

*WTO, Trade Liberalization, and Rural Poverty in the Philippines: Is Rice Special?**

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Along with South Korea and Japan, the Philippines were granted an exemption from the removal of quotas on rice imports in 1995 under Annex 5 of the World Trade Organization (WTO) agreement. This exemption was to expire in mid 2005, but an extension is currently under negotiation. We examine the poverty impacts of both a Doha agreement and free world trade, combined with the elimination of domestic tariffs and rice import quotas, in the Philippines.

Rice is the staple food for about 80% of Filipinos. Indeed, more than 60% of expenditure by poor rural households is on food, of which about half is on cereals (mainly rice and corn). Rice is also the single most important agricultural crop in the Philippines and, therefore, a major source of income for millions of predominantly poor, Filipino farmers. Although there have been increases in palay rice yields—through expanded use of modern varieties, irrigation techniques, and fertilizer and planting area—palay production has not kept pace with high population growth. Consequently, rice imports continue to increase. Another notable evolution is the growth of the market sector, with 46% of production sold on the market (rather than being self-consumed) in 1997, compared to 22% in 1970.

The government is heavily involved in the rice sector because of its political significance in order to ensure affordable supplies to consumers and, less successfully, a reasonable return to rice farmers. As a result, farm prices have been low, margins squeezed and supply has been unable to keep up with

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growing demand. In the face of a huge deficit, government purchases have fallen from roughly 5% of domestic production before 1992, to less than 1% since 1994. On the other hand, sales of rice to the domestic market have fluctuated between 2% and 11% of domestic consumption since 1975 with no discernible long-term trend. Wholesale and retail prices of rice are significantly higher than farm-gate prices of palay rice; more than double in the years that data were available.

About half of rural households live in poverty, while only one-fifth of urban households fall below the poverty threshold. There have been some improvements in recent years. The share of poor, for example, fell from 50.7% in 1997 to 48.8% in 2000 in rural areas and from 21.6% to 18.6% in urban areas.

The Model

The computable general equilibrium (CGE) model used in this analysis has thirteen agricultural, nineteen industrial, and three service sectors, including government. There are six urban and six rural household groups in the model according to the employment and education of the household head: low-educated salaried workers, highly educated (high school graduates) salaried workers, civil servants, low-educated self- or unemployed, highly educated self- or unemployed, and those with a family business. Changes in income are estimated for each household category and then applied to all corresponding households in the 39,615-household 2000 Family Income and Expenditure Survey (FIES).

Real government spending is fixed to neutralize poverty effects of variations in public spending. Government income is maintained constant through the introduction of an endogenously determined uniform indirect tax. Real investment is fixed to abstract from intertemporal poverty effects. The current account balance (foreign savings) is also fixed—no free lunch—and the nominal exchange rate is the *numéraire*. The foreign trade sector is cleared by changes in the real exchange rate and total savings adjust to total investment through a proportionate variation in household savings propensities.

The service sector represents nearly half of GDP, followed by industry (32%) and agriculture (20%). The principal exports are semi-conductors and textiles and garments. Imports are overwhelmingly (98.5%) industrial in nature, composed primarily of automobiles and inputs for the semi-conductor industry. Given the agricultural focus of the Doha negotiations, it is important to note that only 6% of exports and 1.5% of imports are agricultural in the Philippines, although food processing represents about 10% of exports.

The Global Trade Analysis Project (GTAP) world model (Hertel et al.) is first run to estimate changes in world import and export prices, export demand, and tariff rates for the Philippines. Two Doha scenarios are run, without domestic trade reform and with the elimination of domestic import tariffs and rice quotas.¹ Two free world trade scenarios—without and with the elimination of domestic import tariffs and rice quotas—are also explored. Doha scenarios include the expected reductions in tariff rates, export subsidies, and domestic support in the rest of the world under special and differential treatment for developing countries. Free world trade implies the elimination of all world tariffs.

Doha Results

The GTAP model predicts that world export prices increase slightly (by less than 1%) under Doha. More substantial impacts are noted in terms of world demand for Philippine exports. Among sectors with nonnegligible initial exports—which exclude palay and rice/corn milling—the impact is generally positive. World demand generally increases, particularly for industries that transform agricultural products: textiles and garments (11%), meat/fish processing (40%), sugar (56%), and beverages (23%), although modest reductions are noted for most agricultural goods and several nonagriculture-based industries. At the same time, import prices increase by up to 5%. We trace the impacts of the three Doha scenarios from sectors of production to factor prices, household incomes, consumer prices, and ultimately, poverty.

In the absence of domestic trade reform, Doha generates only small sectoral impacts (table 1). Overall, we note a small antiagricultural bias as resources move to export-oriented industry and away from inward-oriented agriculture and services, although the irrigated palay sector expands as import prices increase and import volumes decline.² Rice and corn milling exports fall in response to declining world prices, but their small initial values imply that this has no impact on this sector's output.

Much larger impacts are obtained when Doha is combined with the elimination of domestic tariffs and rice quotas although, once again, the agriculture sector fares worse than industry and services. The reductions in import prices in the rice and corn milling (66.24%) and irrigated palay sectors (13.48%) are particularly striking. Faced with increased import competition, palay production declines by 1.22% and rice and corn milling by 1.24%. Compared to the more modest contractions in these sectors in the third experiment (0.39% and 0.36%, respectively; not shown), we conclude that the strong results in experiment 2 are primarily due to the elimination of rice quotas. While the rice and corn milling sectors are affected directly by quotas, the palay sector is affected indirectly as their main source of inputs.

All factor prices increase slightly in the Doha-only scenario as a result of rising world prices (table 2). Prices of agricultural factors rise less than their counterparts given the antiagricultural bias noted above. The returns to unskilled mobile labor and industrial capital rise most, as they are used intensively in the expanding export sectors. In contrast, factor prices fall when we add domestic trade reform, especially with the elimination of rice import quotas. Strong contraction in the agricultural sector translates into a larger reduction in the prices of agricultural factors, especially land, relative to mobile factors.

In the absence of domestic trade reform, there is no clear rural–urban bias in the impacts of Doha. Indeed, rising factor prices lead to small increases in nominal income for all household groups (table 3). Household with low-educated heads do better than their highly educated counterparts in both rural and urban areas due to their high share of unskilled mobile labor and their small share of fixed nonfactor income (dividends, government transfers, and foreign income). Consumer prices increase more than nominal income. The exception is urban households with low educated salaried heads, which emerge

Table 1. Effects on sectoral prices and volumes (percentage change from base year)

Sectors	Prices			Volumes			Prices			Volumes		
	Import	Export	Output	Import	Export	Output	Import	Export	Output	Import	Export	Output
Agriculture	0.99	-0.24	0.46	Doha, No Philippine Trade Reform						Free World Trade, No Philippine Trade Reform		
Irrigated palay	3.54	0.39	0.39	-1.48	-1.92	-0.01	5.10	0.66	2.53	-5.05	-4.64	0.07
Industry	0.20	0.69	0.43	-14.73	0.06	0.06	8.07	2.48	2.48	-24.39	3.70	0.14
Rice and corn milling	0.42	-5.34	0.43	0.14	0.93	0.15	0.45	2.68	1.68	0.86	3.70	0.39
Service				0.00	-14.22	0.04	2.08	-4.25	2.23	0.00	-15.56	0.11
Total	0.21	0.45	0.41	0.12	-0.46	-0.05	0.50	0.93	1.66	0.80	1.71	-0.04
Agriculture	-3.79	-1.36	-2.91	Doha, Philippine Tariff + Quota Reform						Free World Trade, Philippine Tariff + Quota Reform		
Irrigated palay	-13.48	0.12	-4.01	1.42	1.88	-0.24	-0.49	-0.53	-1.09	-1.98	-0.87	-0.18
Industry	-2.66	0.12	-1.80	76.51	5.05	-1.22	-9.68	2.06	-2.17	55.32	8.20	-1.06
Rice and corn milling	-66.24	-6.46	-3.57	6.32	-8.75	0.05	-2.43	-5.41	-0.65	6.71	8.20	0.20
Service				1,453	-8.75	-1.24	-64.07	-1.89	-1.89	1,278	-10.05	-1.08
Total	-2.67	-0.16	-1.81	6.27	3.77	-0.04	-2.41	1.39	-0.55	6.61	5.52	0.02

Table 2. Factor prices (percentage change from base)

Factors	Doha			Free World Trade	
	Doha Only	Tariff + Quota	Tariff Only	Only	Tariff + Quota
Agriculture labor, skilled	0.38	-3.73	-3.13	2.77	-1.71
Mobile labor, skilled	0.40	-1.15	-1.00	1.59	-0.04
Mobile labor, unskilled	0.64	-1.50	-1.25	2.47	0.22
Capital in agriculture	0.60	-3.40	-2.87	3.28	-1.06
Capital in industry	0.74	-2.15	-1.73	2.69	-0.34
Capital in services	0.34	-1.75	-1.51	1.82	-0.39
Land	0.39	-4.67	-3.48	2.81	-2.58

as the only household category with falling poverty rates under the Doha-only scenario (table 4).

When domestic trade reforms are introduced, nominal income effects are larger and negative (table 3). A clear rural-urban divide emerges as rural

Table 3. Household income and consumer prices (percentage change from base)

	Doha				Free World Trade			
	Only		+Tariff + Quota		Only		+Tariff + Quota	
	Nominal Income	Cons Prices	Nominal Income	Cons Prices	Nominal Income	Cons Prices	Nominal Income	Cons Prices
Urban								
Low-educated salary	0.50	0.42	-1.40	-1.78	2.04	1.81	0.05	-0.55
High-educated salary	0.33	0.39	-1.08	-1.58	1.38	1.70	-0.10	-0.41
Civil servants	0.35	0.39	-1.20	-1.57	1.49	1.69	-0.14	-0.41
Low-educated self	0.37	0.40	-1.50	-1.73	1.73	1.77	-0.26	-0.52
High-educated self	0.26	0.39	-1.08	-1.58	1.21	1.69	-0.20	-0.42
Family business	0.37	0.38	-1.55	-1.45	1.72	1.64	-0.30	-0.32
Rural								
Low-educated salary	0.42	0.42	-2.87	-1.85	2.45	1.85	-1.09	-0.60
High-educated salary	0.37	0.41	-1.93	-1.73	1.86	1.77	-0.60	-0.53
Civil servants	0.36	0.40	-1.48	-1.64	1.67	1.72	-0.29	-0.46
Low-educated self	0.40	0.42	-2.34	-1.83	2.21	1.83	-0.75	-0.59
High-educated self	0.32	0.40	-1.65	-1.71	1.65	1.75	-0.47	-0.52
Family business	0.40	0.41	-2.28	-1.74	2.18	1.77	-0.69	-0.53

Table 4. Poverty effects

	Doha			Free World Trade	
	Only	+Tariff + Quota	+Tariff Only	Only	+Tariff + Quota
Poverty Headcount					
Urban	-0.02	-0.75	-0.14	-0.09	-0.90
Low-educated salary	-0.08	-0.68	-0.26	-0.41	-1.07
High-educated salary	0.00	-0.91	-0.91	0.00	-0.91
Civil servants	0.23	0.00	0.00	0.99	0.00
Low-educated self	0.00	-0.89	0.00	0.05	-0.89
High-educated self	0.00	-2.88	-2.88	1.48	-2.88
Family business	0.00	0.00	0.18	-0.52	0.00
Rural	0.00	0.83	0.88	-0.39	0.29
Low-educated salary	0.00	1.30	1.30	-0.77	0.66
High-educated salary	0.00	0.00	0.00	0.00	0.00
Civil servants	0.00	-0.26	0.00	0.00	-0.26
Low-educated self	0.00	0.61	0.68	-0.24	0.18
High-educated self	0.00	0.00	0.00	0.00	0.00
Family business	0.00	1.32	1.32	-0.49	0.12
Total	-0.01	0.35	0.57	-0.30	-0.07

households are hit by the greater reduction in agricultural factor prices. These effects are especially strong when domestic tariff removal is combined with the elimination of the rice import quota. Among rural households, those with low-educated heads and family businesses lose most as, unlike the others, they derive little income from mobile labor. While consumer prices fall slightly more in rural areas, the income effect dominates such that it is these same household categories, which also have the highest initial poverty rates, that experience the greatest increase in poverty headcounts (table 4). In contrast, poverty rates tend to fall in urban areas where consumer prices fall more than nominal incomes. This exacerbates the initial gap in poverty headcounts between rural (54%) and urban (24.4%) Philippines. Overall, the poverty headcount increases by 0.35% and the poverty gap and poverty severity by 0.66% and 0.93%, respectively. It is noteworthy that poverty increases more when only domestic tariffs are removed, indicating that the rice quotas are slightly poverty-reducing through the consumer price reductions they entail.

Free World Trade

Under free world trade, world prices and demand vary more than under Doha. Export price variations are larger (ranging up to 4.5%) and more often negative, especially for agriculture and agriculture-related industry. However, as under Doha, it is the variations in world export demand that predominate. These tend to be much larger and more positive than under Doha. Once again,

demand increases more for agriculture-based industries: textiles and garments (49%), meat/fish processing (170%), sugar (188%), and beverages (109%). Import prices also increase more (up to 8%), especially in the agricultural sector, under free world trade.

In the absence of parallel domestic trade reform, rising import prices lead to an increase in output prices, especially for agricultural goods (table 1). As a result, the returns to agricultural factors increase more than others (table 2). The impact on household income and poverty is therefore clearly prurural. We also note that skilled mobile labor wages increase least, as the expanding export-oriented industrial sectors are more intensive in unskilled labor, which explains the much better income and poverty outcomes for household with low-educated heads and family businesses. However, when we incorporate Philippine domestic reform into the free world trade scenario, the antiagriculture bias emerges again, as under the Doha scenario and for the same reasons.

Conclusion

We analyze the poverty effects of various combinations of world (Doha Agreement or free world trade) and domestic (elimination of import tariffs and rice import quotas) trade reforms using the global GTAP model and a Philippine CGE model. Rice is the staple food for about 80% of Filipinos and, as the most important agricultural crop, a major source of income for millions of Filipino farmers. Thus, current trade negotiations, notably concerning the intended elimination of rice import quotas in 2005, are of particular importance.

The impact of the Doha-only scenario on the Philippines is very small, yet biased against the inward-oriented agriculture sector and in favor of unskilled labor-intensive export industries. Philippine trade reform, consisting of the elimination of all tariffs and rice quotas, magnifies the antiagricultural bias and increases poverty. Rural households are hit in terms of increased poverty, whereas urban households see poverty rates decline.

We isolate the impact of the elimination of the rice import quota and observe that this reduces consumer prices and, consequently, poverty rates, especially in urban areas. Thus, based on our analysis, the answer to the question in the subtitle of the paper—"Is Rice Special?"—is "No." Although the elimination of the rice import quota results in a surge in rice imports that compete with local production, the fall in consumer prices outweighs this and result in net positive poverty effects in both rural and urban areas.

A free world trade scenario benefits the Philippines through higher export demand, particularly for unskilled labor-intensive agroindustrial sectors. Furthermore, the increase in agricultural import prices eliminates the bias against agriculture sectors by increasing domestic demand for agricultural goods. Thus, both urban and rural households experience reduced poverty rates, which are concentrated among households with low-educated heads. However, when Philippine trade reform is introduced, the results switch back to the previous biased effects against agriculture and the fall in poverty is reduced.

Endnotes

¹The local price of imports under quota is $P_m = e_r \cdot P_{wm} \cdot (1 + t_m) \cdot (1 + itx) \cdot (1 + rr)$, where e_r = exchange rate; P_{wm} = world price of imports; t_m = tariff rate; itx = indirect tax; and rr = tariff

equivalent. Quota rent to import license holders is $Re = er \cdot Pwm \cdot (1 + tm) \cdot (1 + itx) \cdot rr$.

²Impacts on the traditional palay sector are similar throughout and thus not presented.

Reference

Hertel, T., D. Hummels, M. Ivanic, and R. Keeney. "How Confident Can We Be in CGE-Based Assessments of Free Trade Agreements?" *GTAP Working Paper*, No. 26, 2004.