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Do Country Characteristics and International Linkages Foster Financial Stress Transmission in Emerging Economies?

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ABSTRACT

This paper examines the role of country characteristics and international linkages in transmitting financial stress from advanced to emerging countries. The study considers a panel of 18 emerging countries from 2000 to 2019. We apply various panel data techniques to evaluate the conditional and unconditional effects of country characteristics and international linkages on financial stress in emerging economies. Findings suggest that the financial crises from advanced countries transmit strongly and rapidly to emerging economies. Further, we conclude that the extent of the transmission of financial stress is related to the depth of financial linkages between advanced and emerging economies. Positive current account and fiscal balances do little to insulate emerging economies from the transmission of acute financial stress from advanced economies. The study highlights the design of policies to strengthen the institutional setup in emerging economies. Further, coordinated policy responses may help these countries to mitigate FS through external factors. Besides that, a serious effort is desired to monitor fiscal imbalances and recessionary trends.

ملخص

تستعرض هذه الورقة دور الخصائص القُطرية والروابط الدولية في نقل الضغوط المالية من البلدان المتقدمة إلى البلدان الناشئة. تتناول الدراسة مجموعة من 18 دولة ناشئة من عام 2000 إلى عام 2019. نطبق تقنيات مختلفة لبيانات اللوحة لتقييم الآثار المشروطة وغير المشروطة للخصائص القطرية والروابط الدولية على الضغوط المالية في الاقتصادات الناشئة. تشير النتائج

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إلى أن الأزمات المالية من البلدان المتقدمة تنتقل بقوة وبسرعة إلى الاقتصادات الناشئة. علاوة على ذلك، نستنتج أن مدى انتقال الضغوط المالية يرتبط بعمق الروابط المالية بين الاقتصادات المتقدمة والناشئة. إن وجود حسابات جارية وأرصدة مالية إيجابية لا تفعل الكثير لعزل الاقتصادات الناشئة عن انتقال الضغوط المالية الحادة من الاقتصادات المتقدمة. تسلط الدراسة الضوء على تصميم السياسات لتعزيز البنية المؤسسية في الاقتصاديات الناشئة. علاوة على ذلك، قد تساعد الاستجابات السياسية المنسقة هذه البلدان على التخفيف من الضغوط المالية من خلال العوامل الخارجية. إلى جانب ذلك، من المطلوب بذل جهود جادة لرصد الاختلالات المالية واتجاهات الركود.

RÉSUMÉ

Cet article examine le rôle des caractéristiques des pays et des liens internationaux dans la transmission des tensions financières des pays avancés aux pays émergents. L'étude porte sur un panel de 18 pays émergents entre 2000 et 2019. Nous appliquons diverses techniques de données de panel pour évaluer les effets conditionnels et inconditionnels des caractéristiques des pays et des liens internationaux sur le stress financier dans les économies émergentes. Les résultats suggèrent que les crises financières des pays avancés se transmettent fortement et rapidement aux économies émergentes. En outre, nous concluons que l'ampleur de la transmission des tensions financières est liée à la profondeur des liens financiers entre les économies avancées et émergentes. Une balance courante et des soldes budgétaires positifs ne protègent guère les économies émergentes de la transmission de tensions financières aiguës en provenance des économies avancées. L'étude souligne la nécessité de concevoir des politiques visant à renforcer la structure institutionnelle des économies émergentes. En outre, des réponses politiques coordonnées peuvent aider ces pays à atténuer les tensions financières dues à des facteurs externes. En outre, un effort sérieux est nécessaire pour surveiller les déséquilibres budgétaires et les tendances à la récession.

Key Words: Financial stress, emerging economies, transmission, country characteristics, international linkages

JEL Classification: G01, G15, E44, F42

1. Introduction

The financial stress (FS hereafter) transmission from developed to emerging countries intensified after the global financial crisis of 2007 to 2009. The impact of global turmoil spillover to the emerging countries in the final quarter of 2008 when these economies experienced currency

depreciation, unsustainable levels of sovereign debt, falling reserves, and excessive volatility in stock markets. This crisis brought the worst global recession since the 1930s, besides elevating financial instability to unprecedented levels. This instability even surpassed the levels that prevailed during the Asian financial crisis. Emerging countries, characterized by less resilient financial systems and deep financial linkages with developed countries, experienced substantial FS transmission than developed countries (Balakrishnan et al., 2011).

Transmission of FS refers to the co-movements of asset prices and capital flows in periods of financial turmoil. This co-movement is explained either through strong trade and financial linkages between the countries, macroeconomic conditions, or herd behavior of the investors (Park & Mercado, 2014). Numerous studies construct financial stress indices (FSIs hereafter) and investigate the stress transmission process for emerging economies. For instance, Balakrishnan et al. (2011) analyzed FS transmission for 25 emerging and 17 developed countries. They show that FS transmits from developed to emerging countries during stressful periods rather than tranquil ones. Later on, Park and Mercado (2014) studied the transmission of FS using quarterly data from 1992 to 2012 for 25 emerging economies. They also find support for stress transmission from developed countries and emerging regions, such as Emerging Asia and Europe. Likewise, Fink and Schuler (2015) find significant stress transmission from the US financial shock to eight emerging countries through financial linkages channels.

This study claims that the extent of pass-through depends on the country characteristics of the emerging economies and the depth of international linkages between emerging and developed countries. An interesting research inquiry is to shed light on whether country characteristics and international linkages foster or mitigate the FS transmission process from developed to emerging economies. This study makes several contributions to bridge the gap in the existing literature on FS transmission. Specifically, we aim to evaluate the conditional effects of domestic vulnerabilities and linkages in the transmission of FS from developed to emerging countries. Also, the role of regional financial contagion and institutional efficacy is analyzed. This study builds a composite index to reflect the quality of institutions instead of incorporating multiple institutional variables.

The rest of the study is planned as follows. Section 2 explains the theoretical framework of FS transmission analysis. Section 3 explains

data and econometric methodology. The next section presents a detailed analysis of the results. The last section concludes the study and proposes policies that may help mitigate FS transmission.

2. Theoretical Framework

Following Park and Mercado (2014), this study reinvestigates the role of various country characteristics and linkages that interfere with the FS transmission process.

2.1 Country Characteristics and Linkages

The study considers four country characteristics and two linkages to analyze FS transmission. The first country's characteristic is a decline in the real GDP growth rate (GRY). Such an economic downturn raises vulnerability to FS as a financial crisis is generally preceded by slumps in economic activity followed by boom periods (Guru, 2016). The second factor is a deficit in the external account (CA), which compels countries to rely on foreign financing, thereby enhancing the exposure to sudden stops and FS (Claessens, Kose, & Terrones, 2009; Fratzscher, 2009). The third indicator is fiscal vulnerabilities, such as high fiscal deficits and government debt. A negative government balance (GB) magnifies FS as it limits the ability of fiscal authorities to enhance spending during periods of financial crisis. Fiscal deficit elevates concerns about roll-over risk. Debt sustainability problems create repercussions for the financial system through enhanced instability and FS (Afonso, Baxa, & Slavik, 2011; Cardarelli, Elekdag, & Lall, 2011). The fourth macroeconomic imbalance is a decline in the foreign exchange reserves (DRES) held by central banks. Before a financial crisis, Dwindling reserves exert pressure on the banking system and local currency as monetary authority fails to support domestic currency (Olafsson & Petursson, 2010). The study further looks into the role of financial and real linkages that affect the shock spillover from one country to another. A high degree of financial integration (FO) fosters the transmission of FS through capital outflows, reduction in trade credit, and foreign direct investment. These shocks spillover to the domestic economy through unfavorable shifts in the perception of international investors. Such portfolio rebalancing helps investors minimize exposure to portfolio risk but raises FS. Likewise, real international linkages, in terms of trade openness (TO), improve economic performance through trade diversification. This brings financial stability and reduces FS in the domestic economy. This study estimates

four models, each indicating an interaction of FSIA with these characteristics to gauge the conditional role of these preconditions in the stress transmission process. Further, a fifth and sixth model explores the conditional role of linkages in transmitting FS from advanced to emerging countries (Hwa, 2015; Park & Mercado, 2014).

2.2 Control Variables

To avoid specification issues, this study incorporates a few control variables. The first set of control variables are external factors. We take three external/global factors, namely, global interest rate (GIR), global output (GY), and global commodity prices index (GCP). Any rise in GIR suggests tight credit conditions in the global credit market. This limits foreign financing for local imbalances. Similarly, an increase in GY refers to a boom that magnifies FS. A rise in GY refers to favorable global demand conditions. The last factor, an adverse shock to GCP, raises the likelihood of a financial crisis through various channels, as Kinda, Mlachila, and Ouedraogo (2016) explained. Such shocks lower the export earnings and income of the domestic country. Further, falling GCP sores up fiscal deficits as revenues of commodity-exporting nations fell. A surge in bank withdrawals after falling GCP squeezes the liquidity of banks. The financial sector becomes fragile through all these channels, and the FS level increases.

Region-specific contagion is the next control variable. It refers to the spread of crisis within specific regions characterizing similar macroeconomic conditions and common creditors (including international commercial banks). The first channel of regional propagation is adverse shocks to banks located in interconnected regions. The second one is the exposure to a common lender channel. A common lender in regional countries is a common factor in the propagation of FS originating from one country. The heavy reliance of the domestic country on a regional lender raises the possibility of regional contagion (Arvai & Driessen, 2009; Park & Mercado, 2014).

The effectiveness of Political Institutions is the last control variable. Institutions play an essential role in minimizing systemic risk. The concept of institutions combines non-market factors, such as social norms and public relations, politics, legal systems, culture, and religion. In the economic context, institutions shape the behavior of economic agents and markets. The efficacy of political institutions ensures the stability of a financial system. Low-quality political institutions make a financial

system fragile. Institutional failure to regulate financial markets encourages excessive risk-taking behavior. The present study is unique in evaluating institutional effectiveness in assessing system-wide FS for emerging countries.

2.3 Model Specification

To evaluate the conditional and unconditional effects of country-specific characteristics and international linkages in FS transmission process, we estimate the following model:

$$\mathrm{FSIE}_{i,t} = \beta \mathrm{FSIA}_{\mathrm{t}} + \delta_i CC_{i,t} + \sigma_i(\mathrm{FSIA}_{\mathrm{t}} \times CC_{i,t}) + \phi_i Lin_{i,t} + \eta_i(\mathrm{FSIA}_{\mathrm{t}} \times Lin_{i,t}) + \gamma G_t + \omega_i PRI_{i,t} + \theta_i RD_i + u_i + \varepsilon_{i,t} \quad (1)$$

where FSIE and FSIA iindicatethe FSIs for emerging and advanced countries, respectively. The average co-movement parameter (β) measures the intensity of the stress co-movement. CC refers to country characteristics, such as GRY, CA, GB, and DRES. These characteristics affect FSIE directly and indirectly. The direct and iconditional effects of emerging countries' characteristics are captured through δ_i, and σ_i, respectively. Lin refers to international linkages such as TO, and FO. The direct and indictional effect of emerging countries' characteristics are captured through ϕ_i and η_i, respectively. G denotes global factors, comprising cGIR, GY, and GCP changes The effectiveness of political institutions is measured through a political risk index (PRI) for emerging countries. Regional dummies (RD_i) account for regional financial contagion. This study incorporates three regional dummies: merging Asia (DA), Latin America (DLA), and Emerging Europe (DE). The country-specific effects are captured through unobservable time-invariant shocks (u_i). The subscripts i and t denote country and time, respectively.

3. Data and Methodology

This section explains data, variables, and econometric methodology for analyzing the role of country characteristics and international linkages in financial stress transmission in emerging countries.

3.1 Data

This study considers panel data for 18 emerging countries from 2000 to

2019, comprising 360 annual observations. The sampled countries are Argentina, Brazil, Chile, China, Colombia, Hungary, India, Indonesia,

Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Russian Federation, Thailand, Turkey, and Venezuela. Data availability at the measurement stage of FSIs remained the primary concern when selecting countries. Initially a large sample was selected that was later trimmed on consistent data availability. A list of variables, definitions, measurements, and data sources is given in Table A in the Appendix.

3.1.1 Measuring Financial Stress

This study constructs monthly FSIE and FSIA using PCA. The authors follow Sadia, Bhatti, and Ahmad (2019) for detailed procedures for constructing FSIs. For each group of countries, the authors consider three types of risks as components of FSIs. These are financial, economic, and political risks. These components are banking sector risk, stock market volatility, currency risk, sovereign risk, credit stress, output gap, and political risk. Finally, we take the period average to convert monthly FSIs into annual frequency.

3.1.2 Measuring Effectiveness of Political Institutions

The measurement of institutional factors did not receive considerable attention in the literature. Abdessatar and Rachida (2013) take various institutional factors as the regressors that affect FS. Following Sadia, Bhatti, and Azeez (2022), we apply the composite index approach to the International Country Risk Guide (hereafter ICRG) data. Composite PRI measures the effectiveness of political institutions. A high index value, which refers to low political risk, indicates that political institutions are strong enough to mitigate FS.

3.2 Econometric Procedure

Before estimation, the authors apply some diagnostic tests proposed by Das (2017) and check for the presence of outliers. The first diagnostic test for serial correlation rejects the null hypothesis of no first-order serial correlation and must accept the null hypothesis of no second-order serial correlation. The second test, Hansen J, for over-identifying restriction, accepts the null hypothesis of no correlation of instruments with the error term. This study applies Hampel Identifiers (hereafter HI) to control for the outliers in data (Wilcox, 2005). An observation would be declared as an outlier with a cutoff of 3.5. Bhatti, Haque, and Osborn (2014) elaborate on the procedures.

This study uses several econometric techniques for the robustness analysis while estimating equation (1). These techniques are Pooled Ordinary Least Square (POLS), Fixed Effects (FE), Two-Stage Least Squares (2SLS), system and difference GMM.

4. Empirical Results

The authors investigate the conditional effects of country characteristics and linkages in the transmission of FS from developed to emerging countries. They estimate both the static and dynamic models. Table 1 presents the estimation results using POLS for the equation (1). The authors estimate 6 models, each introducing the interaction of FSIA with one of the four country characteristics or two linkages. The findings reveal that the institutional factor is negative and statistically significant across all six models, confirming that political risk endangers the financial system's stability, thereby raising FSIE. Strikingly, a more pronounced role of global factors is observed in almost all the models. For instance, an adverse shock in global commodity prices enhances FS. However, the magnitude of this effect is negligible, but the effect is significant in almost all the models. Likewise, in 5 out of 6 models, high growth in the global economy significantly mitigates FSIE. Lastly, growth in the global interest rate is dropped out in all the specific models, except the first model, indicating that global credit conditions carry an insignificant impact on emerging economies. Regional dummies for Asia and Latin America indicate that FS goes down significantly in all six models if the region is Emerging Asia or Latin America compared to the European region's base category.

Table 1: Role of Country Characteristics and Linkages in Financial Stress Transmission, POLS

Variables	GM (1)	SM (2)	GM (3)	SM (4)	GM (5)	SM (6)	GM (7)	SM (8)	GM (9)	SM (10)	GM (11)	SM (12)
PRI	-0.083*** (0.000)	-0.068*** (0.000)	-0.085*** (0.000)	-0.073*** (0.000)	-0.079*** (0.000)	-0.071*** (0.000)	-0.084*** (0.000)	-0.073*** (0.000)	-0.087*** (0.000)	-0.068*** (0.000)	-0.084*** (0.000)	-0.068*** (0.000)
FSIA	0.067** (0.017)	-0.268*** (0.000)	-0.0664 (0.187)	0.001 (0.973)	0.077 (0.194)	0.121*** (0.002)	-0.129 (0.107)	-0.032 (0.825)	-0.183** (0.042)	0.011 (0.766)	-0.076 (0.233)	0.0548 (0.207)
GRY	-0.074*** (0.004)	-0.053*** (0.000)	-	-	-	-	-	-	-	-	-	-
GRY*FSIA	-0.437*** (0.008)	0.046*** (0.001)	-	-	-	-	-	-	-	-	-	-
CA	-	-	0.043*** (0.000)	0.021*** (0.005)	-	-	-	-	-	-	-	-
CA*FSIA	-	-	-0.008 (0.403)	0.004 (0.620)	-	-	-	-	-	-	-	-
GB	-	-	-	-	-0.066*** (0.000)	-0.056*** (0.000)	-	-	-	-	-	-
GB*FSIA	-	-	-	-	0.055*** (0.002)	0.043*** (0.000)	-	-	-	-	-	-
DRES	-	-	-	-	-	-	-0.005* (0.082)	-0.004** (0.024)	-	-	-	-
DRES*FSIA	-	-	-	-	-	-	0.005 (0.156)	0.0034 (0.239)	-	-	-	-
TO	-	-	-	-	-	-	-	-	0.001 (0.398)	-0.001 (0.334)	-	-
TO*FSIA	-	-	-	-	-	-	-	-	0.002** (0.026)	0.001 (0.653)	-	-
FO	-	-	-	-	-	-	-	-	-	-	0.050** (0.003)	0.015** (0.036)

Variables	**GM (1)**	**SM (2)**	**GM (3)**	**SM (4)**	**GM (5)**	**SM (6)**	**GM (7)**	**SM (8)**	**GM (9)**	**SM (10)**	**GM (11)**	**SM (12)**
FO*FSIA	-	-	-	-	-	-	-	-	-	-	-0.011 (0.543)	0.001 (0.383)
GCPG	0.007*** (0.002)	0.005*** (0.001)	0.004** (0.025)	0.003*** (0.007)	0.006*** (0.001)	0.004*** (0.002)	0.006*** (0.004)	0.004** (0.027)	0.004** (0.019)	0.0026** (0.025)	0.005*** (0.016)	0.003** (0.025)
GYG	-0.044 (0.307)	-	-0.155*** (0.000)	-0.102*** (0.000)	-0.113** (0.010)	-0.095*** (0.000)	-0.123** (0.011)	-0.108*** (0.000)	-0.135*** (0.007)	-0.101*** (0.000)	-0.124** (0.011)	-0.081*** (0.000)
GGIR	-0.001* (0.071)	-0.001*** (0.000)	0.0002 (0.420)	-	-0.0001 (0.692)	-	-0.0001 (0.660)	-	0.0001 (0.825)	-	0.0001 (0.832)	-
DA	-0.457*** (0.000)	-0.245*** (0.000)	-0.731*** (0.000)	-0.478*** (0.000)	-0.552*** (0.000)	-0.407*** (0.000)	-0.578*** (0.000)	-0.324*** (0.000)	-0.628*** (0.000)	-0.348*** (0.000)	-0.599*** (0.000)	0.349*** (0.000)
DLA	-0.165 (0.137)	-0.120** (0.036)	-0.157 (0.184)	-0.155** (0.010)	-0.101 (0.299)	-0.126** (0.034)	-0.129 (0.247)	-	-0.101 (0.405)	-0.151** (0.019)	-0.077 (0.481)	-0.137** (0.017)
Constant	5.826*** (0.000)	4.446*** (0.000)	6.173*** (0.000)	5.051*** (0.000)	4.273*** (0.000)	4.692 (0.000)	5.988*** (0.000)	5.009*** (0.000)	6.164*** (0.000)	4.663*** (0.000)	6.037*** (0.000)	4.626*** (0.000)
Obs	342	329	342	327	342	331	342	330	342	325	342	325
R^2	0.693	0.759	0.675	0.778	0.697	0.807	0.648	0.756	0.643	0.762	0.655	0.763
F Statistics	48.37*** (0.000)	83.16*** (0.000)	64.26*** (0.000)	108.87*** (0.000)	56.46 (0.000)	112.26 (0.000)	46.05 (0.000)	81.15 (0.000)	60.99 (0.000)	123.67 (0.000)	51.49 (0.000)	105.59 (0.000)

Note: GM and SM refer to general and specific models respectively. And the interaction between FSIA and the country characteristics (GRY, CA, GB, DRES), and FSIA and linkages (TO and FO) are introduced to trace out the conditional effect of FSIA on FSIE.

Further, these findings are consistent with Park and Mercado (2014), and UNCTAD (2019).

Next, we discuss the conditional effects of transmitting FS from developed to emerging countries. The first effect, growth in real output of the emerging countries, is documented in the first and second columns in Table 1. The findings suggest a negative and significant direct impact of a decline in real GDP (GRY) on FS. However, the transmission of FSIA to FSIE is conditioned upon growth in real output. This indirect impact turns out to be positive. This reflects that FSIA compliments FSIE if emerging countries face economic downturns. This effect is attributed to recessionary trends in major emerging countries since 2013, which makes a strong link between economic slowdown and heightened FS, as pointed out by UNCTAD (2019).

Next, columns (3) and (4) account for the stress transmission (from developed to emerging countries) conditional upon the current account balance of the emerging countries. In line with the baseline model, the direct effect of deterioration in the current account on FSIE is positive and statistically significant. Emerging European and Latin American countries explain most of this deterioration in the early 2000s. Although the indirect effect of CA is positive, the effect turns out to be statistically insignificant once again, reflecting weak complementarity. The next two columns (5 and 6) report the direct and indirect effects of government balance (GB) changes in the FS transmission. The direct effect is negative and statistically significant. Interaction terms show FSIA spillover to emerging countries if these economies experience a fiscal deficit. This effect is attributed to the sampled Latin American and leading Asian countries that faced persistent fiscal deficits. The fourth model (Columns 7 and 8) explores the direct and indirect role of FOREX changes on FSIE. Our model witnesses that a fall in reserves carries a negative and significant impact on FSIE. The indirect effect is, however, positive and insignificant, confirming a weak complementarity between FSIA and FSIE. The next four columns (columns 9 to 12) analyze the role of trade and financial openness in the FS transmission process, respectively. More open economies in terms of trade flows experience lesser FS as openness improves their competitive position and brings stability to financial markets. However, the findings reveal that deeper trade linkages contribute insignificantly to FS transmission. Likewise, a high degree of

financial openness makes emerging countries more vulnerable to adverse capital account shocks. This enhances FSIE. Nevertheless, countries that tend to be more open financially do not facilitate FS transmission from developed to emerging countries.

Overall, our results confirm that real economy macroeconomic fundamentals, such as a fall in real GDP and fiscal deficits, and political factors weigh more in the transmission of FS. This is further supported by the fact that 5 out of 7 selected Emerging Latin American and 3 out of 4 selected Emerging European countries are experiencing problems of twin deficits during the sample period. This finding sharply contrasts the previous studies of IMF (2009) and Balakrishnan et al. (2011). Across all six models, R^2 is considerably high indicating that the models explain well the variations in data. Further, F statistics reveal the overall significance of all the six models.

The authors re-estimate equation (1) using the FE and 2SLS methods for robustness checks. The estimation results are presented in Table 2 and Table 3, respectively. High political risk once again thwarts financial stability in both the tables and across all the models. The findings appear to be different in the FS transmission. We lack support for the FS transmission across all the models of both tables. All the other findings are robust to POLS, except that the direct effect of both trade and financial linkages is significant. Thus, we find evidence consistent with the notion that deeper trade, particularly between China, India, and the US, helps to mitigate FSIE. Likewise, high financial connectedness between developed and emerging countries facilitates FS transmission through bank lending channels and the high financial liabilities of emerging countries. This finding conforms to Balakrishnan et al. (2011).

Table 2: Role of Country Characteristics and Linkages in Financial Stress Transmission, FE Model

Variables	**GM (1)**	**SM (2)**	**GM (3)**	**SM (4)**	**GM (5)**	**SM (6)**	**GM (7)**	**SM (8)**	**GM (9)**	**SM (10)**	**GM (11)**	**SM (12)**
PRI	-0.038*** (0.000)	-0.039*** (0.000)	-0.048*** (0.000)	-0.050*** (0.000)	-0.049*** (0.000)	-0.047*** (0.000)	-0.041*** (0.000)	-0.045*** (0.000)	-0.052*** (0.000)	-0.050*** (0.000)	-0.045** (0.000)	-0.043*** (0.000)
FSIA	-0.310** (0.017)	-0.155* (0.094)	-0.084** (0.044)	-0.042 (0.317)	-0.0004 (0.996)	-0.004 (0.918)	-0.1083* (0.093)	-0.039 (0.554)	-0.202** (0.036)	-0.079 (0.249)	-0.142 (0.112)	-0.064 (0.331)
GRY	-0.092*** (0.000)	-0.061*** (0.000)	-	-	-	-	-	-	-	-	-	-
GRY*FSIA	-0.031 (0.139)	0.021* (0.083)	-	-	-	-	-	-	-	-	-	-
CA	-	-	0.037* (0.091)	0.011 (0.123)	-	-	-	-	-	-	-	-
CA*FSIA	-	-	-0.017 (0.217)	0.003 (0.669)	-	-	-	-	-	-	-	-
GB	-	-	-	-	-0.041 (0.197)	-0.028*** (0.003)	-	-	-	-	-	-
GB*FSIA	-	-	-	-	0.027 (0.199)	0.013* (0.097)	-	-	-	-	-	-
DRES	-	-	-	-	-	-	-0.002 (0.297)	-0.002 (0.498)	-	-	-	-
DRES*FSIA	-	-	-	-	-	-	0.002 (0.490)	0.0002 (0.934)	-	-	-	-
TO	-	-	-	-	-	-	-	-	-0.003 (0.117)	-0.003* (0.050)	-	-
TO*FSIA	-	-	-	-	-	-	-	-	0.002* (0.067)	0.001 (0.249)	-	-

FO	-	-	-	-	-	-	-	-	-	-	0.043* (0.094)	0.027** (0.023)
FO*FSIA	-	-	-	-	-	-	-	-	-	-	-0.024 (0.251)	0.009 (0.420)
GCPG	0.005*** (0.007)	0.003** (0.010)	0.003 (0.151)	0.003** (0.014)	0.004** (0.010)	0.003*** (0.003)	0.004** (0.029)	0.003** (0.011)	0.003** (0.021)	0.003*** (0.004)	0.003* (0.066)	0.003*** (0.007)
GYG	-0.04 (0.166)	-0.05** (0.020)	-0.17*** (0.003)	-0.09*** (0.000)	-0.14*** (0.001)	-0.09*** (0.000)	-0.14*** (0.003)	-0.096*** (0.000)	-0.15*** (0.004)	-0.09*** (0.000)	-0.15*** (0.004)	0.09*** (0.000)
GGIR	-0.0001 (0.615)	-	0.0003 (0.281)	-	0.0001 (0.554)	-	0.0001 (0.513)	-	0.0002 (0.432)	-	0.0002 (0.463)	-
Constant	2.844*** (0.000)	2.641*** (0.000)	3.547*** (0.000)	3.255*** (0.000)	3.358*** (0.000)	2.945*** (0.000)	3.600*** (0.000)	2.961*** (0.000)	3.891*** (0.000)	3.442*** (0.000)	3.368*** (0.000)	2.841*** (0.000)
Obs	342	325	342	320	342	314	342	320	342	309	342	310
R^2	0.5905	0.6784	0.675	0.778	0.6271	0.8021	0.5718	0.7185	0.5695	0.7623	0.5603	0.7092
F Statistics	97.91*** (0.000)	67.15*** (0.000)	16.87*** (0.000)	22.13*** (0.000)	14.32*** (0.000)	44.59*** (0.000)	16.28*** (0.000)	41.44*** (0.000)	18.51*** (0.000)	22.60*** (0.000)	17.62*** (0.000)	27.22*** (0.000)

Table 3: Role of Country Characteristics and Linkages in Financial Stress Transmission, 2SLS

Variables	GM (1)	SM (2)	GM (3)	SM (4)	GM (5)	SM (6)	GM (7)	SM (8)	GM (9)	SM (10)	GM (11)	SM (12)
PRI	-0.08*** (0.000)	-0.072*** (0.000)	-0.085* (0.091)	0.078*** (0.000)	-0.078*** (0.000)	-0.069*** (0.000)	-0.083*** (0.000)	-0.069*** (0.000)	-0.088*** (0.000)	-0.078*** (0.000)	-0.083** (0.000)	-0.07*** (0.000)
FSIA	-0.295 (0.523)	-0.134* (0.092)	-0.091 (0.646)	-0.035 (0.349)	0.131 (0.315)	0.092*** (0.007)	-0.288 (0.641)	0.061 (0.245)	-0.207 (0.337)	-0.094 (0.188)	-0.173 (0.579)	-0.018 (0.642)
GRY	-0.053* (0.051)	-0.065*** (0.000)	-	-	-	-	-	-	-	-	-	-
GRY*FSIA	0.047 (0.387)	0.021** (0.039)	-	-	-	-	-	-	-	-	-	-
CA	-	-	0.041*** (0.001)	0.024*** (0.000)	-	-	-	-	-	-	-	-
CA*FSIA	-	-	-0.006 (0.715)	-0.0003 (0.964)	-	-	-	-	-	-	-	-
GB	-	-	-	-	-0.052*** (0.000)	-0.061*** (0.000)	-	-	-	-	-	-
GB*FSIA	-	-	-	-	0.038 (0.126)	0.031*** (0.000)	-	-	-	-	-	-
DRES	-	-	-	-	-	-	-0.005 (0.586)	-0.001 (0.690)	-	-	-	-
DRES*FSIA	-	-	-	-	-	-	0.011 (0.655)	-0.003 (0.191)	-	-	-	-
TO	-	-	-	-	-	-	-	-	0.0014 (0.220)	-0.0004 (0.598)	-	-
TO*FSIA	-	-	-	-	-	-	-	-	0.002 (0.144)	0.001 (0.109)	-	-

Variables	**GM (1)**	**SM (2)**	**GM (3)**	**SM (4)**	**GM (5)**	**SM (6)**	**GM (7)**	**SM (8)**	**GM (9)**	**SM (10)**	**GM (11)**	**SM (12)**
FO	-	-	-	-	-	-	-	-	-	-	0.048** (0.029)	0.025*** (0.001)
FO*FSIA	-	-	-	-	-	-	-	-	-	-	-0.026 (0.642)	0.008 (0.434)
GCPG	0.003 (0.924)	-	0.010 (0.7561)	-	0.006 (0.807)	-	0.021 (0.634)	-	0.017 (0.629)	-	0.019 (0.600)	-
GYG	-0.001 (0.980)	-	-0.236 (0.656)	-	0.046 (0.913)	-	-0.360 (0.545)	-	-0.361 (0.537)	-	-0.352 (0.550)	-
GGIR	-0.0004 (0.286)	-	0.0001 (0.892)	-	-0.0003 (0.468)	-	-0.0001 (0.895)	-	0.0002 (0.833)	-	0.0001 (0.846)	-
DA	-0.41*** (0.000)	-	-0.661*** (0.000)	0.545*** (0.000)	-0.470*** (0.000)	-0.332*** (0.000)	-0.490*** (0.000)	-0.296*** (0.000)	-0.554*** (0.000)	-0.415*** (0.000)	-0.520*** (0.000)	-0.314*** (0.000)
DLA	-0.091 (0.303)	-	-0.112 (0.209)	-0.111* (0.083)	-0.042 (0.587)	-	-0.058 (0.538)	-	-0.029 (0.759)	-	-0.022 (0.806)	-
Constant	5.465*** (0.001)	4.656*** (0.000)	6.378*** (0.000)	5.048*** (0.000)	4.666*** (0.007)	4.129*** (0.000)	6.685*** (0.004)	4.307*** (0.000)	6.912*** (0.004)	4.918*** (0.000)	6.742*** (0.004)	4.422*** (0.000)
Obs	324	352	324	352	324	340	324	340	324	350	324	340
R^2	0.7124	0.7289	0.6985	0.7398	0.6823	0.8134	0.5785	0.7466	0.5986	0.7118	0.5977	0.7637
F statistics	47.8*** (0.000)	99.1*** (0.000)	62.2*** (0.000)	116.2*** (0.000)	60.1*** (0.000)	170.6*** (0.000)	34.4*** (0.000)	131.1*** (0.000)	42.6*** (0.000)	150.2*** (0.000)	36.3*** (0.000)	129.5*** (0.000)

Next, we document the results for conditional effects. Only two of 6 country characteristics play a significant role in FS transmission. The first is the direct and indirect effects of fall in GY, as shown in columns (1) and (2) in Table 2. A decline in real output carries a significant negative effect on FSIE. The indirect effect is once again positive as well as statistically significant. This reconfirms the findings in Table 1. The second significant conditional effect appears in columns (5) and (6) for changes in fiscal balance. We find a negative and statistically significant direct effect. Moreover, a positive indirect effect reveals that fiscal deficits tend to enhance the transmission of FSIA to FSIE. Leading Emerging Asian and most Latin American countries faced large fiscal deficits that fostered stress transmission. Our results are in sharp contrast to IMF (2009) and Balakrishnan et al. (2011) which state that none of the domestic vulnerability contributes to FS transmission from developed to emerging countries. This lack of evidence may be attributed to the sample, which did not fully capture the post-global financial crisis effects. Our unique finding enriches the existing evidence.

For 2SLS, we consider global factors as instruments. In all the models, global factors completely vanish out after removing outliers. Finally, we end up with OLS estimates. Once again, a fall in real output and fiscal deficits elevate FSIE directly and indirectly. We conclude that our findings for the conditional effect in Table 2 and Table 3 are robust to Table 1. The results further indicate that the two other direct effects are significant using 2SLS. First is a current account deficit that enhances the transmission of FSIA to FSIE. Second, financial openness speeds up the process of FS transmission. The bottom part of both tables reports the model's goodness of fit and overall significance. Both the models are a good fit as R^2 is reasonably high. F-statistics confirms the overall significance of regressors across all the models.

The conditional role of the country characteristics in the transmission of FS is also re-evaluated using the dynamic panel data models. We apply two variants of such models, namely System GMM and Difference GMM. Results are presented in Table 4 and Table 5, respectively. We confirm the presence of dynamic effects as the lagged value of FSIE is positive and statistically significant. The dynamic model also reconfirms the claim that political institutions are vital to financial stability. This finding provides support to the theoretical viewpoints of Waszkiewicz

(2017). We find that the co-movement parameter is positive across most of the models. This confirms the presence of non-regional financial contagion. This contagion, however, is statistically insignificant. Both the dynamic models acknowledge the role of global factors in the escalation of FSIE. These findings align with Park and Mercado (2014), and UNCTAD (2019)**.**

Now we discuss the conditional effects using system GMM. Table 4 reports that a fall in real output helps raise FSIE. The interaction terms, although small in magnitude, are positive and statistically significant at 1 percent. The second significant characteristic is the deterioration in GB. The direct effect of fiscal deficit is not significant. When we incorporate the interaction of GB with FSIA, the coefficient becomes significant. Our findings are again robust to POLS, FE, and 2SLS models. It is interesting to observe that once we apply Difference GMM the results differ from all the previous models. Columns (3) and (4) in Table 5 report the conditional effect of the current account balance on FS transmission using difference GMM. This effect is negative and significant, pointing out that improved CA mitigates the transmission of FS. Similarly, the conditional effect of a fall in real output is positive and statistically significant, confirming the findings of previous models that the FS transmits from developed to emerging countries if emerging countries face a recession. All other conditional effects are insignificant for Difference GMM. The bottom part of Table 4 and Table 5 discuss the results of diagnostic tests. Test for serial correlation confirms the absence of second-order serial correlation as indicated by probability for AR(2) higher than 5 percent. The Hansen test for over-identifying restriction shows that instruments are valid in both models.

Table 4: Role of Country Characteristics and Linkages in Financial Stress Transmission, One Step System GMM

Variables	GM (1)	SM (2)	GM (3)	SM (4)	GM (5)	SM (6)	GM (7)	SM (8)	GM (9)	SM (10)	GM (11)	SM (12)
L.FSIE	0.524*** (0.000)	0.47*** (0.002)	0.515 (0.156)	0.38** (0.028)	0.821 (0.114)	0.58*** (0.007)	0.53** (0.011)	0.74*** (0.000)	0.274 (0.515)	0.474** (0.034)	0.084 (0.712)	0.41*** (0.00)
PRI	0.017 (0.781)	-0.04** (0.025)	0.01 (0.928)	-0.08*** (0.004)	-0.14 (0.181)	0.08*** (0.000)	-0.03 (0.024)	-0.03* (0.067)	0.06 (0.376)	-0.09** (0.027)	-0.07*** (0.007)	-0.06*** (0.000)
FSIA	-0.203 (0.503)	-0.353 (0.632)	0.123 (0.482)	0.076 (0.271)	1.534 (0.263)	0.418** (0.010)	0.050 (0.710)	0.202** (0.012)	-4.463 (0.543)	1.561 (0.293)	-0.435 (0.224)	0.251* (0.064)
GRY	-0.043** (0.025)	-0.031 (0.308)	-	-	-	-	-	-	-	-	-	-
GRY*FSIA	-0.033 (0.409)	0.046* (0.075)	-	-	-	-	-	-	-	-	-	-
CA	-	-	0.021 (0.855)	-0.003 (0.927)	-	-	-	-	-	-	-	-
CA*FSIA	-	-	-0.091** (0.017)	-0.001 (0.948)	-	-	-	-	-	-	-	-
GB	-	-	-	-	-0.0220 (0.902)	-0.028 (0.485)	-	-	-	-	-	-
GB*FSIA	-	-	-	-	0.8242 (0.147)	0.096*** (0.007)	-	-	-	-	-	-
DRES	-	-	-	-	-	-	-0.013** (0.016)	-0.013** (0.029)	-	-	-	-
DRES*FSIA	-	-	-	-	-	-	0.0024 (0.476)	-0.0004 (0.876)	-	-	-	-
TO	-	-	-	-	-	-	-	-	0.005 (0.931)	0.021 (0.365)	-	-
TO*FSIA	-	-	-	-	-	-	-	-	-0.064 (0.556)	-0.028 (0.272)	-	-

Variables	GM (1)	SM (2)	GM (3)	SM (4)	GM (5)	SM (6)	GM (7)	SM (8)	GM (9)	SM (10)	GM (11)	SM (12)
FO	-	-	-	-	-	-	-	-	-	-	0.1442** (0.02)	0.020 (0.674)
FO*FSIA	-	-	-	-	-	-	-	-	-	-	-0.1961 (0.237)	0.083 (0.118)
GCPG	0.005 (0.474)	0.002*** (0.085)	-0.001 (0.857)	0.004*** (0.002)	0.0118 (0.108)	0.0036** (0.044)	0.005* (0.059)	0.003** (0.020)	-0.003 (0.422)	0.008** (0.027)	0.0066* (0.073)	-
GYG	-0.151 (0.113)	-0.0852* (0.090)	-0.185** (0.025)	-0.083*** (0.000)	-0.0044 (0.975)	-0.088*** (0.001)	-0.111* (0.066)	-0.040* (0.060)	-0.154 (0.268)	-0.173** (0.016)	-0.157** (0.049)	-0.037** (0.034)
GGIR	-0.001** (0.036)	0.001* (0.052)	0.001* (0.060)	-	-0.0026 (0.176)	-	0.0001 (0.589)	-	0.0004 (0.597)	-	0.0001 (0.843)	-
Constant	0.238 (0.884)	3.025*** (0.010)	0.340 (0.921)	4.245*** (0.001)	8.305 (0.158)	5.085*** (0.000)	2.479** (0.013)	1.916** (0.044)	-4.039 (0.428)	5.435* (0.067)	4.982*** (0.000)	3.696*** (0.000)
Obs	342	336	342	326	342	328	342	332	342	327	342	332
Countries	18	18	18	18	18	18	18	18	18	18	18	18
Diagnostic Tests												
F statistics	46.24*** (0.000)	60.62*** (0.000)	112*** (0.000)	28.68*** (0.000)	4.05*** (0.007)	23.4*** (0.000)	17.5*** (0.007)	154*** (0.000)	3.3** (0.019)	12.0*** (0.000)	4.7*** (0.000)	38.3*** (0.000)
AR(1)	-2.81 (0.029)	-2.85 (0.004)	-1.72 (0.086)	-3.07 (0.002)	-0.88 (0.379)	-2.37 (0.018)	-2.51 (0.012)	-3.02 (0.003)	-0.51 (0.612)	-1.93 (0.054)	-2.18 (0.290)	-2.50 (0.012)
AR(2)	0.72 (0.469)	0.19 (0.846)	-0.95 (0.343)	0.91 (0.362)	-1.4 (0.163)	-1.28 (0.201)	-0.08 (0.940)	-1.2 (0.229)	-0.6 (0.550)	-0.57 (0.569)	-0.64 (0.520)	0.32 (0.746)
Hansen Test	14.21 (0.048)	14.42 (0.044)	12.63 (0.614)	12.91 (0.142)	6.3 (0.614)	13.48 (0.142)	15.75 (0.028)	13.48 (0.128)	3.16 (0.087)	7.39 (0.049)	9.53 (0.299)	16.10 (0.097)
Note: The upper portion of the table is as for Table 1. The bottom part of the table presents the diagnostic tests.												

Table 5: Role of Country Characteristics and Linkages in Financial Stress Transmission, Difference GMM

Variables	GM (1)	SM (2)	GM (3)	SM (4)	GM (5)	SM (6)	GM (7)	SM (8)	GM (9)	SM (10)	GM (11)	SM (12)
L.FSIE	0.53*** (0.000)	0.61** (0.017)	0.122 (0.618)	0.39** (0.014)	0.59*** (0.001)	0.45** (0.030)	0.63** (0.016)	0.32** (0.028)	0.41** (0.018)	0.32*** (0.006)	0.38** (0.020)	0.24** (0.019)
PRI	0.011 (0.539)	-0.019 (0.347)	-0.058* (0.098)	-0.056*** (0.004)	-0.078* (0.063)	-0.101*** (0.001)	-0.0236** (0.043)	-0.042*** (0.000)	-0.030 (0.517)	-0.063** (0.050)	-0.034 (0.282)	-0.058** (0.010)
FSIA	-0.565** (0.033)	-0.517* (0.097)	-0.088 (0.566)	0.086 (0.406)	0.190 (0.102)	0.207** (0.035)	0.1834 (0.357)	0.194 (0.211)	0.398 (0.171)	0.390 (0.154)	-0.062 (0.320)	0.0001 (0.999)
GRY	-0.105 (0.181)	-0.048 (0.533)	-	-	-	-	-	-	-	-	-	-
GRY*FSIA	0.076** (0.015)	0.088* (0.086)	-	-	-	-	-	-	-	-	-	-
CA	-	-	0.128*** (0.00)	0.090*** (0.00)	-	-	-	-	-	-	-	-
CA*FSIA	-	-	-0.051** (0.00)	-0.045*** (0.00)	-	-	-	-	-	-	-	-
GB	-	-	-	-	-0.023 (0.597)	0.014 (0.697)	-	-	-	-	-	-
GB*FSIA	-	-	-	-	0.045 (0.225)	0.027 (0.307)	-	-	-	-	-	-
DRES	-	-	-	-	-	-	-0.0179** (0.025)	-0.006 (0.370)	-	-	-	-
DRES*FSIA	-	-	-	-	-	-	-0.007 (0.371)	-0.010 (0.247)	-	-	-	-
TO	-	-	-	-	-	-	-	-	0.006 (0.702)	0.009 (0.579)	-	-
TO*FSIA	-	-	-	-	-	-	-	-	-0.005 (0.188)	-0.005 (0.166)	-	-

Variables	**GM (1)**	**SM (2)**	**GM (3)**	**SM (4)**	**GM (5)**	**SM (6)**	**GM (7)**	**SM (8)**	**GM (9)**	**SM (10)**	**GM (11)**	**SM (12)**
FO	-	-	-	-	-	-	-	-	-	-	0.065 (0.187)	0.045 (0.125)
FO*FSIA	-	-	-	-	-	-	-	-	-	-	-0.042** (0.042)	-0.026 (0.112)
GCPG	0.012* (0.078)	0.014** (0.016)	0.003** (0.019)	0.004** (0.010)	0.004* (0.088)	0.005*** (0.003)	0.003** (0.021)	-	0.004 (0.167)	0.004** (0.029)	0.003* (0.094)	0.003** (0.014)
GYG	-0.10* (0.050)	-0.16* (0.067)	-0.211** (0.016)	-0.09*** (0.000)	-0.05 (0.381)	-	-0.053 (0.312)	-0.04* (0.060)	-0.19** (0.022)	-0.09*** (0.000)	-0.15*** (0.004)	-0.08*** (0.000)
GGIR	0.0001 (0.712)	-	0.0004 (0.261)	-	-0.0003 (0.439)	- 0.001*** (0.001)	0.0007 (0.901)	-	0.0004 (0.302)	-	0.0003 (0.324)	-
Obs	324	314	324	316	324	312	314	318	324	316	324	315
Countries	18	18	18	18	18	18	18	18	18	18	18	18
Diagnostic Tests												
F Statistics	137*** (0.000)	19.8*** (0.000)	5.8*** (0.001)	23*** (0.000)	15.9*** (0.000)	7.9*** (0.000)	14.8*** (0.000)	108.*** (0.000)	9.82*** (0.000)	32.69*** (0.000)	11.59*** (0.00)	21.1*** (0.00)
AR(1)	-2.19 (0.028)	-1.65 (0.099)	1.79 (0.049)	2.43 (0.015)	-1.86 (0.062)	-1.95 (0.052)	-2.47 (0.014)	-1.76 (0.078)	-2.19 (0.029)	-2.52 (0.012)	-2.19 (0.029)	-2.43 (0.015)
AR(2)	0.93 (0.352)	0.24 (0.810)	-0.61 (0.541)	-0.11 (0.911)	0.62 (0.441)	0.65 (0.513)	0.63 (0.529)	-0.55 (0.584)	0.54 (0.587)	0.52 (0.600)	0.03 (0.979)	0.02 (0.981)
Hansen Test	5.64 (0.228)	4.78 (0.687)	12.92 (0.248)	6.12 (0.295)	5.75 (0.569)	4.42 (0.815)	14.45 (0.071)	13.55 (0.195)	10.23 (0.115)	5.55 (0.593)	15.75 (0.113)	14.75 (0.019)
Note: The upper part of the table is as for Table 1. The bottom part of the table presents the diagnostic tests.												

4.1 Comparison of Results

To compare the results, we reproduced the co-movement parameter, unconditional (direct), and conditional (indirect) effects from Table 1 to Table 5 in Table 6.

Table 6: Summary of Conditional and Unconditional Effects

Variables	**POLS** Table 1	**FE** Table 2	**2SLS** Table 3	**System GMM** Table 4	**Difference GMM** Table 5
FSIA	-0.268***	-0.155*	-0.134*	-0.353	-0.517*
GRY	-0.053***	-0.061***	-0.065***	-0.031	-0.048
GRY*FSIA	-0.046***	0.025*	0.021**	0.046*	0.088*
FSIA	0.001	-0.042	-0.035	0.076	0.086
CA	0.021***	0.001	0.024***	0.003	0.090***
CA*FSIA	0.004	0.003	-0.003	-0.001	-0.045***
FSIA	0.121***	-0.004	0.092***	0.418**	0.207**
GB	-0..056***	-0.028***	-0.061***	-0.028	0.014
GB*FSIA	0.043***	0.013*	0.031***	0.096***	0.027
FSIA	-0.032	-0.039	-0.061	0.202**	0.194
DRES	0.004***	0.002	-0.001	-0.013**	-0.006
DRES*FSIA	0.0034	0.0002	-0.003	-0.0004	-0.010
FSIA	0.011	-0.079	-0.094	1.561	0.390
TO	-0.001	-0.003*	-0.0004	0.021	0.009
TO*FSIA	0.001	0.001	0.001	0.028	-0.005
FSIA	0.0548	-0.064	-0.018	0.251*	0.001
FO	0.015**	0.027**	0.025**	0.020	0.045
FO*FSIA	0.001	0.009	0.008	0.083	-0.026

Note: The first value in every row indicates the co-movement parameter. The second and third values in every row measure the unconditional and conditional effects of country characteristics and linkages on FSIE. The dependent variable is FSIE. Significance levels at 1, 5, and 10 percent are represented by ***, **, and *, respectively.

The consolidated findings in Table 6 show that a fall in real output of the emerging countries has significant direct and indirect effects across all the models, except that the respective direct effect is not significant for System GMM. Similarly, the effects of the government balance on FSIE countries are significant in 4 out of 5 methods. For the fifth method, the Difference GMM, the effect of the current account balance is significant rather than the government balance. The coefficient estimates from system GMM are generally larger than the other models. Overall, our findings are robust to the estimation method applied.

5. Conclusion and Policy Recommendations

This study rigorously analyzes the FS transmission process from developed to emerging countries. The authors utilize a broader set of stress transmitters for a panel of 18 emerging countries from 2000 to 2019. The study provides enough evidence that country characteristics and international linkages help to foster FS transmission from developed to emerging countries. The authors estimate six conditional models using five different estimation methodologies. The study concludes that the vulnerabilities in the real economy play a significant role in fostering FS transmission rather than trade and financial linkages. The findings are robust to various estimation methods. The study highlights the importance of designing policies that strengthen the institutional setup in these economies. Further, coordinated policy responses may help these countries to mitigate FS through external factors. Besides that a serious effort is desired to keep an eye on fiscal imbalances and recessionary trends in these countries. This analysis can be further refined by exploring a better measurement of political risk and incorporating the interdependencies between monetary policy and FS in the context of emerging and developed countries.

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Appendix: Table A List of Variables, Measurement, and Data Sources

Variables	**Measurement**	**Source**
Financial stress index for developed economies	The weighted average of FSIA uses PPP-based GDP weights. The index is built by employing PCA on 7 components.	Author's calculation
Financial stress index for emerging economies	The weighted average of FSIE uses PPP-based GDP weights. The index is built by employing PCA on 7 components.	Author's calculation
Growth in real GDP	Annual percentage change in Real GDP	WDI, WB
Current account balance as a % of GDP	The ratio of the sum of exports and imports as a ratio of GDP	WDI, WB
General government overall balance as a % of GDP	General government expenditures net of taxes as a percent of GDP	WDI, WB
Change in foreign exchange reserves	Growth in the level of foreign exchange reserves	IFS, IMF
Global real interest rate	LIBOR (three months)	WEO, IMF
Global GDP	Growth in world output	WEO, IMF
Global commodity price index	Global Price Index of All Commodities Not Seasonally Adjusted	Fed Reserve Bank
Trade openness	The ratio of the sum of exports and imports to GDP	WDI, WB
Financial openness	The ratio of the sum of portfolio and foreign direct investment to GDP	WDI, WB
Regional financial contagion	Regional Dummies for Asia, Latin America, and Europe	Author's calculations
Effectiveness of Political Institutions	Political risk index constructed for 12 components of political risk	Author's calculations based on ICRG, PRS