

Brosig, Stephan; Teuber, Ramona; Levkovych, Inna; Thiele, Rainer; Glauben, Thomas

Article — Accepted Manuscript (Postprint)

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Journal of Agricultural Economics

Provided in Cooperation with:

Leibniz Institute of Agricultural Development in Transition Economies (IAMO), Halle (Saale)

Suggested Citation: Brosig, Stephan; Teuber, Ramona; Levkovych, Inna; Thiele, Rainer; Glauben, Thomas (2013) : Introduction to the Special Feature: Will the BRIC Decade Continue? The Role of Rural Areas and Agriculture, Journal of Agricultural Economics, ISSN 1477-9552, Wiley, Hoboken, Vol. 64, Iss. 1, pp. 145-150, <http://dx.doi.org/10.1111/1477-9552.12012>

This Version is available at:

<http://hdl.handle.net/10419/156394>

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Introduction to the Special Feature: Will the BRIC Decade Continue? The Role of Rural Areas and Agriculture

Stephan Brosig¹, Ramona Teuber, Inna Levkovych, Rainer Thiele and Thomas Glauben

This is the peer reviewed version of the following article: *Brosig, S.; Teuber, R.; Levkovych, I.; Thiele, R.; Glauben, T. (2013): Introduction to the Special Feature: Will the BRIC Decade Continue? The Role of Rural Areas and Agriculture, Journal of Agricultural Economics 64 (1); pp. 145-150*, which has been published in final form at: <http://dx.doi.org/10.1111/1477-9552.12012>. This article may be used for non-commercial purposes in accordance with Wiley Terms and Conditions for Self-Archiving.

Abstract

This article provides an introduction to the special feature on agriculture-related issues in the emerging economies of Brazil, Russia, India and China (BRIC) contained in this issue of *Journal of Agricultural Economics*. The special feature is motivated by the increased interest which these countries have received since the turn of the millennium and by the significance of agriculture in their development. It considers economic and social development in BRICs, their integration in world agricultural trade as well as environmental concerns. This article presents key figures on economic, social and agricultural features in BRICs and compares them across countries. A synthesis of the articles included in the special feature is provided by highlighting the selection of topics likely to be crucial for further development across BRICs.

Keywords: BRIC; agricultural trade; agricultural sector.

JEL classifications: F63, Q17, Q56, I32.

1. Introduction

In November 2001 Jim O'Neill of Goldman Sachs presented an outlook on the roles in the global economy of four big emerging economies, Brazil, Russia, India and China – for which he coined the acronym BRIC (O'Neill, 2001). His time horizon was 'the next decade', reaching until 2011. The projections, based on alternative sets of assumptions on growth and exchange rates among the G7 and the BRICs, consistently predicted growth in the BRICs to outpace the G7 economies. O'Neill identified an urgent need to better integrate the new big players in the worldwide coordination of economic policies.

¹ Stephan Brosig, Ramona Teuber and Inna Levkovych are postdoctoral researchers at Leibniz-Institute of Agricultural Development in Central and Eastern Europe (IAMO), Halle, Germany. Thomas Glauben is director at IAMO and professor at Martin-Luther University Halle-Wittenberg, Germany, Institute of Agricultural and Nutritional Sciences. Rainer Thiele is head of the research area "Poverty Reduction, Equity and Development" at the Kiel Institute for the World Economy, Kiel, Germany, and honorary professor of development economics at Kiel University. E-mail: brosig@iamo.de for correspondence.

Although crises and political instabilities during the decade have rendered simple extrapolations rather incapable of forecasting economic developments in general, the expectation of increasing weight of the BRIC did materialise. The BRICs' combined share in world GDP (in current US\$) increased from 8% in 2001 to 19% in 2011 (World Bank, 2012), twice as fast as the study had suggested.

The combination of size and rapid economic growth are common features which suggest clustering these four economies. However, they are quite heterogeneous in other respects. This introduction and the five articles of our Special Feature highlight some of these aspects – mostly with a focus on agricultural issues – and examine in what respects the developments of the 'BRIC decade' may or may not continue in years to come. The articles are revised versions of selected articles presented and discussed during the IAMO Forum 2011, 'Will the 'BRICs Decade' Continue – Prospects for Trade and Growth', held on June 23–24, 2011 in Halle (Saale), Germany. The conference was co-organised by the Leibniz-Institute of Agricultural Development in Central and Eastern Europe, the Kiel Institute for the World Economy and the German Institute of Global and Area Studies.

2. Stylized BRICs

Table 1 presents some basic indicators of the four economies. All BRICs belong to the first dozen countries in terms of total national income. National income is even higher if measured using PPP-exchange rates, which reflects that the BRIC currencies' purchasing power for private households' consumption basket is stronger than market exchange rates indicate. However, based on per capita income, BRICs are ranked much lower in the list of 214 countries considered in the World Development Indicators 2012 (World Bank, 2012). They range from rank 70 for Russia (with a per capita income close to other transition economies) to rank 157 for India. China's economic growth over the last two decades, and to a lesser extent also India's, has been associated with significant rises in inequality. Yet, the Gini indices of these two countries are still well below Brazil's, which is among the highest in the world, despite some reductions in recent years. Russia experienced a steep rise in the Gini index during the early transition period, but no discernible trend afterwards. While poverty, as defined by the World Bank's two-dollar poverty line, has almost disappeared in Russia, it is still very prevalent in India, China and Brazil although poverty reduction programmes have been effective in recent decades. In India, a third of the population has to survive on less than the extreme-poverty threshold of US\$ 1.25 per capita per day, indicating that large parts of India still exhibit features of a low-income country.

Compared to O'Neill's focus on the BRICs' share in the world economy as a whole, their weight in world agriculture is even larger. In 2010, over 40% of agricultural value added (in current US\$) was generated in BRIC countries. At a national level, agriculture is still a major economic sector in India and China, supplying huge populations and amounting to 18% and 10%, respectively, of national GDP. For Russia and Brazil the share of agriculture in GDP is substantially lower, at 4% and 5%, respectively.

Table 1
Country profiles: BRIC economies and their agricultural sectors

	Brazil	Russian Federation	India	China
Socioeconomics				
Population 2010/pop. change p.a., avg. of 2010–2020	195 m/0.7%	142 m/0.2%	1,225 m/1.2%	1,338 m/0.3%
Gross national income, 2010: [billion US\$]/country rank	1,830/8	1,404/12	1,554/9	5,721/2
GNI p. c. 2010: PPP [\$/country rank	11,000/98	19,200/70	3,400/157	7,640/120
Gini index*, avg. of 2000–2009	57	39	33	43
Poverty headcount ratio at US\$ 2 a day (PPP)	11% (2009)	0.05% (2009)	69% (2010)	30% (2008)
GDP 2010: billion US\$/country share in world GDP	2,143/3%	1,488/2%	1,684/3%	5,931/9%
Agriculture				
Agricultural land area, 2009				
million km ² /country share in world agric. area	2.6/5%	2.2/4%	1.8/4%	5.2/11%
per capita	1.4 ha	1.5 ha	0.1 ha	0.4 ha
Agricultural value added, 2010: billion US\$/share in world agricultural value added	97/6%	51/3%	279/16%	159/34%
Agricultural value added as share of GDP (2010)	5%	4%	18%	10%
Top products by share in net production value in constant 2004–2006 US\$, 2010<				
1st	Beef, 19%	Milk, 24%	Milk, 19%	Pork, 16%
2nd	Sugarcane, 18%	Beef, 13%	Rice, 17%	Rice, 10%
3rd	Soybeans, 13%	Wheat, 11%	Wheat, 6%	Vegetables, 5%
Exports: top products by value share in agri-food exports				
1st	Meat, 22%	Cereals, 46%	Cereals, 16%	Fruit & veget., 44%
2nd	Sugar, 20%	Veg. oils, 11%	Cotton, 15%	Crude materials, 11%
3rd	Soybeans 18%		Fruit and veget., 12%	Meat, 7%
Imports: top products by value share in agri-food imports				
1st	Cereals, 34%	Fruit and veg., 29%	Veg. Oils, 46%	Soybeans, 32%
2nd	Fruit and veget., 20%	Meat, 18%	Fruit and veget., 23%	Textile fibres, 11%
3rd	Rubber, 9%			Veget. oils, 10%

Notes: *Refers to income shares (Brazil, China)/expenditure shares (India, Russia) by percentiles of population, ranked by per capita income/expenditure. <Net production value according to FAO definition excludes value of produce utilised within the agricultural sector.
Source: World Development Indicators (World Bank, 2012) and FAOSTAT (FAO, 2012).

However, in Brazil, agriculture has particular importance due to its contribution to the balance of payments. Meat (mainly poultry and beef), sugar, soybeans and other agricultural produce represent over a third of Brazil's merchandise exports. Russia has become a major exporter in the markets for grains, particularly for wheat, and is expected to further expand in this regard (see Pall et al. in this feature). A quarter of the world's agricultural land area is situated in BRIC countries. The area per inhabitant is small in India and China. China, presently highly dependent on agricultural imports, particularly of protein feeds, has started to invest in agricultural enterprises abroad aiming to secure control over food supplies needed for its population. There are indications that India is pursuing a similar strategy. The per capita farmland endowment in Brazil and Russia is larger; huge land resources allow these countries excess production for exports. However, national and international statistics on Russia still categorise large areas as agricultural land, which were abandoned after the end of socialist cultivation policies. The recultivation of at least part of these areas is questionable for economic and ecological reasons (Schierhorn et al., 2012).

3. Conditions for Sustained Development

Further prospects for growth in the BRICs' agri-food sectors as well as in their general economy will depend on framework conditions which are specific for these large, fast-growing economies. A diverse set of relevant issues is addressed in the five contributions combined in this Special Feature. One aspect is the internal distribution of welfare (-growth) with its impact on socioeconomic stability. This is addressed in the article on Brazil, the country with the most unequal income distribution among BRICs as measured by the Gini index. Between 2005 and 2008, world prices of many staple food commodities rose substantially. This led to wide-spread concern about possible impacts on poverty and hunger, whereas possible income gains for farmers and farm workers received less attention. This ignorance is definitely inappropriate for large and competitive food producers with a predominantly wage-earning agricultural labour force, such as Brazil. Accordingly, in their estimates of the welfare consequences of the food price increases across Brazilian households, Ferreira et al. include general equilibrium effects on market and transfer incomes as well as the standard changes in consumer surplus. They find that the loss of purchasing power implied by food price increases had a large, negative and markedly regressive impact on the volume of households' (total) consumption. The market income effect in contrast, reflecting higher food prices' impact on agricultural profits and wages, was positive and progressive, particularly in rural areas where substantial parts of the population benefit from agricultural revenues. Because of this income effect on the rural poor and increases in two large social-assistance programmes, the overall impact of higher food prices in Brazil was U shaped, with middle-income groups suffering larger proportional losses than the very poor. Nevertheless, since Brazil is 80% urban, higher food prices still led to a greater incidence and depth of poverty at the national level, pointing to the need for a social safety net to mitigate the negative consequences of the price shock.

Two of the articles are concerned with the behaviour of BRIC countries as participants in cross-border agricultural trade and the framework conditions they face in international markets. During the last decade, Russia has become one of the largest exporters of wheat. This development is mainly due to the fact that the livestock sector decreased tremendously after the breakdown of the Soviet Union. Russian wheat is mainly exported to low- and middle-income countries in the Middle East and North Africa (with Egypt as the largest buyer of Russian wheat) as well as to Central Asia and the Caucasus. Pall et al. argue that, in particular, countries of the former Soviet Union are not fully integrated in world markets, which might enable Russian wheat exporters to price discriminate against them. The authors investigate whether Russian wheat exporters were indeed able to price discriminate against certain wheat-importing countries. They apply a pricing-to-market model for a sample of 25 wheat-importing countries and the time period 2002–2010. Their empirical results suggest that Russia is able to exercise pricing to market in some wheat-importing countries. However, this does not imply that Russia exerts market power in the world wheat market. In general, the structure of the Russian wheat exports was found to be more competitive than previous studies have found US or Canadian wheat exports to be. However, the estimated parameters of the model reveal evidence for the existence of pricing-to-market behaviour of Russian exporters in wheat-importing countries where Russia has a large share in total imports and / or in countries in which there are few competitors.

Brink et al. analyse agricultural and trade policy from the WTO institutional perspective. The BRICs' behaviour as WTO partners – their notifications and support disciplines – reflects the state and scope of their farming sectors and likely objectives of their domestic support to agriculture. These pieces of information provide hints on the probable pathway the countries may take in international markets of agricultural commodities. The authors identify considerable scope for flexibility of agricultural support as a common feature of BRIC countries.

High inflow of FDI is a common phenomenon in BRIC countries and the behaviour of multinationals has generated a debate about their impact on economies, especially via linkages with domestic firms and productivity spillovers. Vandeplass et al. compare milk-procurement systems run by multinational dairy companies in India with cooperative and informal channels and examine vertical spillover effects of these marketing channels on farm-level performance. The authors find that supplying to the cooperative or to the multinational channel is associated with higher productivity and profitability at the farm level compared with supplying to the informal sector. Characteristic differences between milk producers typically supplying to the cooperative, the multinational and the informal dairy processors are also discussed.

By transferring modern and clean technologies to host countries, FDI may also contribute to the control of pollution. Yang et al. focus on inward industrial FDI to China, analysing whether investment in the industrial sector financed by foreign investors differs from domestically funded investment in terms of environmental impact. Environmental degradation has become a serious side effect of growth in China, and a limit to further expansion. Controlling pollution has hence become a major concern of the government and the authors show that encouraging cooperation with foreign investors may be an option in this regard. At least for the period

of their analysis, the authors show that the average foreign dollar invested in Chinese factories resulted in lower environmental emissions, in spite of higher positive output effects, than equivalent investments from domestic sources. This result prompts further investigation – by comparison of domestic and foreign investments - of how efficiency and environmental friendliness in the Chinese industrial sector might be improved.

The articles selected for this Special Feature can obviously only deal with a subset of the issues that are important for the BRICs' further development. Other topics of direct relevance for BRIC countries such as the recent surge in commodity prices, the competition between fork and tank in utilisation of farm produce and land grabbing were also discussed in the conference where these articles were presented. Jim O'Neill's 2001 paper was followed by a number of vividly debated statements and theses of Goldman-Sachs economists regarding the role of BRICs and other emerging economies until 2050. Given the particular importance of the agricultural sectors of these countries, we can be sure that food and agriculture will be major factors in the BRICs' development. We hope that the local behavioural and institutional issues addressed in this Special Feature will help to better understand them.

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