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Full Research Paper

Financial Instability in Tunisia (April 2012)

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The aim of this paper is to contribute to the study of the causes of financial instability in Tunisia. The empirical research followed in this paper has a major purpose, which to assess the relationship of causality among a panel of explanatory variables and the financial instability. The model elaborated in the empirical investigation of this survey is based on estimating a time series covering the period 1990 – 2011, by taking the Tunisian case for example. The results show that financial instability in Tunisia is related with the weak institutional quality from analyzing the coefficients of the explanatory variables: government effectiveness and the government regulation. Given this conclusion, we raise more the added gains for macroeconomic and financial stability and to avoid financial crisis that could occur if this country switches openly to strength governance.

Keywords: Institutions and the Macro economy, Financial Markets and the Macro economy, Financial Crises, Tunisia, Financial instability.

INTRODUCTION

Financial stability is a major purpose always searched by policy makers all over the world. The financial crisis shows the dangerous impact of financial instability to the country where the crisis occurs and its contagious effects to the other countries. Before starting, it is important to give a clear definition for the financial instability concept.

An extensive research suggests no easy definition of financial instability.

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Following an abandon literature we identify two schools: the first who define financial stability and the second who prefer define financial instability.

Related to the first school, contends that "*the objective of financial system stability could therefore be defined, in broad terms, as the avoidance of disruptions to the financial system that are likely to cause significant costs to real output".* posits that:"*we have financial stability where there is: a) monetary stability;b) employment levels close to the economy's natural rate; c) confidence in the operation of the generality of key financial institutions and markets in the economy; and d) where there are no relative price movements of either real or financial assets within the economy that will undermine a) or b)*"

Schinasi (2004) suggests that financial stability is defined "*in terms of its ability to facilitate and enhance economic processes, manage risks, and absorb shocks".* Moreover*,"financial stability is considered a continuum: changeable overtime and consistent with multiple combinations of the constituent elements of finance"* idem..

According to financial stability"*is a condition where the financial system is able to withstand shocks without giving way to cumulative processes, which impair the allocation of savings to investment opportunities and the processing of payments in the economy*".

For the second school, economists argue that financial stability could best be understood by considering its absence: "financial instability". For example, Davis (2001) defines financial instability as "*a heightened risk of a financial crisis".* A financial crisis is then described as *"a major collapse of the financial system, entailing inability to provide payments services or to allocate credit to productive investment opportunities*"suggests that "*financial instability occurs when shocks to the financial system interfere with information flow so that the financial system can no longer do its job of channeling funds to those with productive investment opportunities*".

submits that financial instability is "*conditions in financial markets that harm or threaten to harm an economy's performance through their impact on the working of the financial system*".

financial instability is "*a situation characterized by three basic criteria: i) some important set of financial asset prices seem to have diverged sharply from fundamentals; and/or ii) market functioning and credit availability, domestically and perhaps internationally, have been significantly distorted; with the result that, iii) aggregate spending deviates (or is likely to deviate) significantly, either above or below, from the economy's ability to produce*"

To thwart this financial instability, many central banks all over the world established *financial stability departments* and started publishing *Financial Stability Reports*. They have also adopted specific definitions in their official website to offer some guidance to their aim of maintenance financial stability. For example, in the website of the Reserve Bank of Australia we find this definition : « *A stable financial system is one in which financial intermediaries, markets and market infrastructure facilitate the smooth flow of funds between savers and investors and, by doing so, help promote growth in economic activity* ». In the same website we find too a definition of the financial instability as: « *a material disruption to this intermediation process with potentially damaging implications for the real economy. From this perspective, the safeguarding of financial stability can be seen to be a forward-looking task – one that seeks to identify vulnerabilities within the financial system and, where possible, take mitigating action ...*».

Recently, the world economy is facing the worst crisis since the Great Depression. The financial crisis has taken a global feature, spreading from the USA, Europe and the emerging markets. For developing countries, suggest that over the last quarter of a century financial instability has reduced the incomes of developing countries by roughly 25 percent. Like the other emerging countries, Tunisia has suffered from financial crisis. That's why, in this paper we will try to explain the determinants of this financial instability in Tunisia. Following an empirical approach widely used by many authors, mainly after the recent international crisis, we develop an empirical model based on estimating a time series covering the period 1990 – 2011.

First we must specify that since 1986, reforms were started to improve Tunisian financial policy. Moreover, a new law was passed in November 1994 to reinforce the reforms of the juridical and regulatory environment through creating three institutions:

1) The CMF (Conseil du Marché Financier), which is a supervision institution responsible for protecting savings invested in securities and organizing the financial market;
2) The BVM (Bourse des Valeurs Mobilières), which is theStock Exchange supervised by theCMF;
3) The SDCR (Sociéte de Dépôts, de Compensations et de Réglements), which is an administrative institution responsible for operations concerned with settling and transferring property.

Following this new legislation, the Tunisian Stock Market has recorded an important rise in its activities since 1990. The Stock Market capitalization rises from 5% to 16% between 1991 and 1994.The growth of the Stock Market performingis accompanied by an imbalance between supply and demand. Indeed, demand exceeded supply from 200% to 500% and caused an important artificial appreciation of the Stock Market, which clearly created a *speculative bull*.Moreover, during the period 1986-1993, the current account balance realized a progress in comparison with that of the 1980s, from 4% of the GDP on average to 8.5%.

The remainder of this paper is organized as follows. Section 2 presents methodology and data. Section 3 presents the empirical results and their interpretations. Section 4 concludes the study.

METHODOLOGY AND DATA

The research methodology

The empirical research followed in this paper tends to find out a major purpose, which to assess the relationship of causality between a panel of explanatory variables and the financial instability:by taking the Tunisian case as an example.

For this reason, we elaborated a modelcontaining several explanatoryvariables, that we divided in two groups:the first oneisshowing the institutional quality of the countries, and the othercontains various macroeconomic aggregates, to represent thefinancial infrastructure of the countries.

The empirical investigationelaborated in this survey is based on estimatinga time series covering the period 1990 – 2011, by taking Tunisiafor example. We chose this period because it's marked by rapid evolution in technology and financial development of globalization.

The model specification

The depending variable

To estimate our model, we needed a depending variable representing the financial instability.For this reason, we have built our own indicator by focusing on the volatility of the exchange rate and the volatility of the reserves to import.

The explanatory variables

For the explanatory variables, we have used several indicators which we could group them in two panels:

- The first group of variablesrepresenting the financial structure like: the bank deposit, the bank credit, the government debt, the liquid liabilities of banks the openness of the economy.
- The second group of variables is representing the administration effectiveness and the institutional quality of the country, because such indicators have contributed in the banking crisis affecting the world in the last years. In our paper, we used the control of corruption, the government regulation, the government effectiveness.

Data

The bank deposit, the central bank assets, the bank credit and the liquid liabilities were calculated as a share from the GDP, and collected from the financial database of IMF: International financial statistics 2012.

The openness of the economy and the government debt as a part of GDP were collected from the database WDI: World Development Iindicators 2012.

Kauffman, Kraay and Zoido-lobaton (2012). For the variable representing the government regulation, we used The control of corruption is collected from the heritage foundation database 2012.The government effectiveness is an indicator compiled by the World Bank KKZ: the indicator built by Fraser Institute 2012.

The model

$$\begin{aligned}\text{Instability}_t &= constant + \beta_1 \text{liquid liabilities}_t + \beta_2 \text{bank deposit}_t \\ &+ \beta_3 \text{bank credit}_t + \beta_4 \text{ openess}_t + \beta_5 \text{ control of corruption}_t \\ &+ \beta_6 \text{ central bank asset}_t \\ &+ \beta_7 \text{ government effectiveness}_t + \beta_8 \text{ government regulation}_t \\ &+ \varepsilon_t\end{aligned}$$

Where$\beta_1, \ldots \beta_9$ and ε_t

EMPIRICAL RESULTS AND THEIR INTERPRETATIONS

After including several explanatory variables covering institution quality and financial infrastructure in this empirical investigation, we have succeeded identifying various models, to explain the origin of the financial instability in Tunisia. Our models were estimated by using the method of the ordinary least squares (OLS), and we found the following results:

According to the estimate table presented above, we could conclude a positive relationship between the liquid liabilities and financial instability. In many papers, the liquid liabilities aggregate is considered as an indicator of financial development of the country, like the paper of This allows us to deduct that the financial development is a destabilizing factor in Tunisia, because of its fragility According to the financial development in small countries raises them instability and therefore them poverty by affecting the economic growth. So, a fragile financial development could be harmful for developing countries by making them more vulnerable to external financial shocks.

The central bank assets tend to raise the financial instability, but statistically non-significantbecause of the few means of the Tunisian central bank facing the capital and exchange markets of the rest ofthe world.

A rise in the credit bank is joined with a rise in financial instability but the same variable tends to stabilize the monetary and financial environment of Tunisia, when it's lagged by one period. So, the previous credits given by Tunisian banks are diminishing the instability because they represent a cash flow in the current period, stimulating the liquidity and the monetary means of the banking sector. argues the positive relationship between credits and liquidity, conducting to stimulate the macroeconomic stability.

For the negative impact of the current credit on financial

Table 1. Numbers between parentheses are t-statistics. For variables beginning with a D: means the use of first differential because they are not stationary.

The results of the empirical investigation.

Variables	Model 1	Model 2	Model 3	Model 4
constant	-18.9* (-1.8)	-22.2* (-2.09)	-9.65 (-1.34)	-23.17** (-2.34)
Central bank asset	995.6 (1.4)	909.1 (1.03)	--	1107 (1.7)
DLiquid liabilities	--	102.6* (2.12)	90.1* (1.87)	58.02 (1.62)
DCredit bank $_{t-1}$	-0.46** (-2.43)	--	-0.21 (-1)	-0.52** (-2.9)
Government regulation	8.14** (2.9)	7.79* (2.2)	6.21** (2.39)	9.9*** (3.48)
Bank deposit	-84.9** (-2.38)	-80.1* (-1.96)	-75.6* (-1.96)	-103.4** (-2.93)
Dcredit Bank	0.3* (1.9)	-0.35 (-1.53)	0.2 (1.02)	0.31* (2.07)
Government effectiveness	9.85** (1.44)	16.26 (1.35)	14.1 (1.12)	10.56 (1.64)
DOpeness	-0.07 (-1.19)	-0.1 (-1.68)	-0.1 (-1.72)	-0.07 (-1.36)
Control of corruption	--	-4.42 (-0.76)	-4.71 (-0.83)	--
DGovernment Debt	--	-0.59 (-1.59)	-0.5 (-1.32)	--
Durban Watson test	1.66	2.12	2.18	2.13
R^2	64%	70%	70%	71%

*significant at 10%.
**significant at 5%.

stability, giving credits is diminishing the liquidity and raise the risk of solvability in developing countries, and thus continue to affect stability. The report of the West African monetary agency (2009) concludes that the credit risk is a major source of financial instability in the African countries, by affecting the permanence of the banking sector.

The coefficient of the government regulation is positive and at least significant at 10%, allowing us to conclude that the current regulation in the Tunisian government is raising the financial instability. Because a lack of competency and inefficiency of the banking sector administration, representing vulnerability for the macroeconomic stability of the country, the argues that countries should reinforce regulation and supervision of financial system, containing substantial fragility during last crisis.

There is a negative relationship between bank deposits and financial instability and significant, because the deposits in banks are diminishing the illiquidity risk and improving the confidence in the financial climate. In economic recession, according to, if borrowers anticipate the decline of them profits, they could withdraw their money from banks. Such severe decrease in deposits could push banks to bankruptcy, because of the lack of liquidity making them unsolvable facing their financial commitments.

Following the results found, the government effectiveness tends to raise the financial instability. We can explain this result by the less effectiveness and the lack of competitiveness of the Tunisian administration in banking sector having complex bureaucracy. After the last crisis, the most of financial and administrative institutions need more reforms to reach the international standards, like argued by

According to Busari D. (2006), « Macroeconomic stability or good institutions of governance, what is Africa getting wrong», United Nations African institute for Economic Development and Planning (IDEP), macroeconomic stability and good institutions governance are connected. For the author, improvements in the governance quality, contribute on creating a climate of confidence in countries, encouraging business and production in financial sector.

For the openness, the variable tends to diminish instability in Tunisia because of the careful external politics and measures adopted by Tunisian authorities to protect its economy and markets. The control allowed for the country a protection from external financial shocks, threatening its macroeconomic stability. But the coefficient is not significant because of the less competitiveness of the economy and the weak specialization in exports.

A rise in the control of corruption is joined with a decrease in instability, so the rules and the regulation adopted by the country is in favor the macroeconomic stability. It conducts to instaure a climate of confidence that will raise the volume of financial transactions and the opportunities of business. Mainly, the moral hazard tends to improve the banking sector performance and efficiency. "fraud and corruption played significant roles in these financial crises, including the current crisis that began in 2007 and is still unfolding". According to the results, the control of corruption is not significant because the weakness of the institutions, the lack of accountability regulation and the bureaucracy quality.

For the variable government debt, a rise in the debt contribute to stabilize the financial environment of Tunisia, but this effect remains not significant statistically. We could explain this deduction by the goodcontrol of the debt evolution in the last years, and the efficient use of the debt funds in promoting infrastructure and reforms. It conducted to a raise the effectiveness of the financial and banking sector. So, the debt could be useful for developing countries but this will depend on its use. So, for developing countries needing more financial resources, debt played a major to promote their economic and development growth.

CONCLUSION

Motivated by the insufficiency of a precise definition of financial stability, this paper suggests different definitions of financial stability proposed by two separate schools: one who try to define financial stability, rather than its absence and the other who prefer to define financial instability as the antithesis of financial stability. It shows clearly that definitions vary extensively from an economist to other.

Then, as a conclusion after the empirical study for the case of Tunisia, the financial instability depends on the weak institutional quality because of the coefficients of the explanatory variables: government effectiveness and the government regulation. The weakness of institutions of Tunisia will play a significant role to maintain the macroeconomic stability and avoid financial crisis in future. During elaborating this paper, Tunisia is living a political revolution touching all the society fields: political, institutional and economic, making this period more sensitive and critical for the survival of the country.

In addition of the limited financial means and the weak quality of financial infrastructure of Tunisia, financial development will play a major threat to sustain the financial stability. Because it will push the country to adopt measures and reforms according with the new the requirements to adopt international financial standards and to improve its effectiveness and efficiency.

The governance concept widely cited in many reports of the World Bank and the international monetary fund, as a promoting factor for sustained economic growth and financial development. This concept will be critical to maintain the macroeconomic stability of Tunisia, by promoting the effectiveness of administrative and political institutions in combating corruption and promoting accountability. This challenge should open widely the debate about the new measures and practices available for government to limit the exposure to external financial risk.

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