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Financial depth and post-2008 change of GDP

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Abstract
Research background: This paper researches the relationship between financial depth (private credit to GDP ratio) and the subsequent response of GDP to the 2007+ financial crisis. The prevailing view in the finance-volatility of growth nexus literature is that financial depth reduces production volatility, but this holds true only up to a certain level of financial depth. Another stream of research documents that rapid growth in credit is a financial crisis predictor.
Purpose of the article: We ask: did financial depth or its change have any impact on the post-crisis response of the real sector?
Methods: Cross-sectional regression, 144 countries.
Findings & Value added: The post-crisis GDP response corresponds to a change of financial depth prior to the crisis, rather than to the financial depth itself. The increase of financial depth prior to the crisis is statistically significant to the extent of GDP drop; in countries where the credit-to-GDP ratio surged prior to the crisis, the post-crisis response of the real sector was more pronounced. There is no evidence that financial depth negatively affected the extent of the GDP drop after the 2007+ financial crisis; some calculations suggest that the effect is slightly positive (i.e. the collapse was less severe in the countries with higher financial depth). The variables relating to financial depth affected the response of GDP mainly in countries where financial depth is relatively high.

Introduction

The global crisis that started in 2007, as well as its consequences to the real sector (particularly conspicuous since 2009), fostered the return of the debate on the role of the financial sector in the economy, in particular on its relationship with the real sector. Among a number of discussion fields there is a relationship between financial depth (defined as, e.g. a ratio of credit to GDP) together with its change, and the response of GDP after the 2007+ financial crisis. The question is: did financial depth or its change have any impact on the post-crisis response of the real sector?

The purposes of this paper are mostly empirical. A cross-sectional regression comprising 144 countries demonstrates that the post-crisis GDP response corresponds to a change of financial depth prior to the crisis, rather than the financial depth itself.

The first section reviews the literature on the relations between financial depth and GDP. The second section presents the research strategy and data. The third section discusses the results and possible channels by which the change of financial depth impacted the post-crisis GDP response.

Financial depth and volatility of GDP nexus

In a number of publications the term "financial development" is used to denote the share of financial transactions in GDP. This particular term does not seem to be completely adequate, since equating development with the number of transactions is simplistic. In recent years, there have been numerous attempts to clarify the nomenclature.

Beck (2013) suggests to distinguish the following:

- financial depth, which refers to the volume of financial transactions in an economy (defined as, e.g. a ratio of private credit to GDP),
- financial breadth, which refers to the diversity of providers and segments of the financial system, including banks, capital markets and contractual savings institutions,
- financial inclusion, which refers to access to and use of financial services by a large share of the household and enterprise population in a society.

This paper focuses on financial depth. In most studies financial depth is measured in a simplified manner as the ratio of private credit to GDP.

So far, particular attention has been paid to the relationship between financial depth and economic growth. The role of a financial system in economic growth should be regarded from the perspective of information

asymmetry, in conditions of uncertainty, between the entities that wish to provide purchasing power and the entities that seek purchasing power. In a banking system typical for a modern market economy, the issue of information asymmetry is partially resolved due to the activity of financial intermediaries (banks) and organised financial markets. Intermediaries, as compared to other entities, have easier access to various sources of market information, are equipped with appropriate technologies for mass processing of data, and can benefit from the scale and scope of the collected data.

The relationship between financial depth and GDP growth has been the subject of numerous empirical studies, both before and after 2007. Following the pioneering work of King and Levine (1993), a substantial body of literature has emerged, mostly confirming a strong and robust positive relationship between financial development (depth) and economic growth, which is typically regarded in causal terms with financial depth as the cause and GDP growth as the effect. However, the conclusions presented in post-2007 studies are generally less straightforward and contingent upon other factors. Financial development fosters growth only up to a certain threshold, after which it becomes a drag on economic growth (Cecchetti & Kharroubi, 2012; Arcand *et al*., 2012; Beck *et al*., 2014). This relationship is particularly conspicuous in the countries with average financial depth or economic development (some studies also point to the impact of the quality of institutions). However, if the share of financial transactions in GDP is high, this relationship may no longer hold true, or may even reverse. Arcand *et al*. (2012) demonstrate that this is the case once a threshold of 80-100% of credit in GDP is exceeded. Similar conclusions are drawn by Cecchetti and Kharroubi (2012), who set this threshold as the 90% ratio of private sector credit to GDP. Nevertheless, several earlier studies show that for developed countries, in particular since the 1970s, the positive relationship between financial depth and GDP growth has disappeared (Gregorio & Guidotti, 1995). Presently, it is accepted that the relationship between financial depth and GDP growth has the shape of an inverted "U", and the value of the positive peak of influence depends on the definition of the financial depth and the research methods.

Ductor and Grechyna (2015) point out that whereas the level of financial depth has a positive impact on GDP growth, it is observed only in conditions of sustainable growth of the real and financial sector. When credit grows faster than GDP growth, this relationship becomes negative. Law and Singh (2014) point to the role of institutions as the variable that can explain the non-linear relationship between financial depth and economic growth.

Regrettably, the relationship between financial depth and short-term volatility of GDP has been researched to a much lesser extent. The depth of a financial system may be relevant to economic fluctuations due to the following:

- disturbances caused by the financial system, which are subsequently transferred into the real sector (in line Minsky's instability hypothesis).
- disturbances caused by the real sector whose severity is intensified by the financial sector,
- financial shocks reverberating across national borders through financial channels.

The number of empirical studies on the relationship between financial depth and volatility of GDP is much lower compared to those on financial depth versus economic growth. What is more, these studies are far from straightforward conclusions. The prevailing view in the studies conducted prior to 2007 is that there is a relatively positive impact of financial depth on the reduction of production volatility. For example, a study by Denizer *et al.* (2000) who analysed 70 countries between 1956 and 1998, concluded that the greater financial depth, the lower the amplitude of fluctuations in GDP, consumption, and investments. Cecchetti *et al.* (2006) reached similar conclusions. It was typically assumed that this positive impact on the reduction of the volatility of GDP is due to the fact that a developed financial system allows risk to be shared and provides more liquidity, thus allowing for an evening-out of the effects of shocks. Few papers have pointed to a different nature of these relationships. Beck *et al.* (2001) concluded that the role of financial depth depended on the type of shock. For real shocks, a developed financial sector fosters the evening-out effect, whereas for monetary shocks it increases the volatility of GDP. An empirical study involving 63 countries between 1960 and 1997 revealed no statistically significant relationship between financial depth and GDP volatility. Easterly *et al.* (2000) maintain that a financial sector may increase the volatility of GDP if the ratio of credit to GDP exceeds 100%. Generally, an increase in corporate debt, including increased dependence of companies on external financing, makes the real sector more susceptible to shocks from the financial sector.

The research carried out after 2007 draws a more detailed picture. While Dabla-Norris and Srivisal (2013) support the conclusion drawn in earlier studies, i.e. that a developed financial system allows for the evening-out of shocks and thus helps to reduce the amplitude of GDP fluctuations, they claim that this holds true only up to a certain ratio of financial sector to GDP. Upon exceeding 106–132% (depending on the analysed variable) of GDP, this effect declines, and the size of the financial sector may contrib-

ute to the increase of macroeconomic volatility. Barajas *et al*. (2013) suggest that once the size of the financial sector exceeds a certain level depending on the structural characteristics of a country, financial instability might emerge

Another branch of research, i.e. the studies on the effects of credit on economic fluctuations and recessions is more conclusive. Jordá *et al.* (2011) suggest that credit growth is the single best predictor of financial instability. Furthermore, financial depth makes financial crises more likely (Schularick & Taylor, 2012), and economic recessions tend to be longer and deeper when accompanied by financial distress (Jordá *et al*., 2013; Claessens *et al*., 2012). Jordá *et al.* (2013) have studied the role of credit in the business cycle, with a focus on private credit overhang. Based on a study of over 200 recession episodes in 14 advanced countries between 1870 and 2008, they have documented that more credit-intensive expansions tend to be followed by deeper recessions and slower recoveries. Mendoza and Terrones (2012), Elekdag and Wu (2011) analysed the growth and collapse cycle of credit and fluctuations of other macroeconomic variables. However, even the pre-crisis literature documented that while the level of financial depth is positively associated with economic growth, rapid growth in credit is a reliable crisis predictor.

To our knowledge, there has not been any study so far in the finance-volatility of growth nexus literature that takes into account change of the financial depth. In this study, we'd like to get preliminary results and we begin with simple cross-sectional regression to research the post-crisis GDP response to a change of financial depth prior to the crisis.

Methodology and data

We estimate the following baseline cross-sectional regression:

$$Y = \alpha FD + \beta \Delta FD + \zeta X + \varepsilon$$

where: Y is a measure of post 2008 change of GDP; FD is a measure of financial depth; X is a matrix of control variables; ε is the error term.

The parameters were estimated using OLS, with heteroskedasticity consistent standard errors.

The dataset used in this paper covers 144 economies at annual frequency. The countries included are listed in the annex.

One of the key issues involved defining the collapse in the real sector post 2008. In most countries, the response of GDP was most severe in 2009, while in some the downturn begun as early as in 2008, and continued in some countries up to 2013–14. Due to the substantial differences in the responses of individual countries to the global financial crisis, it was decided to apply a number of indicators to measure the collapse — from the simplest ones, i.e. the growth rate of real GDP in 2009 to its cumulative growth rate up to 2014. As there were no substantial differences in the interpretation of the results, in the paper we present only the results for four measures: the GDP growth rate in 2009 versus the average growth rate in the period 1998–2007 (Y_1), the GDP growth rate from 2007 to 2009 (Y_2), the GDP growth rate from 2007 to 2014 (Y_3), and the average deviation of the GDP growth rate in 2008–2014 versus the average growth rate in 1998–2007 (Y_4) — each calculated on the basis of the World Development Indicators data (GDP in constant local currency prices).

Financial depth is a multidimensional concept that is difficult to quantify, particularly for a broad cross-section. The two most often recognised basic indicators of financial depth are either the ratio of bank credit for private sector to GDP or the ratio of banking sector assets to GDP — both highly correlated. Most studies measure financial depth (financial development) by simplifying it as the ratio of credit to GDP. This is also the case in this paper. The raw data was obtained from the Global Financial Development Database (FD, ratio of private credit by deposit money banks and other financial institutions to GDP). The level of financial depth prior to the crisis was measured as the average from 5 years before the crisis (2004–2008), and the change in the depth was established in relation to 2003. The purpose of using 5-year averages was to even out any random annual fluctuations.

As it was necessary to consider the cyclical or short-term nature of the analysed GDP changes, the set of control variables diverges from the set employed in analysing the relationship between financial depth and economic growth. Therefore, the indicators that relate to a possible spread of shocks across national borders through trade and financial channels were primarily taken into consideration. Indicators such as economic openness (OPE, exports and imports of goods and services as % of GDP) and economic conditions of the largest trade partner (PAR, i.e. a country with the largest share in exports in the country in 2008, as per the Direction of Trade Statistics — IMF 2016). Due to the substantial role of external imbalances and the flow of capital in the origin of the global crisis, the following were also analysed as control variables: current account balance as % of GDP (CAB, average from 5 years prior to the crisis, i.e. 2004–2008), the change

of the nominal exchange rate (ΔNER), total gross capital flows scaled by trend GDP (average from 5 years prior to the crisis, i.e. 2004–2008), and net capital flows scaled by trend GDP (average from 5 years prior to the crisis, i.e. 2004–2008). Capital flows data were taken from Broner *et al*. (2013).

The X variables also include the constant term, the log of initial real GDP per capita (log GDP pc), which captures convergence, the last GDP growth prior to the crisis (i.e. 2007), political stability (STA) and quality of institutions (REQ). It was necessary to also consider the set of dummy variables representing: developed countries (DEV), countries that undergo/underwent transition (TRA, the countries are the same as in the Transition Report 2008), oil-producing countries (OIL) as well as African economies (AFR). Finally, a dummy variable related to the banking crisis (CRI) was also included. The following table presents the information about each variable and about the sources of data. Prior to the estimation, all variables but the dummies were standardized. As a result, the estimated coefficients represent a change of response (expressed as a fraction of its standard deviation) associated with an increase in an independent variable of one standard deviation and can be compared across the exogenous variables.

Results

The estimates from the cross-sectional regression are reported in Table 2. These results cover the baseline set of the control variables for the sample of 144 countries only. Other controls (listed in Table 1) including the capital flow measures (due to the missing data, the sample size would then drop to 95 countries) were also included in the alternative specifications of the model. Because of the space restrictions and the fact that the results for the alternative specifications do not alter the final conclusions, they are not presented in the paper.

The importance of the level of financial depth for the drop in GDP during the crisis cannot be clearly established. When focusing on the early phase of the crisis, especially 2009 (variables Y_1 and Y_2), the impact of the level of financial depth is strong and statistically significant. The estimated coefficients are positive, which means that in the countries with a higher level of financial depth the decline in GDP was smaller on average. However, for the two other measures of the drop in economic activity, the coefficients associated with financial depth are smaller and statistically insignificant.

The results clearly point out the important role of the change in financial depth. It has a strong, statistically significant and negative impact on the response of GDP after 2008. A similar effect is observed regardless of the measure of the GDP drop used as well as the set of control variables considered (including the capital flow measures). These results suggest that it was not the level of financial depth itself, but rather its rapid and substantial change that severely affected the response of GDP during the crisis.

As far as the control variables are concerned, the most important role is played by the level of GDP per capita (with the expected sign documenting the convergence processes affecting also the short-term growth rate of GDP) and the GDP growth rate in 2007. The results also reveal some idiosyncratic effects for the transformation countries — the decline in GDP in these countries was, on average, stronger than in the other economies. If the GDP growth rate in 2007 is removed from the set of controls, then a significant role of the economic condition of the largest trading partner for explaining the response of GDP is also observed.

In the next step, the hypothesis that the relationship between the change of financial depth and the response of GDP may vary depending on the level of financial depth was verified. The countries were classified by the level of financial depth into three groups (FD < 40%, 40% < FD < 80% and FD > 80%) and the separate regressions were run for each group. The variables were standardized within each group, so the estimated coefficients presented in Table 3 are comparable between the groups as well as to the estimates obtained for the whole dataset. The results show that the further rise in financial depth before the crisis was especially harmful for the countries with a high level of financial depth. The only exception is the variable Y1, which measures the response in 2009 only, which is almost exclusively determined by the economic condition of the largest trade partner as far as the countries with a high level of financial depth are concerned. In the countries with a lower level of financial depth, the relationship between the change in financial depth and the response of GDP becomes much weaker (the coefficients are no longer statistically significant). The considerable decrease in R^2 coefficients for these countries also shows that the exogenous variables considered in the study play only a minor role in explaining the response of GDP to the crisis there and some other economic forces (which are beyond the scope of the paper) should be taken into account.

The results of this study related to the change in financial depth, are well in line with the literature on the role of credit during recessions and the sources of the crisis in the Euro zone (de Grauwe, 2010; Baldwin & Giavazzi, 2015). These findings can be generalized, as shown in this paper, to the broader group of countries, at least those with a sufficiently high

level of financial depth of at least several dozen percent of GDP. The literature on the sources of the severe drop in economic activity measured in several members of the Euro zone points out the role of credit booms which, in countries like Spain or Ireland, considerably increased the credit/GDP ratio before the crisis. The sudden and substantial rise in credit was associated with many negative consequences like credit and systemic risk. As a result, these countries were more vulnerable to the effects of the crisis that broke out in the USA. Such problems were to a smaller extent related to the mature economies with a stable level of the credit/GDP ratios, especially if the long-term consequences for the real economy are concerned. However, it should be noted that it does not contradict the thesis that such economies can become the source of the initial shock destabilizing the global economy (which is beyond the scope of the paper).

Conclusions

The paper has researched the response of GDP to the 2007 crisis in relation to financial depth. The key conclusions are as follows:

- By and large, there is no evidence that financial depth negatively affected the extent of the GDP drop after the 2007+ financial crisis; some calculations suggest even that the effect is slightly positive (i.e. the collapse was less severe in countries with higher financial depth). The latter, however, has been confirmed only by part of the data.
- The increase of financial depth (credit to GDP ratio) prior to the crisis is statistically significant to the extent of GDP drop; in countries where the credit-to-GDP ratio surged prior to the crisis, the post-crisis response of the real sector was more pronounced.
- The variables relating to financial depth affected the response of GDP mainly in countries where financial depth is relatively high.

The obtained results make probable our conjecture that the GDP response corresponds to a change of financial depth rather than to the financial depth itself and constitutes the stimulus for further, in-depth studies.

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Annex

List of countries

Albania, Algeria, Argentina, Armenia, Australia, Austria, Azerbaijan, Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bhutan, Bolivia, Botswana, Brazil, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Canada, Central African Republic, Chad, Chile, China, Colombia, Congo, Dem. Rep., Congo, Rep., Costa Rica, Cote d'Ivoire, Croatia, Cyprus, Czech Republic, Denmark, Dominica, Dominican Republic, Ecuador, Egypt, Arab Rep., El Salvador, Estonia, Fiji, Finland, France, Gabon, Gambia, Georgia, Germany, Ghana, Greece, Grenada, Guatemala, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iran, Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Korea, Rep., Kuwait, Lao PDR, Latvia, Lesotho, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, Mali, Malta, Mauritius, Mexico, Moldova, Mongolia, Morocco, Mozambique, Nepal, Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Pakistan, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Romania, Russian Federation, Samoa, Saudi Arabia, Senegal, Serbia, Seychelles, Sierra Leone, Singapore, Slovak Republic, Slovenia, Solomon Islands, South Africa, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Sudan, Swaziland, Sweden, Switzerland, Tanzania, Thailand, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Uganda, Ukraine, United Kingdom, United States, Uruguay, Vanuatu, Venezuela, Vietnam, Zambia

Table 1. Data sources

Abbreviated name	Variable	Source
GDP	GDP, constant local currency	World Bank, World Development Indicators
FD	Private credit by deposit money banks and other financial institutions to GDP (%),	World Bank, Global Financial Development
GDP pc	GDP per capita, constant 2005 US$	World Bank, World Development Indicators
ΔGDP	2007 GDP growth; annual percentage growth rate of GDP at market prices based on constant currency.	World Bank, World Development Indicators
OPE	Economic openness; total exports and imports as % of GDP	World Bank, World Development Indicators
STA	Political Stability and Absence of Violence/Terrorism	World Bank, Worldwide Governance Indicators; Kaufmann *et al*. (2010)
REQ	Regulatory Quality	World Bank, Worldwide Governance Indicators; Kaufmann *et al*. (2010)

Table 1. Continued

Abbreviated name	Variable	Source
PAR	Economic condition of the largest trade partner	Data on export directions: IMF – Direction of Trade Statistics, External Trade by Counterpart Data on GDP: World Bank, World Development Indicators
CAB	Current account balance (% of GDP)	International Monetary Fund, World Economic Outlook Database
NER	Change of nominal exchange rate	World Bank, World Development Indicators
DEV	Dummy – developed countries	
TRA	Dummy – transition countries	
OIL	Dummy – oil producing countries	
AFR	Dummy – African countries	
CRI	Dummy – banking crisis	
GCF	Total gross capital flows scaled by trend GDP	Broner *et al*. (2013)
NCF	Net capital flows scaled by trend GDP	Broner *et al*. (2013)

Table 2. Results from the baseline regressions

Exogenous var.	Y1	Y2	Y3	Y4
FD	0,323*** (0,109)	0,267** (0,12)	0,121 (0,124)	0,104 (0,104)
ΔFD	-0,277*** (0,071)	-0,274*** (0,079)	-0,186** (0,081)	-0,253*** (0,059)
OPE	-0,012 (0,057)	0,035 (0,058)	0,026 (0,055)	0,054 (0,053)
STA	-0,084 (0,090)	0,034 (0,090)	0,090 (0,103)	0,017 (0,104)
log GDP pc	-0,106 (0,176)	-0,441** (0,183)	-0,626*** (0,174)	-0,292** (0,153)
REQ	-0,264* (0,134)	-0,113 (0,145)	0,068 (0,142)	-0,176 (0,141)
CAB	-0,041 (0,091)	0,141 (0,088)	0,219*** (0,082)	0,040 (0,104)
ΔNER	-0,025 (0,049)	-0,088 (0,057)	0,037 (0,067)	0,015 (0,061)
CRI	-0,020 (0,177)	0,170 (0,202)	0,159 (0,211)	0,152 (0,167)
DEV	-0,089 (0,227)	-0,390 (0,236)	-0,295 (0,214)	-0,025 (0,224)
TRA	-0,510** (0,210)	-0,359 (0,221)	-0,200 (0,229)	-0,683*** (0,194)
OIL	-0,167 (0,263)	0,045 (0,340)	-0,244 (0,352)	-0,862** (0,429)
AFR	0,238 (0,158)	0,178 (0,169)	0,031 (0,174)	-0,023 (0,182)
PAR	0,331*** (0,088)	0,023 (0,068)	0,026 (0,088)	0,270*** (0,062)
ΔGDP07		0,296*** (0,072)	0,318*** (0,075)	
n	144	144	144	144
R^2	0,583	0,572	0,558	0,530

Note:
In parentheses, heteroscedasticity consistent standard errors are reported. Significant coefficients are denoted with stars (* – $p < 0,1$; ** – $p < 0,05$; *** – $p < 0,01$).

Table 3. Results of the regressions within the FD groups

Exog. var.	Dependent variable											
	Y1			Y2			Y3			Y4		
FD group	>80	[40; 80]	<40	>80	[40; 80]	<40	>80	[40; 80]	<40	>80	[40; 80]	<40
FD	0,07 (0,19)	0,19 (0,21)	0,02 (0,14)	0,25 (0,17)	0,16 (0,28)	-0,06 (0,18)	0,13 (0,15)	0,30 (0,31)	0,00 (0,15)	0,24* (0,14)	0,32 (0,26)	0,02 (0,13)
ΔFD	-0,20 (0,16)	-0,17 (0,22)	-0,27* (0,14)	-0,35** (0,14)	-0,18 (0,29)	-0,14 (0,15)	-0,23* (0,12)	-0,10 (0,33)	-0,04 (0,12)	-0,48** (0,17)	-0,18 (0,29)	-0,06 (0,13)
OPE	-0,20 (0,13)	-0,09 (0,19)	0,02 (0,14)	-0,13 (0,25)	-0,04 (0,19)	0,05 (0,15)	-0,27 (0,19)	0,07 (0,19)	0,09 (0,14)	-0,21* (0,11)	0,00 (0,21)	0,22 (0,13)
PST	0,05 (0,17)	0,20 (0,15)	-0,14 (0,15)	0,02 (0,17)	0,03 (0,18)	0,00 (0,17)	-0,07 (0,18)	-0,02 (0,19)	0,11 (0,18)	-0,12 (0,16)	0,04 (0,19)	-0,05 (0,15)
log GDP pc	-0,14 (0,20)	-1,12*** (0,22)	-0,01 (0,17)	-0,57*** (0,20)	-1,00** (0,43)	-0,24 (0,19)	-0,47** (0,22)	-1,20** (0,43)	-0,38** (0,17)	-0,47* (0,25)	-1,31*** (0,28)	-0,08 (0,15)
REQ	-0,26 (0,21)	0,30 (0,20)	-0,24** (0,11)	0,01 (0,22)	0,37 (0,43)	-0,13 (0,14)	0,34 (0,20)	0,64 (0,38)	-0,05 (0,16)	0,30 (0,24)	0,56* (0,27)	-0,18 (0,16)
CAB	0,11 (0,18)	0,11 (0,25)	-0,08 (0,1)	0,4** (0,18)	0,19 (0,36)	0,07 (0,13)	0,50*** (0,17)	0,2 (0,28)	0,13 (0,13)	0,40** (0,18)	0,00 (0,32)	-0,06 (0,15)
ΔNER	-0,05 (0,08)	-0,36** (0,16)	0,05 (0,10)	0,02 (0,15)	-0,34 (0,24)	-0,17 (0,14)	0,15 (0,14)	-0,27 (0,24)	-0,07 (0,13)	0,15* (0,08)	-0,53*** (0,18)	-0,11 (0,12)
CRI	0,15 (0,27)	-0,38 (0,29)	0,25 (0,44)	0,17 (0,21)	-0,68 (0,52)	0,67 (0,57)	-0,07 (0,19)	-0,68 (0,49)	1,22** (0,49)	-0,12 (0,19)	-0,48 (0,34)	0,83* (0,43)
DEV	-0,04 (0,52)	0,39 (0,46)	-0,59 (0,43)	-0,10 (0,67)	-0,12 (0,69)	-0,50 (0,48)	-0,71 (0,63)	0,12 (0,74)	-0,47 (0,47)	-0,04 (0,61)	0,41 (0,57)	-0,18 (0,60)
TRA	-1,23 (0,91)	-0,66 (0,53)	-0,43 (0,49)	-1,94*** (0,65)	-0,35 (0,75)	-0,44 (0,56)	-0,42 (0,57)	-0,74 (0,77)	-0,75* (0,41)	-0,96** (0,4)	-1,55*** (0,54)	-1,21*** (0,39)
OIL	-0,63 (0,48)	0,56 (0,51)	0,07 (0,44)	0,47 (0,78)	0,92 (0,74)	-0,40 (0,84)	0,04 (0,59)	1,53* (0,77)	-0,91 (0,59)	-0,11 (0,4)	1,07* (0,61)	-1,33* (0,76)
AFR	-0,27 (0,51)	-0,21 (0,41)	0,19 (0,23)	-0,76 (0,61)	-0,16 (0,66)	0,14 (0,29)	-0,99* (0,52)	-0,69 (0,72)	-0,01 (0,23)	-0,56* (0,31)	-1,08* (0,59)	-0,08 (0,2)
PAR	0,55*** (0,19)	0,43*** (0,14)	0,27* (0,15)	-0,11 (0,22)	0,10 (0,22)	0,05 (0,12)	0,07 (0,17)	-0,02 (0,21)	0,00 (0,14)	0,34*** (0,12)	0,23* (0,11)	0,24** (0,10)
ΔGDP07				0,51* (0,25)	0,13 (0,22)	0,41** (0,16)	0,53** (0,22)	0,28 (0,2)	0,38*** (0,13)			
n	39	35	70	39	35	70	39	35	70	39	35	70
R^2	0,76	0,78	0,53	0,76	0,66	0,38	0,81	0,68	0,38	0,81	0,72	0,46

Note:
In parentheses, heteroscedasticity consistent standard errors are reported. Significant coefficients are denoted with stars (* – $p < 0,1$; ** – $p < 0,05$; *** – $p < 0,01$).