

The impact of capital flows on financial stability in developing countries

Period 1990-2020

أثر تدفقات رؤوس الأموال على الاستقرار المالي في الدول النامية

خلال الفترة 1990-2020

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Abstract:

This paper aims to assess the impact of international financial flows on financial stability in developing countries. This will be accomplished through a standard study using a panel dataset comprising 16 developing countries and employing a binary Logit model. The study has found that financial liberalization policies have been a major cause of numerous banking crises in these countries.

Keys words: Financial system, international financial flows, financial stability, Kaopen index , Logit model.

JEL classification codes: C54 ; F34 ;F36 ;N14

ملخص:

تهدف هذه الورقة إلى معرفة أثر التدفقات المالية الدولية على الاستقرار المالي في الدول النامية، وذلك عن طريق دراسة قياسية في سلة بيانات بانل تضم 16 دولة نامية وباستعمال نموذج ثنائي الحدين **Logit** . وقد توصلت الدراسة الى أن سياسة تحرير التدفقات المالية كانت سببا رئيسيا لنشوب العديد من الأزمات البنكية في هذه الدول.

الكلمات المفتاحية: النظام المالي، التدفقات المالية الدولية، الاستقرار المالي، مؤشر Kaopen, نموذج **Logit**.

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1-Introduction

Capital flow, the movement of funds and investments across borders, plays a crucial role in shaping the stability of financial systems around the world. The relationship between capital flow and financial stability is intricate and dynamic, with both positive and negative implications. This article explores the key aspects of this relationship, highlighting the potential benefits and risks associated with capital flows and their impact on overall financial stability.

However, it is essential to recognize that capital flow can also pose challenges and risks to financial stability. Large and volatile capital flows, particularly short-term portfolio investment or speculative capital, can introduce instability and increase the vulnerability of financial systems. The sudden reversal or withdrawal of these capital flows can lead to disruptive asset price fluctuations, currency depreciation, and liquidity shortages, triggering financial crises.

One of the key mechanisms through which capital flow affects financial stability is the credit channel. Capital inflows can stimulate credit growth, as financial institutions respond to increased demand for loans and investments. This can initially support economic expansion and financial deepening. However, if not properly managed, excessive credit growth driven by capital flows can result in the accumulation of unsustainable debt levels, deteriorating credit quality, and the misallocation of resources. These risks can undermine financial stability and increase the likelihood of systemic crises.

Therefore, we will pose the following question:

What is the impact of capital flows on financial stability in developing countries during 1990-2020 period?

To answer this question, we will attempt to propose the following hypotheses:

- H0: There is no statistically significant relationship between capital flows and financial stability in developing countries.
- H1: There is a statistically significant relationship between capital flows and financial stability in developing countries.

2-Previous studies:

1. (Yao, 2022) "Openness, financial structure, and bank risk: International evidence,"

This paper explores the relationship between openness, financial structure, and bank risk on an international scale. The author investigates how the degree

of openness in a country's economy, as well as the structure of its financial system, influence the level of risk faced by banks.

Using a comprehensive dataset from various countries, the study employs rigorous econometric techniques to analyze the empirical evidence. The findings reveal several important insights. Firstly, it is observed that higher levels of financial openness are associated with increased bank risk. This suggests that increased exposure to international financial markets and capital flows can lead to higher vulnerability for banks operating in more open economies.

2. " (Wang, 2022) Financial liberalization and the investment-cash flow sensitivity"

Using a comprehensive dataset that covers 69 developed and emerging economies from 1995 to 2019, the paper presents robust evidence indicating that firms operating in countries with more liberalized domestic financial markets exhibit lower sensitivity of investment to the availability of cash flows. The findings suggest that domestic financial liberalization plays a role in reducing financial constraints and facilitating external finance, thereby influencing investment-cash flow sensitivity.

3. "(Hamdi, 2014) Financial liberalization, disaggregated capital flows and banking crisis: Evidence from developing countries" . The objective of this paper is to investigate whether financial liberalization has led to banking crises in certain developing countries. The study specifically focuses on the role of capital flows, as their volatilities pose a threat to economic stability and growth. Using an empirical model based on panel logit estimation, the analysis employs two commonly used financial liberalization indicators (de facto and de jure) for a panel of 58 developing countries observed from 1984 to 2007.

By examining the relationship between financial liberalization, capital flows, and banking crises, this study provides new insights into the dynamics of financial systems in developing countries. It emphasizes the significance of foreign debt liabilities and foreign direct investment liabilities in understanding the vulnerabilities associated with banking crises.

4.. (REINHART, 2009) "This Time is Different: Eight Centuries of Financial Folly": This influential book examines financial crises throughout history, including the role of capital flows in exacerbating vulnerabilities and leading to systemic crises.

The authors analyze a comprehensive dataset of 20 countries over the period from 1970 to 1993 to identify the patterns and dynamics of twin crises. They investigate how banking crises and balance-of-payments problems are interconnected and mutually reinforcing, leading to severe economic and financial disruptions.

Title: The impact of capital flows on financial stability in developing countries

The study finds that twin crises often occur together, with banking crises typically following or accompanying balance-of-payments problems. The authors identify several key factors that contribute to the occurrence of twin crises, including excessive credit growth, external debt accumulation, overvalued exchange rates, and weak financial institutions.

3- The impact of capital flows on financial stability in developing countries Period 1990-2022 an empirical Study

We will attempt to provide the standard model that we will use to test the impact of financial flows on financial stability in developing countries. This will be done by presenting the macroeconomic variables and the selected time period. Finally, we will estimate the model and analyze the results.

• **CRISIS** :This variable is considered a binary variable, taking the value 1 if there is a crisis and 0 if there is stability. We used this indicator from the works of Fabian Valencia & Luc Laeven, published by the International Monetary Fund and updated in 2012, which includes all countries worldwide that experienced banking crises from 1970 to 2012. We symbolized it with the code "crisis."

• **KAOPEN Index**: In this study, we will rely on this index, which was derived from the works of Menzie Chinn & Hiro Ito in 2002. It takes values ranging from -1.86 in the presence of significant restrictions on capital flows to 2.17 in the absence of any restrictions on capital flows.

This index consists of four main sub-indices:

K1: An indicator referring to exchange rate liberalization.

K2: An indicator referring to liberalization of current account transactions.

K3: An indicator referring to liberalization of capital flows.

K4: An indicator referring to export liberalization.

• **Macroeconomic Variables**: The macro matrix includes a set of aggregate economic variables and financial development, which are as follows:

Gross Domestic Product (GDP) growth rate

Broad money supply as a ratio of the total cash reserves: M2RV.

Total exports as a ratio of the GDP: export.

Total imports as a ratio of the GDP: import.

Inflation rate: inf. The inflation rate primarily reflects the stability of the overall economy of countries.

Domestic bank loans as a ratio of the GDP: CIFSB. This is to determine the level of borrowing expansion and its impact on the likelihood of banking crises.

- **Institutional Framework Quality Variable:**

We used these variables to determine whether the institutional framework plays a role in reducing the occurrence of banking crises in developing countries or if there are other factors preventing it. The criteria for institutional framework quality vary across different economic, political, and social reports. Since our study is economic in nature, we rely on the World Bank's criteria, which focus on administrative standards derived from the works of Kauffmann et al. (2004, 2004, and particularly 2010). They identified six criteria for good governance at the country level, which are as follows:

Voice and Accountability: Measures the extent of citizen participation and accountability.

Political Stability and Absence of Violence: Measures the level of political stability and absence of violence.

Government Effectiveness: Measures the effectiveness of the government in delivering services.

Regulatory Quality: Measures the quality of regulations and their implementation.

Rule of Law: Measures the extent to which the law is enforced and applied.

Control of Corruption: Measures the extent to which corruption is controlled.

These six aforementioned criteria range from -2.5 for weak institutional frameworks to 2.5 for strong institutional frameworks. Applying these principles leads to achieving justice, equality, participation, freedom of accountability, protection of property rights, reducing abuse of power, and increasing trust in the national economy, which contributes to higher economic growth rates and sustainable development.

We obtained the data for these variables and indicators from the World Bank database and the International Financial Statistics of the International Monetary Fund.

Temporal and Spatial Framework of the Study:

We have chosen the temporal dimension of this study to be between 1990 and 2020, as many developing countries experienced a significant number of banking crises during this period.

Title: The impact of capital flows on financial stability in developing countries

In this study, we have selected sixteen (16) developing countries distributed around the world as follows: Argentina, Brazil, Chile, Mexico, Algeria, Morocco, Tunisia, Egypt, Jordan, Turkey, Thailand, the Philippines, Malaysia, Indonesia, India, and South Korea.

These countries implemented financial liberalization policies in the mid-1970s and early 1980s to keep up with financial development and openness to the global economy within the framework of financial globalization. This was done in order to achieve high rates of economic growth, as suggested by the economic theory of McKinnon and Shaw (1973). However, despite achieving significant growth rates after adopting these policies, these countries experienced multiple banking crises.

- Model 1:

We will conduct these tests using a panel dataset consisting of 16 countries, employing a logistic estimation model by following the following equation:

$$\text{Crises}_{it} = \beta_0 + \beta_1 \text{KAOPEN}_{it-2} + \beta_2 \text{Macro}_{it-2} + \varepsilon_{it}$$

- Model 2:

In the second model, we will introduce the variable of institutional framework quality to determine the extent to which this important variable contributes to reducing banking crises in the context of capital account liberalization. This will be done according to the following

"Crises_{it}" represents the variable of bank crisis, which is a binary variable taking the value 1 in case of a crisis occurrence and 0 in case of stability.

"Macro" consists of a matrix of macroeconomic variables and financial development.

"Kaopen" consists of a matrix of variables related to capital flow liberalization.

"INSQ" consists of a matrix of aggregated variables of institutional framework quality.

" ε_{it} " represents the random error.

TABLE N 1 Estimation results for Model 01 and Model 02

Variable	Model 1	Model 2
C	-2.321912*	-1.896921
M2RV(-2)	0.335662**	0.251847*
GDP(-2)	-0.098943*	-0.099006*
INF(-2)	0.031517**	0.031089**
IMPORT(-2)	0.021273**	0.022856**
EXPORT(-2)	-0.04888***	-0.05357***
CIFSB(-2)	0.016362**	0.017784***
KAOPEN(-2)	0.444859**	/
INSQ*KAOPEN(-2)	/	-0.138485**
McFadden R-squared	0.362230	0.370599
Log likelihood	-59.59585	-58.81381
Prob(LR statistic)	0.000000	0.000000

Source: Prepared by the researcher based on Eviews 10

From the above estimation results table, we observe that all the variables included in Model 01 are statistically significant at the 1%, 5%, and 10% levels and have an impact on the likelihood of banking crises. Specifically:

The KAOPEN index, which represents the degree of capital flow liberalization, is statistically significant at the 5% level with a positive coefficient of (0.444859). This means that as the freedom of capital account flows increases, the likelihood of banking crises in the studied developing countries also increases, indicating its responsibility for such crises in these countries.

Regarding the impact of gross domestic product (GDP), it is statistically significant at the 10% level and inversely related to the likelihood of banking crises with a coefficient of (-0.098943). This means that as economic growth

Title: The impact of capital flows on financial stability in developing countries

increases, the likelihood of banking crises decreases, which is consistent with previous economic literature. Higher economic growth affects financial development, thereby avoiding banking and financial crises.

If we examine the indicator of the broad money ratio represented by M2RV, we find that it has a significant positive impact at the 5% level with a coefficient of (0.335662). This means that as this ratio increases, the likelihood of banking crises in the studied developing countries also increases. This finding is supported by several studies, such as (Demirguc-kunt, 1998) . This is mainly due to a loss of confidence in commercial banks by both domestic and foreign investors when their foreign reserve levels decrease.

If we consider the volume of domestic loans disbursed by commercial banks, denoted as CIFSB, we find that it has a significant positive impact at the 5% level with a coefficient of (0.016362). This means that as the volume of lending by commercial banks increases, the likelihood of banking crises in the developing countries also increases. This is primarily attributed to the rise in non-performing loans in these countries, leading to the insolvency of commercial banks and subsequent crises.

As for foreign trade variables, we find that exports have a significant negative impact at the 1% level with a coefficient of (-0.048889), indicating that higher exports contribute to reducing the likelihood of banking crises in developing countries. This is due to the significant role played by exports in attracting foreign currency and promoting economic growth. On the other hand, imports have a positive and significant impact at the 5% level with a coefficient of (0.021273), meaning that higher import volumes increase the likelihood of banking crises. This is primarily due to the outflow of foreign currency, which reduces foreign exchange reserves.

Finally, the inflation rate (inf), which reflects overall economic stability, has a positive and significant impact at the 5% level with a coefficient of (0.031517). This means that as the inflation rate rises, the overall economy becomes less stable, leading to an increased likelihood of banking crises.

As for the second model, which shows its results in the second column where we tested the impact of capital account liberalization in conjunction with institutional framework quality (INSQ * KAOPEN), the results indicate that it is statistically significant and negative at the 5% level. This means that in the case of capital flow liberalization coupled with a strong institutional framework quality, it would contribute to reducing the likelihood of banking crises in developing countries.

4. RESULTS And Conclusion

Furthermore, the interconnectedness between capital flow and financial systems can amplify the transmission of shocks across borders. In today's globalized financial landscape, disturbances in one country can quickly spread to others through financial linkages. Contagion effects, including capital flight and investor panic, can disrupt financial markets and weaken the stability of banking systems. The interplay between capital flow and financial stability highlights the need for effective international cooperation and coordination in managing potential spillover effects and mitigating systemic risks.

To promote financial stability in the context of capital flow, policymakers and regulators need to implement robust macro prudential measures. These measures can include setting and enforcing capital adequacy requirements, implementing liquidity management tools, and establishing risk-based supervision frameworks. By monitoring and managing systemic risks associated with capital flow, authorities can enhance the resilience of financial systems and reduce the likelihood of crises.

Moreover, transparency and timely information sharing among market participants, policymakers, and regulators are crucial for promoting stability. Clear communication of policies, regulations, and market developments can help market participants make informed decisions and reduce uncertainty. Strengthening risk management practices, improving data quality, and enhancing the effectiveness of regulatory frameworks are also important steps to maintain financial stability in the face of capital flow.

In conclusion, the relationship between capital flow and financial stability is multifaceted. While capital flow can provide valuable resources and support economic growth, it also carries risks that can undermine financial stability. Balancing the benefits and risks of capital flow requires proactive measures to manage systemic risks, enhance regulatory frameworks, and promote international cooperation. By doing so, policymakers can strive to achieve sustainable financial stability while harnessing the potential benefits of capital flow for economic development.

5- Citations:

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