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IMPACT OF RICE EXPORT BAN ON INDIAN ECONOMY

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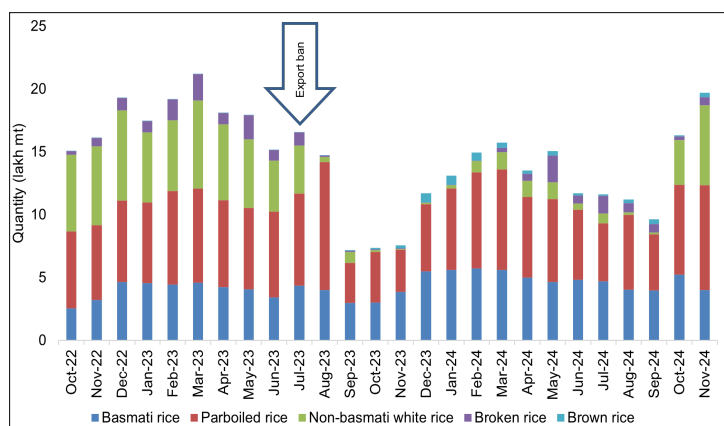
1. INTRODUCTION

In India, rice is an important crop that provides livelihood opportunity for millions of farmers and ensures food security for the 1.4 billion population. India also contributes 25 percent of global rice production and 40 percent of global rice exports, exporting 16 percent of its domestic rice production (FAO 2022). On the other hand, delayed onset of monsoon, extreme weather events, and weather variability significantly affect rice production and the domestic price of rice in the country (Palanisami et al. 2017; Bowden, Foster, Parkes 2023). In response to this situation, policymakers frequently reassess export strategies to ensure adequate domestic supply and to control price fluctuations. Given India's significant contribution to the global rice market, any change in rice trade policy to stabilize the domestic rice market in India will affect the global supply chain of rice and the livelihood of Indian farmers. In 2022/2023, in an effort to control rice prices, the government-imposed export restrictions on different varieties of rice such as broken, brown, non-basmati, basmati, and parboiled rice. Figure 1 reveals that total rice exports from India declined from 16.55 lakh metric tons (mt) to 7.58 lakh mt between July 2023 and November 2023, following the July 2023 ban on non-basmati white rice exports. In August 2023, exports of non-basmati white rice declined sharply

from 3.81 lakh mt to 0.40 lakh mt, and exports remained negligible until the ban was lifted in February 2024. Parboiled rice also saw a decline, though it was less severe due to selective export allowances. Exports began recovering from early 2024, driven by basmati and parboiled rice. This recovery aligned with India's October 2024 decision to remove the 20 percent export duty on parboiled rice. India's global market share dropped from 35.48 percent in 2022 to 30.46 percent in 2023, creating opportunities for other major rice-exporting countries. Vietnam saw an increase in its exports from 10.52 percent of global share to 11.23 percent, while Pakistan's share rose from 7.75 percent to 8.39 percent. Thailand maintained a steady presence at around 15 percent and the US share rose marginally from 5.62 percent to 5.87 percent. These shifts highlight how India's policy decision disrupted global trade patterns, benefitting competing exporters and altering the international rice market dynamics. Even so, the economywide impact of these restrictions on the Indian economy remains underexplored. While the government aims to maintain domestic price stability, it is unclear how effectively the export ban shields consumers from inflation and how this compares to the income losses experienced by exporters and farmers. Questions also persist about the policy's spill over effects on overall market dynamics. In this note, we examine the

impact of the rice export ban on GDP (by sector), employment, and household income in India. We also provide insights aimed at helping policymakers balance affordability for consumers with stable incomes for producers.

Figure 1. Export of rice by category



Source: Government of India, Ministry of Commerce and Industry 2025.

2. METHODOLOGY

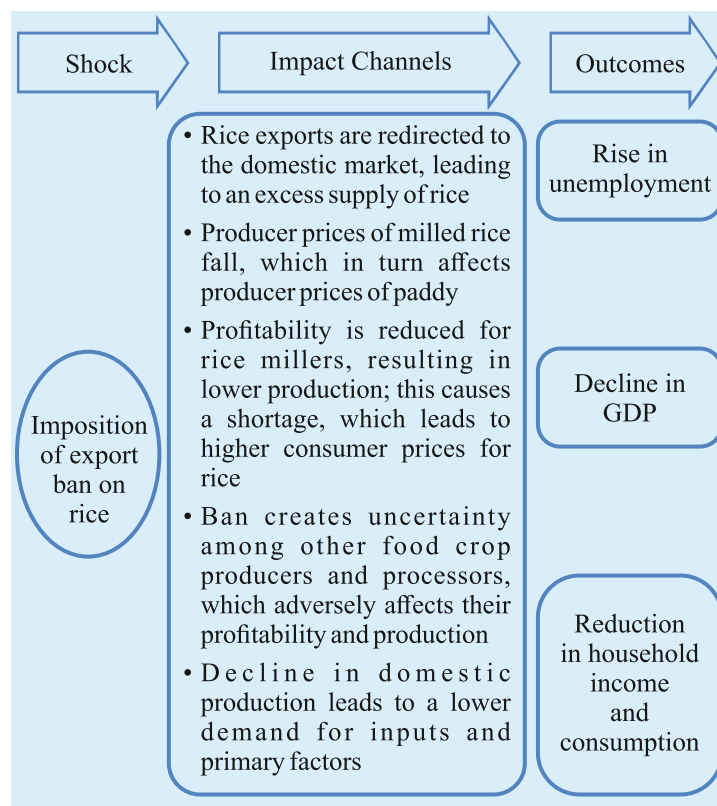
We employ an economywide model to assess the impact of the rice export ban on the Indian economy. It is a static computable general equilibrium (CGE) model, calibrated to the 2019 Social Accounting Matrix (SAM) for India (Pal, Pradesha, Thurlow 2020). The model captures production and employment in 87 economic sectors and measures income and consumption changes for rural (including farm and non-farm) and urban households, all disaggregated into per capita expenditure quintiles.

We consider a short-run scenario where the government enforces a rice export ban, leaving farmers unable to reallocate land to alternative activities. This aligns with the government’s decision to impose the export ban on July 20, 2023, when paddy planting was nearly complete. For the export ban simulation, we reduced the world export price of rice by 100 percent; this lowered selling price discourages Indian rice exporters from exporting to other countries, making it more profitable for them to redirect their rice to the domestic market. In our analysis, due to the lack of disaggregation of the rice sector in our SAM, we assume that the Government of India imposes an export ban on all types of rice; indeed, from 2022 onwards, 98 percent of India’s rice exports were subject to some form of export restriction.

The CGE model measures the effect on the economy

by capturing both direct and indirect impact channels as they affect various sectors and institutions such as households. Figure 2 shows the most important channels through which the export ban affects the Indian economy.

Figure 2. Policy implication pathway of the rice export ban



Source: Author's compilation

3. RESULTS AND DISCUSSION

3.1. Impact on prices and domestic production

As shown in Table 1, the producer price of milled rice falls by 5.8 percent and of paddy by 4.0 percent. The export ban also creates uncertainty among other food

Table 1. Impact on sectors (percentage change from base)

Sectors	Producer prices	Domestic production	Consumer demand prices
• Agriculture	-0.29	-0.68	-0.31
<i>Food crops</i>	-0.54	-0.55	-0.49
Paddy	-4.03	-2.39	-2.93
<i>Export crops</i>	0.003	0.007	-0.06
• Industry	0.08	-0.01	0.10
<i>Food processing</i>	-0.58	-1.77	0.07
Milled rice	-5.83	-19.75	1.64
• Services	-0.03	-0.01	-0.04

Source: Simulation-based results.

Note: Food products include pulses, fruits, and vegetables and export crops include cotton, tobacco, etc.

crop producers and processors, leading to a slight price decline of around 0.54 percent and 0.58 percent, respectively. As profitability declines, domestic production suffers; paddy production falls by approximately 2.4 percent and milled rice output experiences a sharp contraction of about 19.8 percent. The significant decrease in milled rice production results in a shortage of supply, which causes a rise in its demand price. The consumer price of milled rice increases by 1.64 percent, while that of paddy falls by 2.9 percent, reflecting weaker demand from the processing sector.

3.2. Impact on macro-economic indicators

In the short run, due to the 2.39 percent fall in GDP resulting from the decline in the price of paddy, overall agricultural GDP falls by 0.25 percent. Again, though there is a significant fall in GDP of 19.75 percent and 1.3 percent in milled rice and other food processing sectors respectively, industrial GDP increases slightly (0.07 percent) due to a general equilibrium effect (Table 2). The service sector, however, observes a decline in GDP by 0.02 percent due to the rice export ban policy. As a result, overall GDP declines by approximately 0.09 percent (Figure 3).

Table 2. Impact on GDP (percentage change from base)

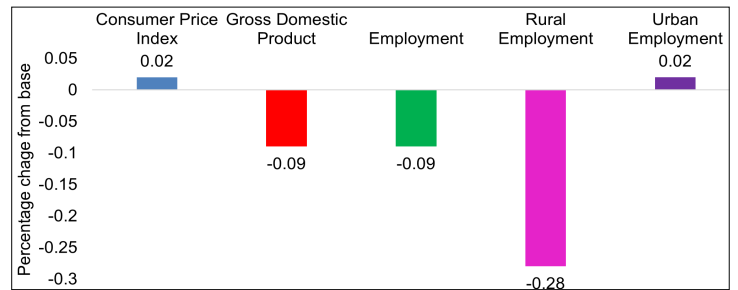
Sectors	GDP
• Agriculture	-0.25
<i>Food crops</i>	-0.55
Paddy	-2.39
<i>Export crops</i>	0.008
• Industry	0.07
<i>Food processing</i>	-1.29
Milled rice	-19.75
• Services	-0.02

Source: Simulation-based results.

Note: Food products include pulses, fruits, and vegetables and export crops include cotton, tobacco, etc.

The decline in domestic production due to the export ban leads to lower demand for primary factors; this results in higher unemployment and a fall in household income and consumption. In the short run, rural employment drops by 0.28 percent (Figure 3). Some members of the unemployed rural workforce, however, are able to find employment in urban areas as they can reallocate easily; this results in a slight (0.02 percent) increase in urban employment. Overall, the rice export

Figure 3. Impact on macroeconomic indicators (percentage change from base)



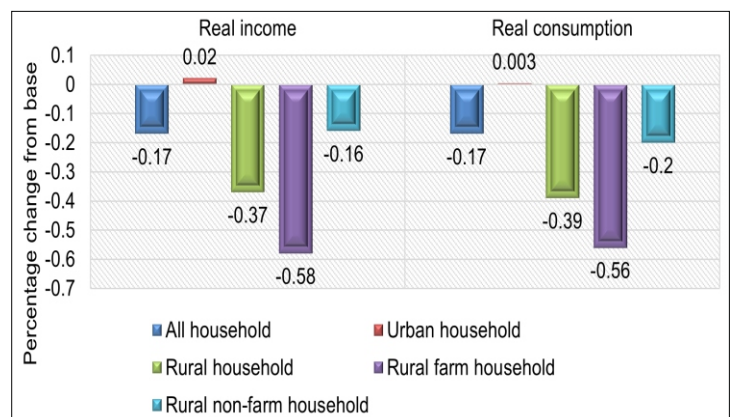
Source: Simulation-based results.

ban increases unemployment in India by 0.09 percent. Thus, while the ban is imposed in order to control the rising price of rice, the policy has negative consequences for both paddy and milled rice producers, as well as for consumers. The disruption in the rice sector also causes a slight (0.025 percent) increase in the Consumer Price Index (CPI).

3.3. Impact on employment, real income, and consumption

The export ban has a significant impact on the members of the labour force who are engaged primarily in agriculture in rural areas; this leads to a greater decline in the income of rural farm households than of rural non-farm households (0.58 percent and 0.16 percent, respectively) (Figure 4). The income of urban households, however, witnesses a slight improvement.

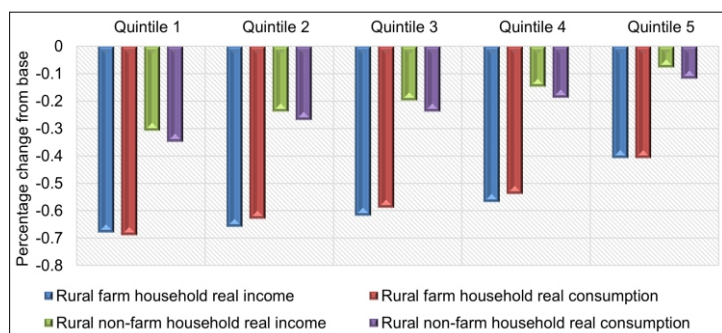
Figure 4. Real income and consumption of households (percentage change from base)



Source: Simulation-based results.

As Figure 4 also shows, household consumption exhibits a similar pattern. Further examination reveals that, in both rural farm and non-farm households, high-income household consumption (that is, Quintile 5) is less affected by the ban than is consumption by low-income households (Figure 5).

Figure 5. Real income and consumption of households by quintile (percentage change from base)



Source: Simulation-based results.

4. CONCLUSION AND WAY FORWARD

The export ban on milled rice significantly affects the rice value chain in India. It increases the price of rice for consumers, and it also reduces profitability for farmers and processors resulting in a decline in rice production. While the ban is meant to control increasing rice prices, our simulation shows that it has the opposite effect. The simulation highlights the bottlenecks in the rice value chain, revealing a paradox in the form of an excess of paddy and a simultaneous shortage of consumable milled rice. The export ban increases the CPI while, at least in the short run, GDP declines. It also increases unemployment and reduces household income, leading to significant declines in overall consumption, especially among rural farm households; at the same time, it constitutes only minimal gains to urban households. To mitigate the adverse impact of rice export bans, the government should explore alternative measures such as buffer stock releases, targeted compensation for affected farmers, and improved trade negotiations with importing nations that benefit rice exporters.

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