

Do Global Capital Inflows Affect Banking Sectors' Profitability? Evidence from EM-20 Emerging Economies

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ABSTRACT

Studies showed that global capital movements had positive, negative or null effects on the general economy in host countries. But what is unknown is their effects on the different sectors-of-activities that compose the general-economy. This paper analysed a sample of countries currently recognized as the top 20 emerging economies (EM-20), to investigate the effects of Global Capital Inflows (GCI) on their banking sectors'profitabilities over the 1998-2018 period. The reason of selecting the banking sector was to point out whether this sector played a contributory-moderating role or rather a brake over the period considered. The Fixed-Effect/Random Effect Models, and Robust-Least-Squares were applied. As main findings, over the 1998-2008 period only two components, but over 2009-2018, Foreign Direct Investments, Foreign Portfolio Investments, External Short Term Debts, and Remittances had positive effects on banking sectors'profitabilities (ROA and ROE) in EM-20 countries. The dynamic analysis shows that for the FDI, FPI and REM, the magnitudes of the effects were less intense before the crisis than after; while for ESTDBT, it was the inverse. Among the control variables, those which had positive effects were the Economic-growth, Inflation, and Interest rate, while Exchange rate showed negative effects. The results highlighted the contributory-moderating role of banking sector on the GCI-ΔGDP relationship in EM-20.

ملخص

أظهرت الدراسات أن تحركات رأس المال العالمية كان لها آثار إيجابية أو سلبية أو منعدمة على الاقتصاد العام في البلدان المضيفة. ولكن المجهول هو تأثيرها على مختلف قطاعات الأنشطة التي يتألف منها الاقتصاد العام. وقد حلت هذه الورقة البحثية عينة من البلدان المعترف بها حاليا على أنها أول 20 اقتصاد ناشئ (EM-20)، للتحقيق في آثار التدفقات العالمية لرأس المال (GCI) على أرباح قطاعاتها المصرفية خلال فترة 1998-2018. ويتمثل سبب اختيار القطاع المصرفي في توضيح ما إذا

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كان هذا القطاع قد لعب دورا وسيطا إسهاميا أو بالأحرى كاجبا خلال الفترة المذكورة. وتم تطبيق نماذج التأثير الثابت/ التأثير العشوائي والمربعات الصغرى للانحدار القوي. وكننتائج رئيسية، خلال فترة 1998-2008، كان هناك مكونان فقط، ولكن خلال الفترة 2009-2018، كان للاستثمارات الأجنبية المباشرة، واستثمارات الحافظة الأجنبية، والديون الخارجية قصيرة الأجل، والتحويلات آثار إيجابية على أرباح القطاعات المصرفية (ROA و ROE) في بلدان الأسواق الناشئة-20. ويُظهر التحليل الديناميكي أنه بالنسبة للاستثمار الأجنبي المباشر، والاستثمار الأجنبي في الحوافظ المالية، والتحويلات، كانت حدة التأثيرات أقل قبل الأزمة من مستواها بعد ذلك؛ بينما بالنسبة للدين الخارجي قصير الأجل (ESTDBT)، كان الأمر مخالفا. ومن بين متغيرات التحكم التي كان لها آثار إيجابية، نذكر النمو الاقتصادي، والتضخم، وسعر الفائدة، بينما أظهر سعر الصرف تأثيرات سلبية. كما سلطت النتائج الضوء على دور الوسيط الإسهامي للقطاع المصرفي في علاقة $GCI-\Delta GDP$ في الأسواق الناشئة العشرين.

ABSTRAITE

Des études ont montré que les mouvements de capitaux mondiaux avaient des effets positifs, négatifs ou nuls sur l'économie générale des pays d'accueil. Mais ce que l'on ignore, ce sont leurs effets sur les différents secteurs d'activité qui composent l'économie générale. Ce document a analysé un échantillon de pays actuellement reconnus comme les 20 premières économies émergentes (EM-20), afin d'étudier les effets des flux de capitaux mondiaux (GCI) sur les bénéfices de leurs secteurs bancaires sur la période 1998-2018. La raison du choix du secteur bancaire était de mettre en évidence si ce secteur a joué un rôle contributif-modérateur ou plutôt un frein sur la période considérée. Les modèles à effet fixe/effet aléatoire et les moindres carrés robustes ont été appliqués. Les principales conclusions sont les suivantes : sur la période 1998-2008, seules deux composantes, mais sur la période 2009-2018, les investissements directs étrangers, les investissements de portefeuille étrangers, les dettes extérieures à court terme et les envois de fonds ont eu des effets positifs sur la rentabilité des secteurs bancaires (ROA et ROE) dans les pays EM-20. L'analyse dynamique montre que pour les IDE, les FPI et le REM, l'ampleur des effets était moins importante avant la crise qu'après ; tandis que pour l'ESTDBT, c'était l'inverse. Parmi les variables de contrôle, celles qui ont eu des effets positifs sont la croissance économique, l'inflation et le taux d'intérêt, tandis que le taux de change a eu des effets négatifs. Les résultats ont mis en évidence le rôle contributif-modérateur du secteur bancaire sur la relation $ICG-\Delta PIB$ dans l'EM-20.

Keywords: Global Capital Inflows, Banking Sector Profitability, Top 20 Emerging Economies (EM-20)

JEL Classification: F21, F65, F43, G21, P45

1. Introduction

The free movement of global capital, in particular into emerging countries, was born out of the global trend towards financial liberalization adopted by most of these countries since the 1980s. Studies have shown that these capital movements in turn have - positive effects (Adeola, 2017, Portes & Rey, 2005; Zhang, 2001; Borensztein, et al., 1998); negative (Reinhart and Rogoff, 2010; Carkovic & Levine, 2005); or mix-effects (Mody and Murshid, 2005; De Mello, 1999) - on the economy in general in the host countries. However, their effects on the different sectors of activity that make up the general economy seem little explored.

The banking sector (especially in emerging countries) plays an important and strategic role in the economy. Indeed, this sector involves significant inflows of global capital. Important resources mobilization is necessary to achieve strong economic growth in a sustainable development program. However, available national resources are often insufficient and difficult to predict to achieve this end (Kinda, 2009); hence the need to resort to external capital support. This justifies the important role of Global capital inflows (GCIs) in financing a country's sustainable development needs.

Financial integration, as is well known, is a system that facilitates free flows of capital, mainly from capital-rich economies to emerging economies in search of higher returns. Integration in its generality has many advantages but at the same time entails risks. Indeed, the general belief according to which financial integration would positively influence integrated economies was called into question after the experiences of the 2008 global financial crisis. Consequently, research interest was intensified to understand and control the kind of effects (positive, negative, or null) that the GCIs have on the financial sector of (integrated) host countries.

The main objective of this study is therefore to examine the effects of Global capital inflows on the banking sectors' profitability for the top 20 emerging economies (EM-20) over the 1998-2018 period. The points that motivated this research are the following:

(1) The effects of GCIs can be positive (growth engines), null, or even negative (source of instability according to their volatility, the way of using, or the macroeconomic characteristics of the host environment).

(2) Most of the previous studies focused on two components of GCIs, analyzing their effects on Economic Growth. This study took into-account five components analyzing their effects on the banking sector's profitability and drawn attention to the fact that the effects of GCIs on each sector of the economy should be considered.

(3) Many previous studies already support the positive effects of ICGs on the economic growth of the host country (Adeola, 2017; Ziesemer, 2012; Zhang, 2001; Portes & Rey, 2005). The reason why the banking sector is selected - to study the effects of capital movements - is to point out whether the banking sector played a contributory moderating role or rather a brake over the period considered. This could open up other ways of subsequent researches.

The remainder of this article was organized as follows: Sections 2 and 3 respectively dealt with the literature review and the methodology. Section 4 presented the regression results and finally, the conclusion was provided.

2. Literature Review

2.1. Theoretical Background: Brief Reminders about the Financial Liberalization Theory

2.1.1. Financial Liberalization Theory: Origins and Main Ideas

The financial liberalization theory appeared for the first time in [McKinnon (1973) and Shaw (1973)]'s writings, after the theoretical debates on the relationship between financial development and economic growth. Proponents of financial liberalization point out that the distortions that characterize the economy in developing countries stem from those of their embryonic financial system (Bentahar, 2005). They explained that the distortions were the result of inappropriate monetary policies, the weak role of financial intermediaries, and the increase of the state's intervention in the financial system. Shaw and McKinnon (1973) described this interventionism as "financial repression". The recovery of such an economy, described as a "superficial" economy (Shaw, 1973),

must therefore target the element that is the source of the distortions i.e. interest rates, through their liberalization. For that, the liberalization theory is based on three main ideas: (1) the high sensitivity of savings to the interest rate; (2) the perfect complementarity between savings and investment; and (3) the positive effect of liberalization on economic growth. The pioneering work of the Neoliberal School certified that financial liberalization is the most effective way to stimulate domestic savings, increase productive investment, and ensure sustainable growth in developing countries. However, this first generation of works was limited to denouncing the perverse effects of the interest rates administration and the constitution of high compulsory reserves on savings and investment (Lajili, 2015).

The liberalization of the capital account allows for increased capital flows between capital-excess countries and countries that lack them. According to the neo-classics, that increases the savings available in developing countries, which have better investment opportunities. Enabling the technological knowledge dissemination and the more efficient managerial practices adoption, those capital movements stimulate economic growth. Foreign investors perceive as a positive signal, the removal of restrictions on capital flows (Michalet, 1999), and the sudden reversal of capital flows could be reduced by the presence of foreign banks (Goldstein and Turner, 1996). Indeed, economic growth would be hampered by a factor that curbs investment; ie the prohibitive tax on physical capital implemented by certain national governments (Gourinchas & Jeanne, 2002). However, a disciplinary effect is created with financial openness given that governments end up relaxing their tax systems in order to attract international capital. Thus, the distortions due to the taxation on capital are reduced, and savings are reallocated towards more productive jobs. Evidence shows that by removing restrictions on capital outflows, most of the developing economies experienced massive inflows of international capital, thereby increasing domestic market liquidity, reducing the risk premium for domestic securities, and therefore the cost of capital; that stimulated investment. Besides, various profit structures are set up, due to the increased foreign share in domestic banks. The relative systems of the domestic banking industry in terms of regulation and supervision are improving (Caprio and Honohan, 2000) and, that facilitates access to the international financial markets. Overall, external financial liberalization makes it possible to develop both financial markets and financial institutions (Levine, 1998). However, achieving

effective results by taking advantage of those positive elements requires initial prerequisites.

2.1.2. Some Criticism against Financial Liberalization Theory

In absence of the prerequisites conditions, significant challenges in terms of the stability of the financial and macroeconomic system (leading to criticism against the theory) could ensue. Indeed, faced with disappointing experiences after the implementation of liberalization in certain developing countries (notably in Latin America and Africa), the theory was confronted with numerous criticisms. McKinnon's school assumed a growing relationship between savings and interest rates but did not discuss the income effect of the same relationship. According to the neo-structuralism school, the theory of financial liberalization neglected an important aspect characterizing developing countries: their financial markets are fragmented with the presence of the informal sector. Neo-liberals admit that banks are the main players in the organized financial market and the presence of the informal market is only a consequence of the financial repression. For the structuralists who place this sector at the heart of their analysis, the informal market is not a consequence of the repression, but rather coexists freely with the official financial market. Another essential aspect (which has sometimes led to systemic banking crises), was omitted or downplayed by the arguments in favor of financial liberalization: the systemic nature of the institutional changes due to liberalization (Gamra & Clevenot, 2006).

Whatever the results, the financial liberalization policy wasn't abandoned. On the contrary, its implementation continued in an increasing number of countries, to varying degrees depending on the State and with adjustments; thus paving the way for increased international capital flows.

2.2. Emerging Economies' Concept

Appeared since the 1980s with the rise of stock markets in developing countries, the concept of "emerging countries" remained a long time vague for a unanimous definition. The term "emerging markets" was used for the first time in 1981 by Antoine van Agtmael, a Dutch economist at the International Finance Corporation, to refer to "developing countries offering opportunities for investors" (Delannoy, 2012). The distinction

became clearer between developed countries and emerging countries from the 2000s with the appearance of acronyms (table 1). However, there is still no unanimous definition of the term "emerging country" or "emerging economy". Objective criteria were proposed by specialists for a fairly precise definition approach (Vercueil, 2012). An emerging country, or emerging economy, or emerging market is a country characterized by:

- (1) A Middle-income: GDP per capita located between those of the least developed countries and those of the rich countries; a standard of living and social structures converging with those of developed countries;
- (2) Economic catch-up dynamics with strong growth potential: their long-term growth rate and their share in world income is increasing sharply; and
- (3) Institutional and structural transformations with an economic opening to the rest of the world.

However, there is still no unanimous definition of the term "emerging country". Indeed, the lists of emerging countries have shown multiplications, and perpetual modifications or renewals, except for the unbeatable ones like Brazil, Russia, India, China, South Africa (BRICS) which appear systematically in most of the lists (Nicet-Chenaf, 2014). A summary of the most common acronyms is presented in chronological order through the table 1.

Table 1: Chronological order of acronyms related to emerging countries

Nº	Acronyms	Grouped by (Author)	Year	Emerging countries included	Idea or criteria for grouping
1	The Four Asian Tigers or Asian Dragons	Ezra Feivel Vogel, Professor of the Social Sciences Emeritus at Harvard University, has written on Japan, China, and Asia generally (Vogel, 1991)	1991	South Korea, Hong Kong, Taiwan, Singapore	Refers to four Far Eastern states with strong and fast industrial and economic growth between the early 1960s and 1990s. They were the leading group of newly industrialized countries (NICs) and were considered as developed since the 1990s.
2	BRIC (2001) become BRICS (in 2010)	Jim O'Neill, chief economist of Goldman Sachs Investment Bank	2001	Brazil, Russia, India, China, and South Africa (added in 2010)	They can surpass total GDP of G7 countries by 2027 (Foroohar, 2009), and accounting around 40% of global GDP by 2050 (Keohane, 2011).
3	MINT	Fidelity Investments (a Boston-based asset management firm) and Jim O'Neill of Goldman Sachs	2001	Mexico, Indonesia, Nigeria, and Turkey	These countries will grow faster than the average in the coming decades
4	NEXT-11	Jim O'Neill, an economist of Goldman Sachs Investment Bank	2005	Egypt, Bangladesh, Iran, Indonesia, South Korea, Mexico, Nigeria, Pakistan, Philippines, Turkey, Vietnam	A group of big eleven emerging markets identified by Goldman Sachs who have high potential, along with BRICS
5	CIVETS	Michael Geoghegan, an analyst of the Economist Intelligence Unit, an international banking business executive, who served as the chief executive (CEO) of Bank HSBC	2008	Colombia, Indonesia, Vietnam, Egypt, Turkey, and South Africa	Countries whose average annual growth rate is estimated at 5% for the 20 years following 2008.

Table 1 (continued): Chronological order of acronyms related to emerging countries

N°	Acronyms	Grouped by (Author)	Year	Emerging countries included	Idea or criteria for grouping
6	MIST	Jim O'Neill, an economist of Goldman Sachs Investment Bank	2010	Mexico, Indonesia, South Korea, and Turkey	These countries show accelerated growth
	EAGLEs (Emerging And Growth-Leading Economies)	BBVA Research (a group of 200 economists and strategists) BBVA means: Banco Bilbao Vizcaya Argentaria, a multinational Spanish Banking Group, formed in 1999 by merging BBV and Argentaria (Marques-Aparicio, 2014)		BRIC (Brazil, Russia, India, and China) + MIST (Mexico, Indonesia, South Korea, and Turkey) + Egypt and Taiwan	According to BBVA, these countries (which expanded list is established over the years), are expected to lead world economic growth in the 10 years following 2010 and could generate 50% of global economic growth.
7	"Nest" ("nid")		2010	Argentina, Bangladesh, Colombia, Malaysia, Nigeria, Pakistan, Peru, Philippines, Poland, South Africa, Thailand, and Vietnam	Another set of countries whose expected incremental GDP (in the 10 years following 2010) should be lower than the average of the G6 economies, but higher than that of Italy (the smallest contributor of G6).
8	BENIVM	Grouped by Laurence Daziano, Lecturer in Economics at the IEP of Paris	2013	Bangladesh, Ethiopia, Nigeria, Indonesia, Vietnam, Mexico	A population of at least 100 million; a 10-year growth rate hovering around 5%; a rapidly growing urbanization; infrastructure needs stimulating economic take-off; expected political stability.
9	BRIICSSAMT	Alexandre Kateb, economist and specialist of emerging countries	2013	Brazil, Russia, India, Indonesia, China, South Africa, Saudi Arabia, Argentina, Mexico, and Turkey	To further expand the acronym BRICS by including all emerging economies of G20. "Economies having crossed the threshold of 1000 billion dollars of GDP, except Argentina which is around 500 billion"
10	E-20 (Emerging Markets 20)	Emerging Market Multinationals Report (EMR, 2018)	2018	Argentina, Brazil, Chile, China, Colombia, Egypt, India, Indonesia, Iran, Korea, Malaysia, Mexico, Nigeria, Philippines, Poland, Russia, Saudi Arabia, South Africa, Thailand, and Turkey.	These countries were recognized in 2018 as the top 20 Emerging Markets and were selected based on their GDP performances, demographics, and their influences in the global trade and investments (EMR, 2018).

Source: Created by the author based on the literature review

2.3. Global Capital Flows and Their Different Components

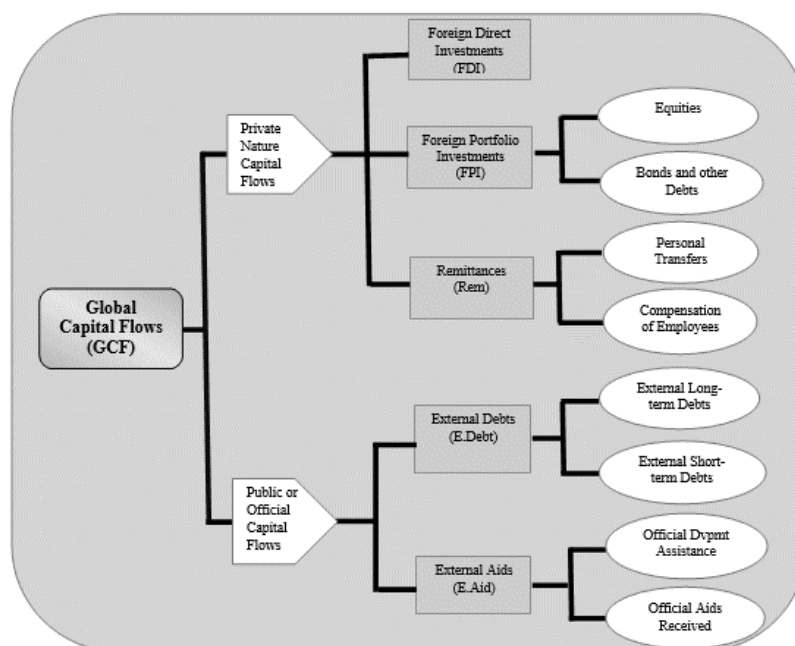
In international economic relations, one of the most important constituents in terms of volumes is the international capital movement (Yalçın, 2012). This study adopted the World Bank (2018) classification in which, the five main components of International Capital

Flows retained were: the Foreign Direct Investments (FDI), the Foreign Portfolios Investments (FPI), the External Debts (EDBT), the External Aid (EAID), and the Remittances (REM). From the point of view of the funds' ownership, one can distinguish:

(1) Public capital movements, which are official and in the form of subventions or credits intended to finance the economic development of the countries. Generally, these official capital movements are carried out directly between governments, between government agencies; between international credit institutions and governments, or between international credit institutions and government agencies. In this category, EDBT and EAID can be cited.

(2) Private global capital flows; this is a type of capital movement that has been on the rise since the late 1980s. In this category FDI, FPI, and REM can be cited. Other classifications also exist: for example, the classification according to the direct or indirect mechanism (function) of the funds; or rather the classification according to the type of instruments used for investments.

It is noted that in this paper the expression "Global Capital Flows" is used instead of "foreign capital flows" which appears to be less broad. Indeed, one of the main components of GCF, i.e "remittances" and which has grown in recent decades, is taken into account in this research. And these remittances include those of natives exercising (or working) abroad. In other words, the concept of this component cannot be limited to only "foreign capital flows". However, this study focused on "capital inflows" which represent a branch of "capital flows". The following conceptual flow (figure 1) chart provides an overview of different components of Global Capital Flows.

Figure 1: Conceptual Framework of Global Capital Flows

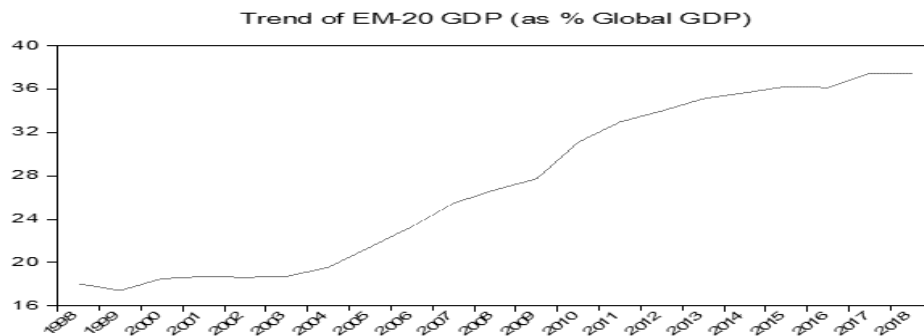
Source: Created by the author based on the literature review

Due to globalization, the interests in researches concerning the Global Capital Flows, their components, and effects are growing in international management, both academically and professionally.

The Major Trends Over the 1998-2018 Period

This subsection presented with graphic illustrations, the main trends in terms of GDP and of Global Capital Inflows (GCIs) components relating to the top 20 Emerging Economies. Overall, according to the forecasts of BBVA Research (2010), the Emerging Economies were expected to lead world economic growth over the 10 years following 2010; which was real. According to estimates based on the data in our possession, over 1998-2008, the share of EM-20 in the Global GDP increased from 18.04% to 26.70% (an increase of about 8.66 points), while over the 2009-2018 period, this share increased from 27.73% to 37.40% (a progression of around 10 points). The slope of the curve increased further upward from 2004 until after the 2008 financial crisis; as shown in Figure 2.

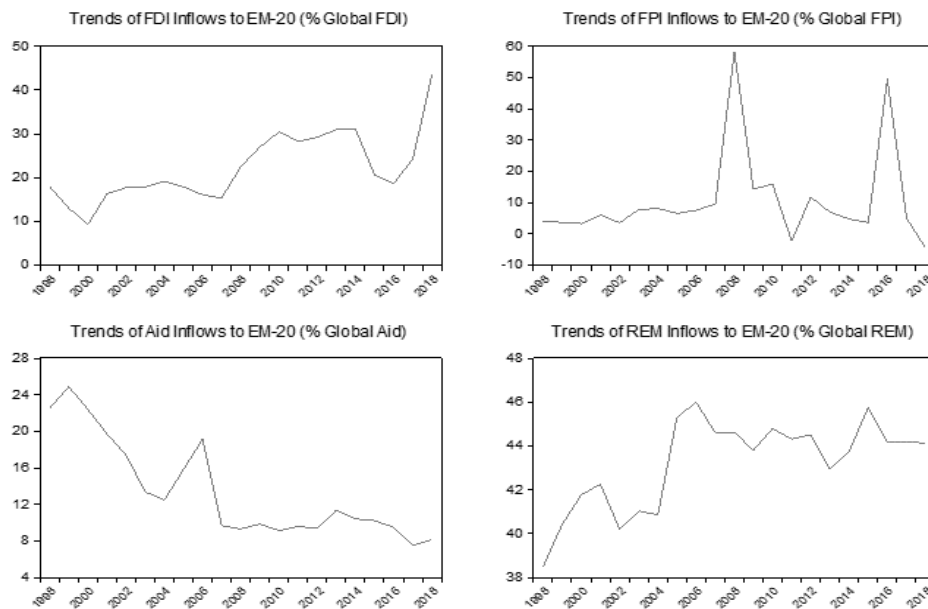
Figure 2: Trend of total GDP in EM-20 (as a % of global GDP) from 1998 to 2018



Source: Author's compilation based on World Bank WDI's data sources, (2018)

As for the GCIs, the trends varied from one component to another, as illustrated by the graphs of figure 3.

Figure 3: Trends of global capital inflows to EM-20 (as a % of GCI) from 1998 to 2018



Source: Author's compilation based on World Bank WDI's data sources, (2018)

The trends showed that the majority of these inflows were unstable, unpredictable and that, their volatilities increased over time (especially capital generating private debts). The changing characteristics of the macroeconomic, institutional, and financial environment in host countries played an important role in these movements. Furthermore, previous studies have shown that capital inflows to emerging countries were strongly correlated with changes in conditions in the global macro-financial context since they increased significantly when global interest rates were relatively low and risk aversion (of investors) was weak (IMF, 2011).

FDI and Remittances Inflows showed a general and continuous growth over the 1998-2018 period. However, after the 2008 crisis, the REM showed an almost constant trend) but fluctuating (within an interval); and over the 2016-2018 period, the slope of the FDI Inflows trend curve increased further upwards.

FPI Inflows showed a general downward trend, relatively high degrees of instability with amplified fluctuations over time. After a remarkable jump in the months preceding the 2008 global crisis, FPI inflows fell sharply in the aftermath of this crisis, before showing a rebound over 2014-2015, and then relapsed again over 2016-2018. This highlights the relatively high degree of volatility of this type of GCIs, always in permanent migration according to the prevailing conditions.

External AID Inflows showed a general downward trend. As it seems logical, the number of countries in EM-20 group (receiving external Aids) gradually decreases over the years. On the contrary, some of them (such as China and India) have rather begun and continue to send Aid to the least developed countries.

2.4. Previous Empirical Studies

The literature is filled (replete) with various studies dealing with the impacts of Global Capital Flows on economic growth. However, to our knowledge, those focusing exclusively on the banking sector seem very scant. As it is well known, in each country the banking sector plays a crucial role in the financing of activities contributing to economic growth. To this end, we consider that the results of previous workings related to the effects of Global Capital Flows on economic growth could serve as inspiration and illumination in the present study. A synthesis of previous works is presented in this section through tables 2 to 4 below.

Table 2: Summary of Empirical Literature review on Foreign Direct Investments and Foreign Portfolio Investments' Effects

Author, Year	Methodology					Results
	Sample of countries	Period	Dependent variable	Independent variable	Technical estimations	
Foreign Direct Investments' Effects						
Adeola, (2017)	4 countries studied in SSA (sub-Saharan Africa)	1970 to 2011	Real GDP per capita	FDI+GDP, Portfolio Equity+GDP, External debt+GDP, ODA+GDP, Remittances+GDP	OLS; Co-integration tests; VECM; SUR (Seemingly Unrelated Regression) Model.	FDI have a positive impact on Economic growth in host countries.
Li et Liu, (2005)	84 countries: 21 developed, 63 developing	1970 to 1999	GDP per capita growth	FDI inflow (% of GDP)	Panel data, Cross-sectional analysis	Promotion of Economic growth.
Alfaro et al., (2004)	20 OECD + 51 non-OECD = 71 countries	1975 to 1995	Real GDP per capita (Growth rate)	FDI inflow (% of GDP)	Cross-section OLS regression,	Great positive effect on Economic growth in host countries where financial markets are developed. Positive effects depending on country's macro-economic (stability, trading liberalization, improved education, and human capital).
Zhang, (2001)	11 economies in East Asia and Latin America	1960 to 1992	Annual growth rate of real GDP	FDI stock/GDP (in log form)	Error correction model	
Carkovic & Levine, (2002)	72 selected countries	1960 to 1995	Real GDP per capita growth rate	FDI (% of GDP)	Panel data; OLS + GMM dynamic estimator	Negative and no robust effects of FDI on Economic growth
Konings, (2001)	3 countries: Bulgaria, Poland, Romania	1993 to 1997	Output	FDI; FDI*T (FDI and Time trend interaction)	Panel data; Fixed effect model; OLS; IV in GMM dynamic estimator	Negatively affect Bulgarian and Romanian domestic firms; Insignificant and ambiguous effects in Poland
De Mello, (1999)	32 selected countries	1970 to 1990	Growth rate of GDP	FDI	Panel data; Fixed effects model; Mean groups estimation	Effects are mixed depending on FDI and DI substitution and/or complementarity

Table 2 (continued): Summary of Empirical Literature review on Foreign Direct Investments & Foreign Portfolio Investments' Effects

Author, Year	Methodology					Results
	Sample of countries	Period	Dependent variable	Independent variable	Technical estimations	
Foreign Portfolio Investments' Effects						
Adeola, 2017	4 countries studied in sub- Saharan Africa (SSA)	1970 to 2011	Real GDP per capita	FDI+GDP, Portfolio Equity+GDP, External debt+GDP, ODA+GDP, Remittances+GDP	OLS; Co-integration tests; VECM; SUR (Seemingly Unrelated Regression) Model.	Positive relationship between portfolio Investments and External aid; some violence periods affects portfolio equity level and official developmnt assistance into the country.
Portes and Rey, 2005	14 countries	1989 to 1996	Equity in log form (gross purchase, portfolio equity sale)	Market capitalization	Cross section gravity model. FE panel data estimation, GLS	Strong and positive evidence of geographical component importance in international asset flows.
Edwards, 2001	65 countries: 21 industrial and 44 emerging economies	1975 to 1997	GDP per capita	Level of capital account restrictions. Debt/GDP, Equity/GDP, FDI/GDP	Panel WLS estimation, IV-WLS, W2SLS, W3SLS, and SUR	Positive relationship after reaching a particular development threshold. A clear improvement is observed in countries with open capital accounts compared to those that are restricted.
Durham, J., 2004	80 countries	1979 to 1998; annual	GDP per capita growth	FDI and EFPI	Cross-sectional OLS regression	The level of financial or institutional developmt plays a crucial role in the "absorptive capacity" of FDI and EFPI by host countries.
Kodongo and Ojah, 2012	Egypt, South Africa, Nigeria, and Morocco	01/1997to 12/2009; monthly data	Net portfolio flows	Real exchange rate	VAR	For all the countries included in the study, the contribution of (relatively volatile) inflows portfolio investments to economic growth proved to be insignificant.
Oney, B; Halilsoy, H., 2011	21 high-income OECD countries	1980 to 2001	Real GDP; real phys. capital; stock and productivity growth.	Banking development (measured by) Private credit, the liquidity and the size of the stock market.	Cross-country study. OLS technique	No significant effects found on contribution to GDP growth.

Source: Created by the author based on the literature review

Table 3: Summary of Empirical Literature review on External Debts' Effects

Author, Year	Methodology				Results	
	Sample of countries	Period	Dependent variable	Independent variable		Technical estimations
External Debts' Effects						
Baum, Checherita-Westphal, and Rother, (2013)	12 Euro area countries	1990 to 2010	Real GDP growth rate	Ratios of Debt+GDP, Gross fixed capital formation + GDP	Panel GMM, OLS, IV 2SLS	Positive with low debt ratio (if $\alpha < 67\%$); α represents the debt % to GDP Nul and insignificant effect (if $67\% < \alpha < 95\%$). Negative effect with high debt over 95% (if $\alpha > 95\%$).
Adeola, 2017	4 countries in sub-Saharan Africa (SSA)	1970 to 2011	Real GDP per capita	External debt+GDP, ODA+GDP, Remittances+GDP	OLS; VECM; SUR (Seemingly Unrelated Regression) Model.	External debt negatively influenced economic growth.
Akram, N, 2013	4 South Asian countries: Bangladesh, India, Pakistan and Sri Lanka	1975 to 2011	Real GDP growth; Investmnt – GCF/GDP	PPG external debt/GDP, Domestic debt/GDP, Debt servicing PPG/Export	FE, RE, Pooled OLS, Dynamic GMM, and System GMM	An "over-indebtedness effect" and a possible "crowding out effect" due to negative effects of external public debt on economic growth were found. Negative relationship between domestic debt and economic growth. Similarly for investments.
Reinhart and Rogoff, 2010	44 countries; 20 advanced, 24 emerging economies	200 years of data. 1946 to 2009; 1900 to 2009	Real GDP growth	Average external debt to GDP ratio	Panel data, VECM (Vector Error Correction Model)	Weak relationship between public debt and real GDP growth (if ratios of debt + GDP <90%); But for a threshold > 90%, there was a 1% decrease in median growth rates. In emerging economies, the threshold is lower. For a threshold of 60% of external debt-to-GDP ratio, the annual growth decreases by 2%. With a higher threshold, the growth rate decreases by 50%. Also, the higher the debt, the higher the inflation rate. For advanced countries, no relationship was found.
Rodrik and Velasco, 1999	32 emerging market economies	1988 to 1998	Ratio of Short-term debt to total debt Per capita	Debt/GDP; M2/GDP	Probit analysis; cross-section and panel with FE regressions	Short-term external debt options aggravate the economy (especially in times of crisis). In other words, other options should be considered in terms of external capital flows.
Frankel and Rose, 1996	105 countries	1971 to 1992	GDP growth	External debt/GDP	Panel data, GMM	A high ratio of External Debt + GDP per capita high is always linked to a high risk of negative impacts.
Mody and Murshid, 2005	60 developing countries	1979 to 1999; annual and 3-year period	Domestic investment +GDP	FDI, Portfolio flows, and loans of commercial bank	Instrumental variables estimat ^o and dynamic panel GMM	Mixed results: positive effects on national investments in countries where better policies are adopted, but negative if not.

Source: Created by the author based on the literature review

Table 4: Summary of Empirical Literature review on Remittances and External Aids' Effects

Author, Year	Methodology				Results	
	Sample of countries	Period	Dependent variable	Independent variable		Technical estimations
Remittances' Effects						
Adeola, 2017	4 countries studied in sub-Saharan Africa (SSA)	1970 to 2011	Real GDP per capita	FDI+GDP, Portfl Equity+GDP, External debt+GDP, ODA+GDP, Remittances+GDP	Tests of Co- integration and Vector Error Correction Model (VECM)	In two of the four studied countries in sub-Saharan Africa, the effects of remittances (recognized as a growing form of Global capital flows) were positive on economic growth.
Ziesemer, T, 2012	52 countries	1972 to 2005	GDP per capita	Workers' remittances/GDP	Panel GMM, OLS, and FE	The positive influences of remittances were found on the growth rate of GDP per capita, the savings rate as well as education and public expenditures.
Adenutsi, 2009	31 developing countries: 15 SSAs and 16 LACs	1996 to 2006	Log of Real GDP per capita	Log of remittances per capita	System GMM	Positive long-term contributions of remittances to economic growth more in LAC than in SSA were found. From a dynamic point of view, growth is delayed by short-term remittances, but in the long run the overall influence becomes positive.
Acosta, et al., 2008	54 industrial and developing countries	1970 to 2000; 5yperiod	GDP (per capita)	Remittances+GDP	GMM estimation	Remittances have helped reduce poverty, inequality and increase the rate of economic growth.
Rao and Hassan, 2011	40 countries	1960 to 2007;	Output growth rate per worker (average of 5-year)	Ratio of remittances to GDP	FE and RE estimation, SGMM	Direct negative effects of remittances but insignificant were found on growth; however, possible minor indirect effects may exist.
Buch and Kuckulenz, 2004	87 developing countries	1970 to 2000	GDP per- capita	Remittances/GDP and Remittances per capita	GLS estimator	Ambiguous results: at first, negative; however, when the data from the 1990s were excluded from the analysis, the effects found became positive. Developing countries recorded a stable influx of money.

Table 4 (continued): Summary of Empirical Literature review on Remittances and External Aids' Effects

Author, Year	Methodology					Results
	Sample of countries	Period	Dependent variable	Independent variable	Technical estimations	
External Aids' Effects						
Adeola, 2017	4 countries studied in sub-Saharan Africa (SSA)	1970 to 2011	Real GDP per capita	FDI+GDP, Portfolio Equity+GDP, External debt+GDP, ODA+GDP, Remittances+GDP	OLS; Co-integration tests; VECM; SUR (Seemingly Unrelated Regression) Model.	The results indicate that external aid positively and significantly influences equity and Real GDP per capita; however in certain periods of violence incidences could appear on results.
Dalgaard, Hansen, and Tarp, 2004	65 Countries; SSA and EA	1974 to 1997; 4year periods	Average growth rate in real GDP per capita	Aid/GDP	OLS regression and panel GMM regression	In tropical countries with large areas of land, the effects of external aid on growth seem less significant. In other words, the influence of the aid depends on the conditions of the host environment.
Moreira, S, 2003	48 developing countries	1970 to 1998; 6y averages	Per capita GDP growth rate	Domestic saving, ODA, private flows and other official flows (% GDP)	GMM estimator	The analysis showed that deadlines play an important role in aid influences. The effects of long run aid are more positive and significant than the short term one.
Papanek, 1973	85 countries	1950 to 1970	Annual rate of increase in GDP	Savings, Aid, Foreign private investment (FPI) and Other foreign inflow (OFI)	Cross country regression analysis. Pooled cross-section. Simple least square estimate	Overall, the results indicate positive and significant effects.
Ram, 2004	56 aid-receiving countries	1970 to 1993	Real GDP per-capita growth rate	Aid, Bilateral aid and Multilateral aid	OLS regression	The influence is positive when the help interacts with the policy variable; this observation turns to negative in opposite the case.
Mosley et al., 1987	80 less developed countries	1960 to 1980	GNP (Growth rate)	Aid inflows (gross ODA), domestic savings, foreign priv cap inflows (all as % of NI)	Cross-section OLS, 2SLS, 3SLS	Effects of aid on the GNP growth rate are insignificant. So, high efficiency countries with policies favoring high investment returns should be favored by aid donors.

Source: Created by the author based on the literature review

From the literature review summarized in the above tables, it is clear that results from previous studies are diverging. However, most of them which focused on global capital flows effects on economic growth, found positive effects as results. This study focused on global capital inflows (GCI) effects on the banking sector of emerging countries. If at the end of the analyzes, the results reveal positive effects of GCI on Banks, then one could easily deduce that the banking sector plays a contributory moderating role in the effects of GCI on GDP.

3. Methodology

3.1. Period, Sample, and Variables

The study covered the 1998-2018 period. This period was chosen in line with the high appearance frequency of the countries selected in our sample as emerging economies, and deals with the post period of "financial liberalization reforms". So the data cover 21 years period, and are subdivided into 2 episodes: the first one takes place from 1998 to 2008 (between the 1997 Asian crisis and the 2008 global financial crisis) while the second one is associated with the period after the global financial crisis. The sample consisted of the countries of Africa, Asia, Latin America, and Europe, which were recognized in 2018 as the top 20 Emerging Economies (please see Table 1). These countries have regularly appeared with a high score of presences on lists made by different groups of analysts during this last decade. Iran's banking data was not available, and Iran was replaced by Peru, a country fairly close to the first 20 emerging countries. There are several measures in the literature used to assess Global capital inflows and bank profitability. GCI are evaluated in this study distinguishing five components for which data exist for each selected country. The measures used to assess bank profitability are chosen in line with recent trends in bank performance measures (Mishkin & Eakins, 2016). In addition, five additional control variables were used. Table 5 gives a synthetic presentation of the variables, their definitions, and their sources.

Table 5: The variables used, their definitions, and their sources

Variable	Symbol	Definition (Calculation)	Expected Effect	Data Sources
1)- Dependent variables				
Return on Equity	ROE	Profits after tax / total Equities (%)	NA	Databases of Central Banks, FRED
Return on Assets	ROA	Profits after tax / Total Assets (%)	NA	
2)- Independent variables				
2.a)- Explanatory variables				
Global Capital Inflows (Aggregate to be broken down)	GCI	Total Inflows of Global capital into the country <i>j</i> in year <i>t</i> in American dollars (% of GDP)		Matrix
Foreign Direct Investment	FDI	Foreign Direct Investment Inflows (% of GDP)	+	Databases of IFS, IMF, World Bank
Foreign Portfolio Investment	FPI	Foreign Portfolio Investment Inflows (% of GDP)	+/-	
External Debts	EDebt	- Long-Term External Debt Flows - Short-Term External Debt Flows	+/-	
External Aids	EAid	External Aids Inflows (% of GDP)	+	
Remittances	Rem	Remittances Inflows (% of GDP)	+	
2.b)- Control variables				
Home GDP growth	ΔGDP	Growth in home nation GDP from year <i>t</i> -1 to year <i>t</i> (%)	+	Databases of IFS, IMF, OECD, Central Banks, World Bank
Inflation rate	INFL	Annual growth rate of consumer price index; GDP deflator (%)	+/-	
Interest rate	INT	Nominal rate is the rate on short-term government securities or the commercial bank deposit interest rate (%)	+/-	
Official effective exchange rate	Exchg	Annual average dollar price	+/-	
Openness to trade	Opns	Exports + Imports (% of GDP)	+	

Source: Created by the author based on the literature review

3.2. Model Specification

3.2.1. Panel Data Method

There are two main approaches used in panel regressions, which are different from the Restricted Least Squares Regression (ROLS) method. These methods are the Fixed Effects Model (FEM) and the Random Effects Model (REM). The test proposed by Hausman (1978), makes it possible to make the best choice among these models. Initially, the panel data regression model can be written as below:

$$Z_{it} = \alpha_{1it} + \alpha_{2it}X_{2it} + \dots + \alpha_{pit}X_{pit} + \varepsilon_{it} \quad (1)$$

The above general model has 'p' variables where $i = 1, 2, \dots, G$ is the cross-sectional unit and $t = 1, 2, \dots, n$ is the time series data. α_{2it} to α_{pit} represents the slope of unknown coefficients. The coefficients α_{1it} and α_{2it} which represent fixed-term contain both time and cross-sectional effects and it provides differentiation opportunity for periods and units. In addition, the non-probable error term ε_{it} is assumed to have zero mean and a constant variance $E[\varepsilon_{it}] = 0$ and $\text{Var}[\varepsilon_{it}] = \sigma_e^2$. The slope of coefficients is unknown and they vary for different cross-sectional units and different periods of time. However, when estimating the model, it is assumed that the error term and the slope of the coefficients are constant.

3.2.2. Fixed Effects Model (FEMo)

FEMo can be expressed as follows:

$$Z_{it} = \bar{\alpha} + \beta_i + \alpha_{2it} + \alpha_{2it}X_{2it} + \dots + \alpha_{pit}X_{pit} + \varepsilon_{it} \quad (2)$$

$$i = 1, 2, \dots, G, \text{ and } t = 1, 2, \dots, n$$

From equation (2) above, the $\alpha + \beta_i$ represents unit-specific constant; $\bar{\alpha}$ has a constant mean. β_i represents the difference from the average constant term for the unit.

The appropriate estimation method for estimating equation (2) depends on whether β_i is fixed or random (Judge and al., 1985). If there is a relationship between the error term in equation (2) and explanatory variables, FEMo is considered as the appropriate model. Because in this case, FEMo estimators are unbiased.

3.2.3. Random Effects Model (REMO)

Contrary to the assumption of FEMo, if individual effects are not related to the explanatory variables in the model, it is more appropriate to assume that the fixed terms are distributed randomly according to the units and make modeling accordingly (Wooldridge, 2002). Thus, the constant term in equation (1) α_{1it} is not constant and therefore the mean of $\bar{\alpha}$ will be a random variable. In this case, the fixed term value for each unit will be $\alpha_{1it} = \alpha + \mu_i$; and μ_i is a random error term with zero mean and constant variance. The equation for REMo can be written as follows:

$$Z_{it} = \bar{\alpha} + \beta_i + \alpha_{2it} + \alpha_{2it}X_{2it} + \dots + \alpha_{pit}X_{pit} + \varepsilon_{it} \quad (3)$$

From equation (3) above the error term (ui) is the compound error term and its components are the individual error term (ui) and the panel error term ε_{it} . The main difference between FEMo and REMo can be seen by comparing equations (2) and (3). In FEMo, each cross-sectional unit has its own fixed term; In REMo, the constant term gives the mean constant term (β) for all cross-sectional units, and the error term ui represents the random deviation of the constant term for each cross-sectional unit from this average constant term. Random-Effect-Model was used for the estimates when the results of the Hausman test allowed it.

3.2.4. The Explicit Form of the Model

Finally, the retained explicit model for estimation is as follows:

$$ROE_{jt} = \lambda_j + \alpha_1FDInvest + \alpha_2FPInvest + \alpha_3EDebt + \alpha_4EAid + \alpha_5Rem + \beta_rK_{jt} + \lambda_t + \varepsilon_{jt} \quad (4a)$$

$$ROA_{jt} = \lambda_j + \alpha_1FDInvest + \alpha_2FPInvest + \alpha_3EDebt + \alpha_4EAid + \alpha_5Rem + \beta_rK_{jt} + \lambda_t + \varepsilon_{jt} \quad (4b)$$

Where:

The dependent variables are:

- ✓ ROE_{jt} : the profitability (Return on Equity) for the banking sector in country j in year t .
- ✓ ROA_{jt} : the profitability (Return on Asset) for the banking sector in country j in year t .

And the independent variables are:

- ✓ X_{jt} : the matrix of Global capital inflows received by country j in year t . Namely Foreign direct investments, Foreign portfolio investments, External debts, External aids, and Remittances.
- ✓ K_{jt} : the matrix of the control variables of country j in year t (as described in table 5).

The country and time fixed effects are respectively λ_j and λ_t while ε_{jt} is the error term.

4. Empirical Results

One of the preliminary analysis consisted of testing which method was appropriate between the fixed effect and the random effect. The Hausman test was used and the obtained results were presented in Table 6.

Table 6: Estimation Results of Hausman Test

	1998-2018	1998-2008	2009-2018
ROA	Ho : Var(u) = 0 Chi2(1) = 27.834889 Prob. > chi2 = 0.0001	Ho : Var(u) = 0 Chi2(1) = 8.116163 Prob. > chi2 = 0.2297	Ho : Var(u) = 0 Chi2(1) = 5.224578 Prob. > chi2 = 0.5153
ROE	Ho : Var(u) = 0 Chi2(1) = 19.760959 Prob. > chi2 = 0.0031	Ho : Var(u) = 0 Chi2(1) = 6.718501 Prob. > chi2 = 0.3477	Ho : Var(u) = 0 Chi2(1) = 5.395445 Prob. > chi2 = 0.4942

Source: Authors' estimations

- Over the 1998-2018 period

According to the test results, there are no random effects in the model over the 1998-2018 period considered as a whole, and the fixed-effect model was used in the study. In order to obtain consistent and robust results from the model discussed, there should be no autocorrelation and homoscedasticity assumptions. At this point, the autocorrelation test by Wooldridge (2002) and the heteroscedasticity test proposed by Greene (2002) were performed.

- Over the 1998-2008 and 2009-2018 periods

According to the test results, there was a random effect in the model for the 1998-2008 and 2009-2018 periods taken separately. Therefore, the random effect model was applied.

4.1. Effects on Banking Sector's Return on Assets (ROA)

Table 7 showed the estimation results for GCI effect on the ROA as dependent variable.

Table 7: Estimation results for ROA as dependent variable

Variables	1998-2018	1998-2008	2009-2018
	Fixed Effect Model Panel Least Squares	Random Effect Model Panel EGLS	Random Effect Model Panel EGLS
FDI	0.32150** (0.17942)	0.45309** (0.14236)	0.60205*** (0.1216)
FPI	0.193464* (0.1443)	0.151131 (0.08498)	0.329740** (0.12936)
ELTDBT	0.035952* (0.3669)	0.08013 (0.0212)	0.035059 (0.01086)
ESTDBT	0.17591*** (0.1120)	0.22208*** (0.0504)	0.04173** (0.03682)
EAID	-0.180202 (0.0950)	-0.088813 (0.06592)	0.039357 (0.02857)
REM	0.61501** (0.2246)	0.42036* (0.1801)	0.5657*** (0.1579)
ΔGDP	0.099457** (0.0166)	0.155326* (0.0812)	0.176934** (0.0568)
INFL	0.03026*** (0.01258)	0.04018*** (0.01006)	0.01136*** (0.0046)
INT	0.05686*** (0.02860)	0.05357*** (0.0249)	0.04946*** (0.0159)
EXCHG(-1)	-0.006607* (0.00187)	-0.001187 (0.001042)	-0.00543** (0.00114)
OPNS	3.00E-05 (0.000789)	6.06E-05 (0.000581)	3.63E-05 (0.000339)
C	0.610318 (0.1216)	0.639832 (0.3008)	1.000159 (0.2570)
Adj. R-squared	0.6524	0.4748	0.5338
Cross-sections	20	19	20
Included Obs.	1280	652	628

Legend: Standard errors are in parenthesis; *** p < 0.01, ** p < 0.05, * p < 0.1.

Source: Author's estimations

The results showed that overall, the main findings were as follows: Before the 2008 financial crisis, only two components, but over the period after (i.e. 2009-2018), Foreign-Direct-Investments (FDI), Foreign-Portfolio-Investments (FPI), External-Short-Term-Debts (ESTDBT), and

Remittances (REM) had positive effects on banking sectors' profitabilities (ROA) in EM-20 countries. The effect is such that an increase by one unit in each of these Global Capital Inflows (GCI) results in an increase of 0.321 ($p < 0.05$); 0.193 ($p < 0.1$); 0.175 ($p < 0.01$), and 0.865 ($p < 0.05$) respectively in the ROA in terms of percentage point. The results can be seen in column 1. The dynamic analysis shows that for the FDI, FPI and REM, the magnitudes of the effects were less intense before the crisis than after; while for ESTDBT, it was the inverse. The results can be seen in columns 2 and 3. The effects of other components of Global capital inflows remained statistically insignificant for the considered period. With regard to the control variables, the results showed that: GDP, Inflation, and Interest rates had positive effects on ROA while the effects of Exchange rates were rather negative.

The positive effects of FDI on the profitability of the banking sector can be partly explained by the significant advantages they brought, by the creation of high-quality jobs, the implementation of modern production and management practices, and the increased competitiveness. It's clear that the FDI effects are not always immediate and are distributed unevenly between sectors so that their magnitude differs over time depending on the host country and the context. These results are in fact the fruit of FDI realised several years ago (in the form of foreign banks penetrations), after the attractive financial policies and adjustments were implemented. It is commonly accepted that the positive effects of FDI far outweigh the negative effects. This theory is more confirmed if the host countries manage to use the advantages drawn from the presence of multinationals to develop the latent sectors of the economy. From this point of view, by easing financial constraints, the EM-20 have been able to put in place general, transparent, and investment-friendly policies and conditions and have been able to build the human and institutional capacities necessary to exploit them. To attract more of these types of capital, a stable political and macroeconomic environment, security and insurance are necessary. These results were consistent with the conclusions of Adeola, (2017), Kirikkaleli (2013), Rother (2013), Ziesemer, (2012), Denizler, et al. (2007), Li & Liu (2005), and Alfaro et al. (2004).

The positive effects of ESTDBT provide evidence that: (a) one part of ESTDBT were oriented to the banking sector improvement and/or were used for well-targeted purposes over this period; (b) the acceptable debt threshold (in terms of amount) for which the effects of external short-term

debts would become negative hasn't been crossed. In fact, as explained in section 2.4, pieces of evidence from empirical previous studies have shown that there are thresholds not to be crossed in terms of indebtedness. And, (c) the recipient country's macro-economic environment for ESDBT was favorable over this period. In other words, it would be beneficial for the financial authorities in the concerned countries to maintain, (and even to reinforce) the prudential policies that enabled them to achieve such success. These results corroborated those of some other authors, even though they have been much more interested in economic growth than in banking sector profitability. We can cite Reinhart & Rogoff (2010) and, Baum et al. (2013).

Concerning the positive effects of REM, when the financial reforms and favorable policies were implemented in EM-20, (individual) foreign investors and even natives (of these countries) who were living abroad have begun to see their homeland as a promising destination for financial investments. This made them more inclined to invest in the country, which led to an increase in remittances via the banking sector. Even better, a significant portion of these funds would be invested in banks rather than the stock market or other sectors. This, therefore, contributed positively to the ROA of bank profitability. However, the crises in different parts of the world had certainly negative effects on many senders of geographically dispersed funds. This led to the slowing down of the REM inflows. The results corroborated those of Adeola (2017), Ziesemer (2012), and Adenutsi (2009).

4.2. Effects on Banking Sector's Return on Equity (ROE)

Although the ROA provides useful information on banks' profitability, it is not the indicator of the greatest interest to bank owners (equity holders). Bank's shareholders worry more about the bank's income related to their equity investment; i.e. the Return On Equity (ROE). This ratio indicates the net profit (in terms of percentage) brought by each unit of currency (of their equity). Table 8 showed the estimation results for GCI effect on the ROE as dependent variable.

Table 8: Estimation results for ROE as dependent variable

Variables	1998-2018	1998-2008	2009-2018
	Fixed Effect Model Panel Least Squares	Random Effect Model Panel EGLS	Random Effect Model Panel EGLS
FDI	0.448706** (0.05290)	1.149773* (0.9292)	0.52385*** (0.323)
FPI	0.963601 (0.2771)	2.262413* (0.7216)	1.075205** (0.2630)
ELTDBT	0.626109 (0.3043)	0.591034 (0.2780)	0.18811 (0.03429)
ESTDBT	0.3792*** (0.1426)	0.505222** (0.2265)	0.24760** (0.12083)
EAID	-5.74221*** (2.5760)	-3.041845 (1.2810)	1.261624 (0.7225)
REM	0.851745** (0.4321)	0.661894* (0.4412)	1.30152*** (0.9582)
ΔGDP	0.962522 (0.2268)	0.121053 (0.0278)	0.73207** (0.14153)
INFL	0.38819*** (0.0782)	0.651523*** (0.2054)	0.04846** (0.0264)
INT	0.79807*** (0.3802)	-0.79137*** (0.3414)	0.41554*** (0.01202)
EXCHG(-1)	0.07175 (0.03490)	-0.061524 (0.02352)	-0.05064** (0.0280)
OPNS	-0.00710** (0.00418)	-0.001457 (0.001876)	-5.85E-05 (0.00087)
C	6.878723 (3.2536)	7.172264 (2.2913)	12.08453 (6.0579)
Adj. R-squared	0.6076	0.4301	0.5538
Cross-sections	20	19	20
Obs.	1280	652	628

Legend: Standard errors are in parenthesis; *** p < 0.01, ** p < 0.05, * p < 0.1.

Source: Author's estimations

As it can be seen, overall the magnitudes differ, however in terms of sign and statistical significance, the effects on ROE were similar to those related to ROA.

The following sub-section presents the continuation of the analysis because it is obvious that the results could vary if the estimates are made in detail for each country taken individually. The Robust Least Squares was implemented as method. However, the number of observations for each country taken individually seems insufficient when the period of the study is divided into sub-periods (1998-2008 and 2009-2018). For this

reason, the period 1998-2018 was analyzed in one block. Table 9 provides a synthetic overview of these estimations.

Table 9: Estimation Results for each Country

Variables	ROA	ROE	Variables	ROA	ROE
Argentina			Mexico		
FPI	0.532859** (0.0425)	0.247303** (0.0730)	EAID	0.109214** (0.0653)	0.857526** (0.4603)
ESTDBT	-0.89891*** (0.0408)	-0.7403*** (0.02340)	REM	0.737332*** (0.06427)	0.443449*** (0.2102)
Brazil			Nigeria		
FDI	0.383543** (0.0432)	0.037594** (0.0163)	FPI	0.6280891** (0.5642)	0.226514** (0.09546)
FPI	0.433077** (0.0142)	0.696185** (0.0406)	ELTDBT	-0.372826* (0.0805)	-0.416486** (0.1557)
REM	0.11282** (0.0508)	0.347348*** (0.02058)	REM	0.192762** (0.0228)	0.118818** (0.0792)
Chile			Philippines		
FDI	0.063514*** (0.0286)	0.897704** (0.0250)	FPI	0.68902*** (0.1806)	0.63924*** (0.1248)
AID	0.315412*** (0.1557)	0.388842*** (0.0155)	EAID	-0.964706** (0.24506)	-0.11787*** (0.05349)
China			Peru		
FDI	0.353654** (0.1271)	0.368607** (0.0412)	ESTDBT	0.210263*** (0.10245)	0.176484** (0.0972)
ELTDBT	0.342006** (0.1791)	0.222184** (0.0509)	ELTDBT	-0.193939** (0.0263)	-0.157714** (0.0684)
REM	0.115687*** (0.0572)	0.248806** (0.0847)	EAID	-0.16125*** (0.06795)	-0.13463*** (0.04234)
Colombia			REM	0.112929*** (0.05681)	0.961016*** (0.11569)
FDI	0.126032*** (0.0648)	0.108875*** (0.06349)	Poland		
ESTDBT	0.208912*** (0.01534)	0.189417*** (0.05703)	FDI	0.512916** (0.0228)	0.217878** (0.1604)
Egypt			FPI	0.321547** (0.18167)	0.186254** (0.11354)
ESTDBT	0.159808*** (0.08573)	0.224248** (0.0269)	Russia		
ELTDBT	0.179510*** (0.05627)	0.163031** (0.0874)	FDI	0.461234*** (0.13428)	0.264632* (0.0848)
			ELTDBT	-0.169246 (0.0111)***	-0.28933*** (0.11245)
			REM	0.152983 (0.0198)**	0.382917*** (0.1258)

Legend: Standard errors are in parenthesis; *** p < 0.01, ** p < 0.05, * p < 0.1.

Source: Author's estimations

Table 9 (continued): Estimation Results for each Country

Variables	ROA	ROE	Variables	ROA	ROE
India			South Africa		
FPI	-0.084704* (0.0533)	Insignificant effects	FDI	0.227090** (0.1712)	0.178236*** (0.08469)
EAID	-0.249807*** (0.05670)	Insignificant effects	FPI	0.232210** (0.16142)	0.22040*** (0.05924)
REM	0.221722** (0.0742)	Insignificant effects	ESTDBT	0.199454** (0.0412)	0.403418*** (0.2058)
Indonesia			Saudi Arabia		
FDI	0.154903** (0.0940)	Insignificant effects	No effects found		
EAID	-0.849895** (0.0249)	Insignificant effects	Thailand		
Korea			FDI	0.465270** (0.3099)	0.6694816** (0.2433)
FDI	0.623329** (0.0349)	0.308094*** (0.09122)	ELTDBT	0.475678*** (0.09147)	0.59729*** (0.023467)
REM	0.312369*** (0.0410)	0.346764*** (0.06802)	REM	0.272703** (0.0228)	0.621749*** (0.02467)
Malaysia			Turkey		
FDI	0.04346** (0.0314)	Insignificant effects	FDI	0.159793** (0.0419)	0.799238** (0.2487)
FPI	0.250781*** (0.10245)	0.195712*** (0.0108)	ESTDBT	0.54914** (0.2285)	0.180259** (0.0694)
ESTDBT	0.114489*** (0.05579)	Insignificant effects	ELTDBT	-0.05689** (0.0481)	-0.183801* (0.0965)
REM	0.147453*** (0.03543)	Insignificant effects	REM	0.854458*** (0.27060)	0.189417*** (0.09739)***

Legend: Standard errors are in parenthesis; *** p < 0.01, ** p < 0.05, * p < 0.1.

Source: Author's estimations

Implications

In accordance with expectations, the components of Global Capital Inflows affect differently the banking sector profitability from one country to another. When analyzing the results for each country individually, among the private global capital flows, the FDI, FPI, and REM while among the public global capital flows, the ESTDBT (in the majority) exhibited positive and significant effects on the banking sector profitability in these countries over the concerned period. The variations in the results point out not only the existence of macroeconomic, financial, and institutional characteristics specific to each country but also

certain global factors that influence the countries differently from an economic region to another.

The results of this study highlight the contributory moderating role of the banking sector on the GCI-GDP relationship, in the EM-20. Indeed, the financial liberalization in these economies, the policy of opening up markets, and the less stringent restrictions on international investments that followed, resulted in increased capital flows between these countries and other countries/ regions of the world, positively affecting the banking sector, and ultimately contributing to the economic growth of these countries over the considered period.

5. Conclusion

The main objective of this paper was to analyze the effect of Global capital inflows (GCI) on the banking sectors' profitability in the top 20 emerging economies (EM-20) over the 1998-2018 period. Three points motivated this study: (1) the GCI can be growth engines and/or a source of instability (according to their volatility, the way of use, and/or the macroeconomic environment characteristics); (2) Most of the previous studies focused on two components of GCIs, analyzing their effects on Economic Growth. This study took into-account five components analyzing their effects on the banking sector's profitability before and after the 2008 global financial crisis; (3) Many previous studies already support the positive effects of ICG on the economic growth of the host country. The reason why the banking sector is selected - to study the effects of capital movements - is to point out whether the banking sector played a contributory moderating role or rather a brake over the period considered. This could open up other ways of subsequent researches. The results were carried out by using the Fixed Effect /Random Effect Models, and the Robust Least Squares with a panel sample of the EM-20 countries.

The main findings were as follows: Before the 2008 financial crisis, only two components, but over the period after (i.e. 2009-2018), Foreign-Direct-Investments (FDI), Foreign-Portfolio-Investments (FPI), External-Short-Term-Debts (ESTDBT), and Remittances (REM) had positive effects on banking sectors' profitabilities (ROA and ROE) in EM-20 countries. The dynamic analysis showed that for the FDI and REM, the magnitudes of the effects were less intense before the crisis than after; while for ESTDBT, it was the inverse. The effects of other capital flows

remained statistically insignificant. With regard to the control variables, those which had positive effects were the Economic growth, Inflation, and Interest rate, while Exchange rate showed negative effects. The results of this study pointed out the contributory moderating role of the banking sector on the GCI- Δ GDP relationship in the EM-20 countries. Indeed, the financial liberalization in these economies, the policy of opening up markets, and the less stringent restrictions on international investments that followed, resulted in increased capital flows between this country and other countries/ regions of the world, positively affecting the banking sector, and ultimately contributing to the economic growth of these countries over the considered period.

Discussion: The financial liberalization is a policy with very long-term effects. Its implementation in the EM-20, with policy of opening up markets, attractive financial policies and adjustments, and less stringent restrictions on international investments that followed, resulted in increased capital flows between these economies and other countries/ regions of the world. That positively affected the banking sector, and ultimately contributed to the economic growth of these countries over the considered period. Besides, the dynamic analysis shows that for the FDI, FPI and REM, the magnitudes of the effects were less intense before the crisis than after. Indeed, after experiences of the crises previously experienced by certain countries of the MS-20, the effectiveness of the reforms and prudential policies implemented in several of these countries constituted for them an armor of resistance in the face of the 2008 global financial crisis, in relation to the economies developed which were very affected.

Limits: Although this study brings some contributions, it has limitations. In fact, only annual data were available for this research. It would be interesting to deepen this analysis by taking into account quarterly or even monthly data for further researches, and if possible, to analyze different activity sectors that make up the economy in general. Specific in-depth analyzes are needed to capture not only the statistical significance of the moderating role of the banking sector (as amplifier or attenuator) but also the magnitude (in terms of coefficients) of these moderations on the relationship between GCI and Δ GDP.

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