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COMMODITY PRICE AND INFLATION DYNAMICS: EVIDENCE FROM BRIICS

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ABSTRACT

In this study, we use a commodity augmented Phillips curve to investigate the impact of global commodity prices on domestic inflation in Brazil, Russia, India, Indonesia, China, and South Africa. Oil and energy prices cause inflationary pressures in all countries, except Russia, where they cause deflationary pressures. In India and Indonesia, global food prices are highly significant and positively related to inflation, while in South Africa precious metal prices impact inflation negatively. For policymakers, this study provides insights on the domestic adjustments required for inflation targeting in response to global commodity price volatility.

Keywords: Commodity prices; Inflation; BRIICS; Augmented Phillips curve.
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I. INTRODUCTION

The major objective of most central banks in current times is inflation targeting (Taylor, 2019; Mundaca, 2018; Hayo and Neumeir, 2017; Tuladhar, 2005; Fracasso *et al.*, 2003). This focus, coupled with commodities price volatility, stock market crashes, and exogenous shocks, has raised a debate on the effectiveness of monetary policy in dealing with commodity market signals (Apergis, Chatziantoniou, and Cooray, 2020; Alam and Gilbert, 2017; Gelos and Usyugova, 2017). In this paper, we delve deeper into the role of commodity prices in the evolution of inflation in six developing economies, of Brazil, Russia, India, Indonesia, China, South Africa (BRIICS).

The earlier works on commodity markets and inflation suggest no intervention of commodity market shocks in the inflation-targeting policy (see, Fuhrer and Moore, 1992; Bernanke and Gertler, 2000, 2001). These studies argue that determination of the fundamental or speculative nature of the impact of commodity price shocks on inflationary expectation would complicate monetary policy responses. However, recent studies have identified commodity market prices, especially traded commodities, as being a principal component of inflationary pressures (Bernanke, 2008). But challenges have been abundant primarily in resolving the simultaneity of commodity market shocks and inflation expectations. Gospodinov and Ng (2013) find that principal components of convenience yields predicted US inflation, but highlighted the lack of power in using the IMF aggregate commodity prices to predict inflation. Chen, Turnovsky, and Zivot (2014) further show the predictive power of commodities over inflation expectation using a sample of five developed countries. They argue that international commodity price changes predicted both Consumer Price Index (CPI) and Purchasing Power Parity (PPP) inflation. Most of these studies have not focused on developing markets, which may be a result of data unavailability.

In this study, we focus on BRIICS and examine the impact of commodity price shocks on inflationary expectations. Focusing on BRIICS is critical because these countries are the principal engine of the world economy (Wilson and Purushothaman, 2003). As per the Organization for Economic Cooperation and Development estimates, BRIICS is expected to account for nearly 35% of global economic output in the next 20 years.[1] These countries straddle a complicated position in the commodity market shocks and inflationary expectation debates, since they are commodity export and import dependent (de Barros Torres, 2020; Nasir, Naidoo, Shahbaz and Amoo, 2018; Kang, Mclaver and Yoon, 2016). The high commodity dependency of these countries resulted in a more direct linkage of commodity markets to their real economies through national revenues and expenses in trade account (Chen *et al.*, 2014).

In this study, we use a commodity-augmented Phillips curve to empirically investigate the impact of commodity price shocks on inflationary pressures. All BRIICS countries' central banks explicitly state inflation targeting as one of their key objectives. In the traditional Phillips curve framework, inflation is related to the output gap and lagged values of inflation, where the lagged values allow us to

[1] See "The Long View: Scenarios for The World Economy to 2060, OECD Economic Policy Paper July 2018 No. 22".

capture inflation persistence (see Juhro and Iyke, 2019). The commodity-augmented Phillips curve framework used in this paper allows us to introduce exogenous commodity prices into the specification to measure supply shocks. While Stock and Watson (1999) suggest that commodities do not improve the predictive power of Phillips curve, Salisu and Isah (2018) demonstrate, by incorporating asymmetries of Shin *et al.*'s (2014) approach; they observed, that they do.

Some recent studies on inflation forecasting suggest that the Phillips curve is non-linear (see, Ho and Iyke, 2019; Iyke and Ho, 2020; Correa and Minella, 2010; etc.). But in the literature on commodity-augmented Phillips curves, the consensus is in favor of linear models (Fasanya, and Awodimila, 2020; Shin *et al.* 2014). Thus, we follow the literature and use a linear commodity-augmented Phillips curve for our analysis. We use quarterly data from the first quarter of 2006 to the first quarter of 2020 (i.e. from Q1 2006 to Q1 2020), which span the financial crisis of 2007, the oil price shock of 2010 (owing to the Arab Spring), and the Euro Crisis of 2009-2012. We find that commodity prices play a critical significant role in determining inflation in these emerging economies. By using energy, oil, metal and food price indices, we find that, amongst all BRIICS minus Brazil, oil and energy have a significant predictive power over inflation expectations in BRIICS. Our findings on oil and energy commodities support the recent literature (Paradiso and Rao, 2012; Millard and Shakir 2013; Oinonen and Paloviita, 2014; Renou-Maissant, 2019), which argues for a pass-through effect of oil price shocks to inflation. Meanwhile, food price index has only significant predictive power over inflation expectations in India and Indonesia. These findings are robust to the accounting of the financial crisis of 2007-2009.

This study contributes to multiple streams of literature. Firstly, it contributes to studies on the Phillips curve and its efficacy in inflation forecasting. While the Phillips curve remains the workhorse for inflation forecasting, its limitations on forecasting have been raised by several studies (see Stock and Watson, 2008; Peach *et al.*, 2011). Secondly, our study contributes to the expanding literature on commodity market shocks and inflationary pressures with a primary focus on oil price shocks (see Hooker, 2002; LeBlanc and Chinn, 2004; van den Noord and André, 2007; Clark and Terry, 2010; Fukač, 2011, Orlowski, 2017; Salisu and Isah, 2018). Our study adds to the work of Gelos and Ustyugova (2017), who suggest that the weight of commodities in the CPI basket determines the impact of commodity shocks on inflation, and that this impact varies across countries. Thirdly, we add to the literature that explores the impact of the commodity market on inflationary pressures in BRIICS. Whereas earlier studies like Gospodinov and Ng (2013), Chen *et al.* (2014), and Coibion *et al.* (2019) have focused primarily on developed markets, our study extends this to emerging economies. We thus offer new insights given our country setting.

The following section briefly discusses the theoretical model, followed by the data and methodology utilized in this paper. Section III focuses on the empirical analysis, which is followed by the concluding remarks in Section IV.

II. METHODOLOGY AND DATA

With regards to the relationship between commodity price shocks and inflation expectation, notable studies have focused on augmenting the traditional Phillips curve with commodity prices, primarily oil prices (see Hooker, 2002; Leblanc and Chinn, 2004; De Gregorio *et al.*, 2007; Chen, 2009). The traditional Phillips curve remains the starting point for most inquires on inflation (Kapur, 2013). The traditional Phillips curve relates inflation to the output gap and lagged values of inflation (Jondeau and Le Bihan, 2005). The lagged values of inflation primarily capture inflation persistence in the model. The commodity-augmented Phillips curves mainly introduce commodity prices in the model to measure supply shocks. In this paper, we use the following commodity-augmented Phillips curve

$$Inf_t = \alpha + \beta_1 Inf_{t-1} + \beta_2 Inf_{t-2} + \beta_3 Gap_t + \beta_4 Com_t + \beta_5 Exr_t + \varepsilon_t \quad (1)$$

where, *Inf* is inflation, *Gap* is measure of excess demand (or the output gap), *Exr* is change in real exchange rate, and *Com* is change in commodity price. Besides, α, βs, and ε_t denote the constant term, regression slopes, and the error term, respectively. We estimate Eq. (1) for each country by ordinary least squares.

We use quarterly data starting from the first quarter of 2006 to the first quarter of 2020 (i.e. from Q1 2006 to Q1 2020), meaning that we use a total of 58 observations for each country[2]. We use multiple proxies of commodity prices, namely oil price, energy, metal, and food price indices.[3] The rationale for using these three different proxies owes to the nature of BRIICS economies; these economies have multiple commodities in their trade baskets (Siswana and Phiri, 2020). All data are sourced from Oxford Economics via Datastream. All the data series are stationary based on the Augmented Dickey Fuller test, and two lags of inflation are included in the equations to ensure no residual autocorrelation. Also, inflation expectations are assumed to be adaptive and are captured through lags of inflation following Gordon (1998) and others.

III. EMPIRICAL ANALYSIS

Table 1 presents the descriptive statistics for the variables. The descriptive statistics provide some interesting insights. Firstly, we notice that the average output gap is positive in the case of China and South Africa, while it is negative for all others with Russia having the highest negative average gap and the highest volatility of output gap. During the same period, Russia experienced a high real exchange rate.

[2] The start date is restricted to Q1 2006 owing to data availability for all countries. The end date is restricted to Q1 2020 to avoid the unprecedented volatility and uncertainty created by the COVID-19 pandemic. Many recent studies have highlighted that impact of the pandemic on economies and markets (see: Devpura, 2020; Devpura and Narayan, 2020; Huang and Zheng, 2020; Iyke, 2020a, b, c; Narayan, 2020a, b, c; Narayan, Devpura and Wang, 2020; Prabheesh, Pradhan and Garg, 2020; Haroon and Rizvi, 2020a, b; He, Sun, Zhang and Li, 2020; Chen, Liu and Zhao, 2020, 2020; Mishra *et al.*, 2020; Phan and Narayan, 2020; Baig *et al.* 2020; Yu *et al.*, 2020; Vidya and Prabheesh, 2020; Gu *et al.*, 2020; He, Niu, Sun and Li, 2020; Shen *et al.*, 2020; and Qin, Huang, Shen, and Fu 2020; Sharma, 2020; Sha & Sharma, 2020; Sharma & Sha, 2020).

[3] We used the change in these indices corresponding to the previous quarter to factor in the lagged impact of commodity price.

For the commodity price indices, food price index recorded the lowest volatility, while oil and energy price indices recorded the highest. The high volatility of the oil and energy price indices is understandable because the energy markets have experienced multiple shocks during the sample period, as highlighted by Arshad, Rizvi, Haroon, Mehmood and Gong (2020). In addition to real sector economic crises, the recent COVID-19 has also impacted the energy markets, particularly in first quarter of 2020, consistent with several studies highlighting the impact on oil and energy markets of the pandemic, in terms of unprecedented volatility and abnormal behaviour (see: Gil-Alana and Monge, 2020; Apergis and Apergis, 2020; Narayan, 2020a; Fu and Shen, 2020; Iyke, 2020a; Liu *et al.*, 2020; Qin *et al.*, 2020).

Table 1.
Descriptive Statistics

The table provides descriptive statistics of Mean and Volatility measured by standard deviation for all the variables. Inflation is measured as change in consumer price index and Ex Rate is change in the real exchange rate. For commodity indices (Food, Energy, Oil and Metals), we measured by the quarterly change in their respective indices.

Variable	Description	Brazil	Russia	India	China	South Africa	Indonesia
Output Gap	Mean	-0.27%	-1.51%	-1.22%	0.12%	0.20%	-0.50%
	Volatility	2.57%	2.76%	1.43%	1.16%	1.75%	1.11%
Inflation	Mean	1.29%	1.88%	1.60%	0.66%	1.40%	1.24%
	Volatility	0.67%	1.35%	1.37%	0.66%	0.68%	0.91%
Ex Rate	Mean	-0.20%	0.34%	-0.05%	0.63%	-0.58%	0.31%
	Volatility	9.01%	29.45%	4.65%	2.41%	8.29%	4.63%
Food Index	Mean	0.49%					
	Volatility	5.78%					
Energy index	Mean	-0.68%					
	Volatility	13.46%					
Oil Index	Mean	-0.17%					
	Volatility	15.73%					
Metals Index	Mean	0.65%					
	Volatility	10.75%					

Tables 2-7 present the results for each of the BRIICS countries. These results are based on the four models that we have used to explore the impact of commodity prices on inflation in these countries. The four models are independent of each other as they used four different commodity price indices. Our findings overall negate the earlier works of Fuhrer and Moore (1992) and Bernanke and Gertler (2000, 2001), who have argued that commodity price shocks played no role in inflation forecasting. We essentially find significant predictive power of oil, energy, and food commodities in inflation estimations in BRIICS. Our findings are more in sync with the recent literature arguing for the predictive power of commodities in inflation forecasting (see Bernanke, 2008; Gospodinov and Ng, 2013; Chen *et al.*, 2014).

Table 2.
Regression Results for Brazil

The following table presents the results for regression of Equation (1) for Brazil. Inflation is measured as change in consumer price index, Ex Rate is change in real exchange rate. For commodity indices (Food, Energy, Oil and Metals), we measured them by the quarterly change in their respective indices. *t*-statistics is presented in the parentheses. *, **, *** represent significance level at p < 0.05, p < 0.01 and p < 0.001 respectively.

Variable	Model 1	Model 2	Model 3	Model 4
Inflation$_{t-1}$	0.427**	0.423**	0.431**	0.428**
	(3.03)	(3.00)	(3.03)	(3.02)
Inflation$_{t-2}$	-0.096	-0.093	-0.081	-0.081
	(-0.66)	(-0.64)	(-0.56)	(-0.56)
Output Gap	0.076*	0.071*	0.072*	0.071*
	(2.11)	(2.12)	(2.14)	(2.09)
Ex Rate	0.013	0.012	0.008	0.007
	(1.15)	(1.12)	(0.59)	(0.57)
Oil Index	0.003			
	(-2.08)			
Energy Index		0.013*		
		(-2.02)		
Metal Index			0.004	
			(0.35)	
Food Index				0.006
				(0.31)
Constant	0.010***	0.008***	0.009***	0.009***
	(4.19)	(4.18)	(3.98)	(3.98)

Table 3.
Regression Results for Russia

The following table presents the results for regression of Equation (1) for Russia. Inflation is measured as change in consumer price index, Ex Rate is change in real exchange rate. For commodity indices (Food, Energy, Oil and Metals), we measured them by the quarterly change in their respective indices. *t*-statistics is presented in the parentheses. *, **, *** represent significance level at p < 0.05, p < 0.01 and p < 0.001 respectively.

Variable	Model 1	Model 2	Model 3	Model 4
Inflation$_{t-1}$	0.397**	0.381**	0.380***	0.398**
	(3.13)	(2.99)	(4.03)	(3.00)
Inflation$_{t-2}$	-1.078*	-0.993	-0.981	-1.081
	(-2.01)	(-0.54)	(-0.61)	(-0.60)
Output Gap	0.141*	0.109*	0.160*	0.091*
	(2.03)	(2.11)	(2.09)	(2.14)
Ex Rate	0.021	0.029	0.019	0.017
	(0.99)	(1.11)	(0.89)	(0.98)
Oil Index	-0.114*			
	(-2.08)			
Energy Index		-0.081*		
		(-2.11)		
Metal Index			0.018	
			(0.89)	
Food Index				0.889
				(0.56)
Constant	0.025***	0.022***	0.029***	0.024***
	(4.89)	(4.15)	(4.02)	(4.17)

Table 4.
Regression Results for India

The following table presents the results for regression of Equation (1) for India. Inflation is measured as change in consumer price index, Ex Rate is change in real exchange rate. For commodity indices (Food, Energy, Oil and Metals), we measured them by the quarterly change in their respective indices. *t*-statistics is presented in the parentheses. *, **, *** represent significance level at $p < 0.05$, $p < 0.01$ and $p < 0.001$ respectively.

Variable	Model 1	Model 2	Model 3	Model 4
Inflation$_{t-1}$	1.456**	1.440**	1.455**	1.456**
	(3.00)	(2.98)	(3.02)	(3.00)
Inflation$_{t-2}$	-0.109	-0.109	-0.990	-0.110
	(-0.41)	(-0.41)	(-0.42)	(-0.41)
Output Gap	1.126*	1.126*	1.125*	1.124*
	(2.14)	(2.22)	(2.00)	(2.11)
Ex Rate	0.114	0.125	0.124	0.125
	(1.01)	(1.10)	(1.10)	(1.00)
Oil Index	0.454*			
	(2.04)			
Energy Index		0.110**		
		(-2.90)		
Metal Index			0.868	
			(0.34)	
Food Index				1.461***
				(4.17)
Constant	0.035**	0.038**	0.033**	0.038**
	(2.88)	(3.00)	(2.89)	(2.98)

Table 5.
Regression Results for China

The following table presents the results for regression of Equation (1) for China. Inflation is measured as change in consumer price index, Ex Rate is change in real exchange rate. For commodity indices (Food, Energy, Oil and Metals), we measured them by the quarterly change in their respective indices. *t*-statistics is presented in the parentheses. *, **, *** represent significance level at $p < 0.05$, $p < 0.01$ and $p < 0.001$ respectively.

Variable	Model 1	Model 2	Model 3	Model 4
Inflation$_{t-1}$	0.258**	0.255**	0.257**	0.258**
	(3.09)	(3.00)	(3.01)	(3.00)
Inflation$_{t-2}$	-0.112	-0.111	-0.100	-0.099
	(-0.58)	(-0.59)	(-0.55)	(-0.55)
Output Gap	0.022*	0.019*	0.019*	0.021*
	(2.10)	(2.18)	(2.15)	(2.10)
Ex Rate	0.003	0.002	0.003	0.002
	(1.00)	(1.12)	(1.11)	(1.00)
Oil Index	0.049*			
	(2.12)			
Energy Index		0.088*		
		(2.12)		
Metal Index			0.011	
			(0.35)	
Food Index				0.001
				(0.11)
Constant	0.025***	0.022***	0.022***	0.021***
	(4.58)	(4.38)	(4.11)	(4.21)

Table 6.
Regression Results for South Africa

The following table presents the results for regression of Equation (1) for South Africa. Inflation is measured as change in consumer price index, Ex Rate is change in real exchange rate. For commodity indices (Food, Energy, Oil and Metals), we measured them by the quarterly change in their respective indices. *t*-statistics is presented in the parentheses. *, **, *** represent significance level at p < 0.05, p < 0.01 and p < 0.001 respectively.

Variable	Model 1	Model 2	Model 3	Model 4
$Inflation_{t-1}$	0.411**	0.410**	0.441**	0.399**
	(3.00)	(2.99)	(3.00)	(3.01)
$Inflation_{t-2}$	-1.121*	-0.999*	-0.981*	-1.081*
	(-2.05)	(-2.11)	(-2.06)	(-2.01)
Output Gap	0.221*	0.229*	0.222*	0.221*
	(2.05)	(2.10)	(2.09)	(2.14)
Ex Rate	0.051	0.052	0.055	0.055
	(0.55)	(0.55)	(0.69)	(0.55)
Oil Index	0.214*			
	(2.09)			
Energy Index		0.189*		
		(-2.11)		
Metal Index			-0.188*	
			(-2.02)	
Food Index				0.089
				(0.88)
Constant	0.101***	0.099***	0.100***	0.101***
	(4.01)	(4.00)	(4.02)	(4.22)

Table 7.
Regression Results for Indonesia

The following table presents the results for regression of Equation (1) for Indonesia. Inflation is measured as change in consumer price index, Ex Rate is change in real exchange rate. For commodity indices (Food, Energy, Oil and Metals), we measured them by the quarterly change in their respective indices. *t*-statistics is presented in the parentheses. *, **, *** represent significance level at p < 0.05, p < 0.01 and p < 0.001 respectively.

Variable	Model 1	Model 2	Model 3	Model 4
$Inflation_{t-1}$	0.456**	0.440**	0.415**	0.456**
	(3.08)	(2.98)	(3.00)	(3.00)
$Inflation_{t-2}$	-0.325*	-0.314*	-0.328*	-0.311*
	(2.01)	(2.00)	(2.08)	(2.11)
Output Gap	0.126*	1.215*	1.114*	1.103*
	(2.14)	(2.22)	(2.00)	(2.11)
Ex Rate	0.104*	0.111*	0.222	0.114*
	(2.02)	(2.10)	(1.10)	(2.04)
Oil Index	0.333*			
	(2.00)			
Energy Index		0.251**		
		(-2.91)		
Metal Index			0.545	
			(0.39)	
Food Index				2.461***
				(4.20)
Constant	0.135**	0.135**	0.133**	0.138**
	(2.89)	(2.99)	(2.89)	(2.98)

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We find a significant impact of oil price change on the inflation in all countries. On the direction of the impact, we find that an increase in oil prices tends to drive up inflation in India, China, South Africa and Indonesia, while the impact is inverse in Russia. These findings are rationally linked to the dependence nature of this commodity in the BRIICS. Whereas India, China, South Africa and Indonesia are energy deficient in their trade balances, Russia is positively aligned on trade balance in energy.[4] These findings corroborate the recent works of Gospodinov and Ng (2013), Chen *et al.* (2014), and Coibion *et al.* (2019), who found a significant impact of oil price changes on inflation in developed markets. Similar results are visible in the case of energy price changes as shown in Model 2 of Tables 2-7. Main reason for this similarity is owing to natural gas price, the second biggest energy source, being tied to oil prices in international trade. Russia's unique case arises out of the nature of the market, wherein Russia is a leading energy exporter. These findings are similar to recent studies such as Tuzova and Qayum (2016) and Bass (2019), which found that increasing international energy prices has a positive impact on the Russian economy via decreasing inflation and interest rates.

An interesting observation is that metal prices do not have significant predictive power in inflation forecasting in all countries, except South Africa. This may be owed to a less than 1% share of metal commodities in the trade balances of these economies (except South Africa). The inverse relationship between metal prices and inflation expectation in South Africa suggests that an increase in prices of precious metals in the international market puts a downward pressure on inflation in the country. One possible explanation is that increasing precious metal prices has a positive impact on the Rand exchange rate because precious metals are one of South Africa's main commodity exports. Thus, the increase in the prices of precious metals would strengthen South Africa's Rand leading to lower import prices and inflation in South Africa. These findings are in line with the recent work of Balcilar, Katzke and Gupta (2017), which suggested the 6% contribution of precious metals to South Africa's exports as the cause of this relationship.[5]

An interesting finding, in the case of the food price index, is that it has a significant predictive power over inflation only in the case of India and Indonesia. This is not surprising given that India and Indonesia are large importers of food commodities (Nielsen and Wright, 2017; Kaitibie, Haq and Rakotoarisoa, 2017). The impact of food price change on domestic inflation has been documented by Furcari, Loungani, Simon and Wachter (2016), who documented about 50 basis points increase in domestic inflation following a 10% increase in international food prices. In our case, the coefficient of food price index is the highest amongst all predictors considered in Model 4 in the case of Indonesia and India. A recent study by Taghizadeh-Hesary *et al.* (2019) has suggested that oil price shocks tend to positively and significantly impact food prices as well. The highly significant

[4] As Russia's exports and income rely heavily on energy commodities, the increase in the energy prices would lead to the appreciation of Ruble. And the appreciation of Ruble would result in lower import prices and then domestic inflation in Russia. The positive co-movement between a country's currency with the prices of commodity in which the country relies largely for its exports and income is commonly known as commodity currency.

[5] This information is from the Preliminary Statement of Trade Statistics (2018) of the World Trade Organization.

positive relationship between food prices and domestic inflation in India and Indonesia can plausibly be linked to this channel. Alternatively, this can be explained by the high food share in the CPI basket and by pre-existing inflationary pressures in both countries, as highlighted by Gelos and Ustyugova (2017). In a recent study, Juhro and Iyke (2019) demonstrated that large-scale models have significant payoffs when forecasting inflation in Indonesia within an inflation-targeting framework.

As a robustness check, we included a dummy variable for the global financial crisis of 2007/08, and found the financial crisis dummy to be insignificant across our sample of BRIICS economies.[6] The reason may be owing to the nature of the crisis and the limited exposure of these economics to the US and European-centric financial crisis as highlighted by Rizvi *et al.* (2018) and Arshad *et al.* (2019).

IV. CONCLUDING REMARKS

BRIICS are mainly resources-based economies, whereby changes in commodity prices have significant impacts on their trade balances, industrial outputs, and inflation. In turn, the high commodity price volatility during the last decade should have substantially influenced economic activities in these economies. In this paper, we empirically investigated whether international commodity price changes have a predictive power in explaining domestic inflation in BRIICS countries. We employ data from the first quarter of 2006 to the first quarter of 2020 and use a commodity-augmented Phillips curve. In the traditional Phillips curve framework, inflation is related to the output gap and lagged values of inflation. The commodity-augmented Phillips curve framework incorporates commodity prices as an exogenous variable to capture supply shocks. We find that, in the case of Indonesia and India, oil, energy and food prices have a significant positive impact on inflation. Thus, an increase in commodity prices creates inflationary pressures in these economies. In the case of Brazil, China and South Africa, oil and energy prices (but food prices) have a similar impact on domestic inflation. In contrast, the impact of energy and oil prices on domestic inflation in Russia is the opposite, as the Russian Ruble tends to appreciate in response to an increase in energy prices because energy commodities heavily dominate the country's exports. Our findings provide insights for policymakers, in terms of the response required in the domestic markets. The inflationary factors are not localized, and changes in global commodity prices have a strong predictive power over inflation expectations in BRIICS. Our study is one of the early works on the commodity-augmented Phillips curve in BRIICS economies and can be further extended by including policy uncertainty or a large set of predictors and by incorporating non-linearities.

[6] These results are not reported here for brevity purposes but are available on request.

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