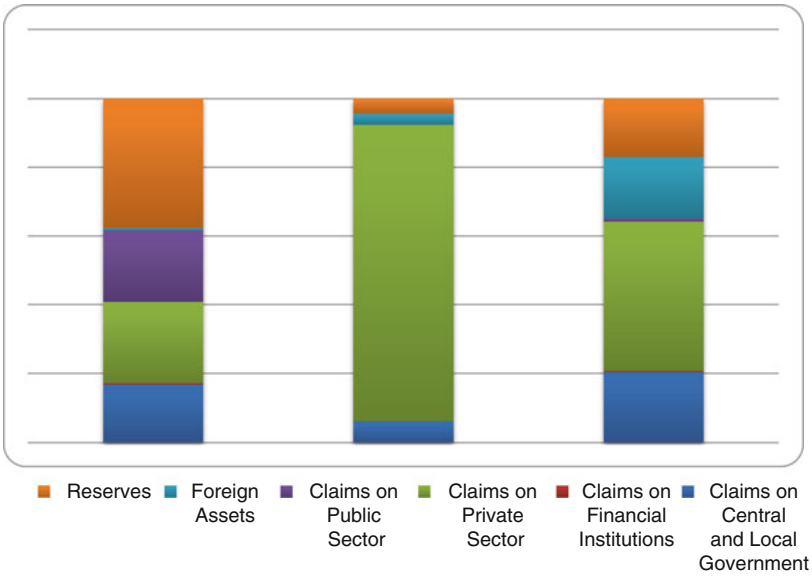

Fig. 3.10 Deposit money bank assets, by asset in percentage of total assets (2012) (*Source*: International Financial Statistics)

For the liabilities side, we use the liquid liabilities ratio that is defined as $\frac{M_3}{GDP}$. This ratio can be considered as financial development indicator and suitable to have an idea on the banking sector willingness to mobilize funds and thus the size of the banking system.

Figure 3.11 shows that Algeria and Tunisia do not have large financial systems compared to a country almost sharing the same features (here we choose Jordan as a control country). In fact, according to that indicator, it appears that Jordan is more efficient in mobilizing funds and offers more abilities and opportunities to savers and investors.

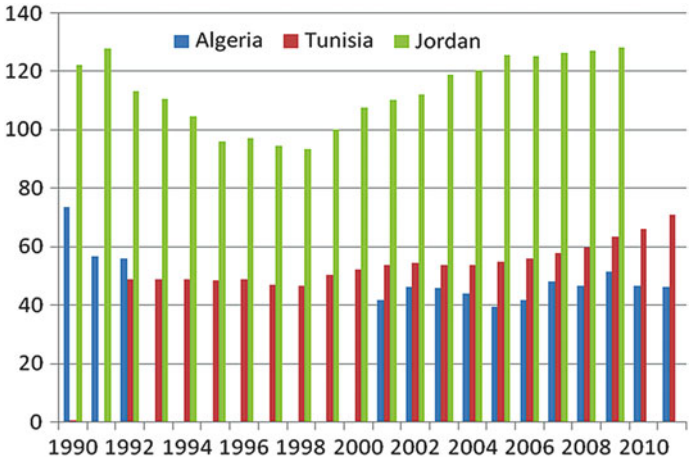

Fig. 3.11 Liquid liabilities as percentage of GDP (*Source*: World Development Indicators. CD-ROM and Beck, T., & Demirgüç-Kunt, A. (2009))

In another way, the payments system is weak in Algeria on retail Automated tell Machines (ATM) but good on Real Time Gross Settlements (RTGS), while the interbank markets are not very active. The situation is different in Tunisia where the payments system is considered efficient but the interbank market is also inactive as it is in Algeria. There is limited secondary trading in Algerian government securities as well as for Tunisia with limited holdings by non-banks financial institutions (data are not available for both countries). The central bank's independence is contested in both countries and financial markets are sharing the same features. Indeed, these markets are characterized by a low level of transactions volume, limited markets size and a feeble presence of local firms (data are not available for Algeria) (Fig. 3.12).

Based on the above stylized facts, we notice that more needs to be done to reinforce the financial systems and especially promote nonbank financial sector development. By and large, we can consider that financial systems in Algeria and Tunisia are neither enough developed nor diversified to be attractive. It is the reason why Algeria, among other oil exporters, cannot afford to invest in its own local financial markets and chose a hoarding behaviour. The problem as stated is rather linked to the low level of financial systems development. In this sense, there was an emphasis in the literature on the factors fostering financial systems functioning and financial products diversification. This focus is explained by the importance of identifying these determinants in shaping growth patterns (Greenwood and Jovanovic 1990; Bencivenga and Smith 1993; King and Levine 1993; Pagano 1993; Levine 1997; Beck et al. 2001; Demirgüç-Kunt and Levine 2008, etc.). Recent works on this topic point out the role of having strong and developed political and institutional infrastructure. Therefore, many scholars argued that differences in institutions quality explain financial development divergence between countries.

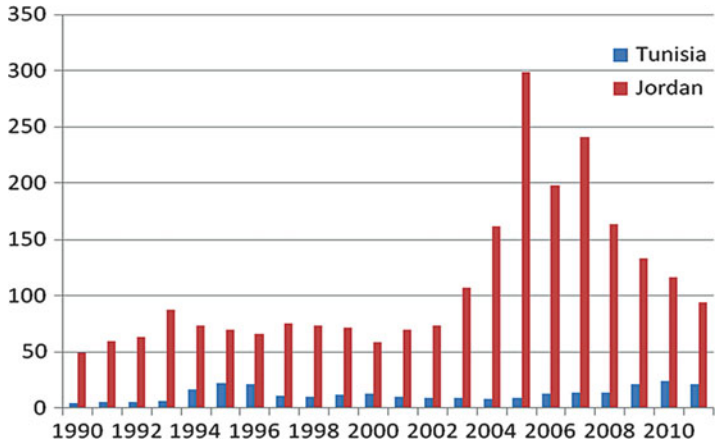

Fig. 3.12 Market capitalization as percentage of GDP (*Source*: World Development Indicators)

Stiglitz (2002) considers that the legal and institutional development contributes to an equitable functioning of the stock markets and hinders managers to notching the shareholders. Institutions evoked by Mishkin (2009) help to maintain strong property rights, efficient legal system and sound financial system. However, developing good institutions that foster financial development is not easy and takes time to be implemented. Furthermore, Mishkin considers that political decision makers in developing countries would be tempted to hinder the implementation of those institutions in order to protect their power and to stop other people from cutting into their profits.

Another strand in the literature looks at how the workings of political institutions shape political actors' incentives to provide financial development (Becerra et al. 2012). The literature focused on two interconnected explanations. On the one hand, it concentrated on the role of interest groups as obstacles to financial development. In this way, incumbent interest groups that may see their profits eroded would oppose the policies that would foster financial deepening. The most cited work (Rajan and Zingales 2003) suggests that financial development might foster competition by allowing entry to credit-constrained firms, which weakens the position of incumbents, both in industry and in finance. On the other hand, as summarized in Haber et al. (2008), the government may also have the incentive to limit financial development in order to draw resources from banks and credit markets. Consequently, even though favouring financial development may be welfare-enhancing, government officials in some countries may prefer maintaining a lax financial institutional environment, which does not promote credit, in case they need to draw funds from the system.[34]

[34] Becerra et al. (2012, p. 627).

3.6 Conclusion: What Is the Alternative to FOREX Reserves Accumulation?

In conclusion, we can say that the reasons for foreign exchange accumulation are different depending on whether countries are developed, emerging or energy exporters. For Algeria, it is neither for reasons of seeking trade advantages, nor for preventing financial crises (and sudden capital outflows). It is rather to prevent the volatility of energy prices and to anticipate a rough decline in their market values, combined with a low absorption capacity of the Algerian economy. However, the investment in foreign assets since 2008, and the outbreak of the late financial crisis, have become more and more risky.

The solution that consists in taxing emergent and developing countries having surpluses to finance industrialized and developed countries having deficits would be deeply unfair. Indeed, countries with surpluses have generally poor populations whose needs in employment, education, health and social protection are huge. If this taxation aims to make them import more, it would create more problems for countries that depend considerably on imports like Algeria. Further, in the developing countries, imports of industrial products from early industrialized countries tend to be substituted by those coming from new emerging economies. This is valid for both consumer and capital goods given their price advantages and their convenience with the needs and specificities of theses countries. Then, the taxation mechanism as imagined by Keynes would not be the solution in such conditions.

A better solution would be to find new investment opportunities for these countries to achieve their development given their special needs. From this point of view, one of the biggest impediments is the lack of development of financial and banking systems. Certainly, financial reforms have been undertaken since the late 1980s and they permit to achieve some improvements, but the financial crisis of 2008 stopped these reforms and cast doubts on their relevance.

In addition, among MENA countries, there is a gap between countries having the large part of the region's financial wealth and the other Arab countries suffering from social and economic underdevelopment. From this perspective, the situation of Algeria is extreme insofar as that polarization is observed within its borders.

If we consider the reasons of foreign exchange accumulation, we can suggest an alternative applicable at regional level:

- The establishment of institutions for consultation and coordination of economic and monetary policy
- The creation of a regional Fund that would allow a form of risk pooling and ensure reinvestment of at least part of that capital within the region.

But we can notice the absence of such institution in the Maghreb region and broadly an economic and financial lag especially in free movement of capital. Following this logic, Algeria and Tunisia, although neighbours are particularly

fragmented. Indeed, while the Gulf Common Market has established a Monetary Council and is moving towards a common currency,[35] the process of building the Arab Maghreb Union is stalled.

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Chapter 4
Are International Food Price Spikes the Source of Egypt's High Inflation?

Sherine Al-Shawarby and Hoda Selim

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Abstract This paper examines whether domestic inflation spikes in Egypt during 2001–2011 were primarily the result of external food price shocks. To estimate the pass-through of international food price inflation to domestic price inflation, two different methodologies are used: a two-step regression model estimates the pass-through in the long run, and a VAR model provides the short-run estimates. The empirical evidence confirms that pass-through is high in the short term, but not in the long run. More precisely, our results show that (1) Long-run pass-through to domestic food inflation is relatively

S. Al-Shawarby (✉)
Cairo University and World Bank, Cairo, Egypt
e-mail: selshawarby@worldbank.org

H. Selim
Economic Research Forum, Cairo, Egypt
e-mail: hodaeselim@gmail.com

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low, lying between 13 % and 16 %, while the long-term spill-over from domestic food inflation to core inflation is moderate, lying around 60 %; (2) In the short-term, pass-through is relatively high, estimated around 29 % after 6 months and around two-thirds after a year, but the spill-over effect to core inflation is limited; (3) international food price shocks explain only a small portion of domestic inflation shocks in both the short and long terms; and (4) international price inflation has asymmetric effects on domestic prices.

Keywords Inflation • Food commodity prices • Pass-through • Egypt

4.1 Introduction

High inflation has been one of the key macroeconomic challenges facing Egypt over the past few years. Indeed, following a decade of low one-digit level, CPI inflation gathered momentum in the end of 2003 and once again in 2007 before accelerating in 2008 to peak close to 24 % in August. Headline inflation is driven by inflation in food prices that have the largest weight (around 40 %) in the average household consumption basket. In fact, food price inflation has been much higher than CPI inflation, remaining in the double-digit level since January 2008.

As spikes in international foods prices have often accompanied these domestic increases, it has been claimed that the latter has been their main driving factor, especially that the food consumption basket has a large imported component (e.g. Egypt is the largest importer of wheat in the world (FAO 2011)). Naturally, more frequent rounds of international food price increases could increase Egypt's vulnerability to high domestic inflation.

The objective of this paper is to examine whether domestic inflation spikes in Egypt during the period 2001–2011 were primarily the result of external food price shocks. In addition, other fundamental questions addressed here are: (1) have surging domestic food prices spilled over into core inflation or there are other factors at play? (2) is the response of Egypt's domestic inflation symmetric for positive and negative international price shocks?

While a vast literature has examined the determinants of inflation in Egypt (Kheir-El-Din 2009; Kiguel and Okseniuk 2009), only a few studies focused on the role of international prices, mostly in panel and multi-country studies (World Bank 2011; Peeters and Albers 2013; Crowley 2010). Other work focused on estimating the long-run relationship (El-Sakka and Ghali 2005). Only one study provided evidence on the spill-over effect of domestic food shocks to other prices in Egypt (FAO 2009).

This paper contributes to the literature on international food price pass-through effects using two complementary methodologies. The first is a two-step regression (IMF 2008a, 2011) that produces long-run estimates of pass-through effects of international price inflation to domestic price inflation and was never applied to the Egyptian case; and the second is a traditional VAR approach that allows estimating the short-run effects and examining the relative importance of different sources of inflation.

Our empirical evidence confirms that the widely held view that inflation is due in the short-term to external shocks whereas the effect of the shock seems to dissipate in the long-run. The empirical results can be summarized as follows: (1) In the long-run, pass-through to domestic food inflation is low and lies between 13 % and 16 % and the

spill-over from domestic food inflation to core inflation is moderate, (2) in the short-term, pass-through is high and is estimated around 29 % after 6 months and around two-thirds after a year, but the spill-over effect to core inflation is feeble, (3) international food shocks explain only a small portion of domestic inflation shocks, and finally (4) international price inflation has asymmetric effects on domestic prices.

Apart from the introduction, the paper is structured as follows. Section 4.2 provides a brief descriptive analysis of both domestic and international inflation measures during the last decade. Section 4.3 presents a brief literature. Section 4.4 lays out the empirical methodologies and presents the data. Section 4.5 reports and discusses the key empirical findings. The final section concludes and discusses policy implications.

4.2 Inflation and Monetary Policy in Egypt

4.2.1 Inflation Measures: A First Look

Egypt's CPI inflation averaged around 9.4 % between 2001 and 2011 spiking to double-digit figures three times: in 2004, 2008 and 2010. Without these spikes, this figure falls to 5 %. Inflation first accelerated in June 2003 from the low digit level (close to 3 %) to 11 % afterwards, reaching a peak of 24 % in August 2008, following the global commodity price crisis (Fig. 4.1). This was more than double the inflation rate in the MENA region in 2008 (11 %) and significantly higher than many other peer countries with more-than-30 % weight of food in the CPI (Fig. 4.1). Inflation has subdued since then, but it remains in the low-double-digit levels (between 11 % and 12 %).

Meanwhile, food price inflation -around 40 % of consumption expenditure and the largest component in the CPI basket- has been the main driver of headline inflation. It has accelerated from low single digit levels of around 4 % in the early 2000s to around 14 % on average between FY04 and FY11. In particular, it rose from 6.9 % in December 2007 to a 31 % peak in August 2008 (Fig. 4.2). Between January 2008 and July 2011, the accumulated inflation of food prices (84 %) was significantly higher than that of the overall CPI (51 %). It is worth also to mention that administered prices represent around 19.4 % of the CPI basket, and subsidized food prices represent around 6 % of food consumption.

Moreover, in all recent spikes of CPI inflation since 2004, price increases in agicultural commodities seem to have played a role in feeding these spikes (Kiguel and Okseniuk 2009). Also, hikes in domestic food price inflation have been generally preceded by increases in international food inflation (Fig. 4.3). However, two aspects are worthwhile to note: inflation of domestic food prices has been higher but less volatile than that of international food prices (Table 4.1), and domestic food prices decouple from international food prices when the latter decrease (Fig. 4.3). Domestic food prices did not see any deflation since January 2008 and July 2011 cumulatively increased by around 84 %, as mentioned earlier, whereas international food price inflation grew by only 18 %.

Moreover, core inflation has been lower than both headline and food inflation. Core inflation- as measured by the Central Bank of Egypt (CBE) that excludes fruits

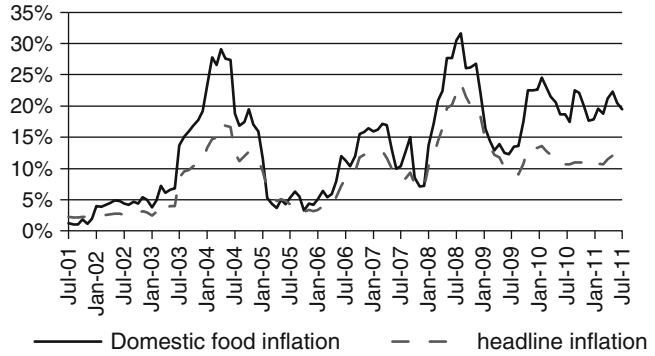

Fig. 4.1 Domestic inflation measures (year-on-year, %) (*Source*: Authors calculations based on CAPMAS data)

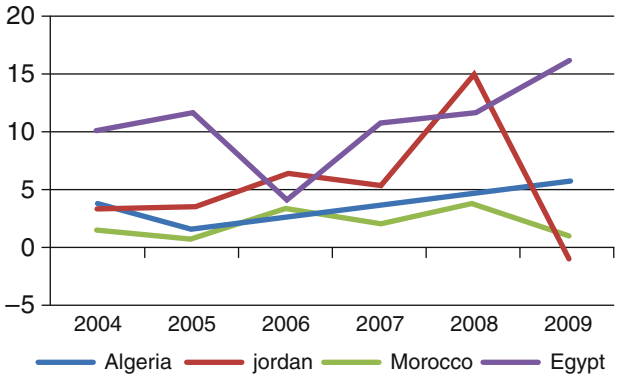

Fig. 4.2 CPI inflation in selected countries (year-on-year change %) (*Source*: Authors calculations based on WDI data)

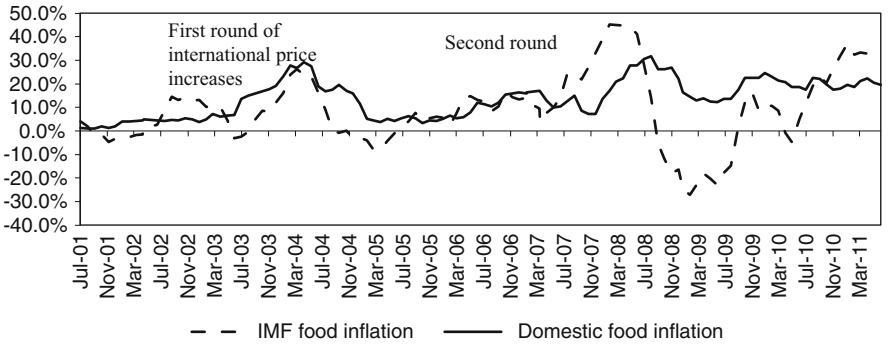

Fig. 4.3 Domestic and international food price inflation (year-on-year, %) (*Source*: Authors calculations on CBE and CAPMAS data)

Table 4.1 Inflation of domestic and international food prices, July 2001–July 2011 (percent)

	Egypt		International food inflation		
	Inflation rate	Food inflation	IMF food inflation	FAO food index	FAO cereals sub-index
Average (%)	9.4	13.8	9.0	10.5	16.3
Volatility (%)	5.1	8.1	15.4	18.7	33.5
Coefficient of variation	0.55	0.59	1.72	1.79	2.05

Source: Authors' calculations based on data from CAPMAS, IMF and FAO

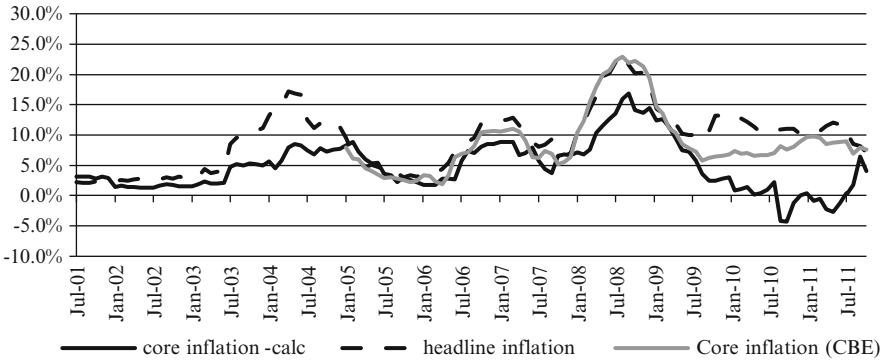

Fig. 4.4 Headline and core inflation measures (year-on-year, %) (*Source*: Authors calculations on CBE and CAPMAS data)

and vegetables and regulated prices- was high, averaging close to 9 % between 2005 and 2011.[1] It closely followed headline inflation during the period January 2005 and August 2009 but they decoupled since then (Fig. 4.4). However, the more traditional measure of core inflation, which excludes *all* food and energy prices, has been significantly lower, averaging only around 5 % during the overall period. Moreover, it has been in the low single digits since July 2009, and has posted negative growth rates in most of FY11. Thus, this core measure of inflation seems to be more disconnected from headline inflation movements, suggesting that shocks transmission from the food sector to other sector was minimal, except for the period January 2005–April 2009 (where it averaged 7.5 %). This confirms the analysis by Kiguel and Okseniuk (2009) who argued that not all inflation spikes have spill-over effects. The 2004 inflation surge was not accompanied by inflation in other sectors, but in 2008 domestic food price increases spilled over to other non-food components; such as tourism, education, recreation, transport and clothing and footwear. This is particularly worrying, because it means that food price shocks influence headline inflation indirectly through agents' inflation expectations, feeding thus into the actual price of other non-food products.

[1] Data available only since January 2005.

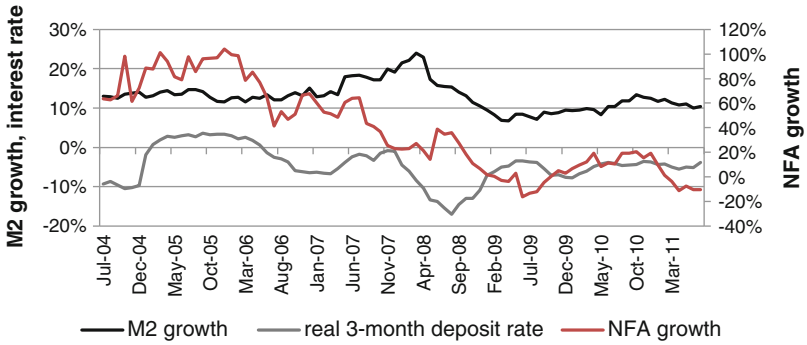

Fig. 4.5 M2 growth, net foreign assets' growth and real interest rates (*Source*: Authors' calculations based on CBE data)

It is very possible that high inflation in recent years is the consequence of many other factors. In fact, demand pressures may have resulted from strong domestic demand (economic growth was between 6 % and 7 % over FY06-FY08), stimulated by large cuts in income tax rates (in July 2005) and other reforms. Large capital inflows (around 8.5 % of GDP in FY07) – stimulated by ample regional liquidity and negative real interest rates – have further resulted in a significant rise in M2 growth, which has fuelled high inflation (Fig. 4.5).

Moreover, Noureldin (2008) presents empirical evidence that relative price adjustments (driven by the 2003 devaluation of the pound, the increases in the prices of energy-related products and the outbreak of the avian flu virus) were important factors in the dynamics of inflation. In particular, the role of the exchange rate in producing lagged inflationary pressures has been examined in some work (Rabanal 2005). Also, Kraay (2007) found that the exchange rate pass-through to food items between 2000 and 2005 was higher than that to other items. Finally, other structural factors like the persistent budget deficit (Helmy 2008) and downward price rigidity (Hassan 2008) have also contributed to sustaining the pressures.

4.2.2 Monetary Policy in Egypt

After the official abandon of the exchange rate anchor in early 2003, recent reforms were introduced to enhance the monetary policy framework in Egypt. In particular, price stability was formally declared (through the 2003 Banking Law and other CBE statements) to be the overriding medium-term objective of monetary policy (CBE 2005). The CBE also announced in 2005 its intention to move to inflation targeting. Yet, these improvements did not allow monetary policy to achieve price stability, especially that the framework still lacks an official nominal anchor since the abandonment of the exchange rate peg (Selim 2011).[2] Like many other central banks, the CBE

[2] For more information on the monetary policy framework in Egypt, please see Selim (2011).

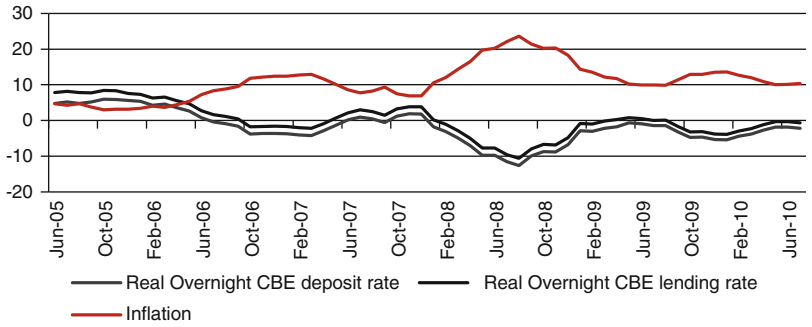

Fig. 4.6 Inflation and real policy rates (*Source*: Authors' calculations based on CBE data)

relies on short-term interest rates as an instrument to influence liquidity and inflation. However, monetary policy remained initially inactive in the face of inflation shocks and policy tightening often occurred too late in the aftermath of shocks and was not sufficient in the face of mounting inflation (Fig. 4.6). In many cases, the stance of monetary policy was accommodating as real interest rates remained negative and were declining. More generally, Al-Mashat and Billmeier (2008) find that the interest rate transmission channel is weak.

4.3 Literature Review

Theory states that commodity prices are able to forecast changes in prices and may thus be expected to correlate positively with intermediate and consumption prices. This is because commodity prices are set in competitive flexible markets and thus respond immediately to actual or expected changes in supply or demand, but because consumer prices are set contractually by producers and retailers, they respond with a lag to these pressures. Empirical work was carried out to verify this relationship in the context of the 1970s' oil price shocks (Blomberg and Harris 1995; Furlong and Ingenito 1996). Moreover, imperfect competition and/or price stickiness (Rotemberg and Woodford 1999) lead firms to only partially pass-on commodity price increases (originating from supply shocks) to consumer prices, thus making pass-through incomplete (Kalecki 1971).

The empirical work aiming to quantify the response of domestic prices to global price shocks is voluminous and received renewed attention in the aftermath of the 2007–2008 commodity price shock (IMF 2011; Ferrucci et al. 2010; Zoli 2009; IMF 2008a, b, c; Jongwanich and Park 2008; Liu and Tsang 2008). More generally, the literature review shows four main findings:

First, international to domestic food pass-through is incomplete and has changed over time. Incomplete pass-through is most likely due to the presence of significant local production components (including retail and distribution components), subsidies and domestic consumption patterns that are different from the composition

of world commodity price indices (IMF 2011). Moreover, Blomberg and Harris (1995) and Furlong and Ingenito (1996) show that a declining food commodity pass-through in the United States since the mid-1980s was due to a weakened demand for commodities, as the latter gradually shifted toward sectors with low commodity content (such as IT and services). Evidence of a declining pass-through in advanced economies was also provided by IMF (2008a) between the period 1975–1995 and 1995–2008. Hahn (2003) had shown that pass-through remained stable over time in the euro area. No study has investigated this for Emerging Markets Economies (EMEs).

Second, pass-through in EMEs is higher than in advanced economies (IMF 2008a, b, 2011; Ferrucci et al. 2010; Galesi and Lombardi 2009). IMF (2011) estimates a pass-through of a 1 % international food price shock to domestic food prices at around 0.18 for advanced economies and 0.34 for EMEs. Estimates of the size and speed of pass-through reveal a wide variation across EMEs and depended on the sample, period of analysis and the international price measure used in the analysis. On the one hand, Zoli (2009) finds that a 1 percentage point (ppt) shock in international commodity prices leads to an average 0.2 ppt increase in domestic inflation in 18 European emerging economies and IMF (2008c) finds that a 30 % increase in world food prices raised annual headline inflation by an average of 1 ppt in 10 Latin American economies. Liu and Tsang (2008) provide evidence of a weak pass-through in China and Jongwanich and Park (2008) show that pass-through did not have a significant role in developing Asia. On MENA, World Bank (2011) provides pass-through estimates, ranging between 20 % and 40 % (except for Tunisia and Algeria where they is very low). The report also finds that the pass-through is relatively fast, taking about 1 year to reach full impact, and in some cases much less (3–6 months). Peeters an Albers (2013) find similar evidence for a number of Southern Mediterranean economies. On the other, Loungani and Swagel (2001) showed that both fuel and nonfuel commodity prices to have a significant but modest impact on inflation in developing countries.

Third, there is evidence of a moderate spill-over effect from domestic food prices to core prices, suggesting weak second-round effects of higher commodity prices (IMF 2011; Galesi and Lombardi 2009; Cecchetti and Moessner 2008; IMF 2008a, b). Moreover, such pass-through is also higher for EMEs than in advanced economies (IMF 2008a, 2011). IMF (2008a) shows that one-half of the shock to domestic food prices eventually makes its way through to core inflation in EMEs, whereas in advanced economies, less than one-quarter passes through. This is due to several factors specific to EMEs, including a higher share of food consumption, and a poor track record in controlling inflation which means that international price shocks contribute to raising inflation expectations, which are in turn reflected into domestic prices.

Fourth, the price pass-through of external shocks is asymmetric. In an extensive study of 282 products and product categories, including 120 agricultural and food items, Peltzman (2000) shows that asymmetric price transmission is the rule rather than the exception and is prevalent in the majority of producer and consumer markets. Zoli (2009) finds that increases in food price inflation generates increase

in headline inflation in emerging Europe, while falls in food price inflation do not lead necessarily to falls in headline inflation. Similar evidence for a number of MENA countries can be found in Peeters and Albers (2013) and World Bank (2011).

Results of empirical work on Egypt are mixed. Previous studies find no evidence that import prices affect inflation in the long-run (Bahmani-Oskooee and Malixi 1992; Deme and Faissa 1995). More recent work provides evidence of a long-run pass-through effect, regardless of the adopted methodology. Using cointegration techniques, El-Sakka and Ghali (2005) find that a 10 % increase in international prices push-up domestic inflation by 1.9 %, though changes in domestic consumer prices do not seem to be highly sensitive to changes in import prices. They attribute this to the heavy subsidy scheme. Using panel data for a sample of MENA and Central Asian countries including Egypt, Crowley (2010) finds that doubling prices of nonfuel commodity would induce increases of 4–6 points in inflation. Investigating short-run dynamics using VAR analysis, multi-country studies like those of Peeters and Albers (2013) and World Bank (2011) find that Egypt is among the high pass-through countries. In particular, World Bank (2011) estimates pass-through to domestic food prices by more than 44 %. Moreover, the shock reaches its full strength after a year. Finally, FAO (2009) provides evidence of a spill-over from domestic food prices to both CPI and core prices, estimated respectively at 59 % and 16 %.

4.4 The Models' Set-Up and Data Properties

Pass-through empirical work is mainly carried out with two different methodologies: bivariate models and VAR models. This section presents these two models then addresses data issues.

4.4.1 Empirical Models

4.4.1.1 The Two-Step OLS Regression Model

According to this methodology adopted by IMF (2008a, 2011), the pass through from international to domestic food price inflation is first estimated using a bivariate regression of the following form[3]:

$$\pi_{t^{domestic}} = \alpha + \sum_{i=1}^{12} \beta_i \pi_{t-i^{domestic}} + \sum_{i=0}^{12} \delta \pi_{t-i^{world}} + \varepsilon_t$$

Where π stands for the annualized month-over-month log difference in food prices. The long-term pass-through effect from international to domestic price inflation is then calculated as follows:

[3] Energy prices in Egypt are fixed and therefore left out of the empirical analysis.

$$price\ pass-through = \frac{\sum_{i=0}^{12} \delta_i}{1 - \sum_{t=1}^{12} \beta_i}$$

Secondly, the pass-through from domestic food price inflation to core inflation (and non-food price inflation) is estimated using the following generalized Phillips curve equation:

$$\pi_{t^{core}} = \alpha + \sum_{i=1}^{12} \theta_i \pi_{t-i^{core}} + \sum_{i=0}^{12} \gamma_i (y_{t-i} - y^*_{t-i}) + \sum_{i=0}^{12} \varphi_i \pi hat^{domestic}_{t-i} + \varepsilon_t$$

Where π stands for the annualized month-over-month log difference in core prices, y and y^* denote the annualized month-over-month log difference in real and potential GDP (growth gap), respectively, while πhat denotes the predicted values of domestic food inflation obtained from the first-step bivariate regression.

The predicted values are used to ensure that domestic food prices in step 2 reflect only the variation that is due to changes in international prices and lagged effects of domestic food price changes, rather than movements in other factors (like labour, transportation, retailing cost, etc.) that may have common origins with overall inflation (IMF 2008a). Coefficients obtained in this step allow the calculation of the food price pass through as follows:

$$domestic\ food\ price\ pass-through = \frac{\sum_{i=0}^{12} \varphi_i}{1 - \sum_{t=1}^{12} \theta_i}$$

Finally, one can examine the presence of asymmetric effects by including a dummy variable for periods when international food price changes are decreasing. The dummy variables equal to 1 when there is a decrease in international food prices, zero otherwise. The dummy is then entered in a multiplicative form with the variable representing international price inflation. If the summation of the coefficient of international food price inflation and the differential slope coefficient is positive, one can conclude that asymmetric effects of world food prices on CPI are likely to be present.

4.4.1.2 The VAR Baseline Model

Most papers use VAR models (World Bank 2011; Galesi and Lombardi 2009; Zoli 2009; IMF 2008b, c; Jongwanich and Park 2008; Hahn 2003). VAR models are able to capture the interaction of domestic prices with different domestic factors and external shocks (commodity prices, exchange rate, etc.). In particular, they can capture both the direct effects of higher costs of commodity prices and the indirect effects coming from the fact that these commodities are inputs in the production of other goods. Moreover, VAR models have three main advantages over bivariate models. First, they solve the endogeneity problem inherent in the single-equation based methods. Second,

they take into account the influence of other macroeconomic variables (supply and demand shocks). Third, in addition to estimating pass-through effect, they assess its dynamics over time.

Two different VAR models are estimated at monthly frequency for Egypt.[4] The first includes the following variables: world food price inflation, output gap, as a measure of economic activity, headline inflation, the change in M2d, and changes in the real exchange rate. This model will estimate the pass-through from world food price inflation to headline inflation. In the second model, headline inflation is replaced by domestic food inflation, and core inflation, providing thus further insights on the transmission of international commodity price shocks to domestic food inflation, as well as the spill-over of the latter to core inflation.

The shocks are identified using the Cholesky decomposition of the variance-covariance matrix of the reduced form residuals. The use of a recursive identification scheme implies that the identified shocks contemporaneously affect their corresponding variables and those variables that are ordered at a later stage, but have no impact on those that are ordered before. Hence, the most exogenous variable, international food prices, comes first. Food price shocks may thus affect all other variables in the system contemporaneously but they are not themselves affected contemporaneously by any of the other shocks. Estimates of the pass-through coefficients are derived from cumulative impulse response function to assess the impact over time of temporary external and domestic shocks on relevant price measures. Variance decomposition analysis is used to determine the relative importance of these shocks for fluctuations in the different price measures.

4.4.2 Data

The models are estimated for the period 2000 and 2011 M7. All variables are included as the annualized log differences, except for the output gap in the VAR and the growth gap in the two-step regression. While all variables, except for the exchange rate, were seasonally adjusted before getting their log differences in the VAR, dummy variables are used in the two-step regression to find out the seasonal effects of various months. Annex 1 provides details on data description and sources.

In order to assess the stationarity of the variables, unit root tests were performed using the Augmented Dicky-Fuller (ADF). The tests, summarized in Annex 2, show that all the variables are stationary (i.e. I(0)).

[4] Energy prices in Egypt are fixed and therefore are left out of the empirical analysis.

4.5 Results

In this section, the empirical results are presented and discussed. The long-term pass-through coefficients are estimated from the two-step regression model, and the short-run dynamics are obtained from the VAR models. *In general, the results show that pass-through is incomplete both in the long and short runs, which is in line with theory. However, the results on the size of the pass-through diverge between the long and short-term. In fact, the short-term impact of external food shocks is higher than in the long-run, suggesting that the effect of the shock tend to dissipate over time.*

4.5.1 Long-Term Pass-Through Coefficients

The two-step regression model shows that pass-through to domestic food inflation is low and lies between 13 % and 16 % (depending on the international price measure used) and the spill-over from domestic food inflation to core inflation is moderate, estimated at around 0.6 %.

The first-step equation was estimated following the methodology shown in the previous section. Three measures of international food prices were used (IMF food index, FAO food index and FAO cereals sub-index). Only statistically significant coefficients of the different lags, regardless of their signs, were used to compute the full long-term pass-through from international price inflation to domestic food inflation.[5] The results using the IMF food price index are not reported because it yielded negative pass through estimates. In general, the results from this step, reported in Table 4.2, show that the pass through to domestic food inflation is low. A 1 % increase in the international price inflation leads to a 0.16 % increase in the domestic food price inflation when the FAO food index is used as a measure of international food prices, and to a 0.13 % when the FAO cereals sub-index is instead used. Also, the first-step equation shows that international food price inflation explains around one quarter of the changes in domestic food price inflation, meaning that changes of domestic food prices are attributed to factors other than the international food price inflation.

These results are in line with the 0.16 weighted average pass-through of the IMF (2008a) country-by-country estimate, and the 0.19 % estimate of El-Sakka and Ghali (2005). Yet, these results may seem much lower than the 0.34 median long-term pass-through of international food price shock in EMEs, (IMF 2011). This may be due to expressing international prices in local currency in IMF (2011), blending thus together changes in the exchange rate and changes in international food prices. Yet, our results remain unexpected given the large size of the food basket in Egypt's CPI.

The estimation of the second-step equation showed that the long-term the spill-over from domestic food prices to other domestic prices is sensitive to the variables used both in step 1, the international price index being (either the FAO food index or the FAO cereals sub-index), and step 2, the domestic price index (core vs. non-food

[5] All selected coefficients are significant at least at 95 % confidence level.

Table 4.2 Regression results for step 1 pass through from international to domestic food price inflation

	Full long-term pass-through	R-squared adjusted
Using FAO food index	0.16	0.25
Using FAO cereals sub-index	0.13	0.28

Table 4.3 Regression results for step 2: spill-over of domestic food price inflation to other domestic prices inflation and root mean square error of the forecasted domestic price inflation[a]

		Using output gap	Using output growth gap
Core	**Using FAO food index**		
	Coefficient	0.48	0.59
	R2 adjusted	0.72	0.59
	RMSE	46.40	31.45
	Using FAO Cereals sub-index		
	Coefficient	0.88	1.04
	R2 adjusted	0.62	0.66
	RMSE	40.27	25.73
Non-food	**Using FAO food index**		
	Coefficient	0.65	0.15
	R2 adjusted	0.72	0.69
	RMSE	37.44	33.61
	Using FAO cereals sub-index		
	Coefficient	0.85	0.59
	R2 adjusted	0.76	0.74
	RMSE	32.05	24.71

[a]All figures are calculated from coefficients estimated at 5 % significance level at least, and RMSE is calculated for the period 2010 M7–2011 M6

inflation) and the economic activity proxy variable (output gap vs. output growth gap). In fact, the eight equations that were estimated showed that the long-term spill-over effects ranged between 0.15 (from domestic food prices impacted by FAO cereals price changes to core inflation) and 1 (complete spill-over of the shock to domestic food price inflation to non-food price inflation when the FAO food index is used) (Table 4.3).

To solve the inconclusiveness of the results of the spill-over estimates, the authors resorted to an out-of-sample forecasting method to compare the forecasting power of various models. As shown in Table 4.3, ceteris paribus, having a lower RMSE, the growth gap variable produces more accurate forecasts than the output gap; and the FAO Cereals sub-index produces more accurate forecasts than FAO food index. Consequently, based on the RMSE criterion, the most accurate relation would be that of the non-food price inflation regressed, among other things, on the predicted values of domestic food prices estimated from the bivariate regression of domestic food and FAO cereals sub index, and the growth gap variable. This relation indicates that a 1 % increase in the domestic food price inflation is estimated to increase non-food inflation by almost 0.6 %, and that changes in domestic food price inflation explain

Table 4.4 Coefficients of international price inflation in step 1 of the two-step regression

	FAO food index	FAO cereals sub-index
Slope of inflation increases	0,54	0,23
Differential slope	−0,35	−0,41
Slope of inflation decreases	0,18	−0,18

Note: All coefficients are significant at the 95 % level

almost 75 % of changes in non-food inflation. Moreover, for the same specification, the spill-over to core inflation is also close to 0.6 %.

Finally, there is evidence that international prices have asymmetric effect on domestic prices (Table 4.4). Following the approach described in Sect. 4.4, domestic food price inflation is found to increase by only 5.4 % when inflation of FAO food index increases by 10 % and by 1.8 % when inflation of FAO food index increases by the same magnitude. Using the FAO cereals sub index inflation, the asymmetric effect is less pronounced: an increase of 10 % in international food prices would cause a 2.3 % increase of domestic food prices, while a decrease of the same magnitude would cause a decline of 1.8 %.

4.5.2 Short-Run Dynamics

In this section, results of the VAR analysis are reported. The number of lags in the VAR is determined through the standard information criteria (see Appendix 3). The results were not sensitive to the ordering of the variables. In general, the results show that pass-through to headline inflation is feeble but it is high to food price inflation (estimated around 29 % after 6 months and around two-thirds after a year). The spill-over effect to core inflation is almost negligible.

4.5.2.1 Impulse Response Functions

Table 4.4 report the pass-through coefficients for horizons j = 1, 3, 6, 12, 18 and 24 months. Impulse responses suggest that movements in world food prices have a feeble impact on domestic CPI inflation. A 1-standard deviation initial shock (estimated at around 31.15 percentage points (ppts)) in world food prices leads to an estimated cumulative increase in CPI by 4.5 ppts after 6 months. Another measure of the size of the pass-through in month *j* is to look at the ratio of accumulated responses of domestic inflation to one standard deviation shock to the international food price inflation *j* horizons after the shock. This way of measurement, usually used in the exchange rate pass-through literature, would suggest that the pass-through to CPI is weak, with only around 9 % of the external shock passing through to CPI inflation after 6 months and around 10 % after 8 months.

Shocks from international food price inflation to domestic food inflation have a stronger effect. A hike in world food inflation by 27.5 ppts is estimated to raise domestic food inflation by 10.7 ppts after 6 months (Table 4.5). In the same way of measurement as above, pass-through to food prices is high: more than a quarter of

Table 4.5 Response of domestic inflation to international food price inflation shocks

	Model 1 (headline inflation)		Model 2 (food inflation)	
Horizon	Percentage points	Alternative measure	Percentage points	Alternative measure
1	1.3	4.0	3.3	12.0
3	2.7	5.5	7.9	17.9
6	4.1	9.3	10.7	28.6
12	3.4	9.8	10.5	66.4
18	2.8	8.4	10.3	78.7
24	2.9	8.3	10.8	69.2

Source: Author's estimates based on IRF derived from VAR

Table 4.6 Response of core inflation to domestic food price inflation shocks

	Core inflation	
Horizon	Percentage points	Alternative measure
1	−3.8	−25.3
3	−2.0	−8.9
6	0.7	2.8
12	1.8	7.4
18	−0.5	−2.1
24	−1.6	−6.8

the external shock (29 %) passes-through to food inflation after 6 months and around two-thirds after a year. This is in line with Kraay (2007) who found that pass-through to food items is higher than other items. While our results are not strictly comparable with others (World Bank 2011), they confirm that pass-through to domestic food prices is high in Egypt.

It is also useful to examine the impact of domestic food inflation on core inflation to assess whether there are second round effects of initial shocks which could be long lasting. Indeed, the analysis of the VAR impulse response suggests that core inflation does not respond significantly to shocks to domestic food inflation (Table 4.6). Impulse responses of core prices indicate that the initial impact of a 1-standard deviation (initial) shock (estimated at 14.8 ppts) in domestic food prices is mostly negative, suggesting the absence of a significant spill-over effect.

Robustness Checks

The basic results were slightly altered when the estimations were conducted using alternative measures of international supply shocks (The FAO food index). Tables 4.7 and 4.8 reports these results and confirms that pass-through to CPI is low, estimated at 8 % after 6 months. However, shocks from international food price inflation still have a stronger effect on domestic food inflation than on CPI inflation. However, this effect is slightly weaker than when the IMF food index is used. In fact, pass-through to food prices is estimated at 22 % after 6 months. More importantly, it subsides over time. Also, the spill-over to core inflation from domestic food price inflation is still weak but stronger than when the IMF food index is used.

Table 4.7 Response of domestic inflation to international food price inflation shocks (using the FAO food index)

	Model 1 (headline inflation)		Model 2 (food inflation)	
Horizon	Percentage points	Alternative measure	Percentage points	Alternative measure
1	1.3	4.9	0.0	0.0
3	2.8	6.0	9.3	20.6
6	5.0	8.2	12.6	22.0
12	6.3	9.5	9.7	16.1
18	6.4	9.7	8.6	14.5
24	6.3	9.7	8.6	14.5

Table 4.8 Response of core inflation to domestic food price inflation shocks (using the FAO food index)

	Core inflation	
Horizon	Percentage points	Alternative measure
1	−2.9	−18.2
3	0.8	3.6
6	2.1	9.0
12	2.5	10.6
18	2.4	10.2
24	2.4	10.2

4.5.2.2 Sources of Inflation: Variance Decomposition Analysis

Although IRFs provide information on the impact of the fluctuations of world food prices on the CPI, they do not indicate the importance of these shocks in CPI fluctuations. By contrast, variance decomposition indicates the contribution of the different shocks for the variance of the k-step ahead forecast errors of the variables.

Figure 4.7a, b summarize the results on the variance decomposition of both domestic food inflation and core inflation respectively. Variance decomposition of domestic food price inflation indicates that it is explained by inertia or its own innovation (65 %). International food price inflation accounts for 10 % of the variance of domestic food inflation. As for core inflation, again innovations in the variable explain a bit more than half of its variance, but together domestic and international food inflation account for 25 % of its variability.

To sum up, the results of the two methods diverge but they are not strictly comparable. They both show that pass-through of external shocks to headline inflation is low. However, the VAR shows that the short-term impact of such shocks to food price inflation, confirming that Egypt is among the high pass-through economies. The two-step model provides a lower pass-through estimate in the long-run, which could be interpreted as a dissipation of the effect of the shock over time. Finally, the VAR model shows that the spill-over from domestic food inflation to core is feeble, which is in line with the descriptive analysis above and also close to the results of FAO (2009).

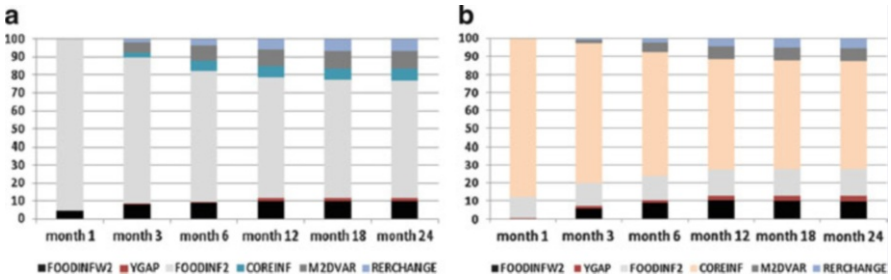

Fig. 4.7 Variance decomposition of (**a**) domestic food price inflation (**b**) core inflation

4.6 Conclusion and Policy Inferences

This paper estimates pass-through coefficients of external food shocks to domestic price inflation in Egypt using monthly data from 2000 to 2011. The paper relies on two alternative methodologies to do so. The first is a two step model that provides the long-run pass-through effects and is able to identify the change in domestic inflation that is due only to changes in international prices rather than movements in other factors. The second is a traditional VAR model that assesses the short-run dynamics of external food shocks to domestic food prices and those of the latter to other domestic prices. Our results can be summarized as follows:

First, the long-term pass-through to domestic food price inflation is low and is estimated between 13 % and 16 %, while the long-run spill over effect of domestic price shocks to non-food inflation is more significant- estimated at 60 %. Also, while changes in international food prices explain only one quarter of the variations in domestic food prices, changes in the latter explain almost three quarters of the variations in domestic non-food prices.

Second, the short-term pass-through to CPI is weak, with only around 9 % of the external shock passing through to CPI inflation after 6 months, while the short-term pass-through to food prices is higher with more than a quarter of the external shock (29 %) passing through to food inflation after 6 months and around two-thirds after a year. Also, the spill-over from domestic food price inflation to core inflation, is limited. Moreover, international food shocks explain only a small portion of domestic inflation shocks.

Finally, there is evidence of an asymmetric effect suggesting that domestic prices are vulnerable to increases in international food prices but seem to be somewhat insulated from their decreases (downward rigid).

This paper has shown that external food shocks affect domestic food price inflation in the short-term. Yet, domestic increases, especially since 2008, had taken place when other traditional and structural sources of inflation were already at play as concluded by Kiguel and Okseniuk (2009). In other words, such increases decisively and pre-emptively defused the risk of deeply entrenched long-term inflation. Meanwhile, market rigidities, weak market institutions and lack of competition and ineffective

consumer protection maybe responsible for downward price rigidity and/or amplifying the imported inflation increases as producers are able to drive their mark-ups and adopt ad hoc pricing strategies. These areas are left for future research.

To conclude, global food shocks are exogenous and therefore are largely beyond policymakers' control. Yet, this does not mean that the monetary authorities do not have a role in reducing pass-through. In fact, appropriately tight and forward-looking monetary policy could pre-emptively act to curb such pressures. This would surely require that the CBE possess the inflation forecasting and modelling capabilities and the data needed in order to assess inflation prospects. According to Al-Mashat and Billmeier (2008), the CBE has already developed models to forecast inflation and carried out both 'near-term' (a quarter ahead) and longer-term forecasts but these forecasts have not yet been published. However, as inflation is also the result of long-term factors, a more prudent fiscal policy together with agriculture and food security policies that ensure increased food supply and improved productive and allocative efficiency in Egypt's markets would significantly reduce inflationary pressures.

Annex 1: Data Description and Sources

International food price indices: three indices are used from the IMF, FAO food, and FAO cereals.

Domestic Prices: The time series of Egypt's CPI and domestic food prices are constructed by the authors for a unified base year (1999/2000 = 100) using official data from the Central Agency for Public Mobilization and Statistics (CAPMAS) that are available for different base years.[6] Domestic non-food prices time series are constructed by the authors by excluding the food component (the weight of which is 42.6 %) from the CPI. The index of core prices (1999/2000 = 100) is constructed by the authors from CPI data by excluding food and energy components from the CPI (the weight of which are respectively 42.6 % and 3.1 %). The Central Bank of Egypt (CBE) core inflation measure (which excludes only fruits and vegetables and regulated prices) is only available since 2005 only. Also, the non availability of this level of disaggregated price data did not allow the authors to extend the CBE core inflation time series. Non-food and core prices were measured using the following formulas:

$non - food = \frac{\left[CPI - \left(foodCPI * w_f\right)\right]}{\left(1 - w_f\right)}$, where w_f is the weight of food in the CPI basket.

$core = \frac{\left[CPI - \left(foodCPI * w_f\right) - \left(energyCPI * w_e\right)\right]}{\left(1 - w_f - w_e\right)}$, where w_e is the weight of energy in the CPI basket.

[6] The weights for fixed to reflect the composition of the basket in 1999/2000.

Economic Activity: In the absence of monthly data on Egypt's GDP the authors proxied output by an index constructed by the means of principal components analysis using seven seasonally adjusted real activity variables: real exports of goods, cement production, steel production, oil production, industrial consumption of electricity, Suez Canal tonnage, and the number of tourists. Variables are turned into indices. As the obtained series had in some cases negative values, a positive integer of '5' was added to all the variable's observations. The output gap *(ygap)* is constructed by applying the Hodrick-Prescott (HP) filter under the assumption that output fluctuates around its potential level.[7] The HP filter decomposes output into permanent and transitory components generating a smoothed trend of output. These generated series are the estimated potential output. The *ygap* is calculated as the difference between actual and potential output as a percentage to potential output.
Exchange rate and monetary policy: The nominal exchange rate (LE/US$), an important cost factor and affects prices, is obtained from the International Financial Statistics (IFS). To calculate the real exchange rate, the authors used the formula: $q = e * (\frac{ppi_{us}}{cpi_{eg}})$, where *(q)* is the real exchange rate, *(e)* is the nominal exchange rate, (ppi_{us}) is the foreign price level, proxied by the US producer price index for all commodities, and (cpi_{eg}) is the domestic price level, proxied by the CPI in Egypt. Data on the US PPI is from the US Bureau of Labor Statistics.
The M2 in LE millions (excluding foreign currency deposits), a measure of money to allow for the effects of monetary policy and also for the relationship between money and domestic prices, is obtained from the Central Bank of Egypt.[8]

Annex 2: Unit Root Tests

			McKinnon critical values for rejection of hypothesis of a unit root		
Variable	ADF statistic	Order of integration	1 %	5 %	10 %
Annualized log differences (except for ygap)					
CPI	−7.64	I(0)	−3.48	−2.88	−2.58
Food CPI	−8.09	I(0)	−3.48	−2.88	−2.58
Core	−10.9	I(0)	−3.48	−2.88	−2.58
IMF	−7.52	I(0)	−3.48	−2.88	−2.58
FAO	−5.88	I(0)	−3.48	−2.88	−2.58
FAO cereals	−5.88	I(0)	−3.48	−2.88	−2.58
M2d	−8.25	I(0)	−3.48	−2.88	−2.58
Real er	−9.31	I(0)	−3.48	−2.88	−2.58
ygap	−6.36	I(0)	−3.48	−2.88	−2.58

[7] Other methods, such as Kalman filter and exponential smoothing, which were also attempted, yield almost identical results. Yet, the Hodrick-Prescott Filter proved to perform best in terms of both explanatory power, and diagnostic tests.

[8] Monthly Statistical Bulletin, various issues.

Table 4.1 reports the ADF unit root test results for a lag of 12 months (based on the Schwartz information criterion (SIC)). The tests included a constant. As shown in the table, all variables in the log-difference form are stationary (i.e. I(0)).

Annex 3: Lag Length

To determine the lag length, a lag order selection test was conducted. The computation of the lag order for a maximum lag of 12 months produced a discrepancy among the different criteria. Based on the on the likelihood ratio (LR) criterion, the VAR is estimated with four lags to allow for enough endogenous transmission of the shocks in the system.

VAR lag order selection criteria						
Endogenous variables: FOODINFW2 YGAP CPIINF2 M2DVAR RERCHANGE						
Exogenous variables: C						
Date: 11/28/11 Time: 10:46						
Sample: 2000 M07 2011 M07						
Included observations: 120						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	347.82	NA	2.27e-09	−5.71	−5.60	−5.67
1	412.73	123.34	1.17e-09[a]	−6.38[a]	−5.68[a]	−6.10[a]
2	431.55	34.18	1.30e-09	−6.28	−5.00	−5.76
3	449.99	31.97	1.46e-09	−6.17	−4.30	−5.41
4	473.09	38.12*	1.52e-09	−6.13	−3.70	−5.1
5	492.60	30.56	1.69e-09	−6.04	−3.02	−4.82
6	512.98	30.23	1.87e-09	−5.97	−2.37	−4.50
7	538.79	36.13	1.91e-09	−5.98	−1.80	−4.28
8	554.68	20.92	2.34e-09	−5.83	−1.07	−3.89
9	575.36	25.50	2.68e-09	−5.76	−0.41	−3.59
10	596.50	24.31	3.10e-09	−5.69	0.23	−3.29
11	625.49	30.93	3.21e-09	−5.76	0.75	−3.12
12	646.45	20.61	3.91e-09	−5.69	1.39	−2.81

LR sequential modified LR test statistic (each test at 5 % level)
FPE final prediction error
AIC akaike information criterion
SC schwarz information criterion
HQ hannan-Quinn information criterion
[a]indicates lag order selected by the criterion

VAR lag order selection criteria						
Endogenous variables: FOODINFW2 YGAP FOODINF2 COREINF M2DVAR RERCHANGE						
Exogenous variables: C						
Date: 11/28/11 Time: 10:57						
Sample: 2000 M07 2011 M07						
Included observations: 120						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	356.44	NA	1.17e-10	−5.84	−5.70[a]	−5.78
1	435.15	148.24	5.75e-11[a]	−6.55[a]	−5.58	−6.15[a]
2	468.15	58.86	6.07e-11	−6.50	−4.69	−5.77
3	491.06	38.55	7.64e-11	−6.28	−3.64	−5.21
4	529.89	61.49	7.44e-11	−6.33	−2.85	−4.92
5	554.95	37.17	9.24e-11	−6.15	−1.83	−4.39
6	589.80	48.21	9.93e-11	−6.13	−0.97	−4.04
7	647.37	73.88[a]	7.47e-11	−6.49	−0.50	−4.06
8	677.52	35.68	9.14e-11	−6.39	0.44	−3.62
9	702.43	26.98	1.26e-10	−6.21	1.46	−3.09
10	740.30	37.24	1.47e-10	−6.24	2.26	−2.79
11	791.01	44.80	1.46e-10	−6.48	2.85	−2.69
12	830.89	31.24	1.87e-10	−6.55	3.63	−2.42

LR sequential modified LR test statistic (each test at 5 % level)
FPE final prediction error
AIC akaike information criterion
SC schwarz information criterion
HQ hannan-quinn information criterion
[a]indicates lag order selected by the criterion

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Part III
Fiscal Issues

Chapter 5
Coordinating Taxation Between the European Union and Other Countries Through Advance Tax-Rulings Systems

Natasa Zunic Kovacevic

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Abstract Difficulties in interpreting and applying provisions of tax laws constitute serious problems in cross-border situations where taxpayers face issues related to the compliance with foreign tax systems. These difficulties are additionally enhanced across the countries of the Middle East and North Africa where the flow of information between tax administrations and taxpayers is not transparent or even present at the regional level and between these countries and the European Union. This chapter reviews academic and policy literature and considers the introduction of binding tax-rulings systems by regional or global international tax institutions. It further studies the functioning of the tax-rulings systems in the EU and recommends the adoption of such systems in countries attempting to coordinate with the EU whether these countries are part of the Middle Eastern and North African region or represent other European countries such as Croatia. We recommend this harmonization among various groups by making the European Union's system of rules as part of national tax systems to achieve tax coordination. Advance rulings systems should be recognized as desirable instruments for achieving

N.Z. Kovacevic (✉)
Associated professor, Faculty of Law, University of Rijeka, Croatia
e-mail: zunic@pravri.hr

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necessary changes in tax systems in many countries. Implementing advance-rulings systems is condition sine qua non at the national but also at the regional levels for tax harmonization measures.

Keywords Advance tax-ruling systems • Advance pricing agreements • Coordinating taxation • Harmonisation

5.1 Introduction

The need for a professional flow of information between tax administrations and taxpayers is one prerequisite for achieving legal certainty and realization the principle of rule of law. Difficulties related to the application and interpretations of tax law provisions are present not only at the national level of taxation. They are more serious and bigger in cross-border situations where taxpayers encounter the difficulties related to the compliance with more foreign tax systems. Also, these difficulties are enhanced within the European Union (EU) (Brokelind 2007). It is possible to recognize this problem as a general problem at the global level. One of the possible solutions might be seen in introduction binding tax-ruling system that might be envisaged by the international tax institution. Such thoughts are presented in great number of articles (Sawyer 2004).

New tax challenges created through technological, economic, political and other developments as electronic commerce and Internet need new approaches in a field of taxation. Such a new approach is found in binding rulings systems and similar advance pricing agreements systems.

5.2 Advance Binding Rulings Systems

A binding ruling can be defined as a statement of the revenue authority's interpretation and application of tax laws to an arrangement, which is binding on the revenue authority in terms of the future application of the tax laws, though in some legislations not binding on the applicant (Simon 1999).

An increasing number of countries have introduced or formalized their rulings systems. As emphasized by Romano (2002), among others, the United States has one of the most developed tax-rulings systems in the world with a wide variety of legal instruments of guidance to taxpayers. There are several reasons for having established these developed binding rulings systems. The ruling system in the United States has its origin in managing the complexity and technicalities of the very extensive tax legislation with the goal to become a commonly used feature by taxpayers in the fulfillment of their tax obligations. Another similarly well-structured and developed ruling system is found in the Netherlands. The basic reason for the introduction of these advance rulings is the Dutch connection with international commerce. The developing ruling system provides the Dutch

authorities with instruments to give certainty to domestic taxpayers that many foreign taxpayers invest in the Netherlands. According to Romano, the advance rulings became an instrument to attract foreign businesses in the case of the Netherlands. Reasons for the introduction of advance rulings are also related to the increased need for the simplification of the tax systems. Binding rules are sometimes seen as a vehicle for establishing (new) forms to achieve an active participation of taxpayers. The first forms of rulings introduced in Italy were limited to anti avoidance legislation.

France developed a so-called protective tax-ruling system that is understood primarily as a new vision of legal norms and a need for evolutionary relationship between tax taxpayers and tax authorities. Such rulings present norms aimed at improving relations between tax authorities and taxpayers with a key goal in legal certainty. The rulings systems are emphasized to be standards that are recognized particularly in international law. Romano also interprets rulings systems as beginnings of a "culture of negotiation", that is being developed in France through the system of *rescrit* and in the world in the past few years. It is one of the components of the "new fiscal management" (Bouvier 2010).

The reason for differences in advance rulings regimes is frequently a consequence of historical practice and a result of the freedom of choice or national sovereignties to have its tax system (Sawyer 2004). Many serious differences in binding rulings systems create uncertainty especially in undertaking business activities.

From the analysis undertaken by the Sawyer (2004) follows that changes in some existing rulings systems with a goal to achieve comprehensive, expanded and efficient rulings systems is not difficult in practice. Parallel efforts should be done in a development of consistent application of binding rulings across national jurisdictions (Sawyer 2001).

5.2.1 Possible Regional and Global Harmonization (Centralization) of Advance Tax-Rulings Systems

The different sets of rules governing the various advance tax-rulings systems in each EU Member State along with the absence of rules, might constitute an obstacle to the development of cross border investment in the EU. The harmonization of domestic advance tax-rulings procedures and the institution of a notification procedure to a central EU body represent a step forward in the achievements of the institutional and political objectives of the EU (Sawyer 2004).

It is necessary to distinguish advance tax-rulings from other forms of guidance provided by the tax administration to taxpayers in order to help them fulfill their tax obligations. Although we have as many different rulings systems as tax systems today, basic appearance elements are at hand, such as the binding nature, formality and costs.

Some scholars recognize the centralization of certain functions of the national rulings authorities at the European level with respect to advance tax-rulings relevance to community tax law as positive and an expected step (Romano 2002, p. 485 onwards). They also suggest that such a central body could function as a supervisory body on the tax-ruling policy, a collector of certain types of rulings requests and as a distribution centre of these requests amongst the competent offices. This study proposes to consider a two-tier rulings procedure. This will be especially useful and effective for certain community tax law issues of general interest for European investors. A national authority would in this case be the body of first instance and a central European authority would be the second instance body.[1]

5.2.2 *The Reasons for Harmonizing Tax-Rulings Systems*

There is no doubt about necessity of implementing advanced tax-ruling system within national tax system and national jurisdiction. In an almost similar vein, this holds for harmonized advance tax-ruling system. The higher legal certainty is pointed out in many academic research papers as a fundamental reason for harmonization. This is our first reason for harmonizing tax-rulings systems.

The second reason, as previously mentioned, is the improved dialogue between taxpayers and their tax administration. The quality of this dialogue is one of the elements of an effective revenue system. This is also recognized as an element that might influence the behavior of taxpayers, their tax evasion and other types of "taxation resistance" behavior of taxpayers.

Thirdly, the improving consistency in the application of tax law is also one of the fundamental reasons for attempts to harmonize tax-rulings systems. This reason is similar to reducing tax disputes and litigations. It is expected to lead to a decrease of judicial courts' burdens and associated costs (Duta 2009, pp. 247–249).

From a legal point of view, Romano (page 499) points at several similar advantages of a harmonization of advance tax-rulings systems in the EU Member States: obtaining a higher degree of certainty in the interpretation and application of tax law provisions, the greater consistency and uniformity in the application and interpretation of the law, enhancing the transparency of the decision-making process of the tax authorities in such a way as to improve the perception of the fairness of the tax obligations by taxpayers and thus tax compliance, fostering compliance with tax law and administrative practice, improving the functioning of the self-assessment and self-reporting systems and reducing tax litigation.

[1] Loc.cit.

5.3 Similarities with Advance Pricing Agreements

An Advance Pricing Agreement (APA) is an agreement or formal arrangement between taxpayer and his tax administration in which the taxpayer receives approval from the tax authorities in respect of the taxpayer's proposed methodology for some or all of the transfer prices between related companies, for a specified time period. This period is usually a certain number of years, agreed within the same agreement. The issue of transfer pricing in relation between taxpayers and tax authorities was for a long time not governed by specific tax rules. However, a growing number of states in accordance with suggestions by the OECD in their tax systems incorporate provisions on these agreements. This turns out to be the case with Italian, Spanish, Dutch and English tax rules, which were in 2010 enriched with similar legislations. Croatia and Slovenia for example still do not have in tax law legislation the provisions on transfer pricing agreements. Since the demands of taxpayers in this direction are growing changes in that direction are expected in Croatian and mentioned Slovenian tax legislation.

Procedural rules in the UK implicate that a taxpayer proposes a methodology for transfer pricing and supply documentation that confirms that the result of such treatment is equity and neutrality of transactions where the previous agreement applies. If the tax authorities accept the proposed methodology by the taxpayer, and after checking all the "accompanying" documents and materials, the parties come to an agreement. The tax authority where the taxpayer requested the conclusion of advance transfer pricing agreement can embrace in this agreement foreign tax authorities to avoid double taxation. In this sense, the previous agreements on transfer pricing can be one-sided, when the agreement is concluded with the tax authority of one State, or bilateral and multilateral advance transfer-pricing agreement when the side of the tax authorities involves two or more states.

Procedural tax rules in the UK give taxpayers a choice before applying for an advance transfer pricing agreement to opt for some kind of discussion or meeting "pre-filing conference". It should help taxpayers in assessing whether an agreement is an appropriate vehicle for resolving his tax issues. The same pre-filing stage as part of APA procedures is known in the US (Boidman 1992).

In Italy tax authorities in 2010 published first report on the successful adoption of advance transfer pricing agreements practices. These practices refer to the period of the first 5 years after the entry into force of the rules on APAs.

It is a special procedure in which domestic companies engaged in international, cross-border activities or foreign entrepreneurs who are engaged in investment and business activities in Italy, agree with the Italian tax authorities on tax treatment of some important tax facts in relation to their cross-border activities – for example, the amount of income that can be attributed to the Italian permanent establishment, transfer pricing for the exchange of goods or services between related companies, the Italian withholding tax on cross-border interest payments, dividends and fees for use of copyright and related rights. These report states that during a specified 5-year period, 52 requests were submitted and 19 agreements concluded. The

average time needed for the procedure, according to this report, is 20 months (Zunic Kovacevic 2010a).

The above mentioned bilateral and multilateral advance pricing agreements, where two or more countries are involved, are more efficient in providing legal certainty. The same is with advance binding rulings (Vögele and Brem 2002). In the cases of a bilateral or multilateral advance pricing agreement there is always a second agreement that is concluded between the competent authorities of countries that are affected by the covered transaction, based on the mutual agreement provision of tax treaties.

The literature exposes key similarities and differences between APAs and advance/binding rulings (Romano 2002, p. 486). It is important to distinguish APAs from advance tax-rulings for many aspects. APAs may be unilateral, bilateral or multilateral while advance tax-rulings are unilateral and they generally do not cover foreign jurisdictions. Advance rulings and APAs differ in their legal nature since APAs are regarded as agreements whereas advance rulings are considered as one-sided statements of the tax administrations. APA may not be implemented without the approval of the taxpayer, whereas advance rulings are valid without considering the consent of the taxpayer as applicant. The participation of the taxpayer in an advance rulings procedure is limited only to the initial level of the process. As a consequence of different legal natures, APAs should be differed from advance rulings on the basis of their effect since APAs are binding for the tax authorities (sometimes and for taxpayers), whereas advance rulings may have binding effects on tax authorities and almost never for taxpayers. APAs deal with factual matters more than it deals with the interpretation and application of the law.

The differences between binding rulings and APAs exist but the degree of similarities justify their joint consideration for inclusion within the scope of a future global tax institution that might be a World Tax Organization (Sawyer 2004).

5.4 Croatian Legislative Framework and Advance Ruling System

The principle of good faith and fair dealing was for the first time introduced in Croatian Tax Law in 2001. Contemporary legal framework of the introduced institute of good faith in revenue procedure did not contain provisions that would more precisely define the content of notion or criteria to assess such acting. Subsidiary sources of law were equally modest. The enactment of the General Tax Law in 2008 indicated that certain alterations would be made in legislative approach with the aim to regulate the already existing tax legal institute of good faith and fair dealing. The Law prescribes an obligation to enact implementing regulations concerning the prescribed principle mode of implementation. This is the main reason why legal professionals have reasonable grounds to believe that the institute of obligatory information will be introduced in taxation. The institute of

advance ruling can be considered as an affirmation of the principle of good faith. Unfortunately, the analysis of sub-law regulation enacted to regulate the implementation of the principle of good faith and fair dealing do not confirm the expected conclusion. Due to the fact that the institute in question has been present in tax legislation and practice of numerous countries, there is inevitable modernization of Croatian revenue procedure (Zunic Kovacevic 2010b).

5.5 Concluding Observations

The binding ruling system is necessary in current complex tax systems. A great number of rules governing various tax systems in many countries constitute an obstacle in developing cross-border trade and investments. At the national level, binding rulings have ratio in economic, social goals as in necessary legal certainty of taxpayers. But divergences and dissimilarities across countries might be seen as obstacles in the realization of a common market. For this reason, this study proposes a harmonization of advance tax-rulings systems in the members of the European Union that have similar ratio's nature. On the basis of the European legal principles it is useful to keep in mind that we already have some kind of such harmonized system in the field of customs duties. The customs' regulation and practice should be an important reference and confirmation that harmonizing ruling system across member states of the European Union is possible and desirable. Moreover, such system should be understood as one step forward to achieve general ruling system at the global level in the framework of expected, not in the close future, international and global tax organization.

At the national level, there are no significant changes so Croatia and several neighboring countries have to change their attitude to this tax procedural and substantive tax institute. Advance rulings systems should be recognized as a desirable instrument for achieving necessary changes in tax systems in the developing world. Implementing advance-rulings systems is *conditio sine qua non* on a national, regional and worldwide level.

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Chapter 6
The Role of Taxation in the Mediterranean Financial Integration

Marco Greggi and Maria Rita Sidoti

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Abstract Taxation is one of the most significant factors affecting financial integration. It involves custom duties, withholding taxes applied to the free flow of capitals running from one country to another, or the conditions under which an investment that a business of a certain country does on the territory of another can be taxed in the latter jurisdiction. The paper addresses the impact of taxation in the Mediterranean area,

M. Greggi (✉)
Associate Professor of Taxation Law, Department of Law, University of Ferrara, Ferrara, Italy
e-mail: universita.ferrara@gmail.com; marco.greggi@unife.it

M.R. Sidoti
Research fellow School of Finance and Economics, Ministry of Finance, Rome, Italy
e-mail: mariarita.sidoti@finanze.it

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considering, in particular, the effect of direct and indirect taxes in the flow of investments. In this respect, however, the fiscal integration of the two main areas the Mediterranean region is divided into (North and South) are remarkably different. While the European Union appears a homogeneous area seen from outside, with an harmonized Value Added Tax system, uniform custom duties and relevant aspects of direct taxation sharing general rules and principles, a lot remains to be done. For what concerns the interaction with third Counties, free movement of capital is the only provision clearly and positively set also to the advantage of individuals and legal bodies resident or belonging to them. In a perspective of integration there is a basic approach that requires the implementation of a common system of rules applicable to specific income only, but the main way is the harmonization of the VAT system even in neighbour countries of the Mediterranean and the sharing of the same principles to prevent double taxation.

Keywords Tax • VAT • EU law • Double taxation

6.1 A Crossroad Area in a Tax Law Perspective

Taxation in general, and Taxation law in particular still constitutes nowadays one of the most relevant factors that could influence financial integration around (and across) the Mediterranean.

It does not involve Customs duties only, but also the withholding of taxes applied to the free flow of capital running from one state to another, or the conditions under which an investment that a business of a state does on the territory of another state can be taxed in the latter jurisdiction.

Despite the ever-increasing globalization of the financial sectors and of the law in general, taxation law has always remained a sort of *domain reservé* of each national state, with a few remarkable exceptions (such as the VAT and Customs Law in the EU).

No doubt in this respect that either the most recent developments and the future possible opportunities of international financial integration around the Mediterranean sea shall be heavily influenced by the taxation policy of the European Union (EU) and by the guidelines of the Organization of Economic Cooperation and Development (OECD) that are applicable to the states of the region.

If we look at the Mediterranean in a purely fiscal perspective, however, it is evident that there's a clear distinction between the northern and the southern border of the sea.

Europe (in this sense, the EU) has undergone a relevant process of harmonization (still ongoing, obviously), arguably boosted more recently by the new Fiscal Compact approved by many of the national governments of the EU countries (see for instance Corsetti 2012). It seems a homogeneous area if seen from outside, with a harmonized Value Added Tax (VAT) system, uniform Custom duties and relevant aspects of direct taxation sharing general rules and principles.

Common case law and jurisprudence, inspired by European Court of Justice (ECJ) rulings is also playing a pivotal role in the progressive harmonization of the European Union's member states taxing provisions.

Therefore, if we analyze European taxation law from inside, there's no doubt about the fact that national states still rule taxation, more remarkably in the very technical aspects of it (such as the tax base calculation, rates), but beyond that, the EU has almost taken over.

The southern and eastern sides of the Mediterranean are characterized by a completely different landscape. No common principles, no attempts of significant harmonized taxation, no efforts to reach for a common area of free exchange of goods and capitals which could actually make a change in the interactions between economies, particularly after the recent Arab awakening.

Although some attempts in this sense have been made, particularly those inspired by some EU countries, no remarkable effect was recorded. Tax interactions between the two shores has always been bilateral, in the sense than they are still inspired by agreements and treaties of bilateral nature, such as those inspired by the OECD and aimed at the prevention of International double taxation (and international tax avoidance, of course).

The conflict to be investigated is therefore between the fact that one side of the Mediterranean is getting more and more institutionalized (although not yet becoming an true system of federal states) while the other side remains still divided into different legal sovereign entities, sharing only a few except religious principles (in most of the cases), determining a complicated entanglement of tax rules.

The entanglement derives from the fact that each state (on both sides) maintains its own taxing rules, that these rules are negotiated in a "point-to-point", bilateral relation, in the framework of an OECD inspired double taxation convention. However, at the same time conventions and taxing rules (on one side only of the treaty) must be consistent with EU law, possibly determining treaty overrides.

VAT makes no difference: although harmonized on one side of the Mediterranean (EU) its application is more and more extended, particularly after 2008, to services delivered also off shore when the recipient is a business resident in the EU.

For these reasons it is essential to begin from the analysis of the European rules (the only ones actually shared by states) and understand how and up to what extent they can influence also non-EU business, and Mediterranean in particular.

6.2 European (Direct) Taxation Law

As it was clearly pointed out in Sect. 6.1, national states have always been jealous of their tax sovereignty, especially when it involves direct taxes. For this reason, when the Treaty of Rome was signed in 1957, a progressive harmonisation was considered in indirect taxes such a VAT and customs duties, but not in personal income or corporate taxes.

In these latter fields, the Treaty used self-restraint to foster the bilateral relations between nations, especially through Double Taxation Conventions (DTCs). This is also

important for what concerns the relations with the southern shore of the Mediterranean, considering that if EU law didn't prevent member state to negotiate DTC between them, it couldn't have prevented EU states from negotiating with Mediterranean neighbours the DTC they considered as more convenient.[1]

In subsequent years, however, it became more and more evident that the DTCs, although fundamental, were not enough to guarantee the full free movement of capital across the Union and that the remaining differences between member states could constitute a limit to foreign investments in the common market as well, even for those coming from the Mediterranean area, that although non particularly relevant, nonetheless constitute a remarkable factor for the development of the national economy of many States. Italy is in this respect a clear example of a borderline state, dealing with EU harmonised rules, but interacting also with the southern shore states of the Mediterranean sea.

The European Court of Justice (ECJ) played (and still plays) a fundamental role in this respect. The basic idea of the case law is that the fundamental freedom enshrined in the Treaty must be respected, although the Council may exclude direct taxation by an intervention (similar to what happens with VAT).

Where a direct intervention is lacking, a progressive interpretation of the four freedoms and the principle of non-discrimination could be successful, although in a sort of "second-best" approach.

In recent years, academics and practitioners have recorded an ever-increasing number of cases decided by the ECJ using the Treaty in the field of direct taxes.

Despite the efforts of the ECJ, it is evident that a harmonisation of a complex field as direct taxation can't be carried on by the judiciary deciding specific cases based on peculiar circumstances.

More to the point, it is fundamental for the business to know exactly and in advance the amount of taxes to be paid and, even more to the point, which state would legitimately exercise its taxing powers in the EU framework.

This problem was particularly evident when flows of dividends, interests and royalties were considered, because of the more volatile nature of the underlying assets in comparison with the business income or profit from real estate investments, and thus also the need for a level playing field across EU was (and still is) more urgent.

That's why the Union introduced a number of Directives touching upon some fundamental aspects related to *passive income* taxation, and urging for the implementation of common provisions regulating taxation of multi-national group of

[1] See the Treaty establishing the European Economic Community (EEC), opened for signature 25 March 1957, 298 UNTS 11, Article 293 (entered into force 1 January 1958). The EEC has been renamed the European Community (EC) and the text of the Treaty has been changed and re-numerated (now Article 293 is 307) after the entry into force of the Treaty of Amsterdam on 7 May 1999 (1997) OJ C340. Consolidated versions of the Treaties can be found at (2006) OJ C321 E. All the references shall be intended to the consolidated version of the Treaties establishing the EC (the Treaty, from now on). The Treaty of Lisbon, signed on December 13th 2007, (2008) OJ C115, however abolished Article 293. It could be argued that the EU in the future won't suffer from any limitation in this respect.

companies operating in the EU, proposing ways and means to introduce a common corporate consolidated tax base (CCCTB).

The first ones, on dividends and mergers and acquisitions (M&A) operations,[2] were implemented in 1990 and later updated and amended because of the EU accession of the new member states. Other Directives involving interests and royalties, although drafted at the same moment, had to wait 13 years.[3]

The aim pursued by the European Commission was twofold. On one side the policymakers tried to avoid any double taxation within the EU related to the free flow of these incomes. On the other side they indirectly offered foreign investors useful tools to optimise their investments across the continent.

Even if the EU is still characterized by 27 different tax jurisdictions, the goal was to minimise such differences for those investing in assets, taking cross-border loans or buying intangibles in EU companies across borders using EU parents established in any one of the European countries.

Unfortunately, neither the text of the European Constitution signed in Rome[4] nor the thinner text drafted by the member states in Berlin and thereafter accomplished

[2] European Economic Communities (EEC) Council Directive No. 435/1990 of 23 July 1990 on the common system of taxation applicable in the case of parent companies and subsidiaries of different Member States [1990] OJ L225, 6. The directive was subsequently amended by the European Community (EC) Council Directive No. 123/2003 of 22 December 2003 amending Directive 1990/435/EEC on the common system of taxation applicable in the case of parent companies and subsidiaries of different Member States [2004] OJ L7, 41 and European Community (EC) Council Directive No. 98/2006 of 20 November 2006 adapting certain directives in the field of taxation, by reason of the accession of Bulgaria and Rumania [2006] OJ L363, 129. European Economic Communities (EEC) Council Directive No. 434/1990 on the common system of taxation applicable to mergers, divisions, partial divisions, transfers of assets and exchanges of shares concerning companies of different Member States [1990] OJ L225, 1. The Directive was subsequently amended by the European Community (EC) Council Directive No. 19/2005 of 17 February 2005 amending Directive 90/434/EEC of 23 July 1990 on the Common system of taxation applicable to mergers, divisions, partial divisions, transfers of assets and exchanges of shares concerning companies of different Member States [2005] OJ L58, 19 and European Community (EC) Council Directive No. 98/2006 of 20 November 2006 adapting certain directives in the field of taxation, by reason of the accession of Bulgaria and Rumania [2006] OJ L363, 129.

[3] European Community (EC) Council Directive No. 49/2003 of 3 June 2003 on a common system of taxation applicable to interest and royalty payments made between associated companies of different Member States [2003] OJ L157, 49. The Directive was subsequently amended by European Community (EC) Council Directive No. 66/2004 of 26 April 2004 adapting various directives in the fields of free movement of goods, freedom to provide services, agriculture, transport policy, and taxation by reason of the accession of the Czech Republic, Estonia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Slovenia and Slovakia [2004] OJ L168, 35; European Community (EC) Council Directive No. 76/2004 of 29 April 2004 amending Directive 2003/49/EC as regards the possibility for certain Member States to apply transitional periods for the application of a common system of taxation applicable to interest and royalty payments made between associated companies of different Member States [2004] OJ L157, 108; European Community (EC) Council Directive No. 98/2006 of 20 November 2006 adapting certain directives in the field of taxation, by reason of the accession of Bulgaria and Rumania [2006] OJ L363, 129.

[4] *Treaty establishing a Constitution for Europe,* open for signature 16 December 2004 [2004] OJ C310 (never entered into force). *The Treaty of Nice amending the Treaty of the European Union, the Treaties establishing the European Communities and certain related Acts* open for signature 26

in Lisbon[5] seem to add anything interesting in this respect. Tax law is once more set aside by the European lawmakers: it could be argued that it is not considered a priority or (more likely) that it is still impossible to reach a unanimous consensus of the member states to introduce common rules in direct taxes.

The situation is obviously different for business income, excises duties, customs and of course VAT. In the case of business income the EU was not able (and still is not) to implement harmonised rules. All in all the need of harmonisation in this context is not expressed by the Treaty and could fall outside the scope of it, considering the principle of subsidiarity that is inspired by the field of taxes.

In this respect, the most recent and significant step forward are the implementation of the IAS / IFRS[6] standards for accounting[7] on one side and the remarkable attempts to introduce a CCCTB[8] for companies investing across the continent, as was mentioned above.[9]

VAT, excises and customs duties are however harmonized (in the case of VAT) or are falling under the same provision (as in case of duties and customs) across the EU. In this respect the tax harmonisation of the EU is such as to allow the EU to act as a unique subject towards third states.[10]

6.3 Treaty and Boundaries of Freedoms: Citizenship and Residence

The European harmonisation in direct taxation is grounded on the four freedoms,[11] the principle of non-discrimination, the right of establishment and the implementation of specific Directives according to Article 115 TFEU.[12]

February 2001 [2001] OJ C80, should also be considered. So far, however, no specific provisions involve direct taxation.

[5] Not counting the abolition of Article 293, as mentioned above. Some other changes actually took place in this respect, but their relevance is not significant to the limited aim of this paper.

[6] International Accounting Standard/International Financial Reporting Standard. Larson and Street (2004), Jermakowicz and Gornik-Tomaszewski (2006) and Eberhartinger and Klostermann (2007).

[7] *European Community Council and Parliament Regulation* No. 1606/2002 of 19 July 2002 *on the application of international accounting standards* [2002] OJ L243, 1.

[8] Common Corporate Consolidated Tax Base. See inter alia Schön et al. (2008).

[9] Kovács (2008).

[10] Bretherton and Vogler (1999).

[11] Namely, free movement of goods, services, persons (workers) and capitals

[12] Article 94, before the TFEU. This Article reads as follows: "*The Council shall, acting unanimously on a proposal from the Commission and after consulting the European Parliament and the Economic and Social Committee, issue directives for the approximation of such laws, regulations or administrative provisions of the Member States as directly affect the establishment or functioning of the common market*".

The free movement of persons, goods, services and capital[13] are of equal relevance, but in the light of this paper and considering the focus on the Mediterranean area it could be argued that the third plays the most relevant role.

While the non-discrimination principle still involves individuals and companies that are intrinsically members of the EU or their residents, it is the free movement of capital (and the freedom of establishment as well) which could arouse the interest of third countries' companies in particular, and more precisely of those residing in the Mediterranean countries, considering the fact that they are particularly close to the EU and they qualify for a remarkable business interaction with the EU.[14]

6.3.1 Free Movement of Capital

In a Treaty written by Europeans for European individuals and businesses it could be considered almost impossible to find provisions drafted also to the advantage of (or at least taking into account) third-country members, particularly in taxation law. This statement is not entirely accurate.

First of all, the free movement of capital is clearly and positively set also to the advantage of individuals and legal bodies resident or belonging to third countries.[15] In this respect the ECJ case law is relevant for third countries as it is for EU members states.

As was noted by prominent academics, Article 63 TFEU[16] can be now considered

> ... the most advanced and far-reaching provision in the EC Treaty in the relations with third countries ....[17]

The reasons of this extension towards third countries are better understood if, to a certain extent, the free movement of capital is seen as a sort of legal watchdog of the European currency, the Euro.[18]

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[13] In the EC Treaty Article 12, now 18 TFEU (prohibition of discrimination), 23, now 28 TFEU (goods), 39, now 45 TFEU (workers), 43, now 49 TFEU (establishment), 49, now 56 TFEU (services), 56, now 63 TFEU (capitals and payments).

[14] The most advanced research in European tax law is arguing about the possibility of extending the free movement of services to third countries as far as the movement involves EU citizens; see Pistone (2006, p. 235).

[15] Article 63 reads as follows: *1. Within the framework of the provisions set out in this Chapter, all restrictions on the movement of capital between Member States and between Member States and third countries shall be prohibited. 2. Within the framework of the provisions set out in this Chapter, all restrictions on payments between Member States and between Member States and third countries shall be prohibited.*

[16] Article 56, before TFEU.

[17] Pistone (2006, p. 235).

[18] This evidently does not mean that the provision is void of any significance for the European countries that refused the euro currency, such as the UK, being relevant as it is to any investment in assets or financial operations.

Rather than attributing a unilateral gift to non-EU countries, allowing them a free ride on one of the fundamental freedoms, the lawmaker arguably wished to consolidate the reliability of the (future) currency and of the investment within the old continent, inbound as well as outbound.[19]

This is the reason why understanding Article 63 and its limits (not present in the other freedoms) is of paramount importance for foreign investors wishing to allocate assets, participate in companies or finance them in EU.

For the same reason, it is important to understand the case law that Article 63 brought about in the past, when practitioners benchmarked the effective safeguards. One of the most controversial aspects in this respect is the interaction between fundamental freedoms: it is clearly understood in case law that a very peculiar relation binds together Article 63 and Article 49 TFEU,[20] and where the latter is applicable the former is not. This interpretation actually led the ECJ to use Article 56[21] in a very limited set of cases, denying its relevance in each and every case when freedom of establishment was at stake.

The drawback of this approach was that as Article 49 has a narrower scope, not including third countries, the ECJ denied its protection, considering that when the circumstances of the case could fall de facto into Article 49 and Article 63 as well, only the first provision had to be used.

If the plaintiff was resident in a third country, then the freedom of establishment cannot be used and therefore he was left without any European protection.

This ultimate consequence led many influent authors to stress the fact that in this respect EU law is not entirely coherent, because it seems to protect more (and better) the free movement of capital rather than the right of establishment. In other words, where a portfolio participation in a company, and its subsequent dismissal, could fall under the scope of Article 63, the creation of a branch or even a qualified participation in a subsidiary (granting the majority of votes, for example) could not.

These issues could be interesting not only for the protection of the participation as such, but even for the income yielded by it such as dividends or capital gains derived from the subsequent winding up of the company or the sale of the portfolio.

To summarize, the EU law should protect a lesser form of investment and deny any protection to third countries' resident companies and individuals. The lack of overall coherence seems evident to the author,[22] who strongly criticised this

[19] However Pistone (2006, p. 236), noted that the Advocate General Kokott (*Re Manninen* (C-319/02) [2004] ECR I-7477) seemed to limit the protection of Article 56 to the inbound investment (paragraph 79 of the Conclusions). This interpretation is clearly inconsistent with the ratio that arguably inspired Article 56 and its importance to enhance the reliability of the European currency worldwide. Other reasons are clearly expressed and delineated by the previously mentioned author.

[20] Article 43, before the entry into force of TFEU.

[21] Since the reference is to a case law developed before the TFEU, we preferred to leave the quotation to the article as it was in the previous EC Treaty. The same reference shall be maintained from now onwards when a citation of academic articles or position of scientific literature shall be taken into consideration.

[22] Pistone (2006).

outcome. It seems that while this criticism is fundamentally right and therefore the opinion of the aforementioned author should be supported,[23] some arguments still exist in favour of the *status quo*.

Basically the current interpretation seems to rely on a finalistic (or teleological) approach that also takes into account the asymmetry[24] of the right guaranteed to an individual or a company of a third country.

The EU seems to encourage foreign investments and protect foreign payments in EU companies or in favour of EU established companies (or individuals as well). To this extent the basic assumption is that the management of the company, its direction and the main decisions involving its business are still "European" to all extents and purposes.

However, when a third-country investor moves into Europe with a branch, a permanent establishment or a similar device, then the situation suddenly changes and the protection of the Treaty decreases. To this extent, the narrow interpretation of the ECJ seems to correctly balance the advantages that the EU grants for free to third countries shows that the extension of Article 63 to third countries is not a gift at all. It is more an instrument to maximise specific forms of investments on the continent.

The third-country investor must be aware that, when deciding on getting into the EU, it is not a paradox that the higher the investment, the lower the protection when the latter constitutes also an establishment of his business, falling outside Article 63.

6.3.2 The Right of Establishment

In paragraph 2.1 the free movement of capital was discussed on the basis that a specific provision of the Treaty (Article 63) clearly extended it to the advantage of third countries' investors.

The issue related to the right of establishment is slightly more complex. Basically the Treaty defends the freedom establishment only so far as it is invoked by EU nationals. However, it is still to be questioned who are the EU nationals.

At first glance the answer seems to be clear, given as it is by the Treaty itself. According to the fundamental text, European citizenship is embedded in the national one, in so far as a citizen of a member state is also a EU citizen.[25]

However, while in the case of individuals the answer is simple and straightforward, in the case of legal bodies and companies the situation differs.

The notion of citizenship in this case is linked by the Treaty to the law of a member state (any one of them) under which the company was constituted and where it has its registered office, central administration or principal place of business.[26] According to

[23] This is the opinion, for instance, of Advocate General P. Wattel cited in Pistone (2006, p. 237).

[24] The free movement of capital protects third countries' investors without any need of reciprocity in their home states in favour of EU investors.

[25] Article 19 of the Treaty.

[26] Article 48 Ibid.

Article 54 TFEU,[27] then, a non-EU company can't enjoy the fundamental rights under the Treaty even if it has a permanent establishment or a subsidiary within the borders of the EU, nor if it claims that the place of effective management is European to all effects and purposes.

The Treaty, however, doesn't seem to take into account the case of transfer of the main seat of a company from a third country to an EU one such as for instance Italy, where foreign companies are recognised by Italian international private law and allowed to be managed by the state of origin corporate governance rules (not conflicting in principle with Italian ones).

A teleological interpretation could allow consideration as being "formed in accordance" with the rules of a member state those companies respecting the international private law principles of the latter. If this interpretation is accepted, then a company with its registered office in an EU country, but with the central administration or principal place of business elsewhere in the world, could qualify for the benefit of the Treaty.

This is not the case with the Directives mentioned above, where the legislature clearly attributed the advantages of the provisions to companies formed according to any of the EU commercial laws, so far excluding companies incorporated abroad and then transferred within the EU.

6.4 Dividends' Euro-Taxation: A Perspective from the Southern Shore of the Mediterranean

Looking to the EU provisions on dividends from abroad gives the interpreter a completely new perspective and surfaces a problem that has been underestimated while discussing these topics from within the borders of the Union.

The Directive was implemented in 1990 with a specific aim: to provide a common system of taxation on the flow of dividends running from subsidiaries to parents across the EU. It was clear that until 1990 the bilateral DTCs signed by the Member States were in most cases inadequate to the necessities of the common market and that the cross-border nature of the dividends caused double taxation inconsistent with the aims being pursued by the Treaty.

The Directive therefore tried to prevent this outcome by working on the two sides of the taxation on dividends: the possible withholding (or taxation at source) and the taxation in the home state of the parent.

Article 5 forbids withholding taxes on dividends, as introduced by Council Directive 2003/123/EC. This is a straightforward rule that is applicable to the subsidiary state (this applies in most of the cases) and to the parent home state as well (Article 6).

Taxation of the dividends as part of the taxable income of the parent company is still allowed, but in this case the home state must be ready to recognise a tax credit equal to the amount of the corporate tax effectively levied on the business income

[27] See footnote 19 (Article 48 before TFEU).

of the subsidiary. Of course, the parent state can exempt the dividends attributed to the company, thus skipping the complexities of the credit calculation (Article 4).[28]

It could be argued, then, that the system depicted by the directive can't be considered a uniform system of dividend taxation across Europe, understanding it as a complex body of taxing rules such as the individuating the taxable base, the rate applicable. It is rather an efficient mechanism to distribute the taxing power amongst the Member States in a way consistent with the Treaty and the needs of a harmonised common market.

So far the DTCs[29] have been considered both insufficient (as potentially not covering all the possible flows of dividends across any EU state) and structurally inadequate (because of their intrinsic bilateral nature)[30] to provide reliable rules to the market of the EU.

However, where the debate within the Union is concentrated on the notions covered by the Directive and its effective application,[31] the interest of a Third-Country investor obviously focuses on the possibility of exploiting the advantages granted and the conditions to be met to qualify under the Directive.

Those possibilities are very limited so far.

Firstly, the Directive clearly set out the qualifying subjects as the companies being a resident within the EU and at the same time not resident abroad, according to a DTC between a third country and the EU state of the case; secondly, the Directive clearly considers the case of the permanent establishment, but only if it belongs to another EU company.[32]

According to this framework, therefore, the only possibility that a third-country investor has to exploit the Directive passes through the creation of a subsidiary, namely a sub-holding, within the territory of the EU and according to the commercial law of any of the member states.[33] The selection of the state of the case clearly depends on the withholding taxes applied to the outbound dividends paid by the resident sub-holding to the third-state resident parent company. Generally the choice falls on the Netherlands, Luxembourg or Ireland, although more recently Baltic countries are raising the interest of foreign investors as preferential entrance gates to the EU.

[28] This article was amended as well by the aforementioned 2003/123/EC Directive.

[29] Double Taxation Conventions.

[30] Some exceptions do exist. This is the case, for instance, of some Nordic countries, which are experiencing a Multilateral Convention: see Helminen (2007).

[31] See amongst others *Bosal Holding BV v Staatssecretaris van Financiën* (C-168/01) [2003] ECR I-9409; *Océ van der Grinten v Commissioners of Inland Revenue* (C-58/01) [2003] ECR I-9809.

[32] See Article 2(2) as introduced by the 2003/123/EC Directive. A clear reference to the permanent establishment was missing in the 1990 version, urging academics to question the analogical application of the EU provisions.

[33] The hypothesis put forward above should be considered as purely theoretical and has never been tested by the ECJ.

The Directive also comes with an anti-avoidance provision, possibly also relevant for third countries' investors: Article1, § 2 clearly points out that anti-abuse or anti-fraud provisions shall be in any case applicable, despite the Directive, when necessary.

More to the point, the Directive doesn't introduce a European notion of *abuse*, but rather makes reference to the rules already in force in the various member states.[34] Even if at first glance, especially by a non-EU observer, such a provision could seem capable of restricting significantly the scope of the Directive, it must be remembered that the ECJ had always judged strictly the compatibility of anti-abuse provisions (both unilateral or deriving from a bilateral agreement) with the European Directives or the Treaty as well.

To this extent, a specific anti-avoidance provision must pass several tests aimed at verifying its proportionality, reasonableness and adequacy to reach the aim pursued while minimizing as well the lessening of EU law and freedoms.

Even in the recent past, the ECJ denied the compatibility with the Treaty of general anti-abuse provisions, such as the CFC[35] ones in the United Kingdom, as they are too general in their scope and fail to aim at the very specific cases in which such avoidance (or abuse) effectively takes place. To a certain extent, the UK CFC provisions constituted an overkill of fundamental freedoms that was considered as unacceptable by the Court.[36]

Moreover, it is also important to remember that Article 63 could cover dividend-payments as such, as clarified in the former paragraph. To this extent, it could be argued that the Treaty is able to provide to third countries' investors better protection than the Directive allows; despite the unfavourable outcome to the taxpayer, the *Holböck* case[37] could be considered a good starting point for future development of the principle.

6.5 Interests and Royalties: Beneficial Ownership Clause and Consequences for Third Countries' Investors and Licensors

The EU Commission has been working for several years on what we call today the "Interest and Royalty Directive". The first blueprint of the Directive was presented in 1990, together with the proposal for the "Parent–Subsidiary" and the cross-border "Merger and Acquisition" ones; however the fate of the former was the more unfortunate of the two.

[34] Terra and Wattel (2005).

[35] Controlled foreign Companies regulations. See inter alia Sandler (1998).

[36] Greggi (2008) noted that the case was decided by the ECJ under the freedom of establishment provision: the case was a purely European one with a company resident in the UK and another in Ireland (financing the first one). It could be interesting to argue what the outcome of the judgment would have been if a third- country company would have been involved, thus allowing a test of CFC regulations under Article 56.

[37] *Holböck v Finanzamt Salzburgland* (C-157/05) [2007] ECR I-4051; for an in-depth analysis, see Lang et al. (2006).

The concept was simple in itself: royalties have to be taxed only once in the European Union, and this power has to be attributed to the country of the payee (Article 1(1) of the Directive). The issues the Directive addresses are different from the ones in the "Parent–Subsidiary": in the case of interests and royalties, generally speaking, no double taxation occurs within the common market; while royalties are taxed upon the payee, they are at the same time generally tax deductible for the payer. The same goes for interest, even if some national limitations might occur.

The need for harmonisation was therefore less urgent, but even in this case the DTCs were considered insufficient to the common market and the administrative compliance costs connected to the payments and the compensation for the tax paid at source inconsistent with the Treaty. The preamble to the Directive clearly refers to the "burdensome administrative formalities" and "cash flow problems" for the payee taxpayer to this extent.

Clearly, the cross-border royalty flows are not subject to international double taxation as dividends are in so many cases; more to the point, they are subject to juridical double taxation only.[38] This happens because, in most cases, royalties are a cost deductible by the payer (if the intellectual property is used for trade or business purposes), and the withholding tax, when not abolished via DTCs, is generally compensated by use of the tax credit mechanism.[39] The issue of double taxation was not therefore as pressing for royalty as it was for the dividend case, and this situation can partially justify the delay of so many years in the implementation of Directive 2003/49/CE.

However, while on one side the aim of the legislature was to foster the market, on the other side the case of royalties and interests the possibilities of improper tax planning would have been sensibly greater than in the case of dividends. That's why the application of the Directive (i.e. the exclusion of any taxation at source for dividends and royalties payments) depends on two classes of anti-avoidance provisions, one being introduced directly by the EU legislator (namely, the "beneficial owner" test) and the other relying on the specific national rules.

The Directive uses the notion of "beneficial owner" when dealing with the payee of royalties: basically, only the beneficial owner of royalties can qualify for the taxation-at-source exemption. Needless to say, the hardest part is the definition of beneficial owner in those systems (most of the Continental ones) where such a notion simply does not exist and where the respective revenue services are almost free to dress it in the preferred attire.

This objective condition of uncertainty (the ECJ hasn't expressed its view clearly yet) is particularly dangerous for the third-country investor who set up a sub-holding in Europe (as suggested in the former paragraph) in order to optimise his investments as far as his sub-holding could be disregarded for these purposes,

[38] While the dividends suffer also from the economical one, the distinction is clearly explained by Helminen (1999), 9 and 38.

[39] Or the exemption mechanism in case the state of the payee chose this second solution in a way similar to the one in Article 23B of the OECD Model.

being considered a "non-beneficial owner". Although is more rare in case of companies incorporated in Mediterranean region and licensing technologies to European countries (with the only exception of Israel perhaps), this provision is theoretically applicable to them as well. To this extent, the only contribution possible to rely on is the interpretation of the concept in the application of the DTCs; even if the operation is not entirely correct under a purely dogmatic point of view, the concept is implemented there in the same way the EU lawmakers use it in the Directive.

The authors[40] who have discussed this topic stress that the notion of "beneficial owner" comes from common law, where it was used for the first time under trust law, to distinguish between "legal ownership" and "beneficial ownership" of an asset. This distinction is, however, impossible according to various continental laws (for instance, according to Italian civil law)[41]; therefore, the mainstream *doctrine*[42] argues that it is necessary to give the definition of "beneficial owner" a completely different and autonomous meaning.

The text of the Directive goes beyond the mere enunciation of the concept, adding that a beneficial owner is considered as such when it receives the royalty payment:

> . . . for its own benefit, and not as an intermediary such as an agent, trustee or authorised signatory, for some other person.[43]

This approach should be followed carefully: to a certain extent, it could be argued, no sub-licensor could be considered a beneficial owner so far as the ultimate owner of the flow of royalties is the owner of the intangible. The same goes, *mutatis mutandis*, for the financing operations. This extremely restrictive interpretation of the provision, which I personally don't share even if it is all but unreasonable, could eventually lead to serious problems for all those third countries' investors wishing to allocate their intangibles to a EU resident company using a licensing contract (behaving as a sub-licensor on the continent).

Others could argue that a sub-holding company operating as a financing company (or an intangible owner) could qualify as a beneficial owner as well if able to demonstrate that the spread between the interest paid (to the non-EU resident holding company) and that gained by the financed company in Europe is fair, reasonable and consistent with the arm's-length principle (i.e. introduces a quantitative test).

It's clear that qualifying a kind of income by using a quantitative approach is not always satisfactory under law, but waiting for ECJ pronunciations and reading the text of the Directive only, no more aspects clearly arise and maybe the distinction should rely on the differences in the amount of the paid royalties or interest.

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[40] Du Toit (1999).

[41] Italy implemented legislation on Trusts very recently (in 2005), adding Article 2645 *ter* to the Civil Code.

[42] See Hinnekens (2000), Oliver (2001) and OECD (2003) (more to the point above at para II(4).

[43] Article 1(4).

A purely anti-avoidance purpose[44] is attributable to two other fundamental provisions of the Directive: Article 4, § 2[45] and Article 5.

The first one includes some basic transfer pricing rules to the outgoing flows of royalties and interest: the member state is allowed to tax at source the amount of royalties paid by the resident company (or permanent establishment) exceeding their arm's-length amount.

Just as with every case involving transfer pricing, the anti-avoidance rule is applicable only if the payment involves two related parties, i.e. two associated enterprises. In the case of the Directive, however, the lawmaker introduces the condition of a special relationship, saying that:

> Where, by reason of a special relationship … the amount … of royalties exceeds the amount which would have been agreed … the provisions of this Directive shall apply only to the latter amount, if any (Article 4, § 2).

It is self-evident that this condition goes beyond the notion of associated enterprises (or companies) asking for something more to be checked for their application.

In fact, all the companies according to the Directive conditions must be necessarily associated if they want to take advantage of the taxation-at-source exemption; therefore, it could be argued that every royalty or interest payment under the Directive falls also within the application boundary of the arm's-length anti-avoidance rule.

However, no details are given about the notion of "special" relationship, which is quite new in EU tax law.

The consequence of this choice is that every state has been free to implement the rule as it wished to do, granting the taxpayer either a more limited or a wider leeway to define the amount of royalties paid and to have it both as tax deductible on the payer and at the same time not taxed at source. This is particularly important for the third-country investor, who could be pushed to allocate his sub-holding company in the European country where weaker anti-avoidance provisions exist to this extent.

In the case of Italy, for example, the legislature has interpreted the notion of "special" relationship as the one provided for by the transfer pricing rules in direct taxation[46]; basically the relation can be considered "special" when one company controls another one, and in this way, in Italy, the conditions to be met to apply general transfer pricing rules and the limitation to taxation at source exemption are exactly the same.

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[44] The time dedicated to inquiry about the nature (anti-elusive or anti-fraud or not) of a provision in the Directive could seem wasted under a practically oriented approach to the text of the Directive and its implication in the different national law. In the Italian experience (at least) it is, however, fundamental to allow flexible, extensive or simply literal interpretation of the words and of the concept used by the legislature. The more a provision is finalised to contrast specific operations with a tax-avoidance purpose, the more the interpretation of that provision shall be restricted to those issues enumerated by the legislature.

[45] Article 4(1) also contains anti-avoidance provisions, but they are generally limited to interest payments covered by the Directive together with royalties.

[46] Article 110, Italian Direct Taxation Act, T.U. 917/86.

The lack of harmonisation is evident in this case because of the fact that every state shall be free to interpret differently the notion of "special" relationship, and this situation will surely lead to different meanings of the concept in different states, with an overall level of harmonisation that will be clearly reduced.

The choice of not introducing autonomous concepts and the decision to refer to the separate national experiences is also adopted in the case of the other anti-avoidance (and anti-fraud) rules. They have a wider margin of application in this Directive than has occurred previously[47] in the history of EU tax law, probably due to the fears of the Council about an improper use of the taxation-at-source exemption.

Article 5 of the text clearly points out that the Directive, even if a part of EU law, shall not prevent the application of any national anti-avoidance provision and that the states can suspend the application of its benefits when one of the principal motives of a transaction (i.e. a licensing contract, for instance) is tax avoidance. The relevance of this provision is evident as far as it allows the national lawmaker to suspend the Directive (and the revenue service to deny its advantages), even if tax avoidance is only one motivation amongst the many which pushed the taxpayer to sign that specific licensing contract and to pay the royalties due; tax avoidance doesn't need to be the only motivation or the fundamental one in the overall operation.

Even if the article under examination sets out no specific limitations, it is possible to say that according to the general principles of European tax law, every limitation to the impact of the directive in national law must be consistent with the principle of proportionality.

There must be an acceptable proportion between the infringement committed by the taxpayer and the consequences at law provided for by the lawmaker and applied by the revenue service or any other public institution.

6.6 M&A: European Companies' Reorganisation, Capital Gains Taxation, and the Possible Relevance of the Discipline for Third Countries

Both M&A operations and the issues related to company mobility could seem to fall, at first glance, outside the scope of this article and have nothing to do with capital gains taxation. No EU Directive deals specifically and directly with capital gains taxation on the continent as the above-mentioned 435 and 49 do, respectively, with dividends, royalties and interest.

The reason arguably depends both on the clumsiness of the decision-making process or on the lack of serious understanding of the problem, with this second option being more unlikely, compared with the first one.

[47] Excluding perhaps Article 1(2) of the "Parent–Subsidiary" Directive 1990/435/EEC. These provisions have been repealed by Directive 2011/96/UE that updated the system applicable to "parent-subsidiary" flow of dividends within the EU.

Basically speaking, taxation of capital gains realised on cross-border operations (involving assets, real estate or whatever else) can still be taxed according to the source rules (where the asset is located at the moment of its sale) or depending on the residence rules.

These two approaches, most obviously, coexist even within the tax legislation of each member state, depending on the nature of the asset, the operation realised or other factors.

In the case of Italy, for example, capital gains are taxed in the country if the individual or the company obtaining them is resident for tax purposes in Italy. On the contrary, the gains realised when selling real estate located in Italy are always taxed in the country, notwithstanding the residence of the parties involved.

However, gains realised on shares sold on a stock market are not taxed in Italy if obtained by a non-resident investor. Similar rules are in force in various other continental countries, leading eventually to some cases of double taxation and others of double non-taxation, depending on the specific circumstances of the case.

The first ones are resolved according to any applicable DTC, while the others are tackled by national legislation as well, in most of the cases.

Despite the issues involved or the problems that could arise, the EU legislator was not able to rule about that, except for some specific cases: those involving company reorganisations (namely M&A operations) and the transfer of the seat of a company (the *Societas Europaea*).

Basically, all M&A operations could determine capital gains as the difference between the book value of the assets involved and their market value at the moment of the operations (of the merger, for instance). The different tax legislation of the two countries involved could tax the gains according to different regulations, and, despite all this, the mere fact of considering an M&A operation an occasion to tax the accrued but not yet realised capital gains could constitute per se a limit on the implementation of such operations across the continent.

This is the kind of issues Directive 1990/434/EEC addresses.[48]

The EU legislature decided to qualify these operations as tax irrelevant, that is, the realisation of capital gains is not deemed to occur upon the implementation of such tax-extraordinary corporate operations. Article 4 of the last mentioned Directive clearly sets the rule applicable, deciding that an operation falling into the list in Article 1 doesn't give rise to any taxation on capital gains calculated as a difference between the real value of the assets (i.e. market value) transferred and their value for tax purposes.

However, even in this case the EU lawmaker clearly limited the applications of these provisions, using a different set of rules focusing on purely EU companies: that is, companies incorporated and resident for tax purposes within the EU.

[48] Article1(a) of the Directive rules that it is going to be applied to . . . *mergers, divisions, partial divisions, transfers of assets and exchanges of shares in which companies of two or more Member States are involved* . . .. The directive has been repealed by 2009/133/EC directive of 19 October 2009 on the common system of taxation applicable to mergers, divisions, partial divisions, transfers of assets and exchanges of shares concerning companies of different Member states and to the transfer of the registered office of an SE or SCE between Member states.

The annex to the directive, in clarification ofArticle3(a), introduces a list of specific companies qualifying for the advantages of the directive and, subject to specific conditions, as M&A in a tax- free system.

These are the only circumstances where the EU provides a harmonised system of taxation of capital gains, or, in other words, the only case where the gains are not taxed at all if the above-mentioned circumstances are met.

The consequences of the implementation of this directive for third-country companies and investors are of less relevance. These economic subjects are cast away from the neutrality regime set up by Directive 434 for the obvious reason of their non-EU condition. At the moment, a different solution seems impossible.

The only remark of some interest is, however, the one related to the mobility of the company within and outside the EU (intra-EU mobility and outbound mobility). Recently both the ECJ and the Commission have debated the issue of the transfer of the seat of one company from one member state to another and, it could be argued, from the EU to a third country.

In this respect, the ECJ already ruled that most of the exit taxes applied in these circumstances in the first hypothesis (intra-EU mobility of individuals) are against the freedom of establishment and Article 49. The Commission added that in its point of view the same rule should be extended to companies as well in cases of transfer of the seat from one Member state to another.

Third countries' companies shouldn't underestimate the importance of these remarks. Should the Commission succeed in upholding its thesis in front of the ECJ – that the litigation frontier could be set on Article 63: namely, the conflict of a European exit tax with the free movement of capital in case a company participated in by a non-EU investor decides to move abroad (this could be the case, for instance of an Arabic investor in an European Company, a situation which is more likely t occur rather than a licensing of IP).

Even if it is too early to raise such a question to practitioners and the more likely answer by now could be the one deciding in favour of the compatibility of such taxes with the free movement of capital, at least in a *de iure condendo* perspective, the remarks raised and the problem to be solved seem all but ill founded.

6.7 From Direct Taxes to VAT: How Consumption Taxes Affects the Exchange of Goods and Services

In 2010 the EU implemented a new very important set of rules that changed dramatically the way in which VAT shall be applied (and actually is applied nowadays)[49]: in practice (bus also in academic literature) this set is defined simply as the "Package", or "VAT Package". More precisely, the so called "VAT Package" consists of a Directive (Directive 2008/8/EC) approved by the Council of Europe implementing significant changes to the restated VAT rules as per Directive 2006/112/EC.

[49] Italy implemented the concerned Directive only in 2011.

The main goals pursued by the Union in 2008[50] is to update most of the criteria applicable to consider the sale of a good or the delivery of a service taxable in one state or in another.

Basically, the VAT Package concerns the rewriting of the territoriality principle.

6.7.1 *Continued: The Notion of European Territory and the "Territoriality Rule" for the Application of VAT*

The territoriality principle was perhaps one of the most reviewed part of the entire VAT system after that it was re-casted in the 2006/112/EC Directive. Under a purely quantitative dimension, Article 9 which was the only one dealing with the rules on the power to tax a specific good or service (sold or delivered) in Europe in the framework of the so called VI Directive (77/388/EEC) was broken down into more than 30 Articles, from 31 to 61 in the new Directive.

The number of provisions devoted to the clarification of the territoriality principle and aimed at defining who can tax what and where is self-explanatory of the importance of the issues at stake.

It is not only a domestic issue, that is a problem involving the possible conflict between the taxing power of the member states: conflicts of this case have always been present in the development of EU tax law and arguably always be, the concerns of European lawmaker was also to the possible non taxation of some services and to the relation with third countries.

Territoriality was therefore a priority in the agenda of the Commission even before 2006 and the need for an optimization of the taxing rules more than necessary at that time.

Basically, a service can be taxed under VAT according to four different criteria: the place where the supplier is, the place where the recipient is established, the place where the service is provided (which so not necessarily coincides with the second criterion) and/or the place where the service is used.

The ECJ always ruled that there's no priority in the application of these condition, but each one of them must be considered autonomously from the other, the priority being to avoid double taxation and achieve the result more consistent with the spirit of the Directive. Some National taxation offices (such as the case of Italy) however argued that the first condition should be considered as a sort of general rule, being the other provisions applicable only insofar the specific circumstances of the case fell into them.

This is not, of course, a purely academic distinction, as far as from this reasoning stem out relevant differences in the taxation of services.

The problem arises, in particular, when the delivery of services fall potentially, into a number of these provisions, and therefore taxation could potentially occur in a number of states.

[50] The year in which the directive was drafted in the version that came in force in 2010.

The Italian solution, together with the ones of the other member states has undoubtedly a number of advantages. First of all, it implicitly introduces a sort of interpretive hierarchy amongst the different provisions. In this sense the general rule (*lex generalis*) of the place where the business is situated, steps back in favor of the specific provision (*lex specialis*) but only when the peculiar conditions set out by the latter are met.

The same approach should be followed (although it's not so easy) when the conflict arises from the application of two specific provisions, letting the more specific one to prevail.

For example, in the case of legal services provided by an Egyptian firm to a European Client the specific rules carried on by the Directive should be applied.

The situation is not so clear when the services delivered are those of an accountant. It could be argued that accountancy is not law, thus it should fall into the general clause, but what about the accountant who also is a tax accountant, thus advising also in the realm of law (even if in tax law)?

In the latter case the answers could be different.

If correctly interpreted under a national perspective, the general rule should be applied. Being the other nothing more than exceptions to a general principle, they must be interpreted restrictively, or at least literally: an accountant is not a lawyer even if he would deliver a tax opinion.

In the eyes the of ECJ the situation is not so clear and the fact of the case should be decided and qualified only accordingly to the circumstances of the case, without any priority of one rule to the other.

Under a European approach, therefore, there's no *lex specialis* derogating to any *lex generalis*, but rather different nexus applicable from time to time. The overall situation becomes even more complex and uncertain in the overall result when the conflict arises between two special provisions.

It is the case, for instance, of an advertising activity related to the sale of an immovable property, being "advertising" and "services related to immovable property" two distinct, special rules possibly linking the service of the case to two different territorial context.

Should we decide the issue according to the Italian rules (in any case, Italian interpretive rules are equivalent all the others applicable to the Continental legal systems inspired by Roman law) we should try and see which of the two criteria is the more special one. In other words, which is harder to be met as a matter of fact and go for it.

Continental systems, in other words, tend to stress the importance of the special rule up to the possible limit of the case being the only one solution possible with a tolerable degree of certainty.

ECJ seems sometimes to argue differently, being open to decide most of the cases under a sort of "substance over form" principle and with a specific attention to the circumstances of the case, thus refusing conceptual schemes that being too close as they are to the Theory of law in some cases would loose the grip with reality. The drawback of this approach is, of course, the lack of legal certainty for the taxpayer that is even more serious when the services are delivered from outside the EU, but potentially falls into one of the new scopes of the directive, thus ought to be taxed.

6.8 Concluding Remarks: A Possible *Blueprint* for a Future Fiscal Integration Across the Mediterranean?

The Mediterranean area in general, and the southern shore of it, in particular, are experiencing an unprecedented period of turmoil.

Some of the Arab countries are still struggling against the precedent political systems in the attempt to write a new page of their political history, while the countries on the North (Italy is amongst them) are battling on the economical field the toughest battle in decades, where their membership of the Euro area is at stake.

In this respect, although never mentioned, taxation is a key aspect for the success of both the battles. In the southern countries, the implementation of a fair, equitable, efficient tax system is the cornerstone of the citizenship. To rely on the wealth generated from the exploitation of natural resources has proven to be insufficient and ultimately dangerous to build a sense of belonging to the state. To pay (the same) taxes brings together people and makes them citizens more than anything else, perhaps (at least in a time of peace); in the North, taxation in the way trough which resources are found to respect the Euro-benchmarks: the price to European citizenship, or to be Europeans despite of the citizenship status.

Fiscal harmonisation across the Mediterranean countries could therefore become a strong point out of two weaknesses, and in particular considering the fact that an entire portion of Europe (the southernmost one) is experiencing the same problem and facing the same difficulties.

Probably, a qualified multilateral approach (covering Italy, Spain and arguably Greece) would do where the bilateralism of the DTCs is either outdated or insufficient to deal with the Mediterranean complexities and the possibility to negotiate a fiscal agreement with the EU as a whole is definitely a bridge too far.

In this sense, a multilateral tax convention covering the states mentioned above would clearly generate a more homogeneous area, capable of increasing the regional competitiveness as never before.

It's of the tax lawyer the duty to create the condition for this integration, thinking outside of the dominant models of the discipline. To a certain extent, there's nothing to impose here, but anything to share.

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Part IV
Financial Markets

Chapter 7
Arab Stock Markets Integration: The Case Study of Agadir Agreement Countries

Amir Armanious

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Abstract The Agadir Agreement has been reasonably successful, as it builds heavily on existing regional and bilateral initiatives since there is not a single Arab stock market, the main objective of this study is to examine the significance of stock markets integration among the four Agadir Agreement countries. Their interrelationships with five international markets, the United States, the European Economic and Monetary Union, the United Kingdom, Japan and the Gulf Cooperation Council countries are also examined. Testing the dependencies are studied using co-integration techniques: correlation matrix and variance decomposition for daily equity indices, returns and volatility between the Arab markets and other financial centers for the period from March 2002 till March 2012. The main conclusions of this empirical study show that the Agadir stock markets presented a moderate degree of integration before Agadir Agreement. Therefore, the negative correlation and returns among the Agadir member states after Agadir Agreement is

A. Armanious (✉)
Department of Applied Finance and Actuarial Studies, Macquarie University, Balaclava Rd, North Ryde NSW 2109, Sydney, Australia
e-mail: amir.armanious@mq.edu.au

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mainly due to the global financial crisis as the negative correlation is higher between the Agadir members and other exchanges.

Keywords Agadir Agreement • Financial integration • Stock market integration • Correlation matrix • Variance decomposition • VAR analysis

7.1 Introduction

The integration of international stock markets may be considered as the most significant change in the global capital market, which has been introduced to the stock markets in the last two decades. Many stock exchanges removed restrictions and admitted listing of stocks on more than one exchange. The national stock exchanges are moving towards increasing linkages to other international stock exchanges (Irving 2005).

The Agadir Agreement (AA) was signed on February 25, 2004 between Morocco, Tunisia, Egypt and Jordon; implementation began in March 2007. The agreement remains open to other countries in the region, particularly those that enjoy Association Agreements (AAs) with the EU and have implemented Great Arab Free Trade Area (GAFTA) (Behr 2010). The Agadir Agreement has been reasonably successful, as it builds heavily on existing regional and bilateral initiatives. Some of the temporary exceptions are taken from the liberalization schedules of the AAs that countries have with the EU. The liberalization of agriculture follows GAFTA, although progress in this part of the GAFTA agenda has been limited. Service liberalization draws from World Trade Organization (WTO) commitments (Lawrence 2006). Countries abide by pan European rules of origin, even though this measure is potentially incompatible with GAFTA rules (Wippel 2005). The countries benefit from technical assistance from the EU.

Despite the partial success of Agadir Agreement, it is still not possible to speak of stock market integration among the member countries. Securities trading traditionally followed national lines; as a result, continued fragmentation reflects a host of national differences in market practices, exchange rates, laws, tax treatment and regulation. So very specific problems arise, such as the cross-border use of collateral, which in fact impede the genuine internationalization of this activity across the Arab countries. These differences, coupled with the lack of a single infrastructure platform for the market, impose costs and inefficiencies that prevent the full potential benefits of a unified equity market from becoming widely available.

There are several reasons why different countries' stock prices may have a significant long term relationship. Most empirical studies describe the statistical dependencies across stock markets but do not attempt to identify or discuss the economic and political reasons for such dependencies that will be highlighted later in this study. The presence of strong economic ties and policy coordination between countries can indirectly link their stock prices over time (Table 7.1 highlights international and euro-Mediterranean cooperation agreements). With technological

Table 7.1 International and Euro-mediterranean cooperation agreements

	Egypt	Jordon	Morocco	Tunisia
WTO accession date	06/1995	04/2000	01/1995	03/95
Infrastructure privatization	12/2001	11/2001	12/1998	1/2002
EU association agreement	06/2004	05/2002	03/2000	03/1998
Type of cumulation	Bilateral and diagonal	Bilateral	Bilateral, diagonal, and maghreb full	Bilateral, diagonal, and maghreb full
ENP country report	03/2005	05/2004	05/2004	05/2004
ENP action plan	2007	2005	2005	2005

Source: Europa (2012) and World Trade Organization (2012)

and financial innovation, the advance of international finance and trade liberalization, and deliberate regional and global cooperation, the geographical divide among various national stock markets are less obvious (Gelos and Sahay 2000). Jeon and Chiang (1991) analyze deregulation, market liberalization measures, infrastructure privatization, globalization, communication technology, computerized trading systems, and increasing activities by multinational corporations as factors contributing to such integration.

Trade liberalization initiatives do not necessarily result in greater regional financial integration, unless some degree of political and institutional convergence has been reached (Park 2002). The successive increase of political risk in the region (especially after the Arab Spring and the potential opportunities and threats) seem to have had a contrasted impact, as they appear to have led concomitantly to integration towards the world and the regional markets, but to segmentation from the EMU. These results highlight the widely accepted co-existence of multiple perceptions of political risk among categories of investors. The American Institute for Market Research (2005) highlights that it is hardly measurable country specific risks go along with prospects of growth-driven higher than average returns.

The global financial crisis of 2008 reinforced both intra-regional and global linkages within the Arab capital markets. Taken together with the definition of financial contagion as an increase in shock sensibility in the aftermath of a foreign financial crisis (Forbes and Rigobon 2001), the latter result could constitute preliminary evidence of crisis vulnerability in the MENA region. This would be consistent with the great depression of 1929 which resulted in lower growth, stock market slump, credit crunch, global recession and European sovereign debt crisis which put huge pressures on stock markets for further integration to be able to deal with the current and future financial crisis.

Since there is not a single Arab stock market yet, the main objective of this study is to evaluate the possibility of integrating Agadir stock markets; therefore, the main aim displayed here is to verify whether the Agadir agreement affects the integration of the Agadir stock markets. The motivation behind this study is that, although a lot of research has been focused on stock market integration, the

emphasis has been mostly on developed markets. Stock market integration in the Arab region has not been investigated deeply enough despite the region being of a global economic and political importance.

The empirical analysis consists of the Agadir-impact on the integration of the Arab securities markets. Firstly, the differences between the national stock markets in Arab countries are described by analyzing several characteristics that affect the integration of the Arab stock markets. Secondly, the degree of the integration of Agadir Agreement stock markets after the Agadir Agreement is analyzed. To do so, we study the correlation matrices and variance decompositions for equity indices, returns and volatility between the Arab markets and other financial centers. Some previous results are found through a correlation analysis among stock prices and volatilities of major world stock exchanges. The relationship between the stock price indices before and after-Agadir is also examined. Finally, the impact of the stock price movements in one market on another is investigated.

The study is organized as follows. Section 7.2 reports the previous studies about linkages and dynamic interactions among Arab and international stock markets. Section 7.3 presents the data and describes the stock markets studied in this study. Section 7.4 provides the methodology. In Sect. 7.5 the results are presented and discussed. Section 7.6 summarizes the main concluding remarks.

7.2 Financial Literature on Stock Markets Integration

Stulz (1981) define stock market integration if assets with perfectly correlated returns have the same price, regardless of the location in which they trade. A fully integrated market is defined as a situation where investors earn the same risk adjusted expected return on similar financial instruments in different national markets (Jorion and Schwartz 1986) that means no arbitrage profit can be achieved.

If the risk of an identical financial instrument is traded on the same price in different markets, then it will be an indication of integration between these markets. However, stock market is considered to be more integrated, if there are stronger domestic returns depend on contemporaneous world market shocks. This definition emphasizes not only the openness of stock markets but also measures directly the extent to which shocks are transmitted across stock markets. The transmission of a shock requires both the removal of barriers and the capital itself flows across markets in order to take advantage of potential market opportunities (Fratzscher 2002).

There have been several studies about linkages and dynamic interactions among Arab stock markets with varying evidence. The results vary, depending on the choice of markets, the sample period, the frequency of observations (daily, weekly or monthly), and the different methodologies employed to investigate the interdependence of stock markets. The lack of interdependence across national stock

markets has been presented as evidence supporting the benefits of international portfolio diversification (Grubel 1968; Sharpe 1995; Solnik 1995).

BenNaceur et al. (2006) analyze the relationship between asset price movements and monetary policy by examining eight MENA region countries (Bahrain, Egypt, Jordan, Morocco, Oman, Saudi Arabia, Tunisia, and Turkey) using a VAR methodology for the period from 1998 till 2005. They conclude that the responsiveness of stock markets differs across these MENA countries. Stock market return depicts an upward tendency in some countries while in others it declines or indifferent.

Segot and Lucey (2007) apply four co-integration methodologies to test capital market integration in the MENA countries and its implications for an international portfolio investment allocation. They use daily indices ranging of the selected sample of (Morocco, Tunisia, Egypt, Lebanon, Jordan, Tunisia, Lebanon, Turkey and Israel) from January 1998 until November 2004. Further, they investigate equity market integration with respect to EMU, the extended Arab region (MENA countries plus the Gulf Countries), and the rest of the world. They use a variety of bi-variate cointegration techniques between the stock markets and the international benchmarks in order to check whether the presence of a stable, long run relationship offsets the benefits stemming from international diversification.

Then, they investigate the time varying nature of equity market integration through a recursive and event-based analysis of an extended version of the Akdogan (1995, 1997) financial integration score. Finally, they adjust the latter by market capitalization ratios in order to assess the portfolio allocation implications of market integration. They significantly reject the hypothesis of a stable, long run bivariate relationship between each of these markets and EMU, U.S., and a regional benchmark. This indicates the existence of significant diversification opportunities for the three categories of investors. This is consistent with the study by Sabri (2002) that concluded there is no significant positive correlation between Arab and European stock markets, based on two financial indicators including price earnings ratios and performance growth factor.

Girard et al. (2003) implement a state-dependent multivariate Generalized Autoregressive Conditional Heteroskedasticity (GARCH) methodology on MENA region. They concluded that the MENA markets are still highly segmented and thus provide diversification benefits to the global investor. Girard and Ferreira (2004) conduct a daily spillover analysis suggesting an increased sensitivity to intra-regional exogenous shocks, but not to inter-regional shocks, throughout the period ranging from 1990 to 2001.

Neaime (2002) investigates stock market integration among a mix of MENA and Gulf Cooperation Council countries (Egypt, Jordan, Morocco, Turkey, Bahrain, Kuwait and Saudi Arabia) over the 1990–2000 period based on standard co-integration analysis with VEC modeling and Engle-Granger cointegration approach, within the framework of weekly closing prices taken in local currencies. The study concludes that contrarily to the GCC markets, which remained segmented, financial integration of the MENA markets seemed to go along with a strong sensitivity to unidirectional shocks flowing from U.S. and UK. However, there is no evidence of intra-regional financial integration.

Erdal and Gunduz (2001) investigate the interdependence of the Istanbul Stock Exchange with the G-7 equity markets and with the stock markets of Israel, Jordan, Egypt and Morocco, before and after the Asian crisis. Based on Granger causality tests, they rejected the hypothesis of significant linkages among the MENA markets. They also found one co-integrating vector between the Istanbul Stock Exchange and the G-7 markets, but no lead-lag relationship.

Gunduz and Omran (2001) examine the hypothesis of a common stochastic trend between the markets of Turkey, Israel, Egypt, Morocco and Jordan was rejected over the period 1997–2000. They concluded that although the MENA capital markets still appear segmented from one another, they seem individually integrated to the global markets through the presence of stable bivariate long run relationships.

Darrat et al. (2000) apply Johansen-Juselius cointegration approach to explore the pattern and extent to which the three Arab emerging stock markets (Egypt, Morocco and Jordan) are linked together and with international stock markets. They find that the Arab markets are segmented globally and integrated regionally. There is relatively lower risk in Arab stock markets than the U.S. stock market based on analyzing VaR and extreme value models but this assumption cannot be generalized unless combining the VaR for stock market returns and the VaR for exchange rate are incorporated in the model (Guermat et al. 2003).

Bolbol and Omran (2004) investigate the independent effect of stock returns on investment within the context of four hypotheses (passive informant, active informant, financing, and stock market pressure) by analyzing 83 firms from five Arab countries (Egypt, Jordan, Morocco, Saudi Arabia, and Tunisia) during 1996–2001. They conclude that cash flow has no effect on investment, which could mostly be due to the dividend policy of Arab firms. The fact that Arab stock markets do not allocate capital expenditures unwarranted by fundamentals gives support to current efforts at strengthening Arab stock markets.

Marashdeh (2005) uses the Autoregressive Distributed Lag (ARDL) approach to cointegration to examine the financial integration in the Arab region. The results show that there are long-run equilibrium relationships among all stock markets in the Arab region, but not with developed markets. Alkulaib et al. (2009) argue that there is more interaction and linkage in the Gulf Cooperation Council (GCC) region than in the Arab region.

Marashdeh and Shrestha (2010) examine the extent of stock market integration among GCC countries as well as the integration between the GCC stock markets and developed markets represented by U.S. and Europe. They employ ARDL approach to cointegration. They concluded that the GCC stock markets are not fully integrated and there still exist arbitrage opportunities between some of the markets in the region. On the other hand, the results show no evidence of cointegration between the GCC stock markets and developed markets, which implies that international investors can diversify their portfolio and obtain long-run gains by investing in the GCC markets.

This study makes several contributions to this literature. First, the study applies standardized exchange converted U.S. dollar equity indices rather than local prices to avoid the effect of the exchange rate. This might be preferable when it comes to

cross- markets analysis (Hassan et al. 2003). The study also uses daily time series in order to incorporate the information on market interactions contained in high frequency series (Voronkova 2004). Second, the set of econometric methodologies is designed to apprehend the various facets of financial integration. Testing the dependencies in daily stock prices are studied using co-integration techniques correlation matrix and variance decomposition for equity indices, returns and volatility between the Arab markets and other financial centers. The volatilities of stock exchanges are calculated, following Moreno and Olmeda (2002). Vector Auto Regression (VAR-based) co-integration tests using the methodology developed by Johansen (1995) are implemented. Johansen's method is to test the restrictions imposed by co-integration on the unrestricted VAR involving the series before extending it in order to assess the impact of selected financial, economic and political events.

7.3 Data and Descriptive Analysis

The study employs daily stock price indices for four major stock markets in the Agadir Countries, namely, (Egypt, Jordon, Morocco, and Tunisia) plus U.S., EMU, UK, Japan and GCC. The modeling of returns results in the loss of important information on possible common trends when prices are co-integrated. To resolve this problem, the dependencies in daily stock prices are studied using co-integration techniques correlation matrix and variance decomposition. The data is obtained mainly from Morgan Stanley Capital International (MSCI) covering the period from March 2002 to March 2012 (24,876 observations) to represent the period before and after the Agadir agreement, following Koutmos (1996), Darrat and Benkato (2003), and Tahai et al. (2004). Table 7.2 presents the stock market indices employed in the study. The total sample is divided into two sub-samples: one sub-sample includes the national stock market indices for the pre-Agadir Agreement period (from 01 March 2002 to 28 February 2007, 11,606 observations) and the other includes the same indices for the post-Agadir Agreement period (from 01 March 2007 to 30 March 2012, 13,270 observations).

Table 7.3 indicates that before Agadir, The average daily stock price for all countries in the sample (303) is lower than the U.S. (1,132) and lower than the regional benchmark GCC (791). Turning to measures of risk, the sample's average standard deviation (118) is lower than the EMU (144) and the U.S. (157) but higher than Japan (24). The U.S. is left-skewed. By contrast, the unconditional distribution of returns is right-skewed in Egypt, Jordan, Morocco, Tunisia, GCC, EMU, UK, Japan and the world.

Table 7.4 indicates that after Agadir, The average daily stock price for all countries in the sample (425) is lower than the U.S. (1,210) and higher than the regional benchmark GCC (500). Turning to measures of risk, the sample's average standard deviation (87) is lower than the EMU (168) and the U.S. (200) but higher than Japan (17). The U.S. and Japan are left-skewed. By contrast, the unconditional

Table 7.2 Stock market price indices

Financial area	MSCI equity indices	Variable
Arab financial markets	Egypt	EGY
	Jordon	JOR
	Morocco	MOR
	Tunisia	TUN
Regional financial markets	Gulf Cooperation Council	GCC
International financial markets	European Monetary Union	EMU
	United States	U.S.
	United Kingdom	UK
	Japan	JAP

Source: MSCI (2012)

Table 7.3 Statistical data of Agadir stock exchange indices pre-Agadir (March 2002–February 2007)

	Mean	Median	Min	Max	Std. Dev.	Skewness	Kurtosis
EGY	103	56	18	275	83	0.50	−1.38
JOR	503	376	186	1,074	259	0.44	−1.22
MOR	23	21	12	49	9	0.99	−0.03
TUN	585	559	420	859	121	0.37	−0.98
GCC	791	765	514	1,104	182	0.10	−1.43
EMU	563	545	316	922	144	0.42	−0.60
U.S.	1,132	1,142	777	1,460	157	−0.17	−0.65
UK	8,579	8,263	5,299	12,632	1,800	0.32	−0.82
JAP	105	104	63	155	24	0.20	−0.94
World	1,393	1,352	859	2,067	305	0.22	−0.90

Source: Data compiled and computed by the researcher

Table 7.4 Statistical data of Agadir stock exchange indices post-Agadir (March 2007–March 2012)

	Mean	Median	Min	Max	Std.Dev.	Skewness	Kurtosis
EGY	242	238	125	432	73	0.64	−0.23
JOR	503	447	296	899	161	0.71	−0.81
MOR	53	51	41	79	9	1.47	1.49
TUN	903	915	697	1,197	105	0.10	−0.30
GCC	500	442	278	856	133	0.87	−0.39
EMU	746	706	424	1,095	168	0.43	−0.95
U.S.	1,210	1,236	677	1,565	200	−0.37	−0.60
UK	9,421	8,982	4,874	13,963	2,143	0.32	−0.70
JAP	118	117	72	150	17	−0.11	−0.14
World	1,629	1,570	897	2,264	320	0.22	−0.78

Source: Data compiled and computed by the researcher

distribution of returns is right-skewed in Egypt, Jordan, Morocco, Tunisia, GCC, EMU, UK and the world. Overall, these results seem to suggest that the Arab stock markets are rather volatile and promise relatively high returns, in accordance with

the emerging markets literature (Bekaert and Harvey 1995, 1997; Goetzmann et al. 2000).

7.4 Methodology and Empirical Analysis

The methodology used in this study mainly consists of a correlation matrix (CM) and variance decomposition (VDC) to examine the impact of Agadir Agreement on integration of Agadir stock markets. This approach aims at measuring to what extent the price indices of other markets can help to explain the index values of one particular market. Correlation matrix model is applied for the four stock exchange indices from Agadir exchanges as well as five international exchanges. First of all, it has to be noted that the nine markets considered do not share common trading hours and consequently implications cannot be drawn from comparisons between countries within the same period. Nevertheless, the study is not interested in a comparison between countries within the same period but in a comparison of different periods for the same country. Yet, there is no reason to think that the implications of the different trading hours, whatever they might have changed after full financial integration.

Roll (1992) suggests that equity index behavior is affected by two factors: (1) the technical procedure of index construction and composition, (2) the role of exchange rates. When indices are expressed in a national currency, part of the index volatility is induced by monetary phenomena such as changes in anticipated and actual inflation rates. To avoid interpretation problems the equity indices are denominated in a common currency, US$.

7.4.1 Correlation Analyses of Equity Indices

Correlation analysis of daily equity market indices highlights that the degree of market integration is based on the computation of the correlation between the stock price indices, the volatilities and the returns between the nine stock markets selected in order to analyze whether they are more integrated after the Agadir Agreement than previously. This approach is based on rather simple intuition, the more integrated markets are, the higher the co-movement between their prices.

In this connection, Table 7.5 shows the correlation matrix of daily stock prices of the nine selected stock exchanges during both periods (before and after Agadir). As the price correlation matrix shows, on average, the correlation between these price indices changed sharply. As it was 0.84 during the Pre-Agadir period (2002–2007) and it declined to reach the value of 0.5 during the Post-Agadir period (2007–2012).

But from the previous analysis, the study can conclude that the correlation between Jordon and Morocco increased by 18.0 % as it has increased from 0.68 in the Pre- Agadir Period to 0.80 in the Post-Agadir Period. But on the other hand

Table 7.5 Correlation matrix of daily Agadir equity market indices above diagonal: pre-Agadir (March 2002 to February 2007); below diagonal: post-Agadir (March 2007–March 2012)

	EGY	JOR	MOR	TUN	GCC	EMU	U.S.	UK	JAP
EGY		0.91	0.89	0.84	−0.15	0.92	0.87	0.93	0.91
JOR	0.81		0.68	0.36	0.89	0.78	0.78	0.80	0.80
MOR	0.82	0.80		0.94	−0.74	0.95	0.88	0.94	0.92
TUN	−0.07	−0.47	−0.12		−0.83	0.95	0.91	0.95	0.87
GCC	0.88	0.84	0.80	−0.24		−0.78	−0.70	−0.81	−0.40
EMU	0.78	0.69	0.64	−0.25	0.90		0.97	1.00	0.95
U.S.	0.52	0.36	0.37	−0.05	0.72	0.88		0.97	0.94
UK	0.70	0.59	0.52	−0.21	0.85	0.98	0.94		0.95
JAP	0.60	0.43	0.38	−0.08	0.72	0.90	0.94	0.95	

Source: Data compiled and computed by the researcher

there was negative correlation by 112.7 % between Morocco and Tunisia as it reduced from 0.94 in the Pre-Agadir Period to −0.12 in the Post-Agadir Period. Further Egypt represents negative correlation after the Agadir agreement; the negative correlation of 7.5 %, 10.5 % and 108.2 % was obvious between Egypt with Agadir countries Morocco, Jordon and Tunisia respectively. This does not indicate inefficiency after the Agadir Agreement but rather the impact of the global financial crisis and the European sovereign debt crisis as Egypt reflected negative correlation with GCC, EMU, U.S., UK, and Japan of 675.1 %, 15.2 %, 40.6 %, 24.4 %, and 33.6 % respectively. Also, Jordon, Morocco and Tunisia displayed negative correlation with EMU of 11.8 %, 32.8 %, and 126.3 %. The negative correlation with U.S., UK, Japan and GCC is further higher.

7.4.2 Correlation Analyses of Returns

The return on equity market i, R_{it}, is measured by $R_{it} = \log(I_{it}/I_{i,t-1})$. Where I_{it} is the last daily data of the index of the stock exchange I in the day t.

Table 7.6 provides the correlation of daily returns on the nine selected stock exchanges during both periods. On average, the correlation between these daily returns declined by 0.39 as it was 0.85 during the Pre-Agadir period (2002–2007) and dropped to reach the value of 0.46 during the Post-Agadir period (2007–2012).

After Agadir, the correlation of the returns on Egypt and Jordon stock exchanges has declined more than 18 %, as the correlation between them decreased from 0.91 before Agadir to 0.75 after Agadir. The correlation of the returns on Egypt with Morocco and Tunisia exchanges declined also by 21.3 % and 112.1 % after Agadir agreement. Further, Egypt represented negative correlation with GCC, EMU, U.S., UK, and Japan of 541.3 %, 23.9 %, 54.4 %, 36.7 %, and 43.7 % respectively. Also, Jordon, Morocco and Tunisia displayed negative correlation with EMU of 26.6 %, 42.1 %, and 123.9 %. The negative correlation with U.S., UK, Japan and GCC is further higher.

Table 7.6 Correlation matrix of daily returns on Agadir stock markets above diagonal: pre-Agadir (March 2002–February 2007); below diagonal: post-Agadir (March 2007–March 2012)

	EGY	JOR	MOR	TUN	GCC	EMU	U.S.	UK	JAP
EGY		0.91	0.90	0.86	−0.19	0.93	0.90	0.94	0.92
JOR	0.75		0.71	0.41	0.88	0.80	0.81	0.82	0.81
MOR	0.71	0.63		0.94	−0.75	0.96	0.91	0.96	0.93
TUN	−0.10	−0.58	0.01		−0.83	0.96	0.93	0.96	0.88
GCC	0.84	0.79	0.74	−0.24		−0.79	−0.71	−0.80	−0.40
EMU	0.71	0.59	0.56	−0.23	0.87		0.98	1.00	0.96
U.S.	0.41	0.18	0.33	0.07	0.66	0.85		0.98	0.95
UK	0.59	0.42	0.43	−0.10	0.80	0.96	0.94		0.96
JAP	0.52	0.28	0.30	−0.01	0.66	0.88	0.92	0.95	

Source: Data compiled and computed by the researcher

Followed by the correlation between Morocco and Tunisia, the returns are almost −99 %. The correlation between them decreased from 0.94 before Agadir to 0.01 after Agadir.

7.4.3 Correlation Analyses of Volatilities

The volatilities of stock exchanges are calculated, following Moreno and Olmeda (2002), as $V_{it} = R^2_{it}$. Where V_{it} is the volatility of the stock exchange i in the day t. The study measures the correlation of Agadir exchanges daily volatilities for 5 years before and after Agadir from March 2002 till March 2012.

Table 7.7 presents the correlation matrix of volatilities between the selected stock markets. On average, the correlation of volatilities has increased by 0.13 (from 0.49 in the pre-Agadir period to 0.62 in the post-Agadir period) since Agadir Agreement. Given that, it is reasonable to think that, according to this indicator, the degree of market integration among Agadir members is higher post-Agadir compared with international exchanges including EMU, U.S., UK, Japan and GCC. However, the Agadir Agreement has revived the integration process of the Egypt and Jordon stock exchange with the rest of the exchanges, as the high increase of the average correlation of volatilities shows. Arab markets exhibit the lowest level of volatility of returns compared with international markets (Dahel 1999).

Indeed, before Agadir there have been in Arab countries several previous attempts at stock market integration, as well as a relaxation of controls on capital movements and foreign exchange transactions, improvements in computer and communication technology that have lowered the cost of cross border information flows and financial transactions, and expansion in the multinational operations of major corporations. If markets are completely integrated, therefore, there are no arbitrage opportunities, returns on different assets can be divided into a common component and an idiosyncratic one.

Table 7.7 Correlation matrix of volatilities between Agadir stock markets above diagonal: pre-Agadir (March 2002–February 2007); below diagonal: post-gadir (March 2007–March 2012)

	EGY	JOR	MOR	TUN	GCC	EMU	U.S.	UK	JAP
EGY		0.21	0.43	0.83	0.69	−0.61	−0.66	−0.56	−0.58
JOR	0.88		0.65	0.78	0.42	−0.27	−0.33	−0.30	−0.29
MOR	0.66	0.77		0.61	0.89	−0.10	−0.28	−0.14	−0.10
TUN	0.51	0.49	0.20		0.30	−0.09	−0.69	0.10	−0.33
GCC	0.64	0.88	0.67	0.22		0.83	−0.21	0.84	0.77
EMU	0.91	0.77	0.53	0.52	0.46		0.97	0.99	0.80
U.S.	0.92	0.91	0.67	0.52	0.68	0.94		0.98	0.73
UK	0.88	0.91	0.64	0.55	0.71	0.91	0.98		0.77
JAP	0.90	0.93	0.67	0.63	0.73	0.89	0.97	0.98	

Source: Data compiled and computed by the researcher

Table 7.8 Variance decomposition of Agadir stock exchange indices pre-Agadir (March 2002–February 2007)

	EGY	JOR	MOR	TUN	GCC	EMU	U.S.	UK	JAP
EGY	6,905	77,044	5,086	62,934	104,667	66,780	280,515	19,583,453	3,735
JOR		67,272	91,196	50,126	74,418	44,944	144,935	17,959,326	73,332
MOR			75	77,646	121,948	83,343	319,810	19,920,240	2,024
TUN				14,576	31,859	18,700	89,442	16,726,268	58,245
GCC					33,140	33,993	49,055	14,050,058	99,252
EMU						20,794	103,613	17,693,273	62,986
U.S.							24,531	15,495,428	275,950
UK								3,238,482	19,568,788
JAP									561

Source: Data compiled and computed by the researcher

7.4.4 Variance Decomposition

Variance decomposition decomposes variation in one stock market (endogenous variable) into the component shocks to the stock markets considered (endogenous variables in the VAR). The variance decomposition gives information about the relative importance of each random innovation in a stock market to the rest of the stock markets (variables in the VAR). Tables 7.8 and 7.9 present the results of the variance decomposition for each stock market during the Pre-Agadir period (2002–2007) and during the Post-Agadir period (2007–2012).

The results show the relative importance of each market innovation to each market individually, during both periods. After Agadir, the variance of each Agadir stock market is under performing explained by the sum of these Agadir markets. This decline is due to the Jordanian and Tunisian stock exchanges having increased their relative importance (percentage) in the variance of the Agadir markets. It is worth noting that although the negative consequences of the global financial crisis, the variance of EMU, U.S., and UK stock markets is better due to maturity,

Table 7.9 Variance decomposition of Agadir stock exchange indices post-Agadir (March 2007–March 2012)

	EGY	JOR	MOR	TUN	GCC	EMU	U.S.	UK	JAP
EGY	5,370								
JOR	32,833	26,013							
MOR	11,571	63,666	75						
TUN	117,696	58,506	186,155	11,001					
GCC	28,246	21,813	58,800	54,898	17,609				
EMU	80,478	41,851	134,162	25,759	38,011	28,182			
U.S.	257,205	157,879	354,500	49,065	154,726	87,897	40,142		
UK	23,362,726	22,188,361	24,232,393	20,437,383	22,197,369	21,121,037	19,169,913	4,589,729	
JAP	6,652	50,320	1,212	159,935	45,549	112,997	318,415	23,932,048	276

Source: Data compiled and computed by the researcher

efficiency and ongoing process of alliances and integration while GCC stock market is better due to the surplus they incur in the current account.

The Agadir Agreement has affected the process of Arab stock market integration. For instance, the Jordanian stock exchange has accounted the highest variance before and after Agadir Agreement followed by Tunisia while the variance has changed slightly in Morocco before Agadir and post-Agadir.

7.5 Study Findings

The main conclusions of this empirical study show the following findings: (1) The stock markets presented a moderate degree of integration before Agadir Agreement. Therefore both stock prices and volatilities reflect idiosyncratic characteristics of each stock market, and Agadir Agreement increased the degree of correlation between them. A negative correlation and returns among the Agadir member states is mainly due to the global financial crisis and the European sovereign debt crisis which represents financial fragility as the negative correlation is higher between the Agadir members and other international exchanges like EMU, U.S., UK, Japan, and GCC. (2) After Agadir Agreement, stock exchanges become more related and integrated but these markets react heterogeneously to the different categories of shocks. They should therefore not be treated as a block for global allocation purposes (Al Janabi 2007). (3) The Agadir exchanges are acquiring a major importance especially after the Arab Spring in Tunisia and Egypt. It could be explained by the Agadir Agreement having increased the possibilities of international diversification of portfolios and the adjustment of each exchange to the benchmark of the more efficient markets.

The Agadir Agreement has clearly added to the pressures from technological change and globalization for the creation of new alliances among Arab's exchanges. This empirical study confirms several relevant issues on the Agadir Agreement effect as an integrated element of the Arab stock exchanges.

However, despite progress, the transformation of four national stock markets into a single Agadir Agreement stock market is not yet complete and needs a long path of regulations and agreements (Girard and Omran 2007). The Agadir Agreement's stock markets are still governed by four different legal systems, and other major obstacles – legal, regulatory, exchange rate, tax, capital control, different trading systems, low level of capital markets development, governance, technical, lack of trust, globalization avert, and political will – to cross border activity within the Arab countries result in some degree of segmentation. Moreover, protectionist pressures are still at work and evidence shows that investors in the Arab equity markets still have a strong home bias. There is also an important degree of dispersion in the performance of national stock market indices, and since the beginning of 2007 there has also been a significant degree of dispersion in sectoral performances. To achieve a major Agadir integration of stock markets it will be necessary to have equal access to market infrastructure, such as trading platforms,

clearing and settlement systems, and to remove unfair tax measures (as well as non-tax administrative measures) which represent discrimination against cross border suppliers. Harmonization of rules essential for investor protection is also important for both supply and demand side reasons.

These results highlight the widely accepted co-existence of multiple perceptions of political risk among categories of investors. Barari (2004) analyze that the Arab markets have recently started moving towards international financial integration by investigating the impact of selected financial, economic and political events on such a process. There are various economic, political and social factors that resulted in minimal Arab regional integration.

Economic Factors: (1) Similarity of products in the Arab region resulted in having limited mutual trade benefits among Arab countries. (2) Poor infrastructure links in addition to the lack of executive institutions that help in enforcing the integration agreements. (3) Production facilities are under capacity of in Arab countries. (4) Lack of harmonization in the legislative, trade regulations, and no assigned institution for dispute resolution.

Political Factors: (1) Political instability is one of the reasons that diminished integration efforts, in particular the unresolved Middle East crisis and the Arab Spring that changes the entire region. (2) A great emphasis is placed upon the notion of integration by political leaders without considering the economic rationale. (3) there is no clear agenda for which countries to integrate together as a milestone for integration and in which sectors. (4) There are prevailing shortcomings in both the regulatory and operational institutions governing economic integration in the Arab region, which in turn led to a lack of transparency in the regulations, higher transaction costs and reduced competitiveness.

Social Factors: Integration often leads to some transitional costs such as reduction in the tariff rates, widening external imbalances, downsizing of import substitution industries and rising unemployment, which would result in social pressures that are too costly and thus constitute disincentives to integrate.

In brief, for Arab stock exchanges to survive in the globalization era, it is important that their governments set out sound fiscal and monetary policies. This should be accompanied by reforms that will increase investor confidence, build a strong supervisory and regulatory framework, ensure the existence of modern risk management techniques, place more emphasis on privatization and open up their economies to competition via trade and financial sector liberalization, which will all facilitate future integration/alliances among Arab exchanges.

7.6 Main Conclusions

Globalization is increasingly places pressures on countries to harmonize regulatory and administrative barriers. Arab exchanges, likewise, have no choice but to prepare for the changes taking place in their industry. Integration is a long process

that could start with the easier form of integration "cross membership" and then moves gradually to the most difficult form of integration "Unified Arab Exchange", which will require both political determination as well as economic justification. It will be much better, if Arab exchanges are restructured first and become private entities prior to deciding on regional mergers/alliances. This is because private exchanges can better judge, which alternatives will best fit their long term strategies, survival, profitability etc. rather than having government imposed integration solutions that are doomed to failure.

The Arab region could benefit both economically and politically as a region if it was more integrated like the EU. Cooperation among Arab countries towards building regional synergies in infrastructure, allocation of natural resources, labor mobility, policy harmonization, as well as creating a single stock market for the Arab countries can provide a venue for unifying the small and fragmented economies of Arab countries and help them to compete in the globalization era.

Unfortunately, despite various historical ongoing attempts aimed at increasing integration among Arab countries since the early 1940s, the region remains one of the least integrated in the world, in terms of trade, capital, investment and economy. That's because there was not clear harmonization on the three dimensions; economically, politically, and socially. Also, the Arab region did not follow the sequential progress towards creating regional integration.

Arab countries should work on two tracks in parallel; domestic and regional dimensions. Domestically, efforts should be devoted to liberalization, removal of high tariff and non tariff barriers, increasing the importance of the private sector, deregulation, removing and speeding up structural reform, establishing regional rules and regulations. There are also several regional measures that are crucial for the integration process, which include strengthening the regional institutional framework and moving toward more profound Free Trade Area agreements as emphasized by Fawzy (2002). Moreover, the Arab region should learn from the European experience, which is focusing more and more on the private sector as the engine of growth, establishment of a free trade area, having a common currency (Euro), advances in telecommunications, harmonization of EU financial regime as well as abolishment of structural barriers.

There are certain conditions that will create the necessary environment to foster Arab capital markets integration (El Serafie and Abdel Shahid 2002) including:

- Learning from the EU experience and follow the sequential progress towards creating regional integration but at a faster pace starting by preferential trade arrangements, free trade area, common market, customs union, and ends by monetary union.
- Implementing sound macroeconomic policies in Arab countries. Enhancing information disclosure, transparency and corporate governance.
- Increasing investment in human resources development and training specially in the finance and economics areas, to enhance the skills of the staff working in Arab capital markets.

- Encouraging free movement of capital across countries and encouraging cross-border listing in the Arab region.
- Continuous investment in technology and infrastructure.
- Demutualization of stock exchanges and privatization of public entities should be conducted, to the extent possible, through the capital market, which will help increase the market depth.
- Reforming the laws governing company establishment in Arab countries and encouraging closed companies to become public companies (issue shares, listed and traded on exchanges).
- Encouraging companies to issue bonds as an alternative means of finance (other than bank loans), which will activate the bond market. The similarity of legal regulations and rules governing Arab exchanges according to international standards.
- Reforming investment and taxation laws and regulations. In addition, providing incentives to foreign investors to increase foreign portfolio investment in the region.
- Educating investors and the public at large about the importance and benefits of economic and stock market integration.
- Conducting ongoing strategic dialogue between individual Arab exchanges and developed exchanges. This will not only help Arab exchanges keep abreast with new technology and financial innovations, but also generate ongoing interest of foreign portfolio investors in the region.
- Harmonizing listing and disclosure rules, trading systems, clearing and settlement systems, information dissertation systems, and regulatory framework.

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Chapter 8
GCC Financial Markets in the Wake of Recent Global Crisis

Mazin A.M. Al Janabi

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Abstract This paper provides pioneering risk assessment techniques that can be applied to investment portfolios in emerging financial markets, such as in the context of the Gulf Cooperation Council (GCC) and other Middle East and North African (MENA) stock markets. As such, this paper develops a rigorous approach for the assessment of risk exposures for structured financial portfolios in light of the aftermaths of the sub-prime global financial crisis. Our comprehensive risk analysis model can conduct Liquidity-Adjusted Value-at-Risk (LVaR) simulation and risk forecasting under normal and adverse market conditions besides it takes into account the effects of illiquidity of traded equity securities under the supposition of different crisis-driven correlation factors. This research paper has important practical uses and applications for financial institutions, financial regulators, risk managers, portfolio managers, treasury managers and policymakers operating in the GCC and other emerging MENA markets, and particularly in the wake of the most recent financial crisis. In fact, the proposed analytical methods can be put into

M.A.M. Al Janabi (✉)
Department of Economics and Finance, United Arab Emirates University, P.O. Box 15551, Al-Ain, Arab Emirates (UAE)
e-mail: mazinaljanabi@gmail.com; m.aljanabi@uaeu.ac.ae

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practice in virtually all GCC and other emerging MENA markets, if they are custom-made to be compatible to every market's initial level of complexity. Ultimately, this will contribute in providing a benchmark setting for compliance with contemporary regulatory requirements on capital adequacy; and can ultimately aid in the international financial integration of the economies of the GCC and other developing MENA countries.

Keywords Emerging markets • Financial engineering • Financial modeling • Financial risk management • GARCH-M model • GCC financial markets • Liquidity risk • MENA • Portfolio management • Stress testing • Sub-prime crisis • Value-at-Risk

8.1 Introduction and Overview

To quantify the risks involved in their trading operations, major financial institutions and asset management entities are increasingly exploiting Value-at-Risk (VaR) models. Since financial institutions differ in their individual characteristics, a tailor-made internal risk models are more appropriate. Fortunately, and in accordance with the latest Basel II (and the forthcoming Basel III) capital accords, financial institutions are permitted to develop their own internal risk models for the purposes of providing for adequate risk measures. Furthermore, internal risk models can be used in the determination of economic-capital (or risk-capital) that banks and other financial service firms must hold to endorse their trading of securities. The benefit of such an approach is that it takes into account the relationship between various asset types and can accurately assess the overall risk for a whole combination of trading assets (Al Janabi 2010).

In this backdrop, the financial industry in Gulf Cooperation Council (GCC) countries is generally sound, and the six countries continue to develop their financial system to attract more foreign portfolio investors, and to expand the opening of its financial system to the exterior world. Consequently, several local financial institutions are in a consolidation route; and some others have already followed a process of convergence of their financial operations and have started the procedure of modernizing their internal risk management capabilities. By the standards of emerging market countries, the quality of banking supervision in the six GCC states is well above average (Al Janabi 2010). Despite the latest progress in the GCC financial markets to become Basel II-compliant countries, recently it has been deemed necessary (by local regulatory authorities) to adapt proper internal risk models, and regulation that financial entities, regulators and policymakers should consider in setting-up their daily trading risk management objectives and particularly in light of the aftermaths of the latest credit crunch and the resulting sub-prime global financial crisis.

Set against this background, equity risk assessment has become an important theme in emerging and illiquid markets, such as in the case of GCC financial markets and other Middle East and North African (MENA) developing economies.

Accordingly, the goals of this work are to demonstrate the necessary analytical modeling steps and internal risk management simulation techniques that markets' participants will need in their day-to-day asset management practices.

To this end, in this paper the parameters required for the construction of appropriate and simplified Liquidity-Adjusted Value-at-Risk (LVaR) and stress-testing methods are reviewed from previous works and adapted to the specific applications of these methods to emerging GCC financial markets. The theoretical mathematical algorithms and financial modeling structure applied herein are based on an advanced matrix-algebra approach. The latter tactic can simplify the financial modeling and the algorithms' programming process and can consent as well a straightforward incorporation of short-sales and long positions of assets in the daily equity trading process. Moreover, a simplified modeling technique for the incorporation of illiquid asset, in daily trading risk management practices, is defined and is appropriately integrated into LVaR and stress-testing models in addition to the inception of a risk optimization process for the calculation of maximum authorized LVaR boundary risk limits.

8.2 Literature Review

Risk assessment and management have become of paramount importance in the financial industry and a major endeavor by academics, practitioners, and regulators, and a cornerstone of recent interest is a class of models called VaR techniques. The concepts of VaR and other advanced risk management techniques are not new and are based – with some modifications – on modern portfolio theory.

In the 1950s Markowitz (1959) describes the theoretical framework for modern portfolio theory and the creation of efficient portfolios. Markowitz's mean-variance portfolio optimization methodology is a landmark in the development of modern portfolio theory. The solution to the Markowitz theoretical models revolves around the portfolio weights, or the percentage of asset allocated to be invested in each instrument. In a similar vein, Sharpe (1963) develops the single-index model, which relates returns on each security to the returns on a common index – abroad market index of common stock returns such as S&P 500 is generally used for this purpose.

Despite many criticisms and limitations of the VaR method, it has proven to be a very useful measure of market risk, and is widely used in financial and non-financial markets. The *RiskMetrics*^{TM} system (1994), developed and popularized by *J. P. Morgan*, has provided a tremendous impetus to the growth in the use of VaR concept and other modern risk management modeling techniques. Since then the VaR concept is well-known and scores of specific applications are adapted to credit risk management and mutual funds' investments. The general recognition and use of large scale VaR models has initiated a considerable literature including statistical descriptions of VaR and assessments of different modeling techniques. For a comprehensive survey, and the different VaR analysis and techniques, one can refer to Jorion (2001).

On another front, Berkowitz and O'Brien (2001) question how accurate VaR models are at commercial banks. Due to the fact that trading accounts at large

commercial banks have considerably grown and become increasingly diverse and complex, the authors presented statistics on the trading revenues from such activities and on the associated VaR forecasts internally estimated by banks. Several other authors have attempted to tackle the issues of extreme events and fat tails phenomena in the distribution of returns. Nonetheless, most of their approaches and techniques are good exercises for academic purposes they do lack evidence of real-world applications with actual market portfolios.

Within the Liquidity-Adjusted Value-at-Risk (LVaR) framework, Bangia et al. (1999) approach the liquidity risk from another angle and provide a model of VaR adjusted for what they call exogenous liquidity – defined as common to all market players and unaffected by the actions of any one participant. It comprises such execution costs as order processing costs and adverse selection costs resulting in a given bid-ask spread faced by investors in the market. On the contrary, endogenous liquidity is specific to one's position in the market and depends on one's actions and varies across market participants. It is mainly driven by the size of the position: the larger the size, the greater the endogenous illiquidity. They propose splitting the uncertainty in market value of an asset into two parts: a pure market risk component arises from asset returns and uncertainty due to liquidity risk.

Using a similar methodology, Le Saout (2002) applies the model developed by Bangia et al. (1999) to the French stock market (CAC-40) and states that neither exogenous liquidity risk (which accounts for about half of total market risk) nor endogenous liquidity risk (also a potentially significant component of market risk) should be overlooked by financial entities subject to market risk. In an attempt to consider the effect of liquidating large positions, Le Saout (2002) incorporates the weighted average spread into the LVaR measure.

In a relatively recent study, Angelidis and Benos (2006) loosen the conventional, yet idealistic, postulation of perfect and frictionless financial markets (that is, traders can either buy or sell any amount of securities without triggering major price changes). To this end, Angelidis and Benos (2006) expand the earlier work of Madhavan et al. (1997) (who debated that traded volume can explicate security price movements) and exploit an LVaR model based on bid-ask spread components, following the earlier work of Bangia et al. (1999). The authors argue that under this structure, asset liquidity risk is decomposed into its endogenous and exogenous components, thereby allowing an estimation of the liquidation risk of a specific trading position. The authors then apply LVaR measures to the Athens Stock Exchange by incorporating bid-ask variation and the price effect of position liquidation.

In a different vein, Almgren and Chriss (1999) present a concrete framework for deriving the optimal execution strategy using a mean-variance approach, and show a specific calculation method. Their approach has a high potential for practical application. They assume that price changes are caused by three factors: drift, volatility, and market impact. Their analysis leads to general insights into optimal portfolio trading, relating risk aversion to optimal trading strategy, and to several practical implications including the definition of LVaR.

In a different tactic, Al Janabi (2010, 2011a, b, c) establishes practical frameworks for the measurement, management and control of trading risk under

illiquid and adverse market conditions. The effects of illiquid assets, that are dominant characteristics of emerging markets, are also incorporated in the risk models. These literatures provide real-world risk management techniques and strategies that can be applied to trading portfolios in emerging markets. Furthermore, these literatures intent is to propose a simple approach for including of liquidation trading risk in standard VaR analysis and to capture the liquidity risk arising due to illiquid trading positions by obtaining LVaR estimation.

Within the GCC and MENA financial markets context, Girard and Omran (2007) attempt to identify the risks involved when investing in five emerging Arab capital markets. The authors find that a constant beta is not a good proxy for risk in these thinly traded emerging markets. As such, they turn their attention to a multifactor representation of the return generating process and find that firms' fundamentals and country risk rating factors are significant in explaining the cross-sections of stock returns. Furthermore, they show that a pricing model including both firm's fundamentals and country risk rating factors has a significantly better explanatory power than the CAPM, a model only including a firms' fundamentals, or a model based on country composite risk ratings. Indeed, their paper provides three important contributions to the literature on asset pricing in emerging capital markets. Firstly, it shows that country risk rating cannot be arbitrarily aggregated into a composite risk rating as individual risk rating can be negatively related and, therefore can offset each other's effects; however, country risk ratings can be combined into a country risk factor using a factor analysis. Secondly, it adds to a growing literature base suggesting that, in markets other than the US, it is possible to find large and growth stocks to be riskier than small and value stocks. Thirdly, although many Arab countries have embarked on a process of privatization and stock market liberalization to deepen their markets and improve corporate governance, issues related to financial transparency and political instability are still powerful obstacles to investments in these nascent emerging markets.

In another relevant study, Hammoudeh and Choi (2007) employ the univariate GARCH approach with Markov-switching to study volatility behavior for the transitory and permanent components of the individual GCC market indexes, thus allowing for two volatility regimes to exist in the two components of almost all stock returns of GCC countries. Furthermore, their results indicate that (1) volatility during fad (speculative attacks) is much higher than volatility due to shocks in the fundamentals, regardless of the state of the economy; (2) the spot oil market plays an important role in determining the returns of the GCC stocks during changes in the fundamentals and the fads; and (3) the GCC markets vary in the duration of volatility across regimes, and Oman and Saudi Arabia have the longest volatility durations as a result of shocks in the fundamentals such as oil prices, interest rates, profits, and other economic policy variables (Al Janabi et al. 2010).

In a similar vein, Al Janabi et al. (2010), investigate empirically the underlying nexus of stock market returns and volatility in the GCC countries and MENA region by using the GARCH-M model. The main objectives of their study are twofold: (1) to determine the relationship between expected returns and volatility, and (2) to model the time-varying volatility for each of the six GCC countries as well as

portfolios of the whole GCC and MENA regions. The empirical estimation results reveal that volatility as a measure of risk is time-varying in all six GCC countries and the portfolios of both GCC and MENA regions. However, they do not find empirical evidence that the time-varying volatility is a significant measure in explaining expected returns, except in the case of Kuwait, the UAE, and the MENA region. This also implies that under the proposition of investor risk aversion, their end results confirm that stock return volatility is negatively correlated with stock returns in these three markets. This provides some support for the hypothesis of a volatility-driven negative relationship in the literature, and it is in line with the findings of other authors.

Finally, within Value-at-Risk (VaR) framework, Al Janabi (2009) investigates issues of asset allocation and equity trading risk in the GCC stock markets. The author finds that the distribution of the equity returns in the GCC stock markets is far from being normal and thus justifies using the VaR model, combined with other methods such as stress-testing, to incorporate the other remaining risks. Indeed, this paper tackles an important and timely topic which has not received much attention in the literature especially with regard to the emerging stock markets of the GCC region and concludes with key policy implications. Furthermore, the author concludes that asset liquidity risk can contribute significantly to the general risk level in the GCC region and as a result it should be included in the overall assessment of market risk. As such, neglecting asset liquidity risk can produce an underestimate of the indispensable amounts of regulatory capital and/or economic capital that financial entities need to reserve to withstand future financial crises. Therefore, it is essential that local regulatory authorities and policymakers consider the inclusion of asset liquidity risk as an integral part of their risk management methodologies and in the design of prudential regulatory policies and procedures.

In the same vein, Assaf (2009) employs the extreme value theory (EVT) to measure VaR and then to analyze four emerging markets belonging to the MENA region (Egypt, Jordan, Morocco, and Turkey). Given that EVT techniques make it possible to concentrate on the behavior of extreme observations in these markets, this literature focuses on the tails of the unconditional distribution of returns in each market and provide estimates of their tail index behavior. In the empirical estimation process, Assaf (2009) finds that the returns have significantly fatter tails than the normal distribution and therefore introduces the extreme value theory and then estimates the maximum daily loss by computing the VaR in each market. By and large, the author finds that the VaR estimates based on the tail index are higher than those based on a normal distribution for all markets, and therefore a proper risk assessment should not neglect the tail behavior in these markets, since that may lead to an improper evaluation of market risk. To this end, the obtained results should be useful to investors, bankers, and fund managers, whose success depends on the ability to forecast stock price movements in these markets and therefore build their portfolios based on these forecasts.

Set against this background, the objective of this research study is to provide practical and robust guidelines, modeling techniques and empirical assessments of market risk for equity trading portfolios under extreme and crisis-driven conditions.

As such, the aim is to create a pragmatic approach to assist in the establishment of sound risk assessment practices and within a prudential framework of global financial regulations, particularly in the wake of the credit crunch and ensuing global sub-prime financial crisis. To this end, the parameters required for the construction of appropriate and simplified LVaR and stress-testing methods are reviewed from previous works and refined to the specific applications of these methods to equity trading portfolios of the GCC stock markets.

The remainder of the paper is organized as follows. The following section lays out the financial mathematical technique and the quantitative modeling infrastructure of LVaR method, its limitations, and a model that incorporates the effects of illiquid assets in daily market risk assessment. Results of the empirical tests and simulations of LVaR boundary limits for the GCC financial markets are then drawn. The final section provides a summary along with concluding remarks.

8.3 Methodological Approach

To compute VaR using the parametric method, the volatility of each risk factor is extracted from a pre-defined historical observation period. The potential effect of each component of the portfolio on the overall portfolio value is then worked out. These effects are then aggregated across the whole portfolio using the correlations between the risk factors (which are, again, extracted from the historical observation period) to give the overall VaR value of the portfolio with a given confidence level.

To this end, a simplified calculation process of the estimation of VaR risk factors (using the parametric method), for a single and multiple assets' positions, is illustrated as follow:

From elementary statistics it is well known that for a normal distribution, 68 % of the observations will lie within 1σ (standard deviation) from the expected value, 95 % within 2σ and 99 % within 3σ from the expected value. As such, for a single trading asset position the absolute value of VaR can be defined in monetary terms as follow:

$$VaR_i = \mid (\mu_{\mathrm{i}} - \alpha * \sigma_i)[Asset_i * Fx_i]\mid \approx \mid \alpha * \sigma_i[Asset_i * Fx_i] \mid \qquad (8.1)$$

where μ_i is the expected return of the single asset, α is the confidence level (or in other words, the standard normal variant at confidence level α) and σ_i is the forecasted standard deviation (or conditional volatility) of the return of the security that constitutes the single position. The $Asset_i$ is the mark-to-market value of the trading asset and indicates the monetary amount of equity position in asset i and Fx_i denotes the unit foreign exchange rate of asset i. Without a loss of generality, we can assume that the expected value of daily returns μ_i is close to zero.

For multiple assets or portfolio of assets, VaR is a function of each individual security's risk and the correlation factor $[\rho_{i,j}]$ between the returns on the individual securities, detailed as follow:

$$VaR_P = \sqrt{\sum_{i=1}^{n}\sum_{j=1}^{n} VaR_i\, VaR_j\, \rho_{i,j}} = \sqrt{|VaR|^T\ |\rho|\ \ |VaR|} \tag{8.2}$$

This formula is a general one for the calculation of VaR for any portfolio regardless of the number of securities. It should be noted that the second term of this formula is presented in terms of a matrix-algebra technique – a useful form to avoid mathematical complexity, as more and more securities are added.

In fact, if returns are independent and they can have any elliptical multivariate distribution, then it is possible to convert the VaR horizon parameter from daily to any *t*–day horizon. The variance of a *t*–day return should be *t* times the variance of a 1–day return or $\sigma^2 = f(t)$. Thus, in terms of standard deviation (or volatility), $\sigma = f(\sqrt{t})$ and the daily VaR number [*VaR (1-day)*] can be adjusted for any *t* horizon to yield an LVaR estimation, such as:

$$LVaR\ (t - day) = VaR\ (1 - day)\sqrt{t} \tag{8.3}$$

The above formula was proposed and used by *J.P. Morgan* in their earlier *RiskMetrics*^{TM} method (1994). This methodology implicitly assumes that liquidation occurs in one block sale at the end of the holding period and that there is one holding period for all assets, regardless of their inherent trading liquidity structure. Unfortunately, the latter approach does not consider real-life-trading situations, where traders can liquidate (or re-balance) small portions of their trading portfolios on a daily basis.

The assumption of a given holding period for orderly liquidation inevitably implies that assets' liquidation occurs during the holding period. Accordingly, scaling the holding period to account for orderly liquidation can be justified if one allows the assets to be liquidated throughout the holding period. In order to perform the calculation of LVaR under more realistic illiquid market conditions, we can define the following liquidation risk factor (or multiplier) throughout the close-out period.[1]

$$LVaR_{adj} = VaR\ \sqrt{\frac{(2t+1)\ (t+1)}{6t}} \tag{8.4}$$

where, *t* is the number of liquidation days (*t–day* to liquidate the entire asset fully), *VaR* = Value-at-Risk under liquid market conditions (as presented formerly in Eq. 8.1) and $LVaR_{adj}$ = Value-at-Risk under illiquid market conditions. The latter equation indicates that $LVaR_{adj} > VaR$, and for the special case when the number of days to liquidate the entire assets is one trading day, then $LVaR_{adj} = VaR$.

[1] For further details on the mathematical derivation and the rational usefulness of the liquidation multiplier during the unwinding (close-out) period one can refer to Al Janabi (2010, 2011a, b, c).

8.4 Analysis of Empirical Results

8.4.1 The Dataset

In this empirical study, database of daily price returns of the GCC stock markets' main indicators (indices) are assembled. The historical database of daily indices levels is drawn from Reuters 3000 Xtra Hosted Terminal Platform and Thomson Reuters Datastream datasets. The total numbers of indices that are considered in this work are nine indices; seven local indices for the GCC region (including two indices for the UAE markets) and two benchmark indices, detailed as follow:

DFM General Index (United Arab Emirates, Dubai Financial Market General Index); ADX Index (United Arab Emirates, Abu Dhabi Stock Market Index); BA All Share Index (Bahrain, All Share Stock Market Index); KSE General Index (Kuwait, Stock Exchange General Index); MSM30 Index (Oman, Muscat Stock Market Index); DSM20 Index (Qatar, Doha Stock Market General Index); SE All Share Index (Saudi Arabia, All Share Stock Market Index); Shuaa GCC Index (Shuaa Capital, GCC Stock Markets Benchmark Index); and Shuaa Arab Index (Shuaa Capital, Arab Stock Markets Benchmark Index).

Further, for this particular study we have chosen a confidence interval of 95 % (or 97.5 % with "*one-tailed*" loss side) and several liquidation time horizons to compute LVaR. As such, historical database (of more than 6 years) of daily closing index levels, for the period 17/10/2004–22/05/2009, are assembled for the purpose of carrying out this research and further for the construction of market risk assessment parameters. The analysis of data and discussions of relevant findings and results of this research are organized and explained as follow:

8.4.2 Statistical Inference of Non-Normality and Correlation Patterns

In this section, analysis of the particular risk of each index and a test of non-normality (asymmetry) are performed on the sample equity indices. To investigate the statistical properties of the data, we have computed the log returns of each series. As such, descriptive statistics for the analysis of maximum, minimum, mean and arithmetic mean are presented in Table 8.1. To take into account the distributional anomalies of asset returns, tests of non-normality are performed on the sample equity indices. In the first study, the measurements of skewness and kurtosis are achieved on the sample equity indices. The results are depicted in Table 8.1. It is seen that all indices have shown asymmetric behavior (between both positive and negative values). Moreover, kurtosis studies have shown similar patterns of abnormality (i.e. peaked distributions). As evidenced in Table 8.1, the above results of general departure from normality are also confirmed with the Jarque-Bera (*JB*) test.

Table 8.1 Risk analysis data: Descriptive statistics and testing for non-normality

Stock market indices	Maximum (%)	Minimum (%)	Median (%)	Arithmetic mean (%)	Skewness	Kurtosis	Jarque-Bera (JB) test
DFM General Index	9.9	−12.2	0.01	0.12	0.01	7.86	955**
ADX Index	6.6	−7.1	0.00	0.07	0.12	7.26	734**
BA All Share Index	3.6	−3.8	0.00	0.05	0.43	10.24	2142**
KSE General Index	5.0	−3.7	0.00	0.09	−0.18	8.38	1173**
MSM30 Index	5.2	−8.7	0.00	0.12	−0.57	18.40	9617**
DSM20 Index	6.2	−8.1	0.00	0.06	−0.11	5.59	273**
SE All Share Index	9.4	−11.0	0.07	0.03	−0.97	8.47	1361**
Shuaa GCC Index	11.1	−8.1	0.00	0.06	−0.66	14.00	4949**
Shuaa Arab Index	9.4	−7.6	0.00	0.07	−0.61	13.79	4758**

Notes: Asterisk ** denotes statistical significance at the 0.01 levels

On the other hand, three matrices of correlations are created in this study, namely $\rho = 1$, 0, and empirical correlations. For the empirical correlation case, the assembled correlation matrix is depicted in Table 8.2 for the nine GCC stock markets indices. The latter correlation matrix is an essential element along with conditional volatilities matrices for the simulation of LVaR and stress-testing. Contrary to general belief, our analysis indicates that for the long-run period, in general, there are relatively small correlations (relationships) between the GCC stock markets. Nonetheless, in the short-run period (or on a daily crisis basis), however, we found that correlations tend to increase in value (although not on a large scale) and it could even switch signs under certain circumstances.

8.4.3 Risk Analysis of Equity Portfolios Under Different Market Scenarios

Table 8.3 illustrates an expedient simulation report for the modeling of trading risk assessment of a hypothetical equity portfolio consisting of several indices of

Table 8.2 Risk simulation data: Correlation matrix of GCC stock markets indices

	DFM General Index	ADX Index	BA All Share Index	KSE General Index	MSM30 Index	DSM20 Index	SE All Share Index	Shuaa GCC Index	Shuaa Arab Index
DFM General Index	100%								
ADX Index	56%	100%							
BA All Share Index	12%	8%	100%						
KSE General Index	17%	16%	12%	100%					
MSM30 Index	12%	17%	11%	11%	100%				
DSM20 Index	18%	23%	12%	12%	20%	100%			
SE All Share Index	20%	20%	7%	16%	11%	10%	100%		
Shuaa GCC Index	37%	35%	13%	19%	13%	26%	62%	100%	
Shuaa Arab Index	39%	36%	12%	24%	15%	26%	60%	93%	100%

the GCC stock markets. Asset allocation and LVaR analysis are performed under the assumption that local indices represent exact replicas of diversified portfolios of local stocks for each GCC stock market respectively. In the first case study, total portfolio value is AED 150 millions (UAE Dirham), with varied asset allocation ratios and with a liquidity horizon of one trading day – that is, 1 day to unwind all equity trading positions. Furthermore, Table 8.3 demonstrates the effects of stress-testing (that is, LVaR under severe market conditions) and different correlation factors on daily LVaR assessments. The LVaR simulation report also depicts the overnight conditional volatilities and expected returns calculated via the means of a Generalized Autoregressive Conditional Heteroskedasticity (GARCH) in Mean model (i.e., GARCH-M (1,1) model), in addition to their respective sensitivity factors vis-à-vis the benchmark Shuaa Arab index[2]. Severe market daily volatilities are calculated and illustrated in the simulation report too. In fact, daily volatilities, under severe and crisis-simulated market settings, represent the maximum negative returns (losses), which are perceived in the historical time series, for all stock market indices.

Furthermore, the analysis of LVaR under illiquid market conditions is performed with three different correlation factors: empirical, zero and unity correlations respectively. Indeed, it is essential to include different correlation factors in any LVaR and stress-testing exercises. This is because existing trends in correlation factors may break down (or change signs) under adverse and severe market

[2] The sensitivity factors are the common beta factors for the measurement of systematic risk. These factors assess the relationship of each GCC stock market index against the benchmark index (Shuaa Arab Index).

Table 8.3 Simulation of liquidity trading risk management and asset allocation (full case LVaR analysis)

Stock Market Indices	Market Value in AED	Asset Allocation	Liquidity Holding Horizon	Daily Volatility (Normal)	Daily Volatility (severe)	Sensitivity Factor	Expected Return	Undiversified LVaR in AED (Normal)	Undiversified LVaR in AED (Severe)
DFM General Index	$ 35,000,000	23.3%	1	1.81%	12.16%	0.58	0.14%	634,776	4,255,043
ADX Index	$ 25,000,000	16.7%	1	1.32%	7.08%	0.40	0.07%	331,177	1,768,884
BA All Share Index	$ 15,000,000	10.0%	1	0.58%	3.77%	0.06	0.04%	87,126	565,224
KSE General Index	$ 20,000,000	13.3%	1	0.71%	3.74%	0.14	0.08%	142,497	747,293
MSM30 Index	$ 15,000,000	10.0%	1	0.79%	8.70%	0.10	0.10%	118,901	1,304,848
DSM20 Index	$ 15,000,000	10.0%	1	1.48%	8.07%	0.31	0.07%	222,049	1,211,120
SE All Share Index	$ 25,000,000	16.7%	1	1.86%	11.03%	0.98	0.01%	464,418	2,758,224
Shuaa GCC Index	$ -	0.0%	1	1.30%	8.10%	1.05	0.08%	-	-
Shuaa Arab Index	$ -	0.0%	1	1.15%	7.57%	1.00	0.10%	-	-
Total Portfolio Value in AED	$ 150,000,000	100%					0.08%		

Expected Return and Risk-Adjusted Return	
Trading Portfolio Expected Return	0.08%
Risk-Adjusted Expected Return (Normal)	4.73%
Risk-Adjusted Expected Return (Severe)	0.76%

Daily Liquidity-Adjusted Value at Risk (LVaR) in AED [Normal Market Conditions]		
ρ = *Empirical*	$\rho = 1$	$\rho = 0$
2,455,109	4,001,888	1,810,681
1.64%	2.67%	1.21%

Diversification Benefits	
$ 1,546,779	63.00%

Daily Liquidity-Adjusted Value at Risk (LVaR) in AED [Severe (Crisis) Market Conditions]		
ρ = *Empirical*	$\rho = 1$	$\rho = 0$
15,368,704	25,221,271	11,469,875
10.25%	16.81%	7.65%

Diversification Benefits	
$ 9,852,567	64.11%

Overall Sensitivity Factor: Portfolio of Stock Indices
0.430

movements, caused by unforeseen financial or political crises. As one might expect, the case with correlation +1 gives the highest LVaR numbers (AED 4,001,888 and AED 25,221,271 respectively), owing to the fact that under these circumstances total LVaR is the weighted average of the individual LVaRs of each equity trading position. It is essential to include various correlation factors in any stress-testing exercise, based on the fact that current trends in correlations may break down with severe market movements, caused by unexpected financial or political crises, such as the latest global sub-prime financial crunch. The degree of diversification of this hypothetical equity trading portfolio can also be displayed as the difference in the value of the two greatest LVaRs, that is the LVaR of correlation +1 case versus the LVaR of empirical correlation case (that is, AED 1,546,779 or 63 % of diversification for the normal market conditions case). The overall sensitivity factor (beta factor) of this portfolio is also indicated in this report as 0.43, or in other words, the total equity portfolio value, with actual asset allocation percentage, moves distantly from the benchmark index (Shuaa Arab Index).

Finally, since the variations in daily LVaR are mainly related to the ways in which trading assets are allocated in addition to the liquidation periods of each trading position, it is instructive to examine the way in which LVaR figures are influenced by changes in such parameters. All else equal, Table 8.4 illustrates the changes to LVaR figures when the liquidation periods (or holding horizons) of each trading position are increased discretionally from 1-day to 2-day, 3-day, 4-day, 6-day and 7-day for all equity indices within the structured trading portfolio. As such, for the empirical correlation case, the LVaR figures increased to AED 2,961,740 (1.97 %) and AED 18,610, 486 (12.41 %) under normal and severe markets conditions respectively.

8.4.4 Setting of Maximum LVaR Boundary Risk-Limits

Optimum risk-limits are an important element for any trading/asset management risk management unit and it should be defined clearly and used wisely to ensure control on the trading/investment unit's exposure to risk. To this end, Tables 8.5 and 8.6 represent a summary of LVaR optimization results for three case studies for the setting of realistic and optimum LVaR trading limits under normal and adverse market conditions. In all three case studies, the effects of various asset allocations (with or without short-sales) are investigated for the purpose of setting of adequate LVaR boundary limits. Further, in all cases the liquidation horizons varied from 2 to 5 trading days to unwind the constituents of the portfolio fully. For the sake of simplification of the optimization process and thereafter its analysis, volume trading limit of AED 150,000,000 is assumed as a constraint on the optimization function – that is the financial entity (or trading unit) must keep a maximum overall market value of stocks of no more than AED 150,000,000 (between long and short-sales positions).

Table 8.4 Simulation of liquidity trading risk management and asset allocation (full case LVaR analysis)

Stock Market Indices	Market Value in AED	Asset Allocation	Liquidity Holding Horizon	Daily Volatility (Normal)	Daily Volatility (severe)	Sensitivity Factor	Expected Return	Undiversified LVaR in AED (Normal)	Undiversified LVaR in AED (Severe)
DFM General Index	$ 35,000,000	23.3%	2	1.81%	12.16%	0.58	0.14%	709,701	4,757,283
ADX Index	$ 25,000,000	16.7%	3	1.32%	7.08%	0.40	0.07%	413,050	2,206,186
BA All Share Index	$ 15,000,000	10.0%	4	0.58%	3.77%	0.06	0.04%	119,302	773,964
KSE General Index	$ 20,000,000	13.3%	7	0.71%	3.74%	0.14	0.08%	240,865	1,263,155
MSM30 Index	$ 15,000,000	10.0%	6	0.79%	8.70%	0.10	0.10%	189,040	2,074,576
DSM20 Index	$ 15,000,000	10.0%	4	1.48%	8.07%	0.31	0.07%	304,053	1,658,394
SE All Share Index	$ 25,000,000	16.7%	2	1.86%	11.03%	0.98	0.01%	519,235	3,083,788
Shuaa GCC Index	$ -	0.0%	1	1.30%	8.10%	1.05	0.08%	-	-
Shuaa Arab Index	$ -	0.0%	1	1.15%	7.57%	1.00	0.10%	-	-
Total Portfolio Value in AED	$ 150,000,000	100%					0.08%		

Expected Return and Risk-Adjusted Return	
Trading Portfolio Expected Return	0.08%
Risk-Adjusted Expected Return (Normal)	3.92%
Risk-Adjusted Expected Return (Severe)	0.62%

Daily Liquidity-Adjusted Value at Risk (LVaR) in AED [Normal Market Conditions]		
ρ = *Empirical*	$\rho = 1$	$\rho = 0$
2,961,740	4,990,493	2,139,461
1.97%	3.33%	1.43%

Diversification Benefits	
$ 2,028,753	68.50%

Daily Liquidity-Adjusted Value at Risk (LVaR) in AED [Severe (Crisis) Market Conditions]		
ρ = *Empirical*	$\rho = 1$	$\rho = 0$
18,610,486	31,634,694	13,602,568
12.41%	21.09%	9.07%

Diversification Benefits	
$ 13,024,208	69.98%

Overall Sensitivity Factor: Portfolio of Stock Indices
0.430

Table 8.5 Daily LVaR boundary limits in AED with different correlation factors (the case of normal market conditions)

LVaR boundary limits case studies	ρ = Empirical	ρ = +1	ρ = 0
LVaR case-study 1	2,754,405	4,694,444	1,994,076
	(1.84 %)	(3.13 %)	(1.33 %)
LVaR case-study 2	6,083,149	6,083,149	6,083,149
	(4.06 %)	(4.06 %)	(4.06 %)
LVaR case-study 3	11,150,368	10,944,504	10,004,106
	(7.43 %)	(7.30 %)	(6.67 %)

Note: Numbers in parenthesis represent LVaR boundary limits as a percentage of the total trading portfolio value of 150 million AED

Table 8.6 Daily LVaR boundary limits in AED with different correlation factors (the case of severe and crisis market conditions)

LVaR boundary limits case studies	ρ = Empirical	ρ = +1	ρ = 0
LVaR case-study 1	17,214,462	29,633,615	12,553,014
	(11.48 %)	(19.76 %)	(8.37 %)
LVaR case-study 2	40,776,709	40,776,709	40,776,709
	(27.18 %)	(27.18 %)	(27.18 %)
LVaR case-study 3	73,370,524	48,199,189	70,239,258
	(48.91 %)	(32.13 %)	(46.83 %)

Note: Numbers in parenthesis represent LVaR boundary limits as a percentage of the total trading portfolio value of 150 million AED

While in Case-Study (1) distinct asset allocation percentages are assumed, in Case-Study (2) all equity trading position is concentrated in one market index that has, under severe market conditions, the highest daily return conditional volatility – that is, the Dubai Financial Market (DFM) General Index. Finally, in Case-Study (3) the effect of short-sales of the sample stocks (or equity indices) is also contemplated by randomly short-selling some of the sample stocks.[3] In conclusion, our simulation results indicate that Case-Study (3) demonstrates the highest level of LVaR and, as such, the risk management entity should establish the obtained LVaR figures as the utmost ratified risk-capital boundary limits.

[3] It should be noted that although current operational platform in the GCC financial markets does not permit short-sales of financial assets, accordingly in this paper we relax this restriction on short-sales as we strive to determine asset market liquidity risk exposure. As such, our asset liquidity risk modeling includes both pure long trading positions and a combination of long/short-sales positions.

8.5 Concluding Remarks

In this research paper, a simplified and practical method for calculating stock markets risk exposure in emerging economies under crisis-driven circumstances is presented and analyzed. As such, the aim is to create a pragmatic approach to assist in the establishment of sound risk assessment practices and within a prudential framework of global financial regulations, for the most part in light of the outcomes of the latest global credit crunch and the resultant sub-prime financial crisis.

As such, our contemporary risk-engine modeling and simulation framework can at the same time deal with Liquidity-Adjusted Value-at-Risk (LVaR) appraisal under normal and adverse market conditions besides it takes into account the effects of liquidity of the traded equity securities. In order to illustrate the proper use of LVaR and stress-testing methods, real-world paradigms of trading risk assessment are presented for the Gulf Cooperation Council (GCC) stock markets. To this end, several simulation case studies are attained with the aspiration of bringing about a reasonable framework for the measurement and analysis of equity trading risk exposures.

The appealing outcome of this research study suggests the inevitability of combining LVaR calculations with other methods such as stress-testing and scenario analysis to grasp a thorough picture of other remaining risks (such as, fat-tails in the probability distribution) that cannot be revealed with the plain assumption of normality and in particular under crisis-driven conditions. In conclusion, proper assessment of LVaR is an important element for daily risk management process and for tactical risk-decision-making under adverse and illiquid market circumstances and above all for emerging markets, such as in the context of the GCC zone and other developing Middle East and North African (MENA) markets.

In a nutshell, the modeling techniques discussed in this paper can assist financial institutions, regulators and policymakers in the instigation of meticulous and up to date simulation algorithms to handle equity price risk exposure. The suggested analytical methods and procedures can be put into practice in virtually all GCC and other emerging MENA markets, if they are custom-made to be compatible to every market's initial level of complexity. Eventually, this will assist in providing a benchmark setting for compliance with Basel II accord and the forthcoming Basel III requirements on capital adequacy; and can ultimately aid in the international financial integration of the economies of the GCC and other developing MENA countries. Indeed, the presented methodology and empirical results of this research paper have important practical uses and applications for financial institutions, financial regulators, risk managers, treasury managers, portfolio managers and policymakers operating in the GCC and other developing MENA markets, and particularly in the wake of the most recent financial crisis.

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Part V
Banking

Chapter 9
Determinants of Banking Liquidity in South Mediterranean Countries: The Case of Morocco

Imad El Hamma and Abdelbar Ejbari

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Abstract This study analyses the determinants of the sizeable liquidity held by Moroccan commercial banks that hamper monetary policymaking. We use monthly bank specific and macroeconomic data over the period 2003–2009 and apply the method of instrumental variables to analyse bank liquidity. Our results show that the large excess of liquidity is a consequence of insufficiencies in the domestic credit market and the public securities market. The low level of development of the financial sector also plays a role.

Keywords and JEL Classification Bank • Banking liquidity • Liquidity management

I. El Hamma (✉)
GREDEG, Université de Nice Sophia Antipolis, Nice, France
e-mail: imad.elhamma@gmail.com; elhamma@unice.fr

A. Ejbari
Université Abdelmalek Essaâdi, Tétouan, Morocco
e-mail: ejbari.abdelbar@gmail.com; ejbari@live.fr

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9.1 Introduction

The financial intermediation activity of banks involves risks. Among these risks is the management of liquidity risk. In case the bank accepts the short-term deposits and the issuing of medium and long-term loans, it must be ready to meet its retirements of deposits at any time. In order to satisfy its engagements, the bank holds two types of reserves. The first type is the required reserves that are deposited at the central bank. The second are the excess reserves that are held for precautionary reasons. Keeping reserves goes at an opportunity cost but at the same time excess reserves are an insurance against liquidity risk.

Despite the high opportunity costs, there are financial institutions that are characterized by huge sums of excess liquidity. The literature defines excess liquidity as the unbridled increase of liquid reserves by commercial banks (see Agénor and Al Aynaoui 2010). In the case of excess liquidity, banks choose to maintain reserves that are higher than the level recommended by legislation.[1] A lot of developing countries, in particular African countries often have excess liquidity. Banks' excess liquidity can affect banks' worth, the effectiveness of the monetary policy transmission mechanism, and in this way it can create inflationary or deflationary pressures. Although the potential problems related to excess liquidity affect a large number of countries, the literature studying this subject is limited. For this reason we pay attention to this issue in this chapter in-depth.

One of these financial systems is the Moroccan banking sector that typically has a large excess liquidity. This North African country is vulnerable to external investments and climatic shocks. The Dirham, the national currency of Morocco, is pegged to a basket of several foreign currencies (euro, US dollar) and in this way it contributes to inflation stability, reduces uncertainty and boosts investors' confidence, but it does not reduce the dependence of imports.

The main objective of this chapter is to study the determinants of excess banking liquidity in Morocco. Our study is focused on the period 2003–2009 and uses annual data on several commercial banks provided by the Central Bank of Morocco, *Bank al Maghrib* and from the electronic Library of the International Monetary Fund (IMF), the eLibrary Data.

The outline of this paper is as follows. Sections 2.1 and 2.2 describe the banking liquidity in Morocco and present a review of literature. Sections 3.1 and 3.2 specifies our econometrical model, discusses the empirical determinants of the bank's liquidity and presents the estimation results from panel regressions. Finally, the Sect. 3.3 concludes.

[1] The reasons for excess liquidity can be the provision for unexpected withdrawals of cash by their clients or a precaution for increases in volatility.

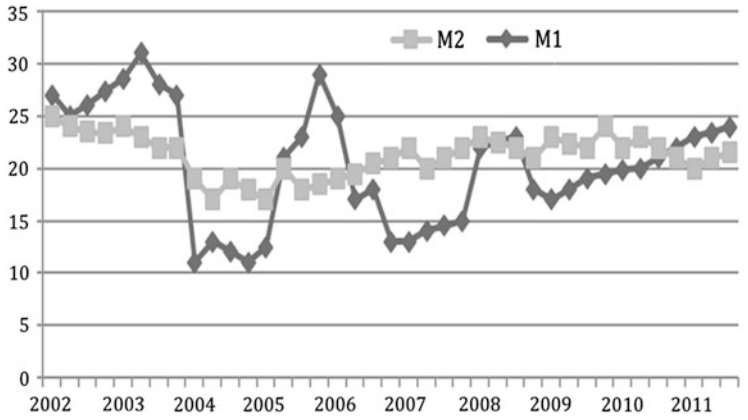

Fig. 9.1 Growth rates of M1 and M2 in Morocco: 2001–2011 (Source: IMF eLibrary data)

9.2 Excess Liquidity: Facts, and Review of the Literature

9.2.1 Stylized Facts Regarding Excess Liquidity

In Morocco, since early 2001, the excess of liquidity has received much attention from monetary authorities, especially in relation to its possible repercussion on prices and financial stability at the national level. However, hardly any studies have been undertaken concerning excess liquidity in the country. Therefore, this section explores some stylized facts concerning the development of liquidity in Morocco. We use quarterly data from the last two decades.

As a starting point, we show an excessive growth in money supply between 2002 and 2011. Data from *Bank al Maghrib* show that both narrow money (M1) and broad money (M2) developed at a fast rate in Morocco between 2002 and 2011, with average annual growth rates of 20.3 and 21.5 % respectively (see Fig. 9.1). In particular the growth rate of M1 has been steadily spiralling upwards since early 2005.

The presented annual growth rates of monetary aggregates do not show the full expansion of liquidity in Morocco. For measuring excess liquidity we have to rely on other quantitative variables. One could use a measure for excess liquidity as defined by the European Central Bank (ECB) that takes the difference of the actual stock of money from an estimated equilibrium level (ECB 2004). Gerdesmeier and Polleit (2005) that give a comprehensive survey of this approach in pinpointing excess liquidity.

Another measures for excess liquidity is the ratio of M2 to nominal GDP, called the instinctive and effective indicator of excess liquidity in a country. As it is often argued, large money supply should be compared with nominal spending, see for instance Ruffer and Stracca (2006) in their study of global excess liquidity across G5 countries

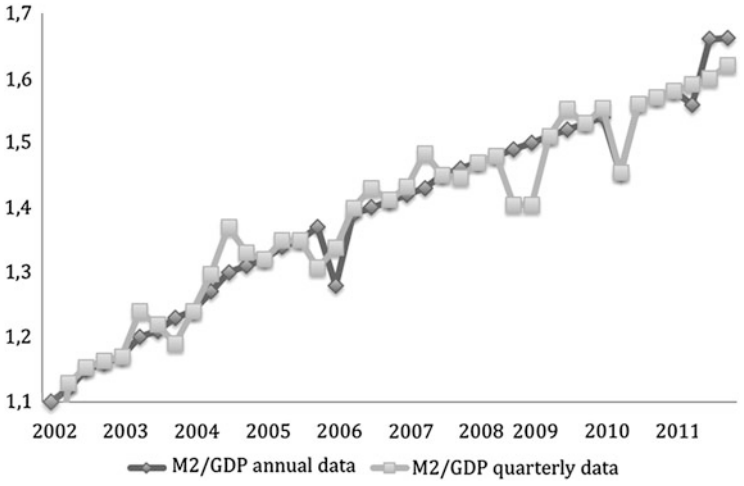

Fig. 9.2 The ratio of M2 to nominal GDP in Morocco (Source: IMF eLibrary data)

In this study, we use this conventional definition to quantify the excess liquidity. The data cover the first quarter of 2001 to the third quarter of 2011. Note that the estimate of M2/GDP using quarterly data is not straightforward. GDP is a flow variable, whereas money aggregate is a stock variable. Therefore, to compose the measure of M2/GDP employing quarterly frequency data reported by the International Financial Statistics (IFS) of the IMF, we develop the quantity for nominal GDP (not seasonally adjusted) at quarterly frequency by computing the four quarters' moving sum of the published data, whereas the money aggregate is measured using the corresponding quarterly observations of M2. Indicating the year and quarters by subscript t, the measure of excess liquidity at quarterly frequency is then computed as:

$$Excess\ liquidity_t = \frac{M2_t}{\sum_{i=0}^{3} GDP_{t-i}} \tag{9.1}$$

Equation 9.1 provides thus a measure of excess liquidity and this advanced method also solves the problem of the potential impact of seasonality in the quarterly data because each observation of the GDP constructed in this way covers four different quarters. We thus obtain a smooth series.

Figure 9.2 shows this series for Morocco from the first quarter of 2002 to the third quarter of 2011. For comparison purposes, Fig. 9.2 also plots M2/GDP using annual data from 2002 to 2011. Not surprisingly, the calculated measure of M2/GDP with the annual data is much smoother than the one computed with the quarterly data according to Eq. 9.1. Nonetheless, the trend of both measures for excess liquidity using the different frequency data is rather similar during the entire sample period of 2002–2011. Excess liquidity kept increasing between 2002 and 2008, slightly declined between 2008 and 2009, and rose further after mid-2009. The level of M2/GDP in

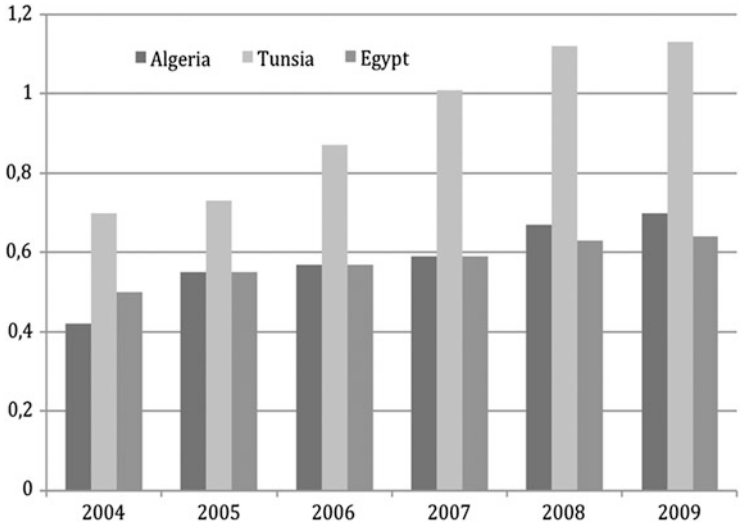

Fig. 9.3 M2/GDP (%) across North African countries: 2004–2009 (Source: IMF eLibrary data)

Morocco grew from approximately 1.2 in the late 2000s to above 1.6 in 2011, with a remarkable rise of 30 % during 2004–2007.

In Morocco during these 10 years, the level of M2/GDP is persistently above 1, which indicates that liquidity in Morocco is indeed excessive. To gauge the excess liquidity in Morocco, we also match the measure of excess liquidity in Morocco with major developing countries. Figure 9.3 plots the ratio of M2/GDP for Morocco in conjunction with the same measure for the North African countries Algeria, Tunisia and Egypt from 2004 to 2009.

In 2008 Morocco excess liquidity surpassed that of Tunisia (see Fig. 9.3). Indeed, the level of M2 to GDP in Morocco has been above that in all other countries studied here. In addition, unlike Morocco, which has experienced a continuous increase in M2/GDP, the ratios of M2 to GDP in other countries between 1997 and 2006 are relatively stable. For example, M2/GDP in Egypt and Algeria has remained around 0.5 and 0.7 in the EU. In comparison with Fig. 9.2, this corroborates that Morocco had a relatively high and increasing excess liquidity in this period.

9.2.2 Review of the Literature

In the economic literature, banks' excess liquidity has received much attention (Baumol 1952), (Harris 1974), Orr and Mellon (1961), Poole (1968), Frost (1971), Baltensperger (1974, 1980) and Santomero (1984) were the first to study theoretically the origin of the bank's excess liquidity. However, Allen (1998), Nautz (1998), Selgin (2001), Dow (2001), Kovanen (2002), Heller and Lengwiler (2003) and Bindseil and al. (2006) were the first to introduce empirical models.

Recent years were marked by the increase of studies trying to identify the cause and the consequence of the huge increase of the banks' liquidity. In the United States of America, Keister and McAndrews (2009) argue that the level of total reserves in the banking system is determined by the central banking initiatives and not by the lending decisions of banks. These excess reserves do not necessarily translate inflation because the central bank can adjust short-term interest rates (Fielding and Shorthand 2002). The authors say that the payment of interest on reserves contributes to maintain the inflation at the desired level. In 2001, Martin et al. (2011) show that the interest reserves (independent of the quantity of reserves) determine the marginal lending rate and this measure will create a floor on the interbank market rate. By analysing the impacts of the financial crisis over the demand of excess reserves, Sol and Garcia (2010), Hornstein (2010) and Gray (2011) argue that the spread (EURIBOR-minimum MRO rate) is its most important determinant.

According to Agénor et al. (2004), research on the situation of excess liquidity in developing economies is still inadequate. However, they recognized the presence of a general excess liquidity situation. Two approaches dominate the recent literature on the debate. In developing countries, Agénor and Aynaoui (2010) and Saxegaard (2006) identify two concepts of banks' excess liquidity. There is the precautionary excess liquidity and the involuntary excess liquidity (Agénor and Aynaoui 2010). The precautionary balances are the minimum requirements needed to meet the withdrawals of deposits and other uncertain payment. The sums that are in excess of these precautionary are the involuntary cash balances.

For many developing countries, the involuntary excess liquidity is due to structural and cyclical factors (Bertram and Watters 1985). It seems natural to assume that one of the structural determinants of involuntary liquidity is the low degree of financial development. Agénor and Aynaoui (2010) argue that the huge demand for liquidity by clients of the banks, the lack of an interbank market, and the high costs of financial operations contribute to the maintenance of a high level of reserves by banks. Also, the degree of the risk aversion can impact the banks' liquidity, as it makes that banks ask high risk-premiums and it lowers private sector credit demand. Risk aversion tends to be strongly correlated with the macroeconomic instability and this can can explain the long-term positive correlation between inflation and excessive liquidity. Other structural factors are mentioned in the literature, such as the inefficient or asymmetric information, and the monopolies in the banking sector (see Saxegaard 2006).

At the same time, other researchers have studied the cyclical factors. Price inflation is a main determinant. A rise in inflation causes higher volatility in relative prices and higher uncertainty in the risk degree of investment projects and in the value of collateral. Thus, banks demand higher interest rates on loans, the demand of credit decreases and excess reserves increase. The second cyclical factor is capital inflows, as a consequence of remittances, the liberalization of capital flows and foreign direct investment. Agénor and Aynaoui (2010) say that the method to eliminate restrictions on capital inflows for non-residents combined with privatization of state enterprises contribute to large inflows of capital for which banks function as intermediaries.

Finally, circumstantial or economic problems, associated with a high degree of uncertainty, provoke the accumulation of reserves by banks, as banks see lending as

a riskier activity. Agénor et al. (2004) demonstrate that the accumulation of reserves in Thailand, during the Asian financial crisis, was the consequence of the decrease of lending by banks and not the result of lower credit demand. Ashcraft et al. (2009) found evidence that, during the financial crisis of 2007–2008, banks in USA increased their holdings of reserves and decreased lending, as a buffer against liquidity shocks.

9.3 The Determinants of Excess Liquidity in Morocco: An Econometric Model

9.3.1 Data, Variables and Model Technique

To investigate empirically the determinants of excess liquidity in Morocco, we need to consider macroeconomic variables, variables related to the structure and level of financial development and variables that characterize the non-controllable factors self as foreign aid, remittances and trade. Therefore, to study the determinants of excess liquidity in Morocco, we constructed a database, collected from the Central Bank of Morocco and international financial institutions. We analysed the period from January 2003 until December 2009, making 84 monthly observations.

The excess reserves held by the banks are estimated as the difference between total reserves deposited in the balance sheet of the *Bank Al Maghrib* plus vault and the minimum reserve. The reserve requirements of each month are calculated by applying the reserve ratio to total deposits (demand deposits and term savings deposits, foreign currency deposits, resident and emigrant deposits) and other commitments (excluding repurchase agreements).

The dependent variable **ELQ** is the ratio between excess reserves and banks' total assets, and the exogenous variables represent the precautionary and involuntary factors. First, we include a variable that represents the illiquidity cost for which we use the interest rate of the *Bank AL Maghrib*'s lending facility, **T**. This is more appropriate than a money market rate because the interbank market in Morocco is low developed. To add the role of uncertainty, we use in our model the volatility of deposits, defined as the moving average standard deviation of private sector deposits divided by the moving average of this variable, **DV**. This variable is also included in a lot of other studies on excess liquidity. Variable **VPS** represents the indicator of the volatility of the public's preference for currency in circulation. It is equal to the moving average standard deviation of currency in circulation relative to deposits divided by the moving average of this ratio. We suppose a positive correlation between each of these variables and the volatility of excess reserves. Further, we add variables that reflect the involuntary factors. As proxies to weak financial development sector and the low of variation of financial products, we use the non-government sector deposits and government sector deposits, divided by banks total assets total, **DPS** and **DGOV**. Morocco's economy is very dependent on external aid flows, tourism and remittances. Due to the lack of data we are not able

to use these variables separately from the referred deposits, as Saxegaard (2006) and Khemraj (2006) did on the Sub-Sahara. However, we believe that foreign aid is part of public sector deposits, which include government deposits. Remittances (domestic currency) are included in private sector deposits. The accumulation of excess reserves in Morocco is due to the dynamics of credit. Credit growth is limited by the high cost of financial intermediation that leads to high interest rates of credit. Variable **CR** describes the ratio between credit and total bank assets. The variable **CRGOV** represents government credit (treasury bills and government bonds) divided by total assets of banks. We expect a negative relationship between each variable and the dependent variable. Finally, the variable **FR** represents the level of bank al Maghreb's foreign reserves as a percentage of bank's total assets. One function of *Bank Al Maghrib* is to hold and manage foreign exchange reserves in order to sustain the exchange rate regime (link to a basket of currencies including the euro) and the compliance with monetary policy objectives. The Moroccan Central Bank gets the main part of its foreign exchange currency through its transactions with other banks, paying with the currency. Usually, the Central Bank buys more foreign currency than it sells, because there is the objective to accumulate foreign exchange and liquidity in the banking sector.

9.3.2 Empirical Results

The aim of this work is to study the determinants of excess liquidity in Morocco.

We specify our main equation as:

$$ELQ_t = \lambda_1 + \lambda_2 T_t + \lambda_3 VD_t + \lambda_4 VPS_t + \lambda_5 DPS_t + \lambda_6 DGOV_t + \lambda_7 CR_t + \lambda_8 CRGOV_t + \lambda_9 FRV_t \quad (9.2)$$

Where the variables are the ones described in the previous section.

In the first step of our empirical analysis, each of these series was submitted to a unit root test. In this context, the ADF was applied. These results are reported in the Table 9.1.

According to these Augmented Dicky-Fuller test statistics some variables are not stationary. This can be due to the size of the database. The series may be too short to allow the rejection of the null hypothesis that claims the existence of a unit root. We performed therefore the Kwiatkowski–Phillips–Schmidt–Shin (KPSS) test that has a null hypothesis claiming stationarity. The results are presented in Table 9.2.

The results of this table show that the variables have a null hypothesis of stationarity. For the variables DPS and DGOV we cannot reject the H_0 at the 10 % significance level, for the variable FRV we cannot reject the H_0 at the 5 % significance level and for the variables ELQ, T, VD, CR and CRGOV we cannot reject the H_0 at the 1 % significance level. Therefore, according to these results, variables are likely not to have a unit root.

Table 9.1 Augmented Dickey-Fuller (ADF) test statistics

		Constant		Constant and trend	
Variables (log)	Lags	*t*-test	p-value	*t*-test	p-value
ELQ	1	−3.34	0.01**	−3.49	0.07*
T	3	−1.77	0.23		0.83
VD	1	−3.49	0.004**	−1.44	0.0004***
VPS	0	−1.18	0.68	−4.80	0.26
DPS	2	−1.17	−2.08	−2.67	
DGOV	1	−3.83	0.004***	−5.18	0.0001***
CR	3	0.43	0.98	−0.07	0.99
CRGOV	3	2.98	1.00	0.36	0.99
FRV	0	−0.78	0.81	−3.26	0.08*

***, **, and * indicate 1%, 5%, and 10% significance

Table 9.2 KPSS test statistics

		Critical values		
Variables (log)	t-test	1 %	5 %	10 %
ELQ	0.17	0.121	0.148	0.215
T	0.23	0.121	0.148	0.215
VD	0.14	0.121	0.148	0.215
VPS	0.07	0.121	0.148	0.215
DPS	0.08	0.21	0.148	0.215
DGOV	0.04	0.121	0.148	0.215
CR	0.24	0.121	0.148	0.215
CRGOV	0.15	0.121	0.148	0.215
FRV	0.16	0.121	0.148	0.215

Note: Variables with trend

Many econometric studies assume that the majority of the explanatory variables are endogenous. For this reason, we will not use the Ordinary Least Squares (OLS) method in this study, but two Stage Least squares (TSLS) instead, or the instrumental variable (IV) method. We choose T, DPS, DGOV CR CRGOV and FRV as endogenous variables. We further performed tests that showed no rejection of the null hypothesis of no autocorrelation and no heteroscedasticity (Table 9.3).

The results show us that the principal determinants of excess liquidity in Morocco are the variables that represent the involuntary factors CR, CRGOV and the FRV. By reflecting the low development and weak dynamism, the credit and the public debt market are the most important causes of liquidity accumulation. The credit demand is not a generalized phenomenon in Morocco and a major part of the investors does not make use of credit in their projects. The loaning rates are high, due to the strategy of high deposit rates that aim to attract remittances. The excessive level of the quantity of reserves, and the non-remuneration of reserves, increase the intermediation costs, also contributing to the low level of credit in the economy. This will give to an inefficient allocation of resources, leaving banks without alternatives on the application of excess reserves. Thus, for Morocco banks, the development of the credit market would represent an increase in profitability, directly and indirectly, due to a decrease in its opportunity cost. The negative coefficient on the variable FRV shows that the central bank has been successful in its role of (efficient) liquidity sterilization pressures.

Table 9.3 Determinants of the Morocco's bank excess liquidity (TSLS estmation)

Variables (log)	Coefficient	Std. error	z	p-value
Constant	−1.49	16.74	−0.07	0.93
T	0.75	3.03	0.25	0.81
VPS	0.24	0.17	1.17	0.23
DPS	10.48	9.68	−1.06	0.25
DGOV	2.98	2.60	1.08	0.27
CR	−5.84	2.95	−2.18	0.02**
CRGOV	−5.30	2.84	−2.06	0.03**
FRV	−1.45	0.65	−1.87	0.07*

AR-1 Test (0.620966), Normality Test (0.758813). p-value in brackets
AR-2[1/]Test (0.556), Sargan[2/]Test (0.63568). p-value in brackets
Heteroscedasticity Test (0.758813). p-value in brackets
The dependent variable is the log of the ratio excess reserves to banks' total assets
***, **, and * indicate 1%, 5%, and 10% significance

Finally, we can also think that the universal financial crisis had a negative effect on the excess reserves. The effect of a crisis in the excess liquidity is not very well-documented in this kind of literature. Agénor et al. (2004) found evidence that, in Thailand, the big increase of reserves during the Asian economic crisis in late 1990s was the result of a diminution in the credit supply. Montoro and Moreno (2011) conclude that after the Lehman bankruptcy the capital inflows to emerging market economies contracted sharply.

The economy of Morocco is rather vulnerable and dependent on remittances and tourism, which can be reduced in an environment of global crisis and high unemployment of the Moroccans living aboard. The real estate market and the tourism sectors are strongly dependent on foreign investors. Finally, taking into account the empirical evidence, some course of action can be recommended, in order to reduce excess liquidity in Morocco's banking sector. The IMF Country Report advises the decrease of the minimum reserves coefficient, or the use of public funds to fulfil a part of the minimum requirements or the remuneration of reserves. Lower reserve requirements could reduce the cost of banking services, specially the credit cost, contributing to the expansion of credit and the economy (Brito and Furtado 2009).

There is also a need to change and improve the institutional features of Morocco financial system. The development of a liquid public debt market could ease the management of reserves by banks and contribute to a better resources allocation. The issuance of fungible treasury bills, with equal interest coupon and maturity date, the realization of auctions and publication of issuance calendars with 1 year in anticipation, and the use of internet banking allowing the people to buy securities in the secondary market are important measures that contribute to the emergence of public securities market, similar to the advanced countries markets (IMF 2010). Although the structural problems in the macro development of Morocco, the recent reforms with the aim to improve the functioning of the primary market of securities and the investments on education, show that Morocco has accomplished an important effort in its modernization. However, there is yet a long way to go before becoming a competitive economy. The banking sector of Morocco could also use

the fact that the domestic banks have French banks as a main shareholder. These have know-how, and operate in a modern and competitive market, and can make the transfer of knowledge and technology easier, contributing to solve the structural problems of Morocco's financial system.

9.3.3 Concluding Remarks

In order to manage liquidity risk, banks hold reserves. However, there are economies characterized by a persistent situation of excess liquidity, where excess balances are not only held for precautionary purposes, but also for involuntary reasons, due to the insufficient development of financial markets, a high degree of risk aversion, or high capital inflows, among other reasons. That has been identified in the literature.

This chapter work analyses the principal determinants of the situation of persistent excess liquidity in Morocco banking sector by means of the estimation of an empirical model of demand for reserves during the period 2003–2009.

On the basis of our empirical findings we conclude that the accumulation of reserves by Moroccan banks is involuntary, due to the lack of options to its application. The large excess of reserves is a consequence of domestic credit market and public securities market insufficiencies and the lack of development of the financial sector. The non-statistical significance of the variables that measure the effect of the uncertainty over the demand for excess reserves shows that the liquidity risk is not important in an environment of persistent excess liquidity.

The *Bank Al Maghrib*'s accumulation of foreign currency has an impact on the excess of reserves. The negative coefficient of this variable suggests that the sterilization of the purchase of foreign currency is efficient. Although in practice there are no restrictions on capital flows, the objective of foreign reserves accumulation by the central bank can limit the ability of banks to invest their reserves abroad.

In modern economies banks perform an important financial intermediation activity that contributes to households and companies welfare. The existence of restrictions that limit the opportunities to lend to private sector and to use the funds obtained by banks – the small dimension of the domestic market, the asymmetries of information, the risk aversion – and the under-development of interbank and public securities markets explain that, whereas banks and depositors (emigrants in particular) don't find opportunities and options to apply their funds, the excess of liquidity will remain a structural problem in Morocco.

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Chapter 10
Financial Integration, Banking Competition Changes and Financial Stability: The Case of the MENA Region

Arafet Farroukh

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Abstract Over the past few decades MENA countries have adopted major financial reforms in favour of more financial integration which has led to changes in financial systems in general and the banking system in particular, characterized by an increased privatization process, foreign bank penetration and changes in the banking competition intensity. These changes raise many questions for the financial stability preservation especially that several banks encountered many difficulties to adapt to this new context and various followed strategies did not save many banks from significant distress situations following a considerable rise of risks.

Thus, the principal aim of this paper is to study the impact of financial liberalization, banking market structure and quality of MENA institutions on the likelihood

A.Farroukh (✉)
University of Carthage FSEG, Nabeul, Tunisia

L.I.E.I. University el Manar FSEG, Tunis, Tunisia
e-mail: arafet.farroukh@yahoo.com

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of suffering a systemic banking crisis and to seek the optimal structure of banking system able to preserve financial stability.

Hence, using aggregate balance sheet data from banks across 13 MENA countries from 1990 to 2009, the paper is specifically directed towards analyzing the changes in banking structures and their capacity to ensure banking stability.

After calculation of a global financial liberalization index for MENA countries, we test several hypotheses between liberalization, banking structure and banking stability in the region. Our estimations are based on a country-specific fixed-effects model.

Given the challenges that MENA countries face, the empirical results of this study should be timely and helpful for policymakers.

Keywords Financial integration index • Banking competition • Governance • Zscore

10.1 Introduction

Following the recent financial crisis, there is a widespread desire to create a stable financial system in general and to ensure the stability of the banking system in particular.

Having a stable and efficient banking system contributes to many economic benefits and reduces the possible negative consequences of increased capital mobility.

Thus, an adequate banking structure can attest to banks effectiveness and capacity enabling them to overcome the risks to which they are prone in order to avoid distress situations.

During recent years, concerns on competition evolution in the banking industry and the possible trade-offs between the efficiency and stability of the system, are often at the centre of banking sector policy debate. The ongoing crisis leads to re-consider the links of changes in the competitive environment of banks and the stability issues.

This issue raises important challenges for the MENA region where the banking system is the main conduit for economic activities. Moreover, the last decade was characterized by substantial reforms to restructure the banking system, increase the privatization process and foreign bank penetration.

Indeed, financial reforms adopted by the MENA countries involved abolition of control regulations which affect the behaviour of the banks (such as the abolition of controls on the debtor and credit rates, fixing of quotas) and ending regulations of structures which condition the organization of banking industry directly (functional separation, entries barriers). As a consequence, three radical changes of the banking structures in all their components took place: change of property structures by a movement of privatization, foreign banks penetration, and the intensity of competition (the deregulation made possible the appearance of new actors which created a new exacerbated competition).

So these changes of structure in all their dimensions raise many interrogations for the maintenance of financial stability especially that several banks encountered various difficulties to adapt to this new context and various followed strategies did not save many banks from significant situations of distress following a considerable rise in risks.

Thus, the aim of this paper is to study the impact of financial integration and banking competition changes in MENA countries on the likelihood of suffering a systemic banking crisis and to seek the optimal structure of the banking system.

The remainder of this paper is organized as follows: Sect. 10.2 presents related theoretical and empirical literature on the relationship between banking market concentration and financial stability. A detailed exposition of the empirical methodology is presented in Sect. 10.3. We report the results and a variety of robustness tests in Sect. 10.4. Some conclusions and policy implications are offered in the final section.

10.2 Literature Review

The relation between financial liberalization and banking stability is the subject of several theoretical and empirical studies that try mostly to identify the effect of liberalization policies on banking stability.

The literature addresses the macroeconomic and microeconomic approaches of banking failure. Researchers[1] use mostly empirical approaches to study the macroeconomic sequence leading to banking instability. A clearly achieved result of these approaches is that the inappropriate institutional preconditions of the financial liberalization process constitute the main cause of crises and economic recessions.

The microeconomic aspect insists on banks behaviour as the origin of financial disturbances. In this respect, two major explanatory visions are opposed. The first is of neo-classic inspiration, where banking instability corresponds to exceptional episodes caused by external factors such as excess of public policies as sources of moral risk. According to this explanatory diagram and in spite of the frequency of banking crises in developing countries, the failure is not directly ascribed to the financial liberalization process, but to internal countries distortions. The second vision which is a post-Keynesian one supposes that the behaviour of banks and credit market imperfections are the main factors of dysfunctions.

This approach gives a central role to speculative behaviours resulting from the environment change created by financial liberalization.

Admittedly, there is no theoretical consensus on financial liberalization effect on banking stability. For the liberal dogma, the main problem is not due to the liberalization process, but rather in monitoring gaps and prudential regulation whose consequences are simply amplified by the financial opening.

[1] Kaminsky and Reinhart (2000, 2002, 2005), Kaminsky et al. (2003), Drees and Pazar-basioglu (1998), Hausmann and Eichengreen (2005), Turner (1996), Lindgren et al. (2004), Rossi (2006), Hutchison and McDill (1999), and Demirguç-Kunt and Detragiache (1998, 2003, 2005).

However, critical approaches (post-Keynesian and neo-structuralist) while criticizing the liberal theoretical justifications, warn against the negative effects of financial liberalization policies and the failure of many reforms to preserve banking stability.

We can conclude that the majority of these contributions on the causes of banking instability did not address the strategic interaction between banks and various banking structures on banking stability.

Recently, many studies (Demirguç-Kunt and Detragiache 2002; Demirguç-Kunt et al. 2004; Claessens and Laeven 2004; Bikker 2004; Bikker and Spierdijk 2007) have focused their analysis on the evolution of competition intensity and the banking market structure characteristics based in the New Empirical Industrial Organization (NEIO). These models, which include those of Bresnahan (1982) and Panzar and Rosse (P-R) (1982, 1987), do not rely on explicit information about market structure in order to determine the level of competition and provides a very simple approach to test the market structure of an industry for competitiveness.

Some of those studies (Barth et al. 2004; Beck et al. 2006a, b; Boyd et al. 2006; Schaeck et al. 2006) raise a controversial question in the context of the on-going financial crisis to examine if the banking stability is enhanced or weakened by the changes in banking structures (ownership and market structure) and the changes in the competition intensity.

The theoretical and empirical results reached show a considerable uncertainty concerning the relationship between competition and financial stability (Carletti 2010).[2]

The synthesis of the theories shows a controversy between theories which advocate for concentration as guarantees of stability and those which consider it as a source of fragility.

Thus, in this respect two opposing views arise. The competition- fragility hypotheses (Keeley (1990), Allen and Gale (2000, 2004), Beck and Laeven (2008), Jimenez et al. (2007), Beck (2008), Berger et al. (2008)) where more concentrated and less competitive banking systems are more stable. Those theoretical and empirical studies suggest that a less concentrated banking system is more responsible for the financial crises. Indeed, banks with a high capitalization can better face unfavorable shocks. The market power and profits which result are regarded as guarantees of stability. This market power confers to banking institution revenue which gives an additional value constituting an additional capital, which decreases the excessive risk-taking improving the quality of loans. However the competition intensification induced by financial liberalization, diminished the dominant position of banks. In short, the partisans of "concentration-stability" predict that large banks can better diversify and face unfavourable shocks.

The increase in banks sizes can be regarded as a force and constitute a generating factor of profit. But it can also constitute a multiplying factor of risk according to the partisans of "concentration fragility".

Whereas, for the new "competition-stability" view (Caminal and Matutes 2002; Boyd and de Nicola 2005; Boyd et al. 2006), increased competition may enhance

[2] For a survey see Elena Carletti, "Competition, Concentration and Stability in the Banking Sector," Background paper, in OECD Competition Committee Roundtable 2010.

bank stability, and may reduce significant implications for stressed banking systems in developing economies.

According to this view, several banks generally choose strategies of fusion to face competition. This process of concentration can cause the "too-big-to fail" policy as these banks will systematically be the subject of rescue in the event of failures. This intervention can exacerbate moral hazard and the risk taking of banks and thus increase the whole system's vulnerability. Moreover, the emergence of the financial conglomerates generates also possible moral hazard by the complication of their monitoring.

In the following paper, our aim is to investigate how financial liberalization, banking structures change, MENA country's institutions and business environment affect banking stability.

10.3 Methodology

10.3.1 The Data Set

Our sample represents panel data on commercial banks in the MENA[3] region for the period 1990–2009. The time interval under examination corresponds to an era characterized by substantial reforms to restructure MENA banking systems, increased banking market changes and foreign bank penetration.

Notes on variables and data sources are presented in Table 2 (Appendix). Table 3 reports descriptive statistics for the entire set of included variables (Bank specific variables, macroeconomic variables, institutional variables).

Bank level financial statements, structure and ownership are obtained from Bankscope database, different banks reports, and the financial structure Data set developed by Beck et al. (2008).

It's imperative to control for macroeconomic, regulatory and institutional factors that are likely to affect market structures, banking stability or both. The data used are retrieved from the World Development indicators (WDI) provided by the World Bank.

10.3.2 Empirical Models and Variables Selection

To test several hypotheses between liberalization, banking structure and financial stability, we follow a model similar to Berger et al. (2008), Demirgüç-Kunt and Enrica Detragiache (2010):

$$zit = \alpha it + \sum \beta k(Bit; Mit, Iit) + \epsilon it$$

[3] Algeria, Bahrain, Egypt, Morocco, Kuwait, Turkey, Tunisia, United Arab of Emirates, Jordan Lebanon, Saudi Arabia, Qatar and Oman.

The dependant variable is Z-score for country i at time t, Bit is the banking specific variables, Mit is the macroeconomic country specifications, It is the institutional variable and ϵit an error term. αit and βit denote the parameters to be estimated.

We estimate versions of panel data to test the following hypotheses:

H1: Financial liberalization and stability,
H2: Banking market structure and stability
H3: Banking market structure, governance and stability.

Three sets of factors might explain the stability of the banking system in a cross-country framework: namely bank industry factors, business environment and institutional variables. A set of control variables that capture macro-economic differences between countries is also used.

10.3.2.1 The Dependent Variable: The Z-Score

The Z-score became a popular measure of banking solidity in several empirical studies[4]: This ratio represents the bank's distance to default, and used as a proxy of banking soundness. This index combines the profitability and return volatility in only one measurement and is denoted as follows:

$$Z = \frac{\lambda + ROA}{\sigma ROA}$$

Where λ is the equity to assets ratio (capital ratio)
ROA is the Return on Assets (Bank's profitability)
σROA = The standard deviation of ROA (Volatility of earnings)

The Z-score increases with bank's profitability and capitalization, and decreases with increasing volatility of earnings. Hence, the Z-score can measure the probability of a bank becoming insolvent when the value of assets becomes lower than the value of debt. Thus, a higher Z-score implies a lower probability of insolvency risk and vice versa.

10.3.2.2 Bank Specific Variables

Structure variables:

In this study, we focus our analysis on one main banking structure changes and its impact on stability. Various measurements of banking market structure and competition belong to two principal approaches: structural and nonstructural ones.[5]

[4] Beck and Laeven (2008), Laeven and Levine (2008), Hesse and Čihák (2007), Gianni De Nicolò and Elena Loukoianova (2007), Asli Demirgüç-Kunt and Enrica Detragiache (2010), and Boyd et al. (2009).

[5] See Beck (2008) for a survey of literature.

Structural approaches are based on the SCP paradigm, the efficiency hypothesis and oligopoly models. The bulk of studies opt for the k-bank concentration ratio (CRk) or the Herfindahl-Hirschmann index (HHI) as a measure of market concentration.

To investigate market structure of MENA banking, we use the most frequently applied measure of concentration: the 3-bank concentration ratio (CR3). It is calculated as the fraction of assets held by the three largest commercial banks.

Two others indicators are used in this study the H-statistic and the Lerner index to measure banking market power. These two measures are based on the nonstructural approach hypotheses.[6]

The H-statistic frequently used in the "new empirical industrial organization literature" is designed to test the market structure of an industry for competiveness.

It is a variable that captures the competitiveness of the banking industry whereby $H \leq 0$ indicates monopoly equilibrium; $0 < H < 1$ indicates monopolistic competition and $H = 1$ indicates perfect competition.

Another variable used as a proxy for market power is the Lerner index. It ranges from 1 to 0, with higher numbers implying greater market power. The approach followed is similar to that of de Guevara et al. (2007) and Delis and Pagoulatos (2009) who defined the Lerner index as

$$L_{it} = \frac{(p_{it} - mc_{it})}{p_{it}}$$

Where p is the price of total assets computed as the ratio of total revenue to total assets; mc is the marginal cost of total assets. To calculate the Lerner index, we first estimate the following trans-log cost function:

$$\begin{aligned}\ln C = {} & \alpha_0 + \alpha_1 \ln Y + \frac{1}{2}\alpha_2 \ln Y^2 + \sum_{k=1}^{2} \beta_k W_k + \sum_{h=1}^{2} \mu_h \ln E_h \\ & + \frac{1}{2}\sum_{k=1}^{2}\sum_{m=1}^{2} \gamma_{km} \ln W_k \ln W_m + \sum_{k=1}^{2} \rho_k \ln Y \ln W_k + \sum_{h=1}^{2} \varepsilon_h \ln Y \ln E_h \\ & + \sum_{k=1}^{2}\sum_{h=1}^{2} \lambda_{kh} \ln W_k \ln E_h + \frac{1}{2}\sum_{h=1}^{2}\sum_{n=1}^{2} \psi \ln E_h \ln E_n + \ln u_c + \ln \varepsilon_c\end{aligned}$$

Where C denotes total cost, and Y is total assets. W is the vector of inputs (labor, funding, and other costs), and E is the vector which includes fixed assets, loan loss provisions, and equity capital. To obtain marginal cost, we differentiate with respect to Y as follows:

$$mc_{it} = \frac{\partial C}{\partial Y} = [a_1 + \alpha_2 \ln Y + \rho_1 \ln W_1 + \rho_2 \ln W_2 + \varepsilon_1 \ln E_1 + \varepsilon_2 \ln E_2] \frac{c_{it}}{Y}$$

[6] In reaction to theoretical and empirical contradictions of the structural models, nonstructural approaches were developed namely: the model of Panzer and Rose, the model of Bresnham and the model of Iwata.

Other specific variables:

Domestic credit provided by the banking sector (% of GDP) DCPS includes all credit to various sectors on a gross basis, with the exception of credit to the central government, which is net. This ratio is used to measure the growth of the banking system

Bank liquid reserves to bank assets ratio (%) is the ratio of domestic currency holdings and deposits with the monetary authorities xcwc to claims on other governments, nonfinancial public enterprises, the private sector, and other banking institutions. This ratio captures the banking system's liquidity. In countries whose banking system is liquid, adverse macroeconomic conditions should be less likely to lead to banking and financial crisis. An increase of this ratio is positively correlated with stability.

Interest rate spread (IRS) is the interest rate charged by banks on loans to prime customers minus the interest rate paid by commercial or similar banks for demand, time, or savings deposits.

In simple terms, the net interest spread is like a profit margin. The greater the spread, the more profitable the financial institution is likely to be and vice versa.

10.3.2.3 Control Variables

The global financial liberalization index: *IGLF*

In the last decades, we note the proliferation of empirical studies trying to detect the impact of financial liberalization process on financial systems, investment and growth. However, in spite of this growing number, the indicators of financial liberalization measurement are still very limited.[7] In fact, the majorities of researchers build their own liberalization chronology and concentrate on the abolition of restrictions on financial sector.

We pursue an approach inspired from Laeven et al. (2003), Demirguc-Kunt and Detragiache (1999) and Kaminsky and Schmukler (2003). We will try, in what follows, to build a global index of financial liberalization for MENA countries. It is a compound index of three fundamental aspects of the financial liberalization process: The domestic financial sector deregulation, the stock market liberalization and capital account deregulation. The total index of liberalization evaluates jointly with the capital account, the stock market and the domestic financial sector liberalization.

Our sample covers 13 MENA countries over the period 1980–2009. For each country, three forms are identified:

Completely liberalized: If the three sectors are perfectly liberalized;
Partially liberalized: At least a sector is partially liberalized;
Repressed: Total restrictions for all sectors.

[7] the financial liberalization proxy – the deposit interest rate ceiling – is widely used in the literature but represents only one aspect of domestic liberalization.

This index is an inter-country average whose value varies between 1 and 3:
3 = Strong restrictions; 2 = Partial Liberalization; 1 = Total liberalization

To capture the capital account liberalization, we study the regulations evolution on the external financing of domestic financial institutions, the evolution of the exchange control, and controls of capital outflows. To measure the liberalization of the domestic financial system, we analyze regulations on debtor and credit interest rates, easing of banking legislation as regards of granting of credit, and deposits in different currencies. Finally, to detect stock markets liberalization, we study acquisition evolution and shares of domestic stock market by foreigners, capital repatriation, and interest and dividends.

We established these criteria after having gathered all the payments and have carefully studied the range of restrictions adopted throughout countries and years of several sources.[8]

The information sources include arrangements of exchange rate (Publications of the IMF and the restrictions and economic developments, various issues). The data base of emerging markets is from the publication of IFC. We use also various reports/ratios of the World Bank, annual reports of the central banks, as well as of the research tasks with chronologies of the restrictions of the financial system.

Macroeconomic variables

Bank soundness is also affected by macroeconomic variables, as slow output growth, high and volatile inflation, rapid exchange rate depreciation, high real interest rates, and rapid credit expansion have been found to be associated with bank instability. We included several financial and macroeconomic variables that have been consistently identified in the literature as significant in the determination of banking crises.[9] The control variables included in all regressions are:

Growth rate: A decline of growth rate generally weakens the capacity of the domestic borrowers to ensure the refunding of their debt and thus increases the risk of insolvency; borrowers' insolvency may be higher under decreasing economic performance which in turn deteriorates the banks' asset quality. In addition, recessions generally advance the episodes of banking distress Laeven and Majoni (2003). Thus, we expect a positive coefficient sign if investment opportunities increase under economic booms with the growth rate variable expected to be positively correlated with banking stability.

Inflation: INF, the volatility inflation rate in general affects the solidity of the economy and the banking system in particular, through several transmission channels. This volatility accentuates the credit and market risks. Inflation is measured by the annual growth rate of the GDP implicit deflator showing the

[8] The criteria employed to determine if the capital account, the domestic financial sector, and the stock market are entirely or partially liberalized, or repressed, are described in detail in Arafet Farroukh (2010, 2012) "Liberalisation financière et crise bancaire : la cas des pays emergents ATM".

[9] See, for instance, Demirgüç-Kunt and Detragiache (1998), Arteta and Eichengreen (2002), Glick and Hutchison (2001) and Mehrez and Kaufmann (1999).

rate of price change in the economy as a whole. The GDP implicit deflator is the ratio of GDP in current local currency to GDP in constant ones.
M2/Reserves international[10]: It is an indicator of confidence for investors in the interior financial system. This indicator informs about the capacity of the economy to resist the speculative pressures without correction of foreign exchange rate. Any increase in this ratio is a sign of vulnerability.

Thus, in robustness tests, we employ various combinations of these macroeconomic variables in alternative specifications. Macroeconomic variables are mainly retrieved from the world development indicators.

10.4 Empirical Results

10.4.1 A Method

We rely on a fixed effect model. This one was preferred to the random one despite that the Hausman test didn't succeed to allow us to choose between random and fixed effect model.[11] In fact, the latter is adapted to capture unobserved specific effects of countries, such as institutions, geographical characteristics, cultural norms, etc. Our regressions are estimated with a weighted least-squares procedure, employing a White correction for heteroskedasticity (cross-section weights).

We present main empirical results in Tables 10.1 and 10.2. Table 10.1 reports regressions results assessing the impact of financial liberalization sequencing on systemic stability as measured by the Z-score-technique. Regression specifications in Table 10.2 use different concentration and competition measures to seek the impact of banking structure changes on banking stability.

10.4.2 Main Findings

10.4.2.1 Financial Liberalization Sequencing, Concentration, and Banking Stability

Contrary to our anticipations, the empirical results indicate that financial liberalization measured by the global financial index is significantly positive at 1 %, so it has

[10] The money and quasi money comprise the sum of currency outside banks, demand deposits other than those of the central government, and the time, savings, and foreign currency deposits of resident sectors other than the central government. This definition is frequently called M2; Total reserves comprise holdings of monetary gold, special drawing rights, reserves of IMF members held by the IMF, and holdings of foreign exchange under the control of monetary authorities. The gold component of these reserves is valued at year-end (December 31) London prices.

[11] The results of Hausman test are reported in Table 10.2.

Table 10.1 Descriptive statistics

Variables	Mean	Standard deviation	Min	Max
C3	0.707	0.183	0.297	1
HSTAT	0.546	0.182	0.079	0.886
LEN	0.300	0.104	0.119	0.501
IGLF	1.409	0.452	1	2.666
BLASS	17.664	27.193	0.738	228.576
M2R	3.614	1.969	0.222	15.642
RI	8.606	6.479	0.086	36.266
NBT	110.145	31.221	50.925	249.374
GDPRG	5.965	5.962	0	50.7
INF	12.315	17.815	0.040	137.964
DCB	68.816	36.414	1.039	210.17

Source: Author calculation

Table 10.2 Financial liberalization sequencing, concentration, and banking stability.

Variables	1 FE	2fe	3 fe
Cst	73.65*	74.95*	74.56*
	(3.89)	(3.88)	(3.93)
C3	−80.56*	−72.33	−74.54*
	(3.75)	(−3.40)	(3.56)
Stock market liberalization	**11.41****		
	(2.57)		
Capital account liberalization		**7.60*****	
		(1.89)	
Financial lib.			**12.38****
			(2.44)
Bank reserve %	0.14**	0.15**	0.14**
	(2.40)	(2.56)	(2.32)
M2R	−2.27	−2.44	−3.23***
	(−1.31)	(−1.37)	(−1.77)
Real interest rate	−0.02	−0.04	0.0003
	(−0.10)	(−0.18)	(0.00)
Domestic credit	0.08	0.07	0.07
	(0.75)	(0.71)	(0.74)
Terms of trade	−0.16*	−0.19*	−0.16*
	(−2.71)	(−3.34)	(−2.77)
Real GDP growth	0.47	0.42	0.36
	(1.22)	(1.08)	(0.95)
Inflation	−0.35**	−0.28***	−0.35**
	(−2.10)	(−1.74)	(−2.08)
R2 (%)	30	27.54	29.48
Fisher	4.15	3.60	4.48
Prob. (fischer)	(0.0001)	(0.0005)	(0.000)

Heteroscedasticity consistent t-student are in parenthesis. ***, ** and * indicate statistically significance at 10, 5, and 1 respectively

a positive impact on Z-score which induces more stability (Table 10.2). According to the majority of existing empirical studies, liberalization generally has a negative effect on banking stability.

In our case, this result can be explained by the non advanced stage and recent adoption of financial liberalization process in MENA region. The majority of countries did not carry out a total financial liberalization yet.

In regressions 1 and 2 of Table 10.1, we try to study the effect of sequencing on banking stability. For stock market liberalization, we didn't find a significant result. Capital account liberalization enters the third regression with a negative and significant sign at 1 % level inducing more fragility for the banking system.

Hence, to guarantee a successful financial liberalization, MENA countries have to ensure banking solidity by an adequate prudential regulation able to limit the harmful effects of a total opening.

10.4.2.2 Banking Market Structure, Competition and Stability

As Table 10.3 reports, concentration (C3) enters regression (1) significantly negative at the 1 % level suggesting that an increase in banking market concentration has a negative impact on MENA banks financial soundness, which corresponds to the "concentration- fragility" view in the theoretical literature and generally confirms empirical findings by De Nicolo et al. (2004). In contrast, this result does not support theoretical arguments and earlier empirical findings (Beck et al. 2006) promoting the "concentration-stability view". We additionally control for the robustness of our main findings by adopting other competition measures.

In Specifications (2) we include the H-Statistic and in specification (3) the Lerner index.

The H-Statistic enters specification 2 positively and significantly at the 1 % level. The positive sign for the coefficient implies that the Z-score increases as the degree of competitive behaviour among financial institutions increases and therefore does not support the view that competitiveness gives rise to banking system vulnerabilities.

For Lerner index, we find that more monopolistic banking systems can induce to more fragility which confirms our first result.

10.4.2.3 Banking Market Structure, Governance and Stability

Finally, to test the impact of institutional variables on banking stability, we adopt the same methodology. We add to the baseline model the vector of institutional variables composed of the six indicators derived from World Governance

Table 10.3 Banking market structure, competition and stability

Variables	1 FE	2 RE	3 FE	4
Cst	71.19*	15.45	6.63	73.19*
	(3.78)	(1.34)	(0.63)	(3.84)
C3	**−83.12***			−84.07*
	(−3.90)			(−3.96)
HSTAT(−1)		**15.15*****		
		(1.74)		
LEN(−1)			**−11.90**	
			(−0.47)	
Financial lib. index	16.00*	12.14*	11.41***	17.22*
(−2)	(2.90)	(3.06)	(1.70)	(3.10)
Bank Reserve %	0.14**	0.05	0.23**	0.16**
	(2.46)	(0.61)	(2.28)	(2.02)
M2R	−3.06***	−1.43	−2.44	−3.66**
	(−1.74)	(−1.25)	(−1.32)	(−2.02)
Real interest rate	0.02	0.14	0.20	0.07
	(0.11)	(0.57)	(0.70)	(0.30)
Terms of trade	−0.16*	−0.14*	−0.18*	−0.18*
	(−2.86)	(−2.71)	(−2.84)	(−2.90)
Real GDP growth	0.44	0.40	0.29	0.38
	(1.16)	(1.03)	(0.67)	(0.99)
Inflation	−0.44**	−0.07	−0.17	−0.47*
	(−2.36)	(−0.40)	(−0.76)	(−2.71)
Domestic credit	0.08	−0.09*	0.23***	0.10
	(0.83)	(−2.72)	(1.71)	(0.96)
R2 (%)	31.40	33.63	24.20	35.42
Fisher	4.29	2.54	2.38	4.24
Prob. (fischer)	(0.0001)	(0.0171)	(0.0202)	(0.0001)

Heteroscedasticity consistent t-student are in parenthesis. ***, ** and * indicate statistically significance at 10, 5, and 1 respectively

Indicators compiled by Kaufmann and Kraay (2008). The empirical results are reported in Table 10.4.[12]

Examining the coefficients on the various institutional variables leads to a number of additional interesting results. The signs of all institutional variables are negative, but only one variable (political stability) is reported to affect positively the bank stability.

Our findings highlight also the importance of institutional environment in enhancing banking stability. Specifically, a sound regulatory quality and a better enforcement of rules of law, play an important role in reducing fragility in the MENA banking system. So we can conclude that stability in the banking system depends on legal and political institutions.

[12] Considering that the institutional indicators are highly correlated with each other, we introduce them separately.

Table 10.4 Banking market structure, governance and stability

Variables	1 (RE)	2 (FE)	3 (FE)	4 (FE)	5 (RE)	6 (FE)
Cst	38.29**	92.09**	97.69*	79.47**	31.91***	−3.86**
	(2.01)	(2.64)	(2.80)	(2.46)	(1.77)	(2.49)
C3	−10.72	−131.204*	−108.42*	−89.98*	−10.48	−88.40*
	(−0.78)	(−4.17)	(−3.67)	(−3.37)	(−0.78)	(−3.23)
Financial lib. index	16.455***	11.239	13.22	14.82	4.94	13.31
(−2)	(2.33)	(0.76)	(0.91)	(1.09)	(1.13)	(0.99)
Bank Reserve %	−0.021	0.119	0.18**	0.15**	−0.02	0.15**
	(−0.35)	(1.53)	(2.24)	(2.04)	(−0.45)	(2.15)
M2R	0.257	0.724	−2.56	−2.32	−0.42	−2.15
	(0.17)	(0.25)	(−1.02)	(−1.01)	(−0.32)	(−0.92)
Real interest rate	−0.153	0.129	−0.018	−0.09	−0.09	−0.13
	(−0.48)	(0.34)	(−0.05)	(−0.28)	(−0.34)	(−0.40)
Terms of trade	−0.136**	−0.045	−0.16***	−0.13***	−0.09	−0.15**
	(−2.11)	(−0.56)	(−1.91)	(−1.97)	(−1.54)	(−2.11)
Real GDP growth	0.41	0.765	0.42	0.41	0.24	0.47
	(0.99)	(1.56)	(0.76)	(0.85)	(0.62)	(0.94)
Inflation	−0.335	−0.753*	−0.717*	−0.58**	−0.40***	−0.54**
	(−1.50)	(−2.94)	(−2.99)	(−2.53)	(−1.87)	(−2.36)
Domestic credit	−0.137**	−0.003	0.076	0.09	−0.08***	0.06
	(−2.29)	(−0.03)	(0.70)	(0.83)	(−1.79)	(0.62)
Voice and accountability	**−11.65*** (−1.73)**					
Political stability		**11.411*** (1.94)**				
Government effectiveness			**−2.107 (−0.18)**			
Regulatory quality				**−5.98 (−0.59)**		
Rule of law					**−12.23*** (−1.82)**	
Control of corruption						**−3.86** (−2.04)**
R2 (%)	27.46	44	40.32	36.52	26.31	36.15
Fisher	2.66	3.33	3.32	2.80	2.30	2.59
Prob. (fischer)	(0.0134)	(0.003)	(0.0021)	(0.0072)	(0.0252)	(0.0124)

Heteroscedasticity consistent t-student are in parenthesis. ***, ** and * indicate statistically significance at 10, 5, and 1 respectively

10.5 Conclusion

The purpose of this paper is to examine the impact of financial liberalization, bank structures changes, and institutional environment on MENA banking stability over 1990–2008. Empirical results indicate that financial liberalization has a positive impact on Z-score which induces more banking stability. Our analysis provides also empirical evidence that MENA banking market concentration has a

negative impact on banks' financial soundness as measured by the Z-score technique while controlling for macroeconomic, bank-specific, regulatory and institutional factors. Empirical results from panel estimations hold when employing alternative concentration and competition measures. Our findings are consistent with the "concentration-fragility view". Finally, our findings highlight the importance of institutional environment in enhancing banking stability. Specifically, a better control of corruption, a sound regulatory quality, a better enforcement of rules of law, and a free voice and accountability play an important role in reducing fragility in the MENA countries.

Appendix 1: Criteria of Financial Liberalization

Criteria for full liberalization: 1		
Capital account	Domestic financial sector	Stock market
Criteria for partial liberalization: 2		
Strong restrictions criteria: 3		
Capital account	Domestic financial sector	Stock market
External financing: The banks and the companies can resort freely to the external financing	**Debtor and credit interest rates**: There is no control on interest rates (ceilings, floors)	**Acquisitions of capital by the foreign investors**: The foreign investors can hold domestic stockholders' equity without restrictions
Foreign exchange rate and other restrictions: No foreign exchange rate imposed for the transactions of the account running or the capital account. No restriction on the outflows of capital	**Other indicators**: elimination of the framing of appropriations (also subsidies). The deposits of currencies are allowed	Repatriation of capital, dividends and interests the capital, dividends, and the interest can be repatriated freely within 2 year starting from the initial investment
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(continued)

Criteria for full liberalization: 1		
Capital account	Domestic financial sector	Stock market
Criteria for partial liberalization: 2		
Strong restrictions criteria: 3		
Capital account	Domestic financial sector	Stock market
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Foreign exchange rate and other restrictions: No foreign exchange rate imposed for the transactions of the account running or the capital account. No restriction on the outflows of capital	**Other indicators**: elimination of the framing of appropriations (also subsidies). The deposits of currencies are allowed	Repatriation of capital, dividends and interests the capital, dividends, and the interest can be repatriated freely within 2 year starting from the initial investment

Appendix 2: Review of the Empirical Literature

Authors	Samples	Proxy of fragility	Model	Results
H1: Financial openness and banking fragility				
Démergu-Kunt et détragiache (1998)	Panel of countries (1980–1995)	Banking crises (dummy variable)	Logit	The liberalization of interest rate weakens the banking system
Démergu-Kunt et détragiache (2000)	Panel of countries (1980–1997)	Banking crises	Logit	Positive correlation between financial liberalization and banking crises
Farroukh and Alaya (2010)	32 emergent countries (1980–2008)	Banking crises	Logit	Financial liberalization
Ilan Noy (2004)			panel-probit	If liberalization is accompanied by insufficient prudential supervision of the banking sector, it will result in excessive risk taking by financial intermediaries and a subsequent crisis

(continued)

Authors	Samples	Proxy of fragility	Model	Results
H2: Structures of banking market and stability				
Allen et Gale (2004)				
Beck et al. (2006a, b)	69 pays (1980–1997)			Empirical obviousness that the concentration is a pledge of stability
(Uhde and Heimeshoff 2009)	25 European countries (1997–1995)	Z-score	Panel	Concentration has a negative effect on the European banks solidity
De Nicolo et al. (2004)	100 pays (1993–2000)		Logit	Positive relation between banking fragility and systemic risk
Benjanin Miranda et al. (2007)	Brazilian banks (2000–2005)	NPL	Panel	The empirical results indicate that banking concentration has a statistically significant impact on NPL, suggesting that more concentrated banking system may improve financial stability

Appendix 3: Notes on Variables and Data Sources

Variable	Description	Data sources
H-Statistic	Variable that captures the competitiveness of the banking industry whereby $H \leq 0$ indicates monopoly equilibrium; $0 < H < 1$ indicates monopolistic competition and $H = 1$ indicates perfect competition	Claessens and Laeven (2004) and Turk-Ariss (2009)
C3	Proportion of total assets held by the three largest institutions in a country, averaged over the period 1988–2003	Bankscope
Lerner index	Describes a firm's market power. The index ranges from a high of 1 to a low of 0, with higher numbers implying greater market power.	Authors' calculations Arafet (2011)
IGLF	Financial liberalization index	Authors' calculations
LC	Capital account liberalization	Authors' calculations
LI	Domestic financial liberalization	Authors' calculations
BLASS	Ratio of bank liquid reserves to bank assets	World Bank Development Indicators
DCPS	Domestic credit provided by the banking sector (% of GDP) includes all credit to various sectors on a gross basis	World Bank Development Indicators
IRS	Interest rate spread	World Bank Development Indicators

(continued)

Variable	Description	Data sources
GDP	Rate of growth of the gross domestic product	World Bank Development Indicators
M2R	Ratio of M2 to gross foreign reserves	World Bank Development Indicators
INF	Rate of change of the GDP deflator	World Bank Development Indicators
RI	Nominal interest rate minus the rate of inflation	World Bank Development Indicators
NBT	Change in the net barter terms of trade	World Bank Development Indicators

Correlation Matrix

	C3	HSTAT	LEM	IGLF	BLASS	M2R	RI	NBT	GDPRG	INF	DCB	ROA	ROE
C3	1												
HSTAT	−0.36	1											
LEM	0.33	−0.09	1										
IGLF	0.36	−0.003	0.003	1									
BLASS	0.16	0.16	0.03	−0.34	1								
M2R	−0.04	−0.04	−0.05	−0.04	−0.41	1							
RI	−0.15	−0.15	−0.29	0.14	0.01	−0.14	1						
NBT	0.06	0.06	0.36	−0.12	0.44	−0.18	−0.08	1					
GDPRG	0.07	0.07	0.21	0.03	−0.07	−0.07	−0.01	0.20	1				
INF	0.10	0.10	0.14	0.09	0.009	0.07	0.08	0.05	0.09	1			
DCB	0.08	−0.25	−0.60	−0.07	0.12	0.06	0.08	−0.21	0.17	−0.28	1		
ROA	−0.02	−0.04	0.31	−0.34	0.01	−0.01	−0.12	0.35	0.009	0.21	−0.23	1	
ROE	−0.04	−0.02	0.18	−0.18	0.03	−0.07	−0.18	0.27	0.01	0.34	−0.23	0.45	1

The correlation matrices analysis shows that the coefficients of correlation are low for selected variables which prove the non existence of multicollinearity problem

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Part VI
Social Aspects and Trade Integration

Chapter 11
Social Economy and Solidarity in the Mediterranean Area: Participation, Sustainability and Revolution

Federica Roccisano

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Abstract The aim of the paper is to show how the dissemination of solidarity economy generates a positive reversal of the relationship between economy and society starting from the idea of reciprocity and the citizens' participation and to his possible connection to Mediterranean Revolution. In the first paragraph we will introduce the topics of social economy and of reciprocal relationship considering the theory of Karl Polany and his figures: reciprocity, redistribution and exchange. In the second part we will give a definition of human economy and analyze the role of the citizen participation's. Finally we will make a description of the most relevant mechanism of reciprocity between countries in the Mediterranean Area (migrations' flows, remittances, cooperation, solidarity economy), to demonstrate how the dissemination of solidarity economy has promote the idea of participation and democracy building as first steps in the Mediterranean "revolution".

F. Roccisano (✉)
Catholic University of Milan, Milan, Italy

MEDAlics, the Research Center for Mediterranean Relations, Calabria, Italy
e-mail: federica.roccisano@medalics.org

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11.1 Introduction: A Possible Transformation of the Classical Economic Approach

11.1.1 Economic and Social Construction

Economic science and everyday life are based on the natural economic order and the need of technological progress. But this was true only after the advent of capitalism and market organization, during the Renaissance and especially since the first Industrial Revolution. Subsequent theories (the Physiocrats) have allowed the economy to buy a strong central role in daily life so that the economics prevails today in all fields, influencing the perception of what is happening so that "All the terms that approach more or less then the economy will be incorporated first in their economic dimension".

In the first half of the twentieth century, many economists have expressed some doubts on theories that supported the success of the economic sector. Among the critics of this model a special place is occupied by Polany (1974), who, studying mainly social and political developments influenced by the theories of time, defines "Satanic Mill" the social consequences caused by the industrial revolution.

By this position, the economic science appears like a social construction realized by man with the aim to facilitate the exchange between the "actors". Many scientist talk about it like a "economic invention" both the point of economic theory – which defines the economy as a practice and science – that from the historical point of view – with the construction of the stages of the birth of the economy – that, finally, from the semantic point of view – that the economy is a representation of type from the point of self-terminology as well as views from the ideological point of view (Latuche 2004).

The ideological representation is linked to the Physiocrats, who argued that laws ruling the functioning of society and economy, underpinned by an order of the natural type. Both the theories of the Physiocrats (Hobbes and Locke) then the utilitarian theory of Bentham highlight the natural laws governing operation and relations between men, describes as independent entities, separate from other people and the environment that around them.

We have a clear description of a society founded on the economy: in each type of relationship between man and man and between man and nature is based on an economized imaginary. The economy is therefore described as a fundamental part of logic that governs choices of individuals and relationships they have with their similar.

However, neither classical nor the neoclassical economic theory have ever been apart from the positions that consider the natural economic order. The dissemination and sharing of similar principles has also created relations between subjects and economy so strong that is possible to talk about "subordination" and "economic dependence". First, about material aspects of daily life: today's society is organized

on the basis of continued growth. A second dependency is on the political consensus. The choice of the vote is tied to the promise of an improvement of economic status. Finally, it is possible to identify a strong psychological dependence with the objective to have more and more (Deriu 2005).

For a better definition of the influence that economy has on the society we consider the theory of Polonay. In 1944 in "The Great Transformation" Polany, developing a theory about birth, development and affirmation of capitalism, pointed out that the relations between economy and society have changed and that this change has produced a new specification and differentiation of two types of economy: the formal and the substantial economy.

Considering the different types of movement of goods, Polany was able to highlight that in the past the institutions that governed the production and distribution were presented as "byproducts" of family relationships, political and religious. Some years ago economy was severely constrained by other spheres of social life, with bans and levees that did not allow the commodity exchange to prevail. After the Industrial Revolution and the spread of Enlightenment theories, the relationship is sharply reversed, so we have that the set of social relations and economic order is subject. This type of relationship between society and economy was used to build levees and did not allow trade bans that type of prevailing commodity.

The traditional economy, still says that the amount of consumption of goods increases consumer welfare. From this, it follows that the global economic system pushes people to consume more and more, under what is called linear progress: "today I feel better than yesterday and tomorrow I will have made progress on what I today".

According to this position, moreover, the market serves to regulate the flow of supply and demand, seen as "analog computer, whose driving force is represented by the maximization of individual utility and profit, totally abstracted from the reality of the community biophysical and social interdependence" (Daly and Cobb 1989). There is therefore a guiding idea of progress based on competition not only against their own kind, but also, consequently, against time and against nature.

It is not possible to define "rational" the man who seeks to have a greater quantity of goods and services, but the man who can buy what he is actually useful. Furthermore, it is not true that the subject always chooses the good that you prefer, because his choices are often influenced not only by preferences, but also by a strong values component. This means that the rational choice theory that every man is dictated by the logic of comparing costs and benefits is not valid and must be replaced by an economics that poses a look at the relationship of reciprocity between individuals and the relationship with the environment around them.

11.1.2 Economic and Social Relationship

It was shown that the traditional economic order was built around what is often described by the theories of exchange value of the so called "homo economicus", or that man, totally subordinated to economic laws, live according to enrichment regardless of reciprocity and relationships with other individuals. The definition of "homo economicus" is essentially based on the assumption that the individual

desires are insatiable and, simultaneously, on the assumption that the utility function derived from the purchase of the good decreases as the quantity purchased of that good.

From these statements, however, we can deduce, imagining a person completely uninterested in relations with other subjects that "only the goods consumed individually contribute to increase satisfaction, or utility function, the individual himself". In reality, however, it was noted that there are at least two reasons that show how this logic of human behavior is not true. The first reason stems from the fact that any kind of relationship, including economic relations, are the result of processes of interaction between more men and then of social relations, and the second reason derives from the essence of being truly human, made of emotions, beliefs, values, and passions in life choices that affect our everyday choices and thus economic in nature. This means that the economic life of man is not separate from society, but rather it is totally immersed in social relations.

Several economists have dealt with this issue in the course of history, describing it with different terms, and always in opposition to economic accumulation. Aristotle had distinguished chrematistics, defined as the propensity to make money for the money, from the "oikonomia", or the family economy in which production is intended for use of their own family, bitterly condemning the first because of moral opposition to good life (Polany 1980).

Three aspects characterize the chrematistics and oikonomia, as defined by Aristotle. First, there is a difference in the time horizon to which they refer. The oikonomia is concerned about the long term, while the chrematistics the short term. Secondly, the oikonomia is closely linked to the interests of the entire community and not just the individuals involved in economic transactions, such as the chrematistics. Finally, there is one last difference concerns the value of goods: while chrematistics aims pure and unlimited accumulation, the oikonomia aims primarily to the value of real use, that just because it is related to a real need, provides limited accumulation (Roccisano 2010). So we can summarize. For the oikonomia it is possible to determine what is sufficient, while for the chrematistic the more you have, the better you are!

Polany, with the intention to break free from optics inherent in the formal definition of rational economics, re-establishes the primary role of the human-human and human-nature relationship within the society rehabilitating the concept of a substantial economy, based on reports in the communities among the various stakeholders and the environment, for a better allocation of resources (Becchio 2002). It is not a purely materialistic vision of the economy, since it is based on the assumption that the economy is not the process that regulates the actions of men dictated by the pursuit of personal gain, through the exchange, but is "a component of the culture" of human life. It is for this reason that the exchange market should not be construed as the only principle that governs the mechanism of exchanges between the players, but to this were added several others in different societies.

In this sense, therefore, it is possible to identify the principle of reciprocity, on the organization of the parental family and society – that involved symmetrical and organized groups – and the principle of redistribution present where the division of assets within the community, was under a "common leader" or at least at the

regional level (a company operated as a centralized group). The economies governed primarily by the principle of reciprocity, are typical of primitive societies, based mainly on horticultural economy and in which institutions were the main families Ferrara and Mavilia (2011). In these societies, the mutual exchange is presented in two different ways: in a general way, as in the case of the relationship between father and son in which the compensation is not immediate but is distributed over time, or under terms of balanced reciprocity, typical of barter, where the counterpart is immediate. The form of redistribution requires, on the contrary, more complex societies in which there is a central authority that deals with the distribution of goods and services. Together, reciprocity and redistribution, defined within the theory of Polany, the specific operation of the economic system is that the institutional system.

Reciprocity and redistribution, however, were not the only types of adjustment of the economic system: there is also the real exchange. Exchange relationships do not always involve the whole company and the group, but are also present in the form of bilateral relations between two parties.

According to these concepts we can identify three types of bilateral trade. The first is the exchange of gifts, which takes place between guests and friends, that the trades have a "ceremonial character" and the purpose of creating a reciprocal relationship between the two parties. It's important for our discussion to underlines how, also today, in a lot of Country in the Mediterranean Area reciprocity is social rules and guarantees an individual as a member of a community (Latuche 2004). The second type of exchange, the exchange is administered, governed by more or less formal agreements signed by governments – stable business organizations – and that is intended to ensure both parties, the fulfillment of their interests for imports, by adjusting the proportions of goods and types of transactions, payments, etc. Finally there is the exchange market, where goods are exchanged according to the unlimited supply and demand mechanism, through the formation of specialized markets, capital, banking, etc. Moreover, with regard to the latter type of exchange, Polany distinguishes the market exchange from the exchange of market: the first is that of the exchange, simple and peaceful, which may occur in the fairs, and that the purpose of finding goods not immediately available, the second with a capital M, however, is that concerning the exchange of means of production and work and which consists in the movement of goods on the market, so it not only provides social relations, but share in common their land, labor and capital, making the mere commodities Celli (1997).

In his vision of the structure on which the economy substantially, Polany identifies three forms of exchange, reciprocity and redistribution, the three institutional processes as a form of regulation aimed at maintaining the economic system and economic processes in (embedded) in the social system. According to this principle of differentiation, Polany says that the market economy, founded on the system – self-regulating – the price is realized mainly in the model of the exchange. In contrast, non-market economies are oriented towards different models in which relationships with others and the environment play a central role, and lead back to the basic institutions of redistribution and reciprocity. Where to prevail is the

market economy, there is hardly room for the other two institutions, while, on the contrary, companies based in non-market economy, the forms of reciprocity and redistribution are able to live together.

In this sense, in fact, the next chapter will be devoted to the application of the model theorized by Polany in Western society and in the Mediterranean Area, with the aim of identifying in the form of reciprocity, the ideal form of integration for spreading new ways of life, based on ethics and justice. In fact, knowing that reciprocity requires a "structure that promises symmetry through blood ties, friendship, community and voluntary", look for the economy of solidarity institutions where this form of economic need and it requires the company to implement the change predicted in the previous pages.

11.2 The "Human Economy"

11.2.1 Some Definitions

The term "solidarity economy" is now widespread throughout the world without a precise definition: it is, in fact, a process, a transformation that is shaping the lifestyles of many people and many businesses on the scene world. The definition, as will become evident from the following pages, is constantly changing, so rather than defining it in theory, it is preferable to identify the various practices related to it and who are investing across sectors and aspects of the economy: production, trade, services, consumption, money, etc. (Biolghini 2007).

The solidarity economy by learning the basic strength of the bonds of reciprocity and redistribution of Polany, becomes a means by which people can react to the Western lifestyle, but also denounce the inequalities between North and South, the "commodification" of social relations, the end of the Welfare State, and, above all, guide the economy towards distributive justice and common welfare.

Nonprofit organization, Third Sector, Civil Economics or of Solidarity, Social Economy or of Happiness, and many others, are the many terms that are often used to define unambiguously these various social and civilians realities. In fact, there are between one and another type some differences, also the result of historical differences that have accompanied the birth, in the different nations of Europe and the World.

The use of the term "Third Sector" was initially linked in particular to French-speaking countries, according to the definition given in 1979 by Delors, which included small cooperatives and associative experiences characterized by an alternative view than the purely commercial (Cochard 2005). The Anglophone countries and the Netherlands preferred to use, however, mainly the terms "non-profit" or "Not for Profit" or "Voluntary Sector" to mark the importance of private charity and voluntary social in their operations.

The context and the different languages create from country to country some profound differences of the term "social economy". In Italy the social economy identifies those activities that are based on participation and autonomy of civil society, which has the primary goal, is not profit, but reciprocity (Zamagni 1996).

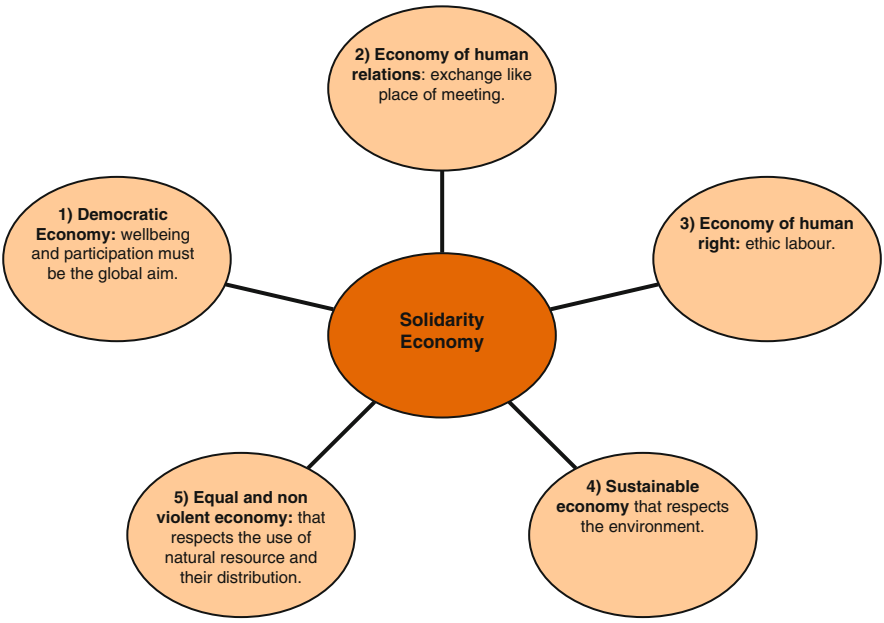

Fig. 11.1 The economy and solidarity

"Social Economy" and "solidarity economy", then, are often used interchangeably, although the definition of solidarity economy organizations are identified with greater political commitment to the fight against inequality and economic polarization.

Generally, just set out to standardize the differences, at European level is preferred to use the term Third Sector, because it can include not only the smallest companies, but also the set of experiences of participation and democracy, as opposed to born crisis of the Welfare State (Cerri 2003). The purpose of the activities to which we refer, in fact, have the same matrix and lens, or try to give a solution to the problems created by the distortions of the market economy, and create the productive activity (goods and/or services) that was no longer able to guarantee.

The distinctive points of this new attitude can be traced considering six features that added together give an idea of what the objectives that aim to achieve the solidarity economy, the creation of fair trade, to democratic participation of members, non-violence and respect the rights of others subjects (Gesualdi 2005).

Within these six distinctive features of the solidarity economy represented by Fig. 11.1, it is possible to identify the four fundamental attitudes that characterize the relations internal to the industry, namely: respect for people (workers and consumers), environmental, democratic participation, lack of profit. In this way, it becomes clear how the solidarity economy, acting at multiple levels in favor of the consolidation of social relations, can be described as a real prospect for future change in lifestyle, as viable way to "create jobs, protect the environment, improve working conditions, maintain the link with the territory" (Saroldi 2005).

11.2.2 The Role of Civil Society

To allow the creation of supportive processes just described, there are essentially two subjects. First, there is one that many times in the preceding pages has been called "civil society" and that includes the activities of volunteer workers and the whole set of different civic initiatives from political and traditional economics (Archambault 2005). Along with the company active and engaged, then you also add groups composed of individuals who are weaker or because of poverty and shortage of supply by the institutions, on the one hand to have time available and unused resources, and the other is an urgent need to employ them. The activities you are doing well also become the reference tools that turn the time available in value in use thus meeting their most disadvantaged social groups (Offe and Heinze 1997). These two groups, strongly committed to the transformation of the system and the collective, are characterized by the predisposition to the joint action of individual members, aimed not only their own welfare but also about improving the living conditions of entire communities in which operate and where they belong.

Following this reasoning will be easily noticeable as the center of the "alternative economy" there is the man, active member of the associational solidarity, both as beneficiary of solidarity, both as a donor operator, which also finally, as a link in a larger network aimed at changing global order. Understanding the factors that unite the people "civilians", and already motivated ideologically close to human values and cooperative, associative enterprises to join in for the good of the community, is not a particularly easy thing.

An attempt, already experienced by the scholar Razeto reality in Latin America – home of the native practices of solidarity economy – may be to analyze the conditions of the context in. Generally, in fact, activities of collective solidarity is felt when people feel a prevailing economic necessity, which can affect the very existence of states as well as problems of unemployment and marginalization, as can also be a commitment to solving economic problems of subsistence other places.

In other cases the union can be facilitated by the pre-existence in the territory of some social organizations (religious, cultural or political) already involved in resistance to oppression and inequality. The impetus for the creation of alternatives may also come from businesses, foundations and institutions or by deciding to give support to community activities (Razeto 2004). It is precisely this distinctive character of the studies conducted in the reality of the Mediterranean Area. The work of the people involved and motivated, resulting in various forms, ranging from social co-operation, foundations, associations, etc. and provides for the sharing of not only social mission but also material resources and goods needed to achieve the objective, skills and income.

The ability to work without there being conflict between the States becomes an important psychological incentive to stimulate and increase the motivation of each individual member of the community, with a view to coordinated and cooperative action leading to greater well- being of the members as well as the performance of the entire economic unit or business association.

Therefore, it is easy to understand how the internalinitiatives of solidariety's economy are not just acts of charity for the weak, but rather targets to a real "business", which we call alternative because these combine the traditional principles of efficiency and "effectiveness" and the alternative principle of respect for the living conditions of workers, producers, as consumers, who are asked to participate and share common objectives.

11.3 A Description of the Mediterranean Condition

11.3.1 Development and Integration

The countries of the Mediterranean Area, can be grouped into one meso-region: the development of its internal relations can be a powerful tool for spreading the wealth and stability of the entire area, becoming a defensive weapon against economic crisis, despite the contradictions that were evident between a geographical proximity of the basin countries and apparent distances emerged on the cultural, the political and economic side (Bianchi and Roccisano 2011).

In particular, it is possible to emphasize economic and cultural exchanges increasingly intense may be particularly useful in view of improving economic and social conditions, optimize migration flows and promote peace and international stability. To achieve these objectives should develop four types of actions: promoting trade area, to encourage educational and cultural exchanges between universities, monitor, assist and guide the internal migration flows and adopt institutional tools to promote dialogue.

Several tests show significant differences in terms of economic and social region, identifying four areas of the countries bordering the Mediterranean area countries outside the European Union (Spain, France, Italy, Slovenia, Greece, Cyprus and Malta), the Anatolian-Balkan region (Croatia, Albania, Montenegro, Bosnia, Turkey), the Middle East region (Lebanon, Jordan, Israel, Palestinian Territories and Syria), and finally the area of North Africa (Morocco, Tunisia, Algeria, Libya, Egypt). The Focus on the Mediterranean in the 2008 SVIMEZ Report, for example, showed that these areas manifested a certain degree of homogeneity, not only geographically, with EU countries, which stand for but a higher per capita income, a very strong role the service sector, over 70 % of GDP, agriculture and a reduced size, contained within 2 % of GDP .

With the exception of European Area, the other three areas (the Balkanian, the Middle East and the North Africa) of *meso-region* are instead characterized by a lower per capita income, with extremes from 2,000 to 8,000 dollars a year. In the end North African agriculture is still an area of some importance, representing just under one fifth of GDP. The outsourcing moves quickly, skipping a few steps that have marked the path of European industrial developments, both those who are already part of the European Union, the Balkans and the countries that formed the former Yugoslavia.

Table 11.1 Human development index and its component in the Mediterranean countries

Rating		HDI Human Development (index) 2007	Life expectancy (years) 2007	Adults Literacy (% of total literate population with more than 15 years) 2007	GDP per capita (PPP U.S. $) 2007	Ranking for GDP per capita less HDI ranking for 2006
8	France	0.964	81.0	..	33,674	17
15	Spain	0.955	80.7	97.9	31,506	12
18	Italy	0.951	81.1	98.9	30,353	11
25	Greece	0.942	79.1	97.1	28,517	6
27	Israel	0.935	80.7	97.1	26,315	7
29	Slovenia	0.929	78.2	99.7	26,753	4
32	Cyprus	0.914	79.6	97.7	24,789	4
38	Malta	0.902	79.6	92.4	29,808	1
45	Croatia	0.871	76.0	98.7	16,027	7
55	Libya	0.847	73.8	86.8	14,364	2
65	Montenegro	0.834	74.0	96.4	11,699	1
70	Albania	0.818	76.5	99.0	7,041	23
76	Bosnia	0.812	75.1	96.7	7,764	11
79	Turkey	0.806	71.7	88.7	12,955	−16
83	Lebanon	0.803	71.9	89.6	10,109	−7
96	Jordan	0.770	72.4	91.1	4,901	11
98	Tunisia	0.769	73.8	77.7	7,520	−8
104	Algeria	0.754	72.2	75.4	7,740	−16
107	Syria	0.742	74.1	83.1	4,511	5
110	Palestinians territories	0.737	73.3	93.8	. . .	..
123	Egypt	0.703	69.9	66.4	5,349	−20
130	Morocco	0.654	70.1	55.6	4,108	−12

Source: Data processed by UNDP Human Development Report 2009

Finally, areas outside the EU share with North Africa income levels significantly low compared to EU countries. One exception is Israel, with an average income of over $20,000 per year. But we have considered, however, to keeping the group from the Middle East also analytical point of view, this view of the strong integration among the countries that make up. To get a more clear view of the similarities between countries and how they have reacted and are reacting to the current economic crisis, let's give this work a new presentation, using data provided by the Programme of Nations United for Human Development (UNDP).

The program, which prepares each year and calculates the index of human development, examines the lives of nations through the observation of the interaction between three variables, average income, life expectancy and literacy levels (see Table 11.1). After years of debate around the concept of development, often characterized by significant ideological ballast, the idea of human development proposal in the UN looks at conditions for conducting a route than the route to go and seems to follow very few of the more recent thesis on the development

including that of Amartya Sen estimates that integrate economic, social and political, also making reference to different types of institutions (markets, organizations, governments, local authorities, educational institutions) and level of interaction between them. In this view, development becomes a form of freedom depends from social and economic asset, and political and civil rights (Sen 2011). According to these theories, therefore, consideration and analysis of quantitative variables of the classical type (income, employment), should also include qualitative variables such as life expectancy and education.

Thus, it's possible to talk about human development when a country is able to choose their future and take the road to reach it. To do this requires an adequate life expectancy, without which the future loses its size perspective (think of those African countries where life expectancy is under 40 years). Secondly, you must have the cultural tools that education can offer. Lastly, it should have resources to implement their own programs. In this perspective, the indexes are calculated for life expectancy, schooling and per capita income, which are then developed in relative terms. The best data for each size is made equal to 1, and each country is assigned a decimal value in proportion the distance from the best value. The best index values indicate an ideal, or a way forward, but a *better chance* of achieving freedom and effectively with their programs.

Examining the data of the last Human Development Report, which refers to Table 11.1, we observe that EU countries occupy the highest places in the standings, with France leading eighth place on 179 countries considered, Spain and the 15th Italy and Greece to the 18th and 25th places respectively. The first European country outside of the area is Israel, in 27th place, while a human development index equal to 0.902 Malta closes the list of EU countries. Afterwards, the group of Balkan countries, is a bit "more detached", Middle Eastern and North African countries, set to "medium human development" in the UNDP classification, with index values below 0.8.

Out of homogeneity is Libya, which occupies the 55th place with an index value of 0.847 due to a given literacy represented 86, 8 % and per capita income of just over $14,000, figures very different from those in other North African countries, which must make do with incomes just below the $8,000, as is the case of Tunisia and Algeria, or even lower, like Egypt and Morocco, divide their time between their people respectively 5,349 and $4,108 per year.

From a dimple analysis of the data we can see how the Country that were placed at the bottom of the classification, like Morocco, Egypt and Lybia are the Country that has started the democratic revolution in the Mediterranean Area! It is possible to understand this trend considering the Senian Approach and, particularly, the definition of capabilities as the possibilities for the citizens to live the "kind of life they choose" and to participate to public life.

Freedom is therefore considered a key aspect of individual initiative and social efficiency: an individual, if free, is at the heart of the action as an individual agent that acts by making changes. This activity of the individual, of course, is open to any field, for which the free individual is a participant of economic transactions, social and political issues in his country.

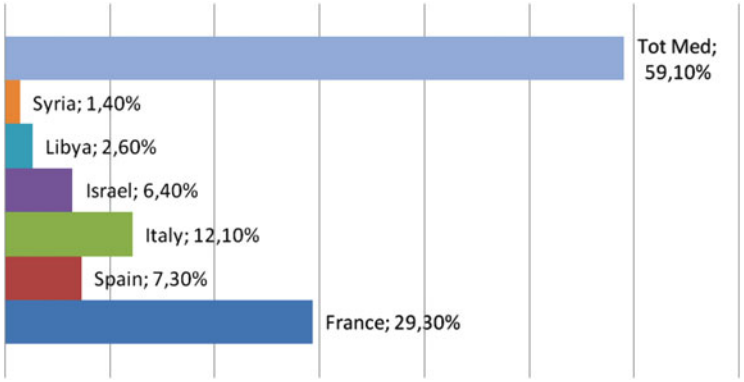

Fig. 11.2 Destination of Morocco's migrants – data IFM 2010

11.3.2 The Remittances: Can We Talk About Solidarity Between Countries?

Regarding the situation of remittances the economic crisis seems to have strengthened the relationship especially among North African and Southern European countries, such as in remittances where North Africa receives what Europe pays to the North African work migrants. Several tests carried out by the International Monetary Fund (IMF) over the last decade confirm remarkable results in considering migration as a choice destination as the main Mediterranean country than a country that is geographically more distant.

In particular, African countries bordering the Mediterranean in comparison to other countries in their continent as a feature that differentiates them from the rest of Africa. According to an analysis by Barajas et al. (2009) the majority of migrants from African countries tend to regard as the first target country their own continent while the European destinations as well as the other continents are just a second choice.

If this is true for most African countries, it is not realistic for North African countries like Morocco, Algeria, Tunisia and Turkey that are more favourable in the migration to the countries of Southern Europe. In Figs. 11.2 and 11.3, you can highlight this kind of preferences: both in the case of Morocco and Algeria even more prevalent geographical proximity and cultural-linguistic, since in both cases the first choice is the French state. In Morocco's case we can also see a particular percentage of migrants direct to Israel, but we can see that Israel is only the fourth choice, after France, Italy and Spain.

Evidently this type of choices is also reflected in the origin of the remittances that migrants send to their families back home (see Fig. 11.4). In fact the amount of remittances coming from continents other than Europe is very high in the continents bordering the Mediterranean, including Morocco, which in 2004 was the destination of 1.193,50 million of euro, Algeria which was the destination of 290,20 million of euro, Tunisia and Lebanon.

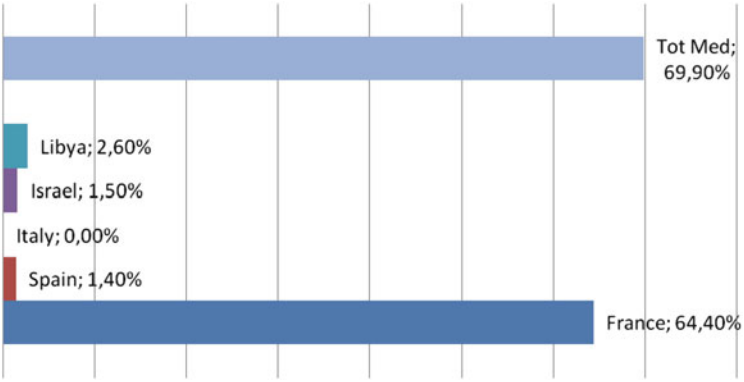

Fig. 11.3 Destination of Algeria's migrants – data IFM 2010

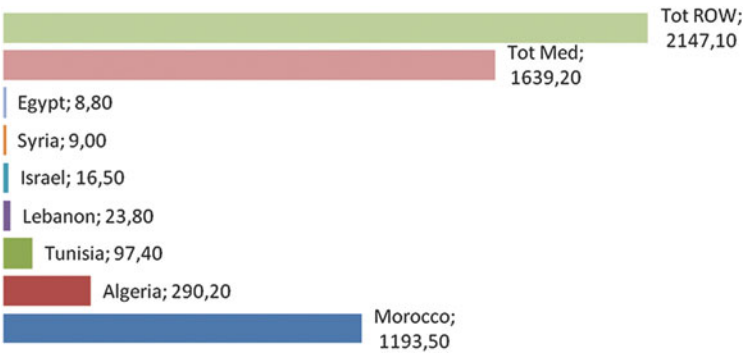

Fig. 11.4 Principal destination of EU remittances by country of destination – EU 2004

In the same way as for the remittances, including as regards the relations of the solidarity economy geographical proximity and cultural similarities, as well as language, has a very important role. There are many experiences in this direction that led to the creation of South-South networks among those created between many EU countries as well as the area between realities from different countries (see Table 11.2). A very important example is the "EuroMed Partnership" born in Barcelona in 1995 as a evolution of the Peace Process in the Middle East started in 1991 in Madrid with the following objectives: the creation of a peace, stability and prosperity zone built on four pillars: Politics and Security; Economics and Financing, Society and Culture, Justice and Immigration (ESMED 2011).

ESMED rules' say that social economy enterprises and entities in the countries that are members of the Union for the Mediterranean can work on all economic sectors. In this network we can find enterprises of all sizes, small or large business.

Table 11.2 The EuroMed network

	N° firms	N° workers
Spain	23.622	1.547.975
France	31.872	507.812
Italy	79.808	1.200.600
Morocco	7.365	22.502
Tunisia	256	n.c.
Portugal	3.407	51.000
Algeria	513	23.696

What they consider a real rigid rule is the respect of the principles of social economy: the individual has to be at the middle of the economic production. Above all, the ESMED group has the aim to promote social economy around the Mediterranean Area and, because of this objective, the network promote collaboration and cooperation between representative existing Social economy organizations in the Union for the Mediterranean and increase awareness and institutional acknowledgment of Social economy as an economic and social stakeholder in the euro-Mediterranean region.

During last decades, in the Mediterranean Area was created a lot of different relations between social firms or social association. We can remember the "Palestinian Fair Trade Network" which is a network of traders, farmers and Palestinian academics with the aim of promoting fair trade in the occupied territories. This organization with the support of various Italian NGOs and solidarity (e.g. Cooperative Fair Trade Salento, Lecce) had permitted to Palestinian farmers to export their olive oil in Europe, North America and the UAE. As this example, we can talk about the Egyptian "Egypt Craft" (or fair Trade Egypt ITD), founded with the support of the Italian NGO COSPE (Cooperation for the Development of Emerging Countries): also this organization now exports their product to all fair trade shops across Europe.

Most important for the aim of their action, is the work of UNDP with the cooperation of the Italian RE.CO.SOL. (Network of Social Municipality) in the refugee camp of Saharawi population in Algeria: they work for their economic and food support, but also help that "un-free" population to maintain their school and their young teaching some jobs or activities.

Considering these examples, according to the previous position of Polany, we think that the dissemination of the social practice has had an important role for the activation of people and the revolution for the democratic process of the last months: people of the Mediterranean Area has decided to stop the repression of their right starting a "democracy building" process. As we've said before about the theory of Razeto, the single individual has an important role for the creation of social economy and social context. In the future we will try to demonstrate this connection between social economies and democratic process after a sample survey in the countries "affected" by the democratic movements.

11.4 Conclusion

It has been argued that a so-called *social economy* has the ability to act on changes in lifestyles and on the willingness and motivations of individuals within a society. This is the case of social and political engagement in favor of less fortunate people in developing countries that led to the birth of the movement in support of Fair Trade, or those working to protect the environment or even groped those who decide to create the dream of developing the land through its actions in favor of ethics and legality.

Organizations and actions related to the economy of solidarity watching carefully what evidence the economic landscape, social and political global attempts to oppose the order of affairs, challenged and opposed by the different practices. Civil society involved in these activities follows a path of change made to the practices of life and related it with the other individuals. People decide this lifestyle after the failures of the last century theories and in favor of equity.

Conviviality, de-growth, reciprocity was the key terms through which he attempted to demonstrate the commitment of civil society involved, has real opportunity to challenge the Global economic order and implement the change, so widely advocated.

The work and commitment shown by the realities of international cooperation and solidarity that have been discussed in these pages, is a work that, in fact, shows that they are already mobilizing for years a kind of collective consciousness and civic values in favor of the spread of reciprocity, as well as of justice and ethics.

It is important to underline how in the opinion of the writer the "revolution of consciences" has had, and has also today, a significant role for Mediterranean People: the information technology, the possibilities to meet people of every part of the world, push a lot of people to participate in the democracy building process of their Country. We can imagine that it can be considered very difficult to say that the evolution to autocracy to democracy was made only because of the influence of social economy. But we think that the dissemination of social economy in the Mediterranean Area has showed to people, and particularly to young people, that everyone is responsible for his country and that participation is not impossible but is a right of every citizen.

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Chapter 12
Trade, Regional Integration and Economic Growth: MEDA Region and the Western Balkan Countries

Jelena Vapa Tankosić, Srdjan Redžepagić, and Miroslav Stojsavljević

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Abstract In times of crises as well as economic booms, openness to trade and foreign direct investment are the factors that stimulate the recovery of the global economy. For Mediterranean Region (MEDA) and Western Balkans Countries (WBC) enhancing trade cooperation among themselves and with other European Union (EU) countries is seen as crucial step for trade growth and economic development of the region. Recent political turmoil in some of the Mediterranean countries leads to serious problems in their economies. The impact of global recession and problems in Euro zone, MEDA main trade partner, has dangerous consequences on the already low level of both MEDA trade with most non-MEDA countries and intra-MEDA trade. As much as it has been achieved with the signing of the Association Agreements, the current level of economic integration of the EU-Mediterranean region has been slower than expected and regional trade integration between MEDA countries is still limited. On the other hand, Western Balkans countries are currently on the pathway to future EU integration, adoption

J.V. Tankosić (✉) • M. Stojsavljević
Economics and Engineering Management, University Business Academy, Novi Sad, Serbia
e-mail: jvapa@libero.it; minjast@eunet.rs

S. Redžepagić
Research Institute of Economic Sciences in Belgrade, Economics at the University of Nice Sophia Antipolis, Nice Sophia Antipolis, France
e-mail: sredzepagic@gmail.com

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and implementation of the *acquis communautaire*, the set of EU rules and regulations. The improved market access instruments (elimination of all non-tariff barriers, rules of origin) aim to enable better conditions for trade and investment and prepares the countries for joining the European Union Single Market and faster economic growth. Western Balkan exporters are on the markets of the EU and countries of ex-Yugoslavia (CEFTA) with their exports gradually increasing, following the process of transition towards a functional market economy.

Keywords Trade • Regional integration • MEDA • Western Balkans • European Union

12.1 Introduction

Currently financial markets are in a severe crisis that has spilled over to the real economy. Policy makers around the world are working to restore confidence in the financial system. Global trade finance activity was impacted by events in the financial markets and consequently trade flows were rapidly and substantially affected. World trade activity has fallen in 2009, which was the first annual decline in global trade since 1982. Still, trade policy is a major European economic pillar. Free trade among the EU members underpinned the launch of the Union 50 years ago. Roughly a fifth of world trade in goods and close to a third of the global services market relates to the EU (Vapa-Tankosić 2011). Boosting trade growth in goods and services can be an important vehicle to emerge from crisis, and well-conceived trade liberalization and exchange rate adjustment can contribute to this aim.

Based on regional integration theory and general trade theory of open economies, countries in region with similar production structure and similar level of GDP, have evidenced significant benefits out of regional trade liberalization. Regional trade agreements have led to some of the most important economic integrations (for example, European Economic Community later European Union (EU), EFTA – European Free Trade Association, NAFTA – North American Free Trade Agreement, CEFTA – Central European Free Trade Agreement, etc.). Regional Trade Agreements (RTA) have been developed to implement different levels and forms of trade liberalization among the partner countries. RTA enable trading partners to go deeper and faster in their liberalisation process, frequently addressing less transparent trade barriers. The gravity model also suggests that countries geographically close trade more than distant countries. RTA often go beyond standard trade policy concerns to stimulate the economic growth and faster reform process, which is true especially for developing countries, the so-called process of North–south integration with industrialized neighbours.

Findings of Gorodnichenko et al. (2009) provide evidence that policy measures that facilitate foreign direct investment and international trade enhance domestic welfare which improves productivity and competitiveness in transition economies. Deep economic integration, more easily achieved in the proximity of the country and

region, should go beyond merchandise trade liberalization (Kathuria 2008). It should be regarded as the extension of the "four freedoms" of the Single Market to the South (the movement of goods, services, capital and labour) with a targeted removal of tariff and non-tariff barriers through trade liberalization, domestic reforms, and partial regulatory convergence (Muller-Jentsch 2005). Dynamic productivity gains, gaining comparative advantage in export markets, knowledge spillovers and greater foreign investment, are a key factor in seeing benefits under the regional trade agreements and future trade liberalization.

With a motivation of political and economic factors the EU has been a major factor in promoting regional free trade agreements to the Mediterranean countries and other developing economies. This paper addresses important issues related to the current degree of regional trade cooperation and economic integration of EU trade relations with Mediterranean and Western Balkans (north–south integration) as well as intraregional cooperation (south-south integration).

12.2 Macroeconomic Overview of Western Balkans

As early as 1999, the EU offered to the Balkan countries, under certain conditions, a closer relationship and a possible association with the EU, as part of the SAP. Since the Feira European Council in June 2000, all Western Balkan Countries (WBC) have held the status of potential accession candidates that was also confirmed in Thessaloniki in June 2003. Albania, Bosnia and Herzegovina and Kosovo[1] are potential accession candidates. The Former Yugoslav Republic of Macedonia, Serbia and Montenegro have candidate country status. Croatia is to become the 28th member of the EU in July 2013.

As for Republic of Serbia, with 7.5 million people and with the second largest market in South East Europe, one can say that it has entered the transition with 10 year delay from the rest of the WBC, as a destroyed country brought "back in past" at least 50 years ago. In the period from 1991 to 2000, when the WBC were using the transition processes for building and strengthening of their economic systems and state institutions, Serbia has passed through isolation and the sanctions imposed by the international community, hyperinflation, problems in Kosovo and NATO bombing. The opening of the economy has had an impact on the increasing trade flows, foreign direct investment increase and slow integration of financial markets (Vapa-Tankosić 2009).

Trade and economic relations play an important role in the process of integration of the WBC into European political and economic environment. Since the market reforms in 2000, along with the Stabilization and Association process launched by the EU, WBC have taken significant measures to expand trade with EU and

[1] Under United Nations Security Council Resolution 1244.

improve the level of economic cooperation. European perspective of WBC is the driver of their regional cooperation (Monastiriotis 2008).

Enhancing closer cooperation and more intensive trade among WBC economies is an important premise for the process of stabilization and association with the EU, which is currently the most important issue in the EU-WBC relations. CEFTA and the Stabilisation and Association Process (SAP) provide the frameworks for trade cooperation in the WBC. As outlined by Handjiski et al. (2010) greater trade integration prior to becoming part of the EU has multiple benefits as countries need to align to the *EU acquis* in trade-related areas, firms better able to cope with the competitive pressures within the EU, and national administrations to build up capacity in regional cooperation.

The WBC are still dominated by public enterprises and the dynamism of the private sector is of capital importance to be able to open up to competition. The ratio of exports of goods and services to GDP for the countries from the WB region ranges between 27 % for Serbia to 44 % for Macedonia in 2009, which is much lower compared to most of the new EU member states among which only four, Latvia, Poland, Cyprus and Romania, have a ratio lower than 50 % (Zajc and Kumar 2011).

For all WBC, The Stabilization and Association Agreements (SAA) aim to eventually establish free trade zone and the EU as a precondition for preparing the economies to join EU in the years to come. SAA which involve the establishment of Free Trade Areas, were preceded by *asymmetrical trade liberalization* in favour of the WBC. These countries were granted trade preferences that allow exports of almost all products originating from WBC to the EU without customs duties or quantitative limits. This measure, which gives those countries even more beneficial status then the treatment foreseen in SAA or Interim Agreement, strongly contributed to increase of WBC export to EU market (see Fig. 12.1), which is their largest trade partner making for 61.3 % of total import (worth €26.5 billion) and 64.5 % of export (€14 billion) of the Western Balkans countries in 2010 (European Commission 2011). Together with the bilateral agreements, these trade preferences have been the important tool for supporting economic integration, fostering political stability and economic progress in the entire region.

It is not a surprise that the balance of trade is strongly in favour of the EU, but it is also clear that WBC export to EU shows much higher average annual growth then their import (see Table 12.1). Annual share of goods originating from WBC in total EU import has constant value of 0.9 %. Share of EU export to WBC countries varies more, with values between 2 % and 2.5 % of total EU annual export worldwide (see Table 12.2).

Due to global economic crisis, in the year 2009, there has been strong decline in both imports (−22.5 %) and exports (−18.9 %) compared to previous year. Unfortunately, the main branches affected by the crisis in WBC were the same as in other parts of the world (construction, the automobile industry, textile production, tourism

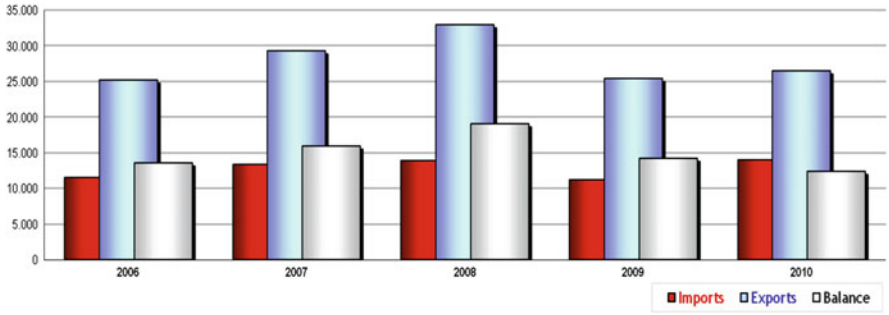

Fig. 12.1 EU trade balance with Western Balkans (*Source*: EUROSTAT 2011)

Table 12.1 Western Balkans trade volume with EU, 2006–2011

Western Balkan countries, trade with the European Union								
millions of Euro, %								
Period	Imports	Variation (%, y-o-y)	EU Share of total imports (%)	Exports	Variation (%, y-o-y)	EU Share of total exports (%)	Balance	Trade
2005	19.196			8.170			−11.025	27.366
2006	17.839	−7,1	66,5	8.577	5,0	68,9	−9.262	26.416
2007	19.635	10,1	65,5	9.379	9,4	67,2	−10.256	29.015
2008	22.457	14,4	65,9	9.827	4,8	66,4	−12.630	32.284
2009	16.782	−25,3	63,6	7.591	-22,8	63,3	−9.191	24.373
2010	16.921	0,8	61,3	9.531	25,6	64,5	−7.390	26.452
Average annual growth (2006–2010)		−1,3			2,7			−5,5

Source: EUROSTAT (2010)

Table 12.2 Share of WBC in EU total import and export

EU trade with Western Balkans countries		
Period	Share of total EU imports (%)	Share of total EU exports (%)
2006	0.9	2.2
2007	0.9	2.4
2008	0.9	2.5
2009	0.9	2.3
2010	0.9	2.0

Source: EUROSTAT (2011)

and others). Exports for manufactured goods declined much faster than agriculture exports.

From the rest of the World, as we can see, Russia, China and Turkey with 12.6 % take part in total WBC trade, with United States of America (USA) and Switzerland

Table 12.3 Volume of Western Balkans countries trade turnover in 2010

Western Balkans trade with the world						
					Millions of Euro, %	
Period	Imports	Variation (%, y-o-y)	Exports	Variation (%, y-o-y)	Balance	Trade
2005	28.261	–	12.306	–	−15.955	40.568
2006	26.839	−5.0	12.445	1.1	−14.394	39.284
2007	29.998	11.8	13.958	12.2	−16.040	43.956
2008	34.080	13.6	14.799	6.0	−19.281	48.879
2009	26.402	−22.5	11.995	−18.9	−14.407	38.398
2010	27.594	4.5	14.782	23.2	−12.812	42.376

Source: IMF (2011)

being slightly more present in the export part (1.1 % and 1.9 %, respectively) and Azerbaijan in import (1.2 % of mainly oil) are partners with individual significance. MEDA countries[2] count for 0.9 % of Western Balkans total trade, with approximately €400 million turnover in 2010, representing 1.5 % of total Western Balkans export and 0.6 % of import (Table 12.3).

WBC have large trade deficit as well as low export share to GDP. Current account deficit has been constant issue in all WBC for the last decade. According to a study (Kathuria 2008) it has been widened from 4.1 % of regional GDP in year 2000 to 8.8 % in 2008. Relatively low percentage of export in GDP is also one of characteristics for WBC, averaging 38.9 % in 2005 compared to 67.9 % in Hungary for the same period (Fig. 12.2).

Gross external debt has fallen from 52 % to 47 % of average GDP of the WBC. It is interesting that in various countries in this region there have been different trends. For example, in Serbia external debt fell by more than half (from 102 % in 2000 to 47.6 % in 2005) but in the same period in Croatia it rose from 61.2 % in 2000 to maximum of 87.9 % in 2004 and fell to 78.5 % in 2005 (Kathuria 2008). Large current accounts deficits present in many WBC (see Table 12.4) raise concerns about macroeconomic stability which can be seen through deviations of exchange rates.

Revealed comparative advantages WBC with EU have not evolved since 2004, and are mostly industries with low technological intensity while foreign direct investments are largely oriented toward services sectors (financial services, trade, real estate, telecommunications, and energy sector). In their further economic development WBC have to make progress in various areas connected with structural reforms (such as fiscal prudence, energy supply and prices, improvement of human capital).

[2] MEDA countries: Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Occupied Palestinian Territory, Syria, Tunisia.

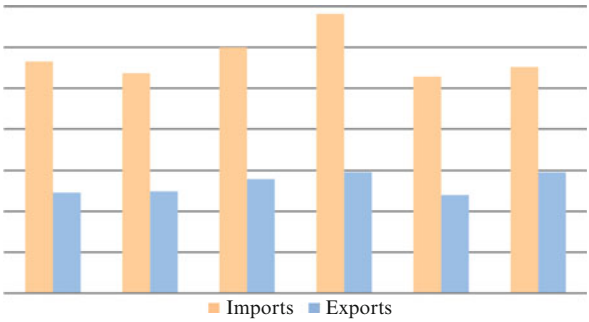

Fig 12.2 Western Balkans countries export and import 2005–2010 (*Source*: IMF 2011)

Table 12.4 Some Western Balkans countries current account balances as percentage of GDP

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
BiH	−10.6	−13.9	−17.5	−17.3	−16.4	−18.1	−7.8	−10.4	−15.1	−7.5
Croatia	−2.6	−3.7	−8.3	−7.2	−5.4	−6.6	−7.0	−7.6	−9.3	−5.4
FYR Macedonia	−2.0	−7.6	−9.4	−3.2	−7.7	−1.4	−0.9	−7.2	−12.7	−7.2
Serbia and Montenegro	−3.0	−3.5	−6.8	−7.2	−9.7	−7.5	–	–	–	–
Serbia	–	–	–	–	–	–	−12.9	−17.2	−17.8	−6.0
Montenegro	–	–	–	–	–	–	−24.7	−39.6	−50.7	−29.1

Source: World Bank (2012), IMF (2011)

12.3 Overview of Central European Free Trade Agreement (CEFTA)

CEFTA cooperation, with objective of faster trade integration with the European Economy, has been an important component of the EU pre-accession process. For all eight parties to the Agreement, Albania, Bosnia and Herzegovina, Croatia, Macedonia, Moldova, Montenegro, Serbia and Kosovo, the Agreement entered into force in 2007. This multilateral trade agreement has replaced 32 bilateral free trade agreements in Western Balkans with the aim of preparing the economies for the competitive pressures of the EU market. CEFTA has provided more stable conditions for trade regulations in the region as it involves the system of political and legal regulation of trade conflicts and introduces set of rules concerning the respect of protection of industrial property, competition, liberalization of services, and public procurements.

Beside the elimination of tariff barriers, CEFTA 2006 includes measures which enable easier trade (suspension of non-tariff barriers, introduction of standards, sanitary measures, cooperation of customs in order to simplify the administrative procedures). Easier cross-border joint production due to the implementation of the protocol on rules of origin, i.e. "accumulation of origin" of goods which are being produced mutually in several countries of CEFTA have enabled easier free-customs treatment of exported goods to the EU countries and the region (EU Commission 2011).

Table 12.5 Economic and trade data for CEFTA in 2008

	Population (in millions)	Exports to CEFTA (in € mn)	Imports from CEFTA (in € mn)	GDP (in € mn)	CEFTA exports per capita (in €)	CEFTA imports per capita (in €)	CEFTA exports to GDP ratio (in %)
Albania	3.2	125	298	8,364	39	93	1.5
Bosnia and Herzegovina	3.6	1,529	2,916	12,649	406	774	12.1
Croatia	4.4	2,253	1,051	47,165	509	237	4.8
Macedonia, FYR	2.0	922	511	6,477	452	250	14.2
Montenegro	0.6	159	1,227	3,393	247	1,911	4.7
Serbia	7.4	2,458	1,216	34,055	334	165	7.2
Kosovo	2.1	93	705	3,804	45	341	2.4

Source: Handjiski et al. (2010)

For example, Table 12.5 demonstrates that the CEFTA region is more than four times important as export market (35 % of total), then for import (8 % of total). According to participation in total export of Serbia, CEFTA members are the second by importance, after the EU market. Surplus in trade is made with Bosnia and Herzegovina, Montenegro, Macedonia and Albania. And while the trade with CEFTA countries Serbia achieves surplus, in trade with the rest of the world performs more than seven times higher trade deficit. The largest deficit is with Russian Federation mainly because of import of energy, oil and gas, followed by China, Germany and Hungary.

However, a number of individual companies presented case studies on the types of problems they encounter on a regular basis when trading within the CEFTA region (CEFTA 2010):

- Complex border crossing procedures that change frequently with little or no notice;
- Lack of co-ordinated opening times for border agencies at border crossings resulting in long waiting times;
- Inconsistent application of agreed procedures;
- Non-recognition of quality and health and safety certificates (SPS) and subsequent increased costs of double testing;
- Varying costs of licenses, tests etc., in some cases the cost of certificates is extremely high in relation to the cost of the goods;
- Instances of different (cheaper) charges for domestic producers (Table 12.6).

Looking at WBC intra-industry trade, it is concentrated in few heavy industries and the structure is very similar for all countries of the region (see Table 12.7). It can be seen that the "top four" industries dominate (iron and steel as first in all countries, except Croatia, metal and non metal manufactured products and electrical equipment). Despite the significant increase in WBC trade, its' structure does not signal significant trade integration as commodities continue to dominate and intra-industry

Table 12.6 Export structure to CEFTA and EU partners in 2007

SITC	Description	CEFTA	EU
0	Food and live animals	15.2	7.6
1	Beverages and tobacco	5.4	0.9
2	Crude materials except food/fuel	5.7	7.8
3	Mineral fuel/lubricants	15.3	3.6
4	Animal/veg oil/fat/wax	1.1	0.3
5	Chemicals/products n.e.s	10.1	6.3
6	Manufactured goods	26.7	26.2
7	Machinery/transport equipment	11.8	21.1
8	Miscellaneous man. arts	8.7	23.9
9	Commodities n.e.s.	0.0	0.1

Source: UN COMTRADE Database (2009)

Table 12.7 Industries with largest share of intra-industry trade (2007)

	Iron and steel (67)	Metal manufactures (69)	Non-metal mineral manufactures (66)	Electrical equipment (77)
Albania	12.6	0.5	3.0	1.7
BiH	5.4	4.9	2.6	2.3
Croatia	4.2	4.2	2.0	1.8
Macedonia, FYR	5.2	2.5	3.1	3.5
Serbia	2.2	2.9	3.2	3.4

Source: UN COMTRADE Database (2009)

trade remains low compared to intra-industry trade performance in the EU-10[3] countries Handjinski (2010).

12.4 Trade in the Euro-Mediterranean Region

From the inclusion of a Mediterranean Chapter in the Helsinki Final Act in 1975 new initiatives supported in the 1980s aimed to foster both political and economic cooperation. François Mitterrand, with an aim of preserving stability in the region had in mind, created a Forum, to bring together five members of the Arab Maghreb Union and their northern neighbours, to contribute to the establishment of the Western Mediterranean Dialogue in 1990. Unfortunately, in 1992, the sanctions imposed on the Libyan Arab Jamahiriya, and the tensions between Algeria and Morocco marked the end of the dialogue (Adamo and Garonna 2009).

In 1994 France and Egypt established the Mediterranean Forum that has led to the creation of a new partnership of EU Ministers of Foreign Affairs and the

[3] The EU-10 includes Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia.

Mediterranean countries in Barcelona conference in 1995. The Euro-Mediterranean Parliamentary Assembly (EMPA), established in 2003, the Parliamentary Assembly of the Mediterranean (PAM) in 2005, and 3 years later the Union of the Mediterranean stressed the need for deeper integration of Euro-Mediterranean Free Trade.

Mediterranean Region (MEDA[4]) is characterized by wide variations in levels of GDP per capita, ranging from around 1,000 US dollars in Egypt and the Palestinian territories to 5,200 US dollars in Lebanon and over 17,000 US dollars in Israel. External trade opening has been improved and nearly all Mediterranean partner countries have become members of the WTO (except for Algeria, Lebanon, Syria and Palestine). Apart from Syria, all Mediterranean countries that belong to the Euro-Mediterranean partnership (now integrated in the Union for the Mediterranean) have concluded Association Agreements with the EU (except Libya which belongs to the Union for the Mediterranean, but is not a member of the Euro-Mediterranean Partnership).

European Neighbourhood and Partnership Instrument (ENPI) provide financial support for the objectives of the Barcelona Process, the Association Agreements, the ENP and the ENP Action Plans. For the Financial Framework 2007–2013, approximately €12 billion in EU funding are available to support these partners' reforms, an increase of 32 % in real terms as compared to 2000–2006 Financial Framework EU Commission *DG EuropeAid* Development and Co-operation (2011). Several industries have been underlined as particularly dynamic that could make up the region's potential such as petroleum and chemical industry and chemicals, agriculture, ICT, production of goods, pharmaceutical industry, tourism.

Main trade partner for MEDA countries is EU, accounting for slightly more than 40 % of total MEDA trade (2010), with US on second place with 9.5 % and followed by China, Russia, Saudi Arabia, India, Turkey and South Korea. Countries with higher trade intensity are Malta, Turkey and the Maghreb area. Among EU exporters to MEDA the most important trade partners, France, Germany, Italy, Spain and the UK, together represent more than 70 % of total EU-MEDA exports and imports, thanks to historical and geographical and the access to the Mediterranean Sea (Ferragina et al. 2005) (Table 12.8).

It is not surprising that trade balances of all Mediterranean countries are negative and, as in all developing countries, tariffs are higher than in industrial countries. Therefore, the transitional period to free trade in industrial products is asymmetric as liberalization schedule for export to EU is shorter than that for import to MED countries. For example, in case of Egypt free import of motor vehicles is postponed for as much as 15 years (Francois et al. 2005). The EU has started reducing tariffs for a large number of industrialized products even before the Barcelona agreement. The levying of tariffs and trade barriers for manufacturing products followed a gradual liberalization for agricultural products and services. The agreements set out

[4] MEDA includes in this analysis Algeria, Cyprus, Egypt, Israel, Jordan, Lebanon, Malta, Morocco, the Palestinian Territory, Syria, Tunisia and Turkey.

Table 12.8 Trade volume MEDA/EU 2005–1010

MEDA trade with the European Union								
							Millions of Euro, %	
Period	Imports	Variation (%, y-o-y)	EU share of total imports (%)	Exports	Variation (%, y-o-y)	EU Share of total exports (%)	Balance	Trade
2005	60.275	–		50.202	–		−10.072	110.477
2006	63.612	5.5	41.5	56.744	13,0	43.2	−6.868	120.356
2007	72.596	14.1	41.3	55.997	−1.3	41.0	−16.599	128.593
2008	80.875	11.4	40.3	67.580	20.7	42.0	−13.295	148.456
2009	69.460	−14.1	41.1	46.518	−31.2	40.0	−22.942	115.977
2010	79.635	14.6	38.9	58.329	25.4	39.1	−21.305	137.964

Source: IMF (2011)

a gradual reduction of tariff and non-tariff barriers applied on industrial products, while anticipating a progressive liberalization of trade in agricultural products through reciprocal preferential access to the markets of the parties to the agreements (Cvikl 2008).

However, scholars argue that the economic integration of the EU-Mediterranean region has been slower than expected and insufficient growth and continued demographic expansion have increased the prosperity gap between the EU and most Mediterranean countries as there has been no real economic convergence (De Wulf et al. 2009). Economic prospects of the Mediterranean countries are constrained by the lack of ambition in their relationships with each other and with their major export market, the EU (Brenton and Manchin 2003). Miniesy et al. (2004) find that MEDA trade with the EU was much more developed back in the 1970s and 1980s (up to 1984).

At the same time, intra-regional free trade agreements have been implemented among the Mediterranean Countries themselves. The Agadir Free Trade Agreement and the agreement reached on a single protocol of origin including provisions for the accumulation of origin among all pan-Euro-Mediterranean partners has given a new impetus to South-South economic integration. Total intra-regional trade amounted to €15 billion in 2009, one of the lowest levels of regional economic integration in the World. The situation is similar in other regions. Studies on internal trade relations in Gulf Cooperation Council[5] states that as little as 5 % of the goods exported by one of GCC country in 2008 went to another GCC country (see for instance Peeters 2011).

Unfortunately, the political turmoil in some of the MEDA countries leads to serious problems in their economies. Financing for trade is particularly scarce in moment of global financial crisis. In both North and South, they face problems in obtaining bank loans to finance their expansion and fulfil their potential. Commercial

[5] Saudi Arabia, Kuwait, Bahrain, the United Arab Emirates, Oman and Qatar.

Table 12.9 MEDA countries trade with the World 2005–2010 in millions of Euro

Period	Imports	Variation (%)	Exports	Variation (%)	Balance	Trade
2005	137.242	–	112.433	–	−24.809	249.675
2006	153.173	11.6	131.332	16.8	−21.840	284.505
2007	175.748	14.7	136.615	4.0	−39.133	312.363
2008	200.768	14.2	160.829	17.7	−39.940	361.597
2009	169.044	−15.8	116.191	−27.8	−52.853	285.235
2010	204.589	21.0	149.214	28.4	−55.375	353.802

Source: IMF (2011)

banks subsidiaries apply strict country credit ceilings directly imposing high risk premiums on lending to developing countries or reduced country and bank limits, which directly affects significantly higher risk pricings (Vapa-Tankosić et al. 2010).

The impact of global recession and problems in Euro zone, MEDA main trade partner, has dangerous consequences. For example, in Tunisia real GDP in 2011 has contracted by 0.5 % due to a sharp decline in main sources of foreign currency, tourism and mining on the production side, and investment and net exports on the expenditure side. According to Institute for International Finance, Tunisia's economy needs to grow by 6–7 % to reduce high unemployment rate of 18 % (2011) to 7–9 % by 2017 (Table 12.9).

Egypt, as one of most important MED region economies, can be good example for the benefits FTA brings to Mediterranean countries. From the entry into force of the Association Agreement in 2004 until 2008 this country bilateral trade with the EU nearly doubled, from €11.5 billion to €20.9 billion. In the light of the global financial crisis 2009 total trade volume contracted by almost 10 % while in 2010 it reached its highest ever level of €22 billion. In 2009, the EU imports from Egypt were dominated by energy (53.1 %), followed by chemicals (10.9 %) and textiles and clothes (10.4 %) industries. EU exports to Egypt consist mainly of machinery (39.1 %) and chemicals (10.7 %). As is the case with majority of other MEDA countries, EU is also Egypt's main trading partner with 33 % of Egypt's total trade volume. EU also ranks first both as Egypt's import (33.5 %) and export partner (32.1 %). In 2010 Egypt ranked 28th among the EU's trade partners (21st export and 36th import partner).

Some scholars advocate that the persistent barriers to trade along with remarkable social and economic differences between the two shores of the Mediterranean have made less optimistic the perspectives of enhanced financial and commercial integration compared to that of Eastern Europe (Ferragina et al. 2005). In the majority of MEDA, the degree of state-ownership remains high, capital markets are small and immature, and there is relatively little FDI in the sector which contrasts with the situation in Eastern Europe where policy reforms during the 1990s allowed foreign financial institutions to bring new capital, modern management, and competition to the sector (Muller-Jentsch 2005). Turning to the literature and analyzed gravity models, studies available invariably suggest that intra-MENA trade flows for five MENA countries appear low in relation to what would be predicted on the basis of a gravity model based because of the border effects

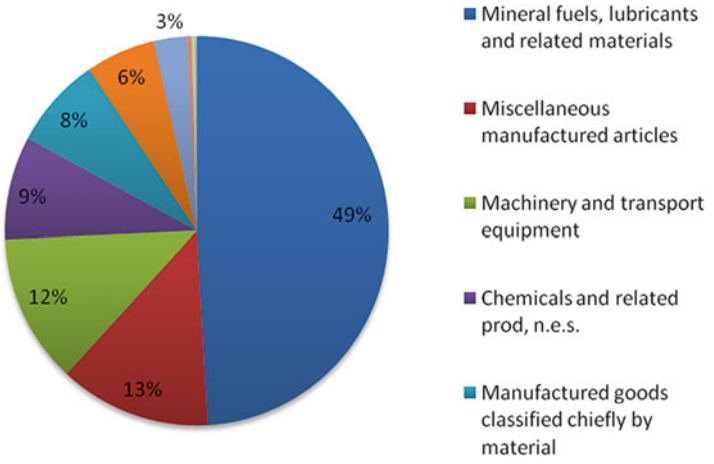

Fig. 12.3 Structure of EU import from MEDA in 2010 (*Source*: EUROSTAT 2011)

(the costs of trade) for MENA countries in trade among themselves are higher (Péridy 2005a).

Similar study (Péridy 2005b) applied to the EU and countries covered by the European Neighbourhood Policy demonstrated significant potential for the expansion of trade between MED and the EU and deeper integration bringing the tariff and non-tariff barriers to trade closer to for the intra-EU trade. The impact of the Barcelona process with regard to North–south trade relations points out that there is very little direct evidence of much of an impact being "too early" to find evidence of a trade impact, as for most of the partner countries the process of liberalizing their tariffs with respect to the EU was far from complete, and non-tariff barriers or general economic conditions in the Mediterranean partner countries remained maybe too restrictive to counteract any trade enhancing impact of the decline in tariffs (De Wulf et al. 2009) (Fig. 12.3).

12.5 Policy Implications

Both MEDA and WBC countries have taken significant measures for trade liberalization while adopting adequate frameworks for trade facilitation followed by regulatory and policy reforms for deeper integration and further economic growth. Undoubtedly, there is evidence of the existence of an important unexploited trade potential and "under trading" between the observed regions. Presently, MEDA and WBC are in the process of making substantial changes in their tariffs and legislations to meet goals requested by the regional trade agreements, as a part of the largest task of substantial structural reforms and greater external financial support.

In order to achieve significant economic and overall development, Mediterranean countries and WBC have to be more competitive, especially on the EU market, the later being their main partner in trade and economic relations in general. They have to use the fact that MEDA and WBC is important export destination for EU producers. Best way to achieve these goals is the closer cooperation with the EU, but also higher level of trade between countries inside both regions. Enhancement of productive capacity with mutual cross border projects and other similar measures will be beneficial for enhancing competitiveness and economic growth.

Various financial incentives, available funds and programmes initiated by the EU are available to both Mediterranean and Western Balkans countries. The future of the economies in the region will depend on enhancing their efficiency and performances in industry, service and know-how. Modernizing production and raising efficiency and competitiveness, accelerating structural changes toward knowledge-based services are the major generators of value added, exports and new jobs. However, the recovery of economies will depend in first place on political and security developments.

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Authors Biographies

Sherine H. Al-Shawarby is currently resident senior country economist at the World Bank office in Cairo and associate professor of economics in Cairo University. She has published several papers on a wide range of issues in Egypt: exchange rates, trade, inflation, fiscal sustainability, subsidies, poverty, and inequality. Sherine Al-Shawarby studied economics at the Faculty of Economics and Political Science in Cairo University until she earned her Ph.D. in Economics in 1997.

Amir Armanious, Ph.D. is a lecturer of financial economics at faculty of business and economics, Macquarie University. An experienced financial professional with practical experience developed in an academic and work environment. Armanious's research interests are in financial crisis, systemic risk, financial risk management, capital market integration, credit risk, asset pricing, and valuation. His research has been published in academic as well as professional journals.

Samouel Beji is a Tunisian citizen and an associate researcher at the University Paris XIII (France) where he obtained his Ph.D. in Economics. He holds a Master in Banking and Monetary Economics from the University of Tunis. He published on financial development for developing countries and the autonomy of nations facing the global economy in books and scientific reviews. His mail-address is samouel.beji@gmail.com.

Abdelbar Ejbari is Professor of Finance and Management at the *Université Abdelmalek Essaâdi* in Tétouan (Morocco) and a member of the *Groupe de Recherche en Management et Systèmes d'Information* (GREMSI) at the *École Nationale de Commerce et de Gestion de Tanger* (ENCGT, Morocco). His mail-address is ejbari@live.fr.

Elias El-Achkar is Director of Research and Statistics at the Association of Banks in Lebanon. Dr El-Achkar, a graduate of Leeds University, UK, has authored and co-authored policy articles related to the banking sector and the financial markets in Lebanon and MENA countries and academic articles on monetary and fiscal

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policy and exchange rates. He has also offered courses in banking and finance at major universities in Lebanon and presented academic and policy research in international conferences and seminars.

Arafet Farroukh is Assistant Professor at the University of Carthage FSEG Nabeul and has a Senior Fellowship at L.I.E.I. University el Manar FSEG in Tunis, Tunisia. E-mail: arafet.farroukh@yahoo.com.

Marco Greggi is Research Fellow at the Department of Business Law and Taxation of Monash University and Professor at the Faculty of Law of the University of Ferrara in Italy.

Imad El Hamma is a Ph.D. Student in Economics at the *Centre d'Etudes en Macroéconomie et Finance Internationales* at the *Université de Nice Sophia Antipolis* in Nice (France). His mail-correspondance address is imad.elhamma@gmail.com.

Mazin A.M. Al Janabi earned his Ph.D. from the University of London, UK, and currently is an associate professor of finance & banking at the Faculty of Business and Economics (FBE), United Arab Emirates University, Al-Ain, UAE. He has several years of real world experience in financial markets and the banking sectors where he held a number of senior positions, such as Head of Trading of Financial Derivative Products, Head of Trading Risk Management, Director of Asset and Liability Management and Director of Global Market Risk Management. He has written extensively, in leading scholarly journals, on finance & banking and contemporary topics in trading, market and credit risk management as well as on strategic assets allocation and modern portfolio management. His research interests and consulting activities address practitioners and regulatory issues in finance & banking, financial risk management, derivative securities and portfolio management. His research has appeared in the *International Review of Financial Analysis*, *Annals of Operations Research, Review of Financial Economics, Journal of Asset Management, Service Industries Journal, Journal of Risk Finance*, *Journal of Financial Regulation and Compliance*, *Journal of Banking Regulation,* among others. His address is: Department of Economics and Finance, Faculty of Business and Economics, United Arab Emirates University, P.O. Box 15551, Al-Ain, United Arab Emirates (UAE). E-mail: mazinaljanabi@gmail.com & m.aljanabi@uaeu.ac.ae.

Natasa Zunic Kovacevic is a full-time Associate Professor of Financial and Tax Law at the Faculty of Law, University of Rijeka in Croatia. She has a Law Degree of the University of Rijeka and a Master of Law (LLM) and Ph.D. in Law of the University of Zagreb (Croatia). Her areas of interest include European Tax Law as well as Procedural Tax Law. Her email-address is zunic@pravri.hr.

Marga Peeters organized the MRM workshop and wrote this chapter while she was a Research Fellow at the Netherlands Institute for Advanced Study (NIAS) of the Royal Netherlands Academy of Arts and Sciences (KNAW). She gained research and policy experience as Senior Economist at the European Commission, Resident Monetary Policy advisor of the International Monetary Fund (IMF) at the

Banka e Shqipërisë in Albania, Assistant Manager in the Scientific and Econometric Research Department of De Nederlandsche Bank, Post-Doc Research Fellow at the *Banco de España*, University of Warwick, *Université Catholique de Louvain* and the *Centre de la Recherche en Economie et Statistique*. She holds a Ph.D. in applied econometrics from Maastricht University and a MSc in applied econometrics from Tilburg University. Contact details huber@TinaMargaPeeters.eu www.TinaMargaPeeters.eu.

Srdjan Redžepagić, Ph.D. is Deputy Director of the Research Institute of Economic Sciences in Belgrade (Serbia) and visiting Professor of Economics at the University of Nice Sophia Antipolis (France). His fields of interests are EU economy, European integrations, and foreign direct investment. Previously, he gained experience in EU projects, as leader or participant, and is responsible of many research projects in Serbia and some EU countries.

Federica Roccisano is a Ph.D. Student at the Catholic University of Milan. She works as research fellow at MEDAlics, the Research Center for Mediterranean Relations, where she is also International Relationship Coordinator. Her e-mail-address is Federica.Roccisano@medalics.org.

Nidal Rachid Sabri is professor at Birzeit University, Palestine. He served 21 years as the Dean of college of Commerce & Economics and Director of MBA program at the same University and received his doctoral degree from the University of Northern Colorado, USA. As a consultant he served on several missions with UN Organizations including; UN-ESCWA, UNDP, UNIDO, UNCTAD,, UNHABITAT, the ILO and he was a visiting scholar at the research department of the IMF. He published among others in the Journal of Derivatives & Hedge Funds, International Review of Applied Financial Issues and Economics, International Journal of Business and Globalization, International Journal of Business and Emerging Markets, Research in International Business and Finance, Advances in Financial Economics, International Journal of Business, Review of Accounting and Finance, Journal of Multinational Financial Management, International Journal of Commerce and Management, International Management, Small Business Economics, International Review of Comparative Public Policy, Finance India, Journal of International Accounting, Auditing and Taxation, Transforming Government: People, Process and Policy Journal , Middle East Business Review, Journal of Economic and Social Research and Management Accountant. He is the author of 25 books including: Stability of International Stock Markets, Financial Institutions and Markets in Arab Economy, Income Taxation and Budgeting.

Hoda Selim is an economist at the Economic Research Forum (ERF) in Cairo since April 2011. Prior to joining ERF, she worked for 5 years at the World Bank's Cairo Office in the Poverty Reduction and Economic Monitoring department. She previously held a research-related position at the Global Development Network. She has participated in research on macroeconomic issues in Egypt and the Arab region including economic development, economic growth, monetary and exchange rate issues. Hoda Selim has a BA in economics from Cairo University,

an MA in Corporate and International Finance from Sciences Po in Paris, as well as a Ph.D. from the same school. Hoda is an Egyptian citizen.

Wassim Shahin is Professor at the School of Business, Lebanese American University in Lebanon. He served as the founding Dean of the School of Business on the Byblos campus from 1996–2011. He has authored and co-edited four books, several monographs, and over thirty articles in refereed international journals. He is the founding editor of the academic Journal "Review of Middle-East Economics and Finance". He serves on several editorial boards of academic journals and organizations. He is a member of the board of Directors of several public, private and banking institutions. Before joining the Lebanese American University, he held tenured and visiting positions in the USA at DePauw University and Indiana University, Bloomington where he earned his doctorate.

Maria Rita Sidoti is Senior Research Fellow at the School of Finance and Economics of the Ministry of Finance in Italy.

Miroslav Stojsavljević, Ph.D. Candidate, Assistant and Lecturer at the Faculty of Economics and Engineering Management, University Business Academy Novi Sad in Serbia for International Finance and Financial Markets & Institutions. More than 15 years he had managing positions in international banking for Raiffeisenbank, the National Bank of Greece and Eurobank Financial Group.

Dr Fatiha Talahite is an economist and researcher at the *Centre National de la Recherche Scientifique* (CNRS) in France. From 1995 to 2000, she was a member at the *Centre Lillois d'Études et de Recherches Sociologiques et Économiques* (CLERSE) and at the Centre d'Economie at the University of Paris Nord (CEPN). In 2012, she became Assistant Director of the Centre de Recherches Sociologiques et Politiques in Paris (CRESPPA). She began to teach economics at the University of Oran in Algeria until 1994. Then, she went to France and lectured economics in the universities of Lille 1, Paris 11, Paris 13 and Paris 8. Her main research is on the economic transformations in Algeria, particularly since the country began a transition process from a centralized and planified socialist economy to a market economy. She published many articles and has contributed to many books on this topic. Her mail-address is Fatiha.talahite@gtm.cnrs.fr.

Jelena Vapa Tankosić, Ph.D. is Assistant Professor at the Faculty of Economics and Engineering Management of the University Business Academy Novi Sad and employed as a Director of International Operations in the Development Bank of Vojvodina in Serbia. She has scientific publications in the field of international trade, exports' promotion and European integration.