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Southeast Asia's import demand for skim milk powder: Implications for US exporters

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ABSTRACT

Dairy industries in Southeast Asia are small and produce less than the domestic market demands. As expenditure and population grow in Southeast Asia, it is expected that the expenditures on skim milk powder (SMP) will grow. In this study, we examined the competitiveness of US SMP in the Southeast Asian market with respect to other leading dairy exporters, including the European Union (EU-28), New Zealand, and Australia. Using monthly data from 2006 to 2015, Rotterdam models were used to estimate import demands for SMP in 4 Southeast Asian countries. In a scenario using annual averages from 2013 to 2015 as a baseline, our findings suggest that a 10% reduction in the US price of SMP would cause Indonesia, Singapore, Vietnam, and the Philippines SMP imports from the United States to increase by 3.96, 0.44, 2.68, and 1.94 kt, respectively. Under the same scenario, the value of US SMP imports would decrease for Indonesia, Vietnam, and the Philippines by \$4.12, \$2.93, and \$2.48 million, respectively; however, the value of US SMP to Singapore would increase by \$0.20 million. Singapore and Indonesia expenditures for the US SMP are elastic, which means that as expenditure and population in Southeast Asia continue to grow, a 1% increase in SMP expenditure in Singapore and Indonesia would result in 1.25 and 1.20% increases in US SMP exports.

Key words: skim milk powder, import demand, trade, competitiveness, Southeast Asia

INTRODUCTION

Skim milk powder [SMP; refers collectively to non-fat dry milk (NDM) and skim milk powder except as otherwise stated] was the top dairy product by value imported by Southeast Asia [defined by the USDA Eco-

nomics Research Service as Burma (Myanmar), Brunei, Cambodia, Indonesia, Laos, Malaysia, Philippines, Thailand, Vietnam, and Singapore] in 2015, totaling \$1.6 billion, almost 30% of the region's total dairy import value. [Note: import values throughout this paper are from the Global Trade Atlas (2016; <https://www.gtis.com/gta/>); those discussed in the introduction include imports for Indonesia, Malaysia, Philippines, Thailand, and Singapore. Burma (Myanmar), Brunei, Cambodia, Laos, and Vietnam do not report dairy import values to Global Trade Atlas; therefore, export data from their trading partners are used. Data for trade within the Southeast region (e.g., from Singapore to Vietnam) are included in the totals.] Adjusted for inflation, the value of SMP imports grew by 62% over the decade from 2006 to 2015 (Global Trade Atlas, 2016). The top exporters of SMP to the region in 2015, ranked by import value, were New Zealand, the European Union (EU; specifically the EU-28, even though some of the countries were not members of the EU during part of the period studied), the United States (US), and Australia. In 2006, the same 4 suppliers were at the top of the list but the rank order was different: New Zealand > Australia > US > EU (Table 1).

Southeast Asian countries with significant imports of SMP in 2015 included the Philippines, Indonesia, Malaysia, Singapore, Thailand, and Vietnam. For all of these countries except Singapore, SMP was the top imported dairy product by value; for Singapore, SMP was second after whole milk powder (Global Trade Atlas, 2016). Although all of these countries had significant imports of SMP, market share among suppliers differed substantially from one country to another. For example, the US was the top supplier of SMP to the Philippines, accounting for 35% of the import share (Global Trade Atlas, 2016). At the other end of the spectrum, Singapore's SMP imports from the US made up only 5% of Singapore's total SMP import value (Global Trade Atlas, 2016).

Undoubtedly, price plays an important role in the decision making of SMP importers. Imports among all of the countries are expected to be inversely related to

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the general global price level of SMP. Relationships between prices from one country to another are expected to have effects on the proportions of SMP imported from each country. However, other factors play significant roles as well, including tariffs, nontariff trade barriers, product quality, proximity, and existing business relationships.

This report qualitatively examines trends in SMP imports for 4 Southeast Asian countries: the Philippines, Indonesia, Singapore, and Vietnam. These countries represent 4 of the largest importers of SMP in Southeast Asia. (Other Southeast Asian countries were considered, but Thailand, Myanmar, Brunei, Cambodia, and Laos had very small SMP import volumes or several months of no trade, whereas Malaysia's SMP import demand results did not satisfy basis demand theory.) The US's SMP faces significant competition from other exporting countries. Our analysis takes a closer quantitative look at SMP imports and quantifies each country's sensitivity to prices of the 4 leading global SMP suppliers to the region (New Zealand, the EU, the US, and Australia). The objective of this study was to estimate each of the selected country's import demands for SMP from each major supplier in terms of responsiveness to changes in prices and total expenditures for SMP. Two types of price responses are examined in this study: (1) own-price elasticity, and (2) cross-price elasticity. Own-price elasticity measures the importer's responsiveness to a percentage change in the quantity demanded of SMP due to a percentage change

in the exporters' SMP price. Meanwhile, cross-price elasticity measures a percentage change in SMP import quantity from a particular country corresponding to a percentage change in the export price of another country. Expenditure elasticity measures the exporters' change in quantity of SMP exported to the importing country corresponding to a percentage change in total import expenditures of SMP by the importing country. Using monthly data from the decade of 2006 through 2015, a separate Rotterdam model (Barten, 1964; Theil, 1965) was constructed for each Southeast Asia importing country to quantify expected changes in SMP imports in response to average price changes for all 4 exporting countries combined and changes in prices of each exporting country relative to the others.

DESCRIPTION OF SMP IMPORTS FOR SELECTED COUNTRIES

Figures 1, 2, 3, and 4 display the evolution of SMP imports for the 4 importing countries analyzed in this report (Indonesia, Singapore, Vietnam, and the Philippines) from the 4 major suppliers (EU, New Zealand, Australia, and the US). The US has been a major player in all of the countries' SMP markets except for Singapore; for all countries except Singapore, there has been an upward trend in imports of SMP from the US. For the EU, there has been an upward trend in SMP exports for every country. For Australia, trends have been mixed, with only Indonesia showing a clear up-

Table 1. Southeast Asia dairy product import values by trading partner and product in 2015 and 2006 (in millions of constant 2015 US dollars)¹

Year/trading partner	SMP ²	WMP ³	Infant formula ⁴	Butter and butterfat products ⁵	Other dairy products	Value per trading partner	Percent per trading partner
2015							
New Zealand	532.3	574.2	37.4	28.0	699.1	1,871.0	33.2
EU-28	403.8	86.5	155.1	313.3	386.5	1,345.3	23.9
United States	365.9	47.7	3.0	139.5	173.0	729.2	12.9
Australia	295.4	52.0	13.0	27.6	257.0	645.1	11.4
Rest of world	48.4	65.0	440.3	55.1	439.8	1,048.6	18.6
Value per product	1,645.9	825.6	648.9	563.5	1,955.4	5,639.3	100.0
Percent per product	29.2	14.6	11.5	10.0	34.7	100.0	
2006							
New Zealand	396.4	345.2	16.5	102.2	198.7	1,058.9	29.4
EU-28	97.2	111.5	132.0	51.3	290.4	682.4	18.9
United States	224.0	16.9	0.4	0.8	136.3	378.5	10.5
Australia	260.1	189.5	24.8	54.1	221.4	749.9	20.8
Rest of world	36.3	230.7	164.2	11.0	293.2	735.4	20.4
Value per product	1,014.0	893.8	337.9	219.5	1,140.0	3,605.1	100.0
Percent per product	28.1	24.8	9.4	6.1	31.6	100.0	

¹Source: Global Trade Atlas (2016; <https://www.gtis.com/gta/>).

²SMP (skim milk powder) includes products exported under Harmonized Schedule (HS) number 040210.

³WMP (whole milk powder) includes products exported under HS numbers 040221 and 040229.

⁴Infant formula includes products exported under HS number 190110.

⁵Butter and butterfat products include products exported under HS number 0405.

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