Chapter 4
External Financial Conditions and Slower Growth in Emerging Economies – 2013-2015
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Abstract Emerging economies have gone through a slower economic growth period in the aftermath of the global financial crisis. In this chapter, we examine the important external and internal conditions which were effective in causing growth deterioration in emerging economies during 2013 -2015. We utilize a pooled panel ordinary least squares (OLS) estimation using a sample including 68 countries. Regarding the external conditions, emerging market economies experienced growth deceleration when (i) current account deficit inclined, (ii) trading partners' import demand decreased, (iii) terms of trade deteriorated. Furthermore, we find that certain internal conditions, such as, higher consumer prices, a more expansionary fiscal policy, more government borrowing, lower investment, lower labor force participation significantly contributed to the economic growth decline.

4.1 Introduction

Many emerging market economies experienced stable and higher growth during the period 2000 – 2012, thanks to high oil and commodity prices, and supportive external financial framework. Domestically, lower trade barriers, financial openness, and responsible fiscal and monetary policy contributed to the favorable external environment. However, since 2012 emerging economies have experienced significant economic growth deterioration. We hypothesize that a certain set of both external and internal factors has played a role to bring out this result.

Figure 4.1 depicts the real GDP growth in the emerging economies (annual averages are calculated), U.S. and Euro area in 2013, 2014, and 2015. While the economic growth rate was decreasing from 3.42% to around 2.35% between 2013 and 2015 in emerging economies, it was steadily rising in the U.S. and Euro area. The U.S. experienced a humble increase in the growth rate. The real GDP growth rate in the Euro area was a disappointing -0.3%. The Euro area economic growth rate rose to 0.89 in 2014, and then to 1.5% in 2015. Figure 4.2 shows the case of the BRICS countries (Brazil, Russia, India, China, and South Africa), Indonesia, Mexico, and Turkey. From 2013 to 2015, only India and Mexico could achieve positive growth, even their real GDP growth rates remained stagnant from 2014 to 2015. All the other countries in this group experienced aggregate output reductions. Brazil and Russia even experienced negative economic growth, -3% and -3.80%, respectively in 2015.

(Insert Figure 4.1 Here)

(Insert Figure 4.2 Here)

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In this chapter, we examine the external and internal factors contributing to the growth reduction taken place in emerging market economies during the period 2013-2015. We use a pooled panel ordinary least squares (OLS) estimation with a sample covering 68 countries. The estimation findings indicate that international trade related external factors such as current account balance, terms of trade, trading partners' import demand significantly affected the decelerating growth performance in emerging economies. Moreover, the internal factors, inflation rate, fiscal policy, investment level, government lending / borrowing position, and labor market conditions affected the macroeconomic performance in these countries.

The chapter is organized as the following. Section 4.2 briefly talks about the related literature. Section 4.3 provides the data details and estimation, and section 4.4 presents the concluding remarks.

4.2 Related Literature
The volume of important studies analyzing the slower economic growth in emerging economies during and after the global financial crisis has considerably increased in recent years (Claessens et al., 2010, Didier et al., 2012 and Gray et al., 2010). Fayad and Perrelli (2014) examine the external and domestic determinants of the growth surprises and synchronized slow growth experienced in emerging economies. They argue that reductions in trading partners' import demand and contractionary fiscal policy are primary determinants. Domestic structural challenges can also hamper medium and long term growth prospects. Almansour et al. (2015) find out that higher economic growth in developed countries positively affect macroeconomic performance of emerging economies. In spite of this effect certain domestic conditions may deteriorate long run economic growth. In a similar nature, IMF (2014) argues that external factors statistically explain almost fifty percent of growth fluctuations in emerging economies.

Aslund (2013) emphasizes the importance of structural reforms and institutions. He argues that unless emerging economies improve democracy, economic freedom, governance quality, and property rights they cannot catch up with developed countries. Tsounta (2014) examines the supply – side determinants of the high economic growth during the period 2000-2012 suggesting increasing total factor productivity and female labor force participation as policy recipes for long run sustainable growth.

In another paper, Dabla-Norris et al. (2014) find out that lower –middle income economies should carry out reforms in banking and agricultural sectors, encourage more competition in goods markets, diminish FDI barriers, improve infrastructure, and invest in high quality secondary and tertiary education to achieve higher economic growth. For the same purpose they recommend upper – middle income countries to deepen capital markets, invest more in human capital accumulation and research and development, and decrease labor market rigidities.

Cubeddu et al. (2014) argue that in order to isolate themselves from challenging external conditions emerging economies should rigorously implement structural reforms and increase productivity levels. A report prepared by the Institute of International Finance (IFF, 2013) explains that emerging economies are not caught up in a slow economic growth period because of not only external cyclical factors but also absence of structural reforms which should have

been pursued during the high growth period before the global financial crisis. In a similar report by Credit Suisse (2013), it is argued that the decrease in fixed investment spending primarily caused the economic growth decline in emerging economies. Furthermore, domestic demand is still susceptible to both external and internal factors.

Blanchard et al. (2010) find out that the emerging market economies which accumulated higher short – term external debt experienced greater production reductions. Aiyar et al. (2013) analyze the connections between institutions, economic growth deceleration and middle income trap. There are also studies focusing on country groups' global financial crisis experience. For instance, Anand et al. (2014) argue that reductions in total factor productivity growth caused declines in economic growth in China and India. Sosa et al. (2013) find out that labor market rigidities, aging population, and relatively mediocre accumulation of physical capital are causing growth deterioration in certain Latin American emerging economies.

4.3 Data Details and Econometric Analysis
We explain the slower economic growth in emerging economies between 2013 and 2015 with a pooled panel ordinary least squares (OLS) estimation. Our sample covers 68 emerging economies (see Table 4.3 for the country list). We collect annual data for years 2013, 2014, and 2015, and also initial conditions measured for the year 2012. We measure the effects of external and internal factors on economic growth in emerging economies, so the sample includes a wide array of external and internal variables. Nonetheless, we experience the problem of missing data, especially for the year 2015 in almost all the data sources. We extract the data from the World Bank Statistics, World Development Indicators, IMF Balance of Payments Statistics, IMF Direction of Trade Statistics, IMF International Financial Statistics databases, IMF World Economic Outlook (WEO) reports (WEO, October 2012 and WEO, October 2015), and Bloomberg (public source).

We use the following equation for the estimation:

$$(GDP\ Growth)_{it} =$$
$$\beta_0 + \beta_1(External\ Factors)_{it} + \beta_2(Internal\ Factors)_{it} + \beta_3(Initial\ Factors)_{i\ 2012} + u_{it}$$
(1)

The dependent variable is the annual real GDP growth rate. The external factors include growth in exports (trading partners' import demand growth), foreign direct investment, current account balance, merchandise exports to high income countries, terms of trade (measured in constant local currency), trade volume, global volatility index (vix), US real GDP growth, US inflation rate (consumer price index), US real interest rate, Euro area real GDP growth, Euro area inflation rate (consumer price index), and oil prices. The internal factors cover inflation rate measured by consumer price index, fiscal policy tool measured by the general government final consumption expenditure, monetary policy tool measured by the real interest rate, investment measured by gross fixed capital formation, female labor force participation rate, labor force participation rate, working age population ratio, and general government net lending / borrowing. The initial

conditions, measured for the year 2012, include a financial openness indicator[2] (Chinn and Ito, 2006), trade openness indicator, output gap[3], and exchange rate overvaluation.

We opt to adopt pooled panel OLS estimation instead of a fixed effects model for a couple of analytical reasons. Since the estimation period includes only three years, year fixed effects are not included. In this respect, external factors affecting all the countries in the sample simultaneously work to achieve a similar purpose. In order to measure the impacts of country specific time invariant initial conditions we do not also include country fixed effects[4].

The estimation results indicate that certain variables of interest turn out to be statistically insignificant. These variables are foreign direct investment, trade volume, global volatility index (vix), US yearly GDP, US inflation rate, US real interest rate, Euro area yearly GDP, Euro area inflation rate, and oil prices which are external factors. We suppose that the rather short time span of the sample leads to this result. We expect that if the estimation time period were longer and it included time lags, these external factors would carry statistical significance (Culiuc, 2014). Among internal factors, the real interest rate, indicator for the monetary policy, appears as statistically insignificant. The initial factors, output gap, financial openness, and trade openness also show no significance.

Table 4.1 shows the estimation results of the factors with statistical significance. Regarding the external factors, emerging economies experience a slower growth performance when: (1) their current account balance deteriorates, (2) export volume shrinks (trading partners' import demand decreases), (3) merchandise exports to high income countries increase, and (4) terms of trade worsen. Considering the internal factors, emerging economies' growth diminishes if the inflation rate increases and a more expansionary fiscal policy is implemented. As expected, a higher investment level supports higher economic growth. When the general government net lending / borrowing balance changes in favor of lending, this positively affects growth performance. Regarding the labor market conditions, while labor force participation is positively correlated with real GDP growth rate, unexpectedly in the estimation years of 2013, 2014 and 2015 increases in female labor force participation and working age population rate negatively affects growth in emerging economies. Last but not least, initial exchange rate overvaluation appears to be positively correlated with real GDP growth rate.

(Insert Table 4.1 Here)

Next, we construct a sub-sample which composes of only the variables with observations available in all the three years, 2013, 2014 and 2015. This sub-sample includes the external factors (i) current account balance, (ii) global volatility index (vix), (iii) US real GDP growth, (iv) US inflation rate, (v) Euro area real GDP growth, (vi) Euro area inflation rate, and (vii) oil prices, the internal factors (i) inflation rate and (ii) government net lending / borrowing, and all the four initial factors which are also used in the main sample. The estimation results depicting

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[2]The financial openness indicator is based on the Chinn-Ito index which measures a country's capital account openness degree.
[3] The output gap is calculated by taking the difference between the 2012 real GDP growth and projected 2012 real GDP growth based on the IMF WEO reports.
[4] The estimation results in Table 4.1 and Table 4.2 report robust standard errors.

only the statistically significant variables can be seen in Table 4.2[5]. Global volatility index and oil prices appear to be positively correlated with growth performance in emerging economies. Regarding the initial conditions, a more positive output gap and exchange rate overvaluation in the year 2012 positively affect economic growth in the following three years in emerging economies[6].

<center>(Insert Table 4.2 Here)</center>

4.4 Concluding Remarks

The emerging economies have been experiencing slower growth transitions in the aftermath of the global financial crisis. A set of external and internal conditions have contributed to this output growth deceleration. In this chapter we analyze the determinants of slower economic development in emerging economies between 2013 and 2015. Our sample composes of 68 emerging market economies and it covers a wide selection of cyclical and structural factors which are hypothesized to be effective in determining the macroeconomic performance in the sample countries. We utilize a pooled panel OLS estimation method due to the short time period examined and in order to include country specific time invariant indicators.

The estimation results obtained using the comprehensive sample highlight important policy implications. Among the external factors, current account balance, export growth, merchandise export growth, and terms of trade are found to be statistically significant at the 5 percent and 10 percent levels. Emerging market countries experienced slower economic growth when their export demand diminished. This means growth performance in emerging countries was negatively affected if their trading partners' import demand fell down. In a similar way, terms of trade deterioration negatively impacted economic development during the analysis years of 2013, 2014, and 2015. On the other hand, merchandise export volume appears to be negatively correlated with real GDP growth. Increases in current account deficits also slowed down the trend growth in emerging economies. The U.S. real interest rate, one of the highlighted external financing factors, turns out to be statistically insignificant for the three-year analysis period. This result may be surprising, but similar results are recorded in recent studies (Fayad and Perrelli, 2014).

When we turn our focus onto the internal factors, we find that a higher inflation rate and higher government final consumption expenditure which indicates a more accommodative fiscal policy could cause emerging market economies' growth prospects to be bleaker. We find interesting results related to labor market conditions. While increases in labor force participation rate appears to be positively correlated with economic growth, when female labor force participation and working age population rates rose up these factors might contribute to growth decline. Furthermore, emerging market countries were prone to slower growth when investment rates decreased, government borrowing increased, and initially an exchange rate undervaluation happened. The monetary policy tool, proxied by the domestic real interest rate, appears to be statistically insignificant.

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[5] The cluster-robust-VCE estimator is used for this estimation. The clustering variable is the countries.

[6] The 2012 exchange rate overvaluation data are missing for four countries, Ecuador, Estonia, Slovak Republic, and Slovenia. Export growth and terms of trade data are also missing for Angola.

As a second level of exercise, we construct a sub-sample composing of only the variables for which observations in all the three years 2013. 2014 and 2015 are available. Then we use the benchmark equation (1) with these variables. The estimation results demonstrate that emerging economies went through growth slowdowns when global volatility and worldwide oil prices declined. Regarding the significant internal and initial factors, a higher inflation rate, reduction in a positive output gap, and initial exchange rate undervaluation (measured in 2012) could cause a lower real GDP growth rate.

In a globalized world economy, it is not surprising to find out that external conditions related to international trade such as higher current account deficit, lower trading partners' import demand, and terms of trade deterioration are significantly correlated with the growth decline in emerging economies in the years 2013 – 2015. In addition to this, the estimation results also emphasize that internal and long run structural factors, specifically a lower inflation rate, more disciplined (less accommodative) fiscal policy, lower government borrowing, investment enlargement, and greater labor force participation rate which is accompanied by a skilled labor force (Bils and Klenow, 2000) could have protected emerging market economies from the worldwide slower growth epidemic in the aftermath of the global financial crisis.

<center>(Insert Table 4.3 Here)</center>

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Table 4.1: Determinants of Real GDP Growth 2013-2015 – Comprehensive Sample

Dependent Variable: Real GDP Growth Rate

Current account balance	0.0577*
	(0.0341)
Export growth	0.127**
	(0.0496)
Merchandise exports to high income countries	-0.0248*
	(0.0145)
Terms of trade	1.22e-14**
	(3.46e-15)
Domestic inflation rate	-0.144*
	(0.0813)
Fiscal policy	-0.147**
	(0.0564)
Investment	0.114**
	(0.0432)
Female labor force participation	-0.129**
	(0.0613)
Labor force participation	0.184**
	(0.0921)
Working age population	-0.175**
	(0.0609)
Government lending/borrowing	0.156**
	(0.0746)
Initial exchange rate overvaluation	0.0000994*
	(0.0000581)
Constant term	11.34**
	(5.188)
Observations	91
R^2	0.640

Note: Robust standard errors are shown in parentheses. * Significant at 10%; ** significant at 5%.

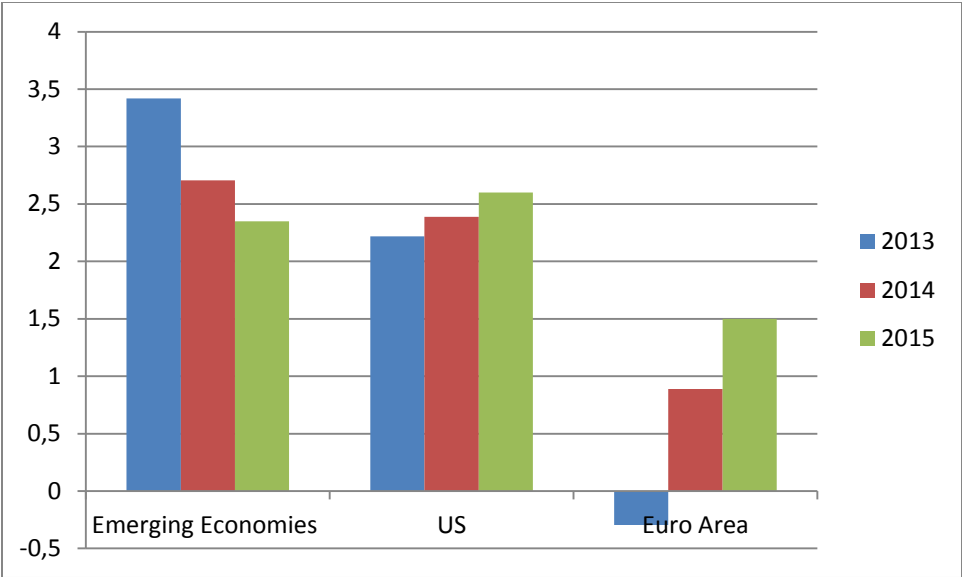Table 4.2: Determinants of Real GDP Growth 2013-2015 – Sub-Sample

Dependent Variable: Real GDP Growth Rate

Global volatility index	0.0569*
	(0.0429)
Oil prices	0.00895*
	(0.00756)
Domestic inflation rate	-0.0962**
	(0.0164)
Output gap	0.393*
	(0.220)
Initial exchange rate overvaluation	0.000192**
	(0.0000384)
Constant term	2.021**
	(0.828)
Observations	179
R^2	0.327

Note: Robust standard errors are shown in parentheses. * Significant at 10%; ** significant at 5%.
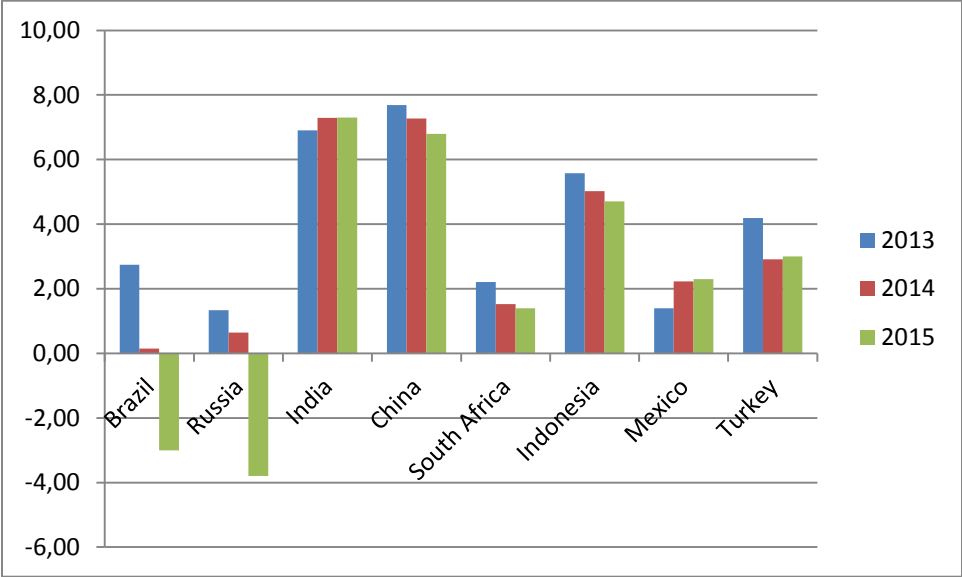

Table 4.3: Country List

Albania	Croatia	Jordan	Poland
Algeria	Czech Republic	Kazakhstan	Romania
Angola	Dominican Republic	Korea, Rep.	Russian Federation
Argentina	Ecuador	Kuwait	Serbia
Armenia	Egypt, Arab Rep.	Latvia	Singapore
Azerbaijan	El Salvador	Lithuania	Slovak Republic
Barbados	Estonia	Malaysia	Slovenia
Belize	Georgia	Mauritius	South Africa
Bolivia	Guatemala	Mexico	Sri Lanka
Bosnia and Herzegovina	Honduras	Morocco	Thailand
Brazil	Hong Kong SAR, China	Nicaragua	Trinidad and Tobago
Brunei Darussalam	Hungary	Nigeria	Tunisia
Bulgaria	India	Pakistan	Turkey
Chile	Indonesia	Panama	Ukraine
China	Iraq	Paraguay	Uruguay
Colombia	Israel	Peru	Venezuela, RB
Costa Rica	Jamaica	Philippines	Vietnam

Figure 4.1: Real GDP Growth in the Emerging Economies, U.S., and Euro Area

Source: Author' own calculations.

Figure 4.2: Real GDP Growth in BRICS, Indonesia, Mexico and Turkey

Source: Author' own calculations.