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RBI-Occasional Papers-Vol. 42, No.2, 2021

Today, the Reserve Bank of India releases Volume 42, No.2, 2021 of its Occasional Papers, a research journal containing contributions from its staff. This issue contains four articles and two book reviews.

Articles:

1. Forecasting Food Inflation using News-based Sentiment Indicators

Bhanu Pratap, Abhishek Ranjan, Vimal Kishore and Binod B. Bhoi examine the utiliy of information content in newspaper articles to predict consumer price inflation in vegetables and food in India. Using news items on three key vegetables published in leading English dailies, namely tomatoes, onions and potatoes (TOP) that contribute heavily to volatility in both CPI food and headline inflation in India, the authors employ natural language processing (NLP) techniques to construct news-based sentiment indices to capture price dynamics of TOP commodities. The study finds an inverse relationship between the constructed news sentiment indices of TOP and corresponding monthly changes in their prices. Exploiting this feature to predict consumer price inflation in vegetables and food, the paper finds that adding news-based information in the form of news sentiments improves forecasting accuracy. The forward-looking information content embedded in news data, therefore, suggests an additional source of information for nowcasting and near-term forecasting of food inflation in India.

2. Behavioural Equilibrium Exchange Rates in Emerging Market Economies

In this paper, Dirghau Keshao Raut assesses the equilibrium exchange rates in emerging market economies (EMEs) using the Behavioural Equilibrium Exchange Rate (BEER) model. Employing annual data from 1994-2020 for ten EMEs, the author finds that the real effective exchange rate (REER) in the long-run confirms the Balassa-Samuelson effect. An improvement in net terms of trade, net foreign assets position and an increase in interest rate differentials *vis-à-vis* the US are found to cause the REER to appreciate. An increase in debt-GDP ratio is, however, found to depreciate the REER. The comparison of actual and time-varying equilibrium REER levels suggests that the REER is determined by macroeconomic fundamentals and the extent of misalignment (overvaluation/undervaluation) usually hovers within a narrow range of +/- 3 per cent. Like most EMEs, India’s REER also recorded two-way movements around its equilibrium value. The observed upward co-movements of actual and equilibrium REER in some EMEs like India and China show the productivity driven increase in REER, which is not a sign of loss of external competitiveness.

3. India’s Innovation Ecosystem for Productivity-led Growth: Opportunities and Challenges

Siddhartha Nath, Sreerupa Sengupta and Sadhan Kumar Chattopadhyay highlight the recent trends in Research and Development (R&D) expenditures in the major advanced and emerging market economies, including India. They highlight that India’s R&D expenditure as a percentage of GDP, a major driver of innovation and productivity growth, is yet to be at par with other major economies. Though the participation of business entities in the aggregate R&D activities has remained low in India as compared to other major countries in the world, the trend has been on upward trajectory in recent years. The empirical model using a sample of 21 countries comprising both emerging market and advanced economies suggests that the aggregate R&D activity is positively associated with better institutions that promote competition, better protection to intellectual property and shareholders’ rights, greater transparency in reporting, and the efficacy of corporate boards. The country’s absorptive capacity, *i.e*., per capita income and participation in international trade are also found to be positively associated with R&D expenditures.

4. Price Stickiness in CPI and its Sensitivity to Demand Shocks in India

Sujata Kundu, Himani Shekhar and Vimal Kishore examine the degree of price stickiness in the all India Consumer Price Index-Combined (CPI-C) by classifying item level data into different price-setting methods. The authors construct a Sticky Price Index and a Flexible Price Index and find that headline inflation is primarily driven by flexible price inflation, while inflation excluding food and fuel largely co-moves with sticky price inflation. Further, using a New Keynesian Phillips Curve (NKPC) framework and data from 2011:Q1-2019:Q4, the underlying relationship between the sticky price index and output gap is analysed and the results are compared with the Phillips Curve estimates (PC) based on headline CPI-C and the flexible price PC. Results reveal that the sticky price PC is much flatter, with the impact of output gap on inflation occurring with a significant lag, thereby suggesting that it is slow to adjust to changes in economic slack.

Book Reviews:

This issue of the RBI Occasional Papers also contains two book reviews:

1. Sreerupa Sengupta reviews the book “Measuring Economic Growth and Productivity: Foundations, KLEMS Production Models and Extensions” edited by Barbara M. Fraumeni. This edited volume is a tribute to Dale Jorgenson’s contributions to growth accounting and brings together research works of academicians on the extension of KLEMS (Capital, Labour, Energy, Material and Services) production models. The book provides a comprehensive perspective on productivity, that ranges from an analysis of trade productivity linkages, energy and environmental issues to models of welfare and human capital development.

2. Shruti Joshi reviews the book “Foundations of Post-Schumpeterian Economics: Innovation, Institutions and Finance” written by Beniamino Callegri. The books revisits

the Schumpeterian theory and covers various important aspects such as, economic development, innovation, capitalist crisis and business cycles. The book also offers a philosophical interpretation of the Schumpeter's theory by drawing insights from the works of Henry Bergson, a French philosopher and Georgescu-Rogen, an economist.

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