Chapter 9

Myanmar

September 2019

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Chapter 9

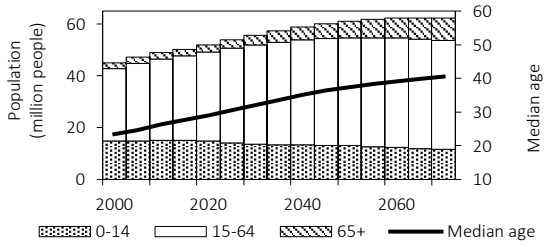
Myanmar

1. Social and Economic Conditions

Population and Per Capita GDP

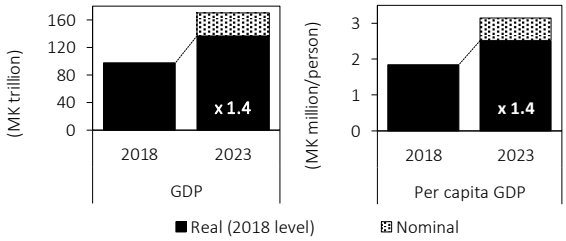
The population in Myanmar, 54 million people in 2018, accounts for 8% of the total population of the ASEAN region, placing it fifth amongst the ASEAN countries. It is expected to reach 62 million people by 2050 (Figure 9.1). The working-age people, between 15 and 65, are the majority of the country's population, and their numbers are expected to steadily increase until 2050. This trend may imply long-term economic growth. Although Myanmar's population is middling in size compared with the populations of the other ASEAN states, the country's strong prospect of population and economic growth suggests a high potential as a consumption market for agri-food products.

Figure 9.1. Population by Age Group, 2000–2060



Source: United Nations Department of Economic and Social Affairs (UN DESA, 2017).

Figure 9.2. Changes in GDP and Per Capita GDP, 2018 and 2023

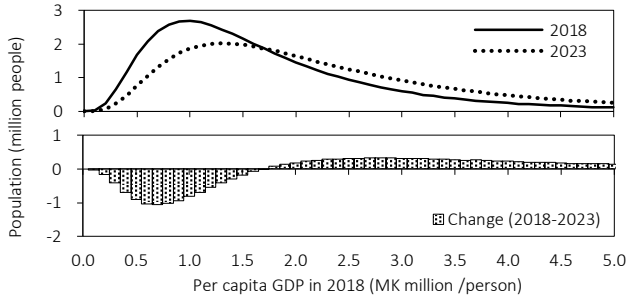


MK = kyats (Myanmar currency).
GDP = gross domestic product,
Source: Estimates based on data from the International Monetary Fund (IMF, 2018).

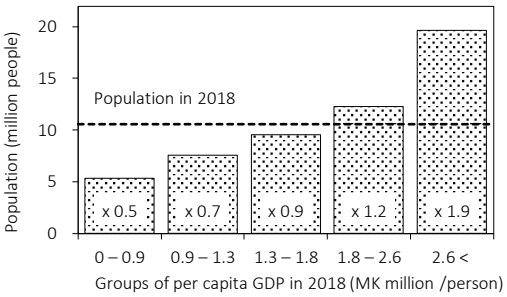
Real GDP and per capita real GDP are both expected to increase rapidly by 1.4 times from 2018 to 2023, (Figure 9.2). According to a projection of Myanmar's population based on the level of per capita GDP (Figure 9.3, Appendix 3.1), as per capita GDP approaches MK1.7 million, a boundary is crossed whereby the number of people whose annual contributions to GDP are below that value will decrease. By contrast, the number of people with per capita GDP above MK1.7 million will increase across a wide range of the distribution. In particular, the population with personal incomes above MK2.6 million (i.e. the 80th percentile) will expand by 1.9 times by 2023. This projection implies a rapid increase in the number of high-income people. It will thus be necessary to establish a system for supplying agri-food products to match the demand of this rapidly growing upper-income bracket.

Figure 9.3. Estimated Population of Myanmar by Per Capita GDP, 2018 and 2023

A. Distribution of Population Changes



B. Population Divided into Five GDP Groups



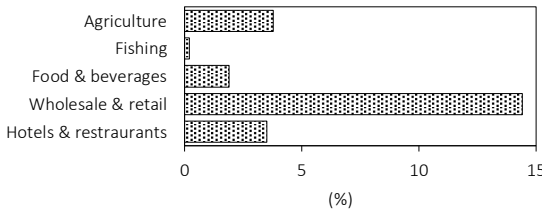
MK = kyats (Myanmar currency).
GDP = gross domestic product.
Note: The per capita GDP is based on constant 2018 prices. The bars in Figure B show the estimated populations of the GDP groups in 2023. The numbers in the bars show the changes in these populations from 2018 to 2023.
Source: Appendix 3.1.

The VA of FVC-related Industries

The VA of the wholesale and retail trade sectors has been a major component of Myanmar's GDP; for instance, it accounted for about 14% of GDP in 2015 (Figure 9.4). Meanwhile, VA of the other FVC-related sectors, including agriculture, was comparatively small.

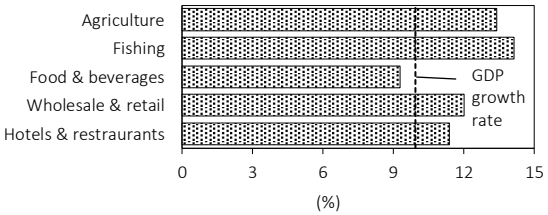
The annual growth rates of real VA in the fishing and agriculture industries were high, averaging 13% –14% during 2000–2015, followed by the growth rates for the wholesale/retail and hotel-and-restaurant industries (Figure 9.5). The growth rates of the FVC-related industries were higher than the GDP growth rate, except for the food and beverage sector, which averaged about 9%. While the proportion of GDP due to the VA of the food and beverage industries shrank, the proportions of GDP due to the VA of most FVC-related industries expanded, especially those for fishing and agriculture.

Figure 9.4. The Proportion of VA in GDP, 2015



GDP = gross domestic product, VA = value added.
Sources: Estimates based on data from Eora (2018).

Figure 9.5. Average Annual Change in Real VA, 2000–2015



GDP = gross domestic product, VA = value added.
Sources: Estimates based on data from Eora (2018) and the Internatioanl Monetary Fund (IMF, 2018).

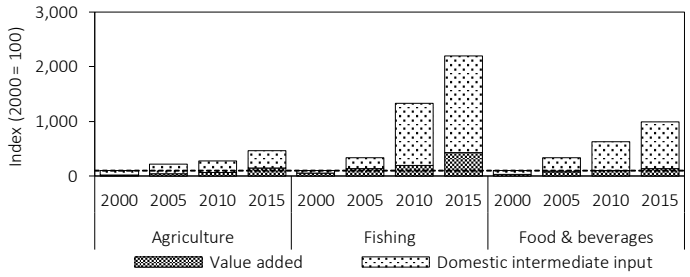
The production values of the agriculture, fishing, and food-and-beverage industries increased drastically during 2000–2015, with those of agriculture increasing by 5 times, those of fishing by 21 times, and those of food and beverages by 9 times (Figure 9.6). The part of production value due to

the VA (i.e. the VA rate) of these three industries remained low after 2010, at 10%–30%, unlike the VA rates for the same industries in the other ASEAN countries covered in this report (Figure 9.7). By 2015, the VA rate of agriculture in Myanmar reached 32%, that of fishing reached 20%, and that of the food and beverage sector reached 14%. All three industries were highly dependent on intermediate inputs from within their sectors and from other, related sectors; and their production did induce to a large degree further production within those same industries.

The growth trend in the VA rate of agriculture suggests a decrease in that industry's use of intermediate inputs. Such a change may have been caused by an increase in the number of products with lower cost of sales to revenue ratios, an improvement in the efficiency of the product mix, and/or technical progress that resulted in savings on inputs.

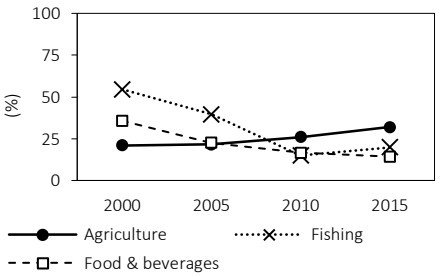
The trend toward lower VA rates in the fishing and food-and-beverage industries during 2000–2010 may indicate a change in the production structure that included the further use of intermediate inputs or a strengthening of ties with other industries.

Figure 9.6. Values of Domestic Production, 2000–2015



Note: The results in the figure are based on real values.
Sources: Estimates based on Eora (2018) and the International Monetary Fund (IMF, 2018).

Figure 9.7. VA Rates, 2000–2015



VA = value added.
Sources: Estimates based on data from Eora (2018).

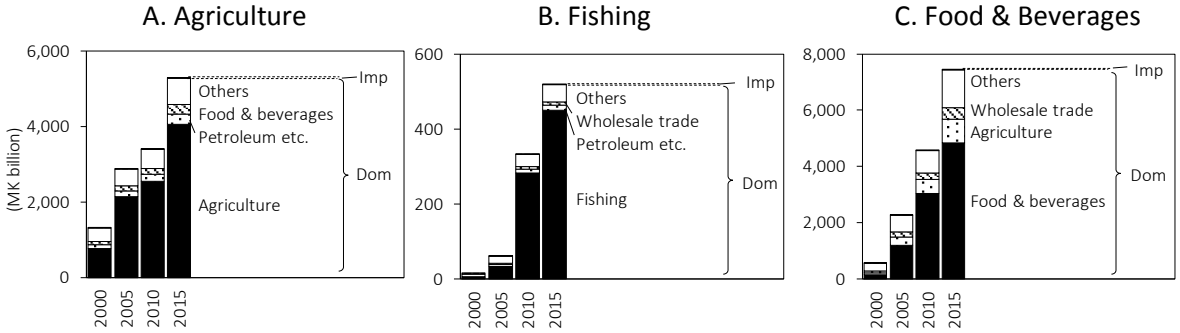
Intermediate Inputs in Agri-food Industries

Figure 9.8 shows which industries contributed to the growth of the agriculture, fishing, and food-and-beverage industries from 2000 to 2015. Intermediate inputs into all three agri-food production sectors came mostly from domestic sources, and increased drastically during that period. It is worth noting that Myanmar rarely imported intermediate inputs for agri-food production.

Myanmar's input structure largely differed from those of the other ASEAN countries. Most of the intermediate inputs for agriculture, fishing, and food and beverages came from within those same sectors.

The fact that, as in Malaysia, the food and beverage industries in Myanmar supplied most of their own intermediate inputs suggests that the development of this sector was largely driven by the supply of processed foods, rather than raw agricultural products. The growth of the food and beverage industries in Myanmar induced a certain degree of development in agriculture through the industries' demand for intermediate inputs.

Figure 9.8. Sources of Intermediate Inputs, 2000–2015

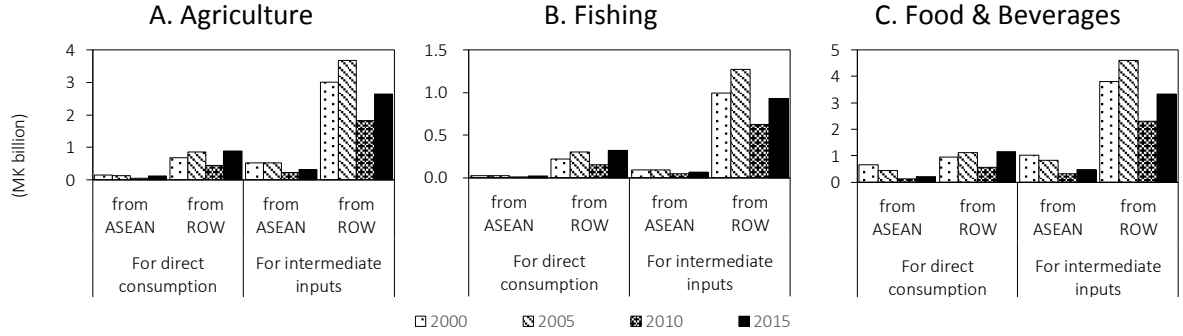


MK = kyats (Myanmar currency).
Dom = domestic supply, Imp = imports.
Notes: The values in these graphs are based on constant 2015 prices. 'Petroleum etc.' refers to the petroleum, chemical, and non-metallic mineral product industries.
Sources: Estimates using data from Eora (2018) and the International Monetary Fund (IMF, 2018).

The value of imports from foreign agricultural, fishing, and food-and-beverage sectors hovered around the same levels between 2000 and 2015, and was very limited compared with the value of domestic production (Figure 9.9). The value of imported agricultural, fishery, and food-and-beverage products for use as intermediate inputs was larger than that destined for direct consumption. In other words, Myanmar was more of an importer of raw materials than of final goods.

Imports from the other ASEAN countries were very limited compared with those from the ROW. We can conclude that, as an importer, Myanmar had stronger linkages with the ROW than with the ASEAN region, although even these linkages did not develop to a significant degree.

Figure 9.9. Values of Imports, by Purpose, 2000–2015



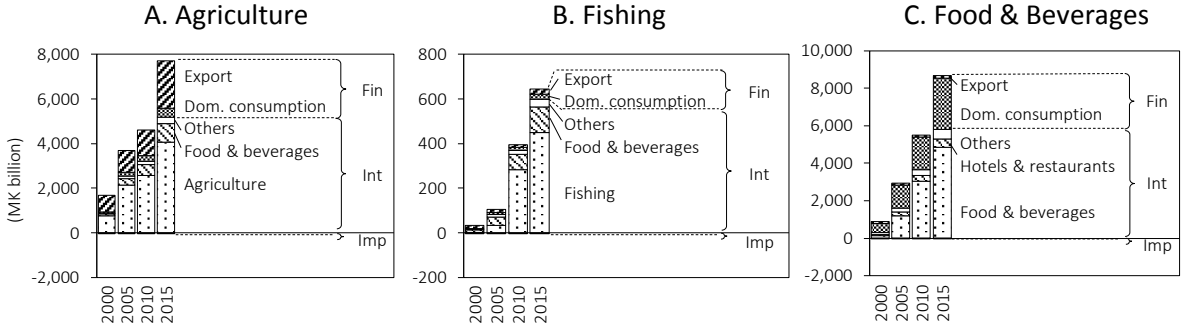
MK = kyats (Myanmar currency).
ASEAN = Association of Southeast Asian Nations, ROW = rest of the world.
Notes: The values of imports shown in these graphs are based on constant 2015 prices. They include imports from foreign agricultural, fishing, and food-and-beverage sectors destined for domestic final consumption and for use as intermediate inputs in all domestic industries.
Sources: Estimates based on data from Eora (2018) and the International Fund (IMF, 2018).

Destinations of Products of Agri-food Industries

Interindustry and intra-industry transactions in Myanmar had special characteristics during 2000–2015, compared with those of the other countries covered in this report. Intra-industry transactions

accounted for the majority product flows in the agriculture, fishing, and food-and-beverage industries (Figure 9.10). Interindustry transactions involving product flows from agriculture and fishing to the food-and-beverage industries, and from the food-and-beverage to the hotel-and-restaurant industries, gradually increased. The FVC in Myanmar expanded rapidly with regard to intra-industry transactions, but increased only gently with regard to interindustry transactions.

Figure 9.10. Destinations of Domestically Produced and Imported Goods, 2000–2015

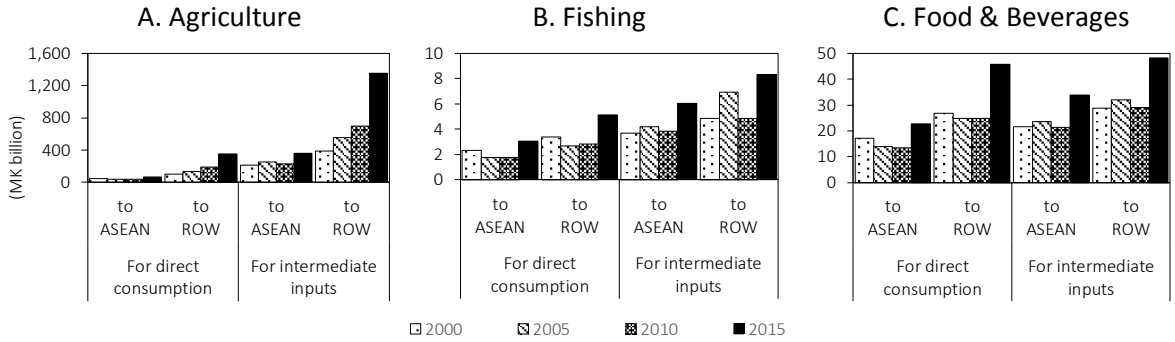


MK = kyats (Myanmar currency).
Dom. = domestic.
Notes: The values in these graphs are based on constant 2015 prices. 'Fin' = final demand for domestic and imported goods, 'Int' = intermediate demand for domestic and imported goods, and 'Imp' = the imports of final and intermediate goods. Total demand = Fin + Int. Domestic production = Fin + Int - Imp.
Sources: Estimates based on data from Eora (2018) and the International Monetary Fund (IMF, 2018).

Both final and intermediate demand grew steadily in the agriculture, fishing, and food-and-beverage industries during 2000–2015. Exports dominated the final demand for agriculture, having increased rapidly. By contrast, exports from the food and beverage industries were very limited in value compared with the goods consumed domestically, although they did jump between 2010 and 2015. Figure 9.11 shows that, between 2000 and 2015, comparatively large quantities of agricultural and fishery products exported from Myanmar were used as intermediate inputs. The destinations of the exports from the food and beverage industries were almost evenly divided between direct consumption and use as intermediate inputs.

The primary destination of agricultural exports was the ROW, so we can conclude that Myanmar was deepening its linkages with the ROW as an exporter of these products. Meanwhile, Myanmar exported similar quantities of goods from the fishing and food-and-beverage industries to other ASEAN countries and to the ROW. With regard to the fishing and food-and-beverage industries, Myanmar contributed to the integration of the ASEAN region, and deepened its global linkages, as well.

Figure 9.11. Values of Exports, by Purpose, 2000–2015



MK = kyats (Myanmar currency).
ASEAN = Association of Southeast Asian Nations, ROW = rest of the world.
Note: The values in these graphs are based on constant 2015 prices.
Sources: Estimates based on data from Eora (2018) and the International Monetary Fund (IMF, 2018).

2. Linkages amongst FVC-related Industries

Final Demand in FVC-related Industries

First, let us see how final demand for domestic FVC-related industries induces the use of intermediate inputs and affects production and VA in each industry.

Table 9.1 shows the composition of final demand during 2000–2015. Final demand was strongest in the retail trade industry, followed by the hotel-and-restaurant, wholesale trade, and food-and-beverage industries. The average annual growth of final demand in the retail trade industry, MK260 billion, outstripped the average rates in all the other FVC-related industries. The growth of final demand in the retail trade industry was driven by household consumption. Similarly, household consumption rapidly increased as a source of final demand in the hotel-and-restaurant, wholesale trade, and food-and-beverage industries. It is worth noting that Myanmar's agricultural exports to both the ROW and the other ASEAN countries accounted for a large portion of final demand in that sector; indeed, the role of exports in final demand in agriculture increased dramatically.

Table 9.1. Final Demand for Products/Services of FVC-related Industries, 2000–2015
(MK billion)

	Domestic production of											
	Agriculture		Fishing		Food & beverages		Wholesale trade		Retail trade		Hotels & restraurants	
Final demand as	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change
Domestic consupmtion												
Household consumption	369	20	19	1	2,655	141	2,170	112	4,744	246	3,460	182
Other consumption	5	0	1	0	37	2	76	4	87	5	46	2
Capital formation	25	1	2	0	38	2	675	39	180	10	0	0
Export												
Export to ASEAN	423	10	9	0	57	1	2	0	2	0	12	0
Export to ROW	1,705	77	13	0	94	2	21	0	10	-1	45	1
Total	2,527	109	44	2	2,880	148	2,945	155	5,022	260	3,562	185
Annual change rate (%)		7.6		5.7		10.8		11.5		11.0		11.1

MK = kyats (Myanmar currency).
ASEAN = Association of Southeast Asian Nations, FVC = food value chain, ROW = rest of the world.
Notes: The values in this table are in constant 2015 prices. 'Change' refers to the average annual changes estimated based on data for 2000–2015.
Source: Appendix 3.2.

Production and VA Induced by Final Demand

Table 9.2 shows sources of intermediate inputs during 2000–2015 that came from domestic and foreign industries, and were destined for use in production in major FVC-related industries in Myanmar. The table indicates that 10% of intermediate inputs in the hotel-and-restaurant industries came from the domestic food-and-beverage industries, and 10% of the inputs in the food-and-beverage industries came from domestic agriculture. This suggests that the hotel-and-restaurant and food-and-beverage sectors can sequentially induce some agricultural production. The table also shows that FVC-related industries in Myanmar rarely used inputs from foreign countries, compared with domestically sourced inputs.

The data in Table 9.2 suggests stability in the country's structure of inter-sector linkages. Meanwhile, the intra-sector linkages could change significantly amongst all the FVC-related industries, other than retail trade, in the medium to long term. In these industries, particularly fishing and food and beverages, the intermediate inputs sourced from within each industry increased sharply, which implies a strengthening of intra-sector linkages. If this structural change continues, the growth of final demand in each FVC-related industry will further drive the development of that industry in the future.

Table 9.2. Sources of Intermediate Inputs in Major FVC-related Industries, 2000–2015

Input from		Domestic production of: Agriculture Share (%)	Agriculture Change	Fishing Share (%)	Fishing Change	Food & beverages Share (%)	Food & beverages Change	Wholesale trade Share (%)	Wholesale trade Change	Retail trade Share (%)	Retail trade Change	Hotels & restraurants Share (%)	Hotels & restraurants Change
Agriculture	Domestic	52	0.31	0	0.00	10	0.08	0	0.00	0	0.00	1	0.05
	ASEAN	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	ROW	0	0.00	0	-0.02	0	0.00	0	0.00	0	0.00	0	0.00
Fishing	Domestic	0	0.00	70	4.51	1	0.00	0	0.00	0	0.00	1	0.02
	ASEAN	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	ROW	0	0.00	0	-0.01	0	0.00	0	0.00	0	0.00	0	0.00
Food & beverages	Domestic	3	-0.08	1	-0.11	56	2.67	0	0.00	1	0.02	10	0.20
	ASEAN	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	ROW	0	0.00	0	-0.03	0	0.00	0	0.00	0	0.00	0	0.00
Wholesale trade	Domestic	2	-0.11	2	-0.30	5	-0.25	22	1.30	1	-0.01	5	-0.01
	ASEAN	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	ROW	0	0.00	0	-0.01	0	0.00	0	0.00	0	0.00	0	0.00
Retail trade	Domestic	0	-0.02	0	-0.06	0	-0.01	0	0.00	0	0.00	1	-0.01
	ASEAN	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	ROW	0	0.00	0	-0.01	0	0.00	0	0.00	0	0.00	0	0.00
Hotels & restraurants	Domestic	0	0.00	0	0.00	0	-0.01	0	0.00	0	0.01	11	0.63
	ASEAN	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
	ROW	0	0.00	0	-0.01	0	0.00	0	0.00	0	0.00	0	0.00

ASEAN = Association of Southeast Asian Nations, FVC = food value chain, ROW = rest of the world.
Notes: 'Share' refers to the intermediate inputs as a percentage of total inputs in 2015. 'Change' refers to the average annual changes in the shares as estimated based on data for 2000–2015.
Source: Appendix 3.2.

Table 9.3 shows the VA directly and indirectly boosted by a 1% increase over the 2015 value in final demand for domestic products and services through an increase in domestic production and intermediate inputs. For example, a 1% increase in final demand in the food and beverage sector generated a MK4.4 billion increase in the VA of agriculture, as well as a MK9.5 billion increase in the VA of the food-and-beverage sector itself.

Increases in final demand in downstream sectors of the FVC, particularly in the food and beverage industries, had some impact on the VA of upstream sectors. This result suggests that interventions in the food and beverage industries do contribute to the development of agriculture.

Final demand in downstream industries had a notable effect on the VA of fishing, as the size of the fishing market is very limited. For instance, the amount of VA in the fishing sector induced by a 1% increase in final demand in the food and beverage industries (MK0.57 billion) exceeded VA driven by the final demand in the fishing sector itself (MK0.28 billion). Similarly, the hotel and restaurant industries can also have a measurable effect on fishing. An increase in final demand in these downstream sectors can thus be an effective way to develop the fishing sector.

The inducement effect of final demand in the wholesale and retail trade sectors on the other four sectors discussed above was very small, as is shown in Table 9.3. Meanwhile, Table 9.2 indicates that FVC-related industries, especially the food-and-beverage and hotel-and-restaurant industries, did depend on inputs from the wholesale trade industry. It is suggested the services provided by the wholesale/retail trade sectors are necessary, but alone not sufficient, to automatically drive the development of the FVC-related industries.

Table 9.3. VA Induced by a 1% Increase in Final Demand, 2015

(MK billion)

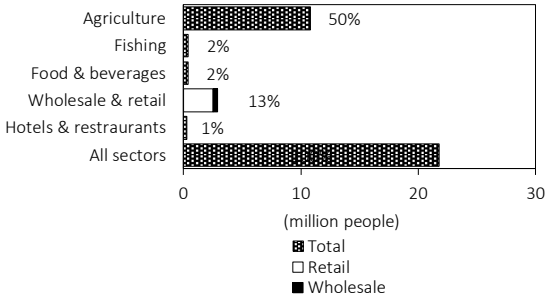
	1% increase in final demand for					
Induced value added in	Agriculture	Fishing	Food & beverages	Wholesale trade	Retail trade	Hotels & restraurants
Agriculture	17.26	0.00	4.39	0.04	0.13	0.98
Fishing	0.04	0.28	0.57	0.00	0.03	0.22
Food & beverages	0.57	0.01	9.50	0.02	0.16	1.34
Wholesale trade	1.51	0.03	3.53	23.06	0.95	2.35
Retail trade	0.15	0.00	0.16	0.10	39.66	0.54
Hotels & restraurants	0.05	0.00	0.14	0.09	0.14	20.69

MK = kyats (Myanmar currency).
VA = value added.
Source: Appendix 3.2.

The Relationship amongst the Number of Employees, Per Capita Compensation, and Production

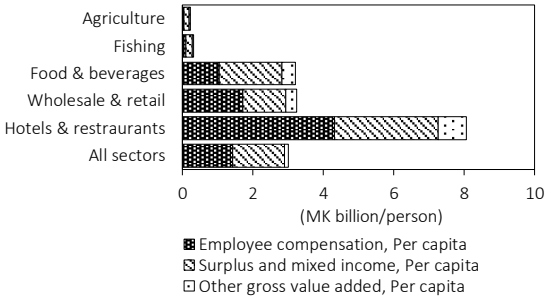
Now let us consider how an increase in production relates to changes in the number of employees and per capita employee compensation in an industry. According to figures 9.12 and 9.13, the agricultural sector in 2015 was characterized by a considerably large number of employees, low labour productivity, and low per capita compensation compared with other FVC-related industries. By contrast, the food and beverage industries had a limited number of employees, and the same levels of labour productivity and per capita compensation as the average levels in Myanmar.

Figure 9.12. Number of Employees, by Sector, 2015



Sources: International Labour Organization (ILO, 2019); Appendix 3.3.

Figure 9.13. Gross VA per Capita, by Sector, 2015



MK = kyats (Myanmar currency).
VA = value added.
Sources: Estimates based on data from Eora (2018) and the International Labour Organization (ILO, 2019); Appendix 3.3.

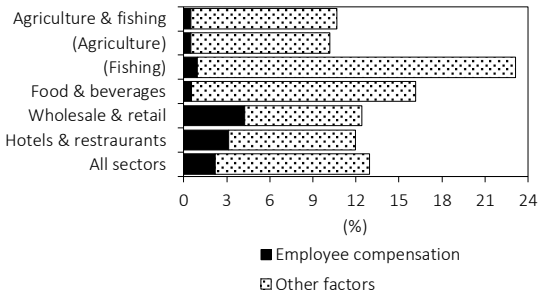
Figure 9.14 illustrates the relationship amongst the number of employees, per capita compensation, and production during 2000–2015. Figure 9.14 A depicts the proportion of the average annual rate of change in production in each sector that was attributable to total employee compensation. The values in the figure differ by industry. For instance, there was a rapid increase of production in fishing (22%) and a slower rise of production in agriculture (10%). The contribution of employee compensation to production was about 0.5%–1.0% in the agriculture, fishing, and food-and-beverage industries, whilst that for the wholesale/retail trade and hotel-and-restaurant industries was in a higher range: 3%–4%.

The average annual rates of change in the total value of employee compensation were within the range of 11%–13% in all of the observable FVC-related sectors (Figure 9.14 B). There are two factors that determine the changes in the total value of employee compensation: the number of employees and per capita compensation. In the agricultural sector, the number of employees decreased, while per capita compensation increased. Although the growth rate of total compensation was similar to the rates of other industries, per capita compensation grew faster, accompanied by a decrease in the number of employees. In other sectors, both per capita compensation and the number of employees steadily increased.

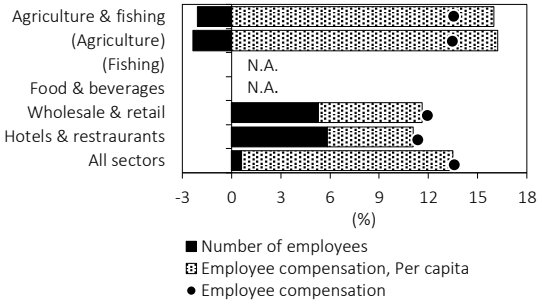
These results suggest the production growth can accompany a rise in per capita compensation in many FVC-related industries, particularly the agricultural sector. Another notable point is the decline in the size of the agricultural workforce. A large number of employees, low-level labour productivity, low per capita compensation, and steep growth in per capita compensation, together with a decrease in the number of employees, all imply the existence of a labour surplus in the agricultural sector. Any interindustry movement of labourers would be deeply connected to the productivity and efficient development of agriculture. The hotel and restaurant industries, which had a remarkably high per capita compensation and a sharp increase in the number of employees, seemed to have been one of the more attractive sectors in terms of labour absorption, although the number of employees was actually very limited.

Figure 9.14. Changes in Production and Employee Compensation, 2000–2015

A. Breakdown of the Average Annual Rates of Change in Production



B. Breakdown of the Average Annual Rates of Change in Employee Compensation



Notes: Other factors include changes in the value added (VA), other than from employee compensation, and changes in intermediate inputs. The data is from selected years during 2000–2015.
Source: Appendix 3.3.

3. Supply–Demand Balance of Agri-food Products

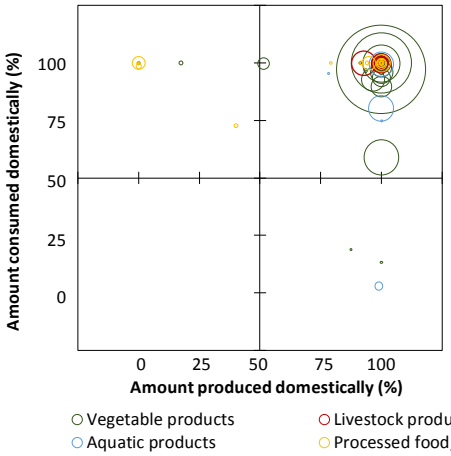
Supply–Demand Structure

Figure 9.15 shows the structure of domestic commerce and foreign trade in 2004–2013. There are two graphs, each of which is divided into four quadrants defined by two criteria: whether agri-food goods were *produced* domestically or in foreign markets and whether they were *consumed* domestically or in foreign markets. In 9.15 A and 9.15 B, the circles are scattered across three of the four quadrants. The circles vary in size according to the volumes produced of the goods they represent. The pattern of circles is the same in both graphs, but the circles in Figure 9.15 A are colour-coded to indicate the agri-food sector, whilst those in Figure 9.15 B are colour-coded to reflect growth rates.

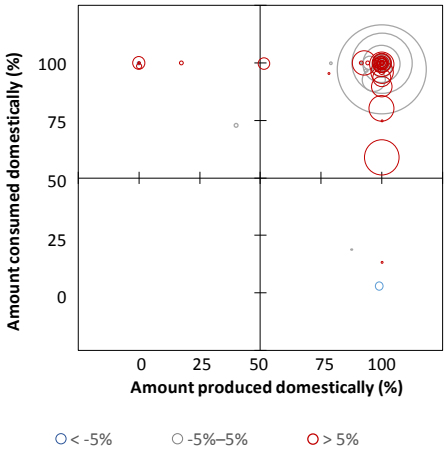
The top side of each graph represents goods that were mostly or completely consumed domestically, and the right side represents goods that were mostly or completely produced domestically. Most of the agri-food products are concentrated in the first (upper-right) quadrant, representing products that were produced and consumed in the domestic market (i.e. domestic-oriented goods). There is also a few circles scattered in the second (upper-left) quadrant, representing goods that were produced in foreign markets and consumed domestically (i.e. import-oriented goods), and in the fourth (lower-left) quadrant, representing goods that were produced domestically and consumed in foreign markets (i.e. export-oriented goods. Circles are unobservable in the third quadrant, representing goods that were imported for re-exportation (i.e. trade-oriented goods). The graphs show that the agri-food industry in Myanmar was domestic-oriented, similar to the agri-food industries in Lao PDR and Cambodia, but with more export activity than in those two countries.

Figure 9.15. Classification of Agri-food Products by Supply–Demand Balance, 2004–2013

A. By IC1 Group, Annual Averages



B. By Average Annual Growth Rate



IC1 = item category level 1, nei = not elsewhere included.

Notes: Each circle represents a Food Balance Sheet (FBS) item as designated by FAOSTAT. The sizes of the circles express the quantity of total supply, with the proportions estimated based on quantitative data. 'IC1' comprises the author's classifications of broad agri-food product categories (see Appendix 2.2). In these graphs, the percentage of goods not produced/consumed domestically are produced/consumed in foreign markets. Data classification: FBS items.

Sources: FAO (2019); Appendix 3.4.

Table 9.4 shows that, during 2004–2013, most agri-food products, particularly cereals (11), oil and sugar crops (12), and vegetables (13), were produced and consumed mainly in the domestic market. A comparatively large quantity of fat and oils (42) was imported, followed by cereals and milk (22). The exportation of vegetables (13), mainly beans, was relatively large. The second- and third-largest export goods were cereals and marine fishes (32), respectively. The supply–demand structure in Myanmar had some peculiar features, such as a high self-sufficiency in milk (22) and a high import dependency for alcoholic beverages (44), unlike the other ASEAN countries covered in this report.

Annual change data indicates a soaring production and domestic supply of vegetables, oil and sugar crops, and cereals. Both the production and domestic supply of meat (21), marine fishes, and freshwater fishes (31) grew to comparatively large volumes. The increases in the importation of processed food, nei—such as fat and oils, sugar, and alcoholic beverages—were notable compared with the changes in the amounts of production of these items.

Table 9.4. Supply–Demand Balance of Agri-food Products, 2004–2013

(1,000 metric tons)

IC1	IC2	2004–2013 average				Average annual change, 2004–2013			
		Production	Domestic supply	Import	Export	Production	Domestic supply	Import	Export
1 Vegetable products	11 Cereals	21,732	20,832	201	636	227	325	21	35
	12 Oil and sugar crops	12,071	12,009	2	64	411	410	0	0
	13 Vegetables	9,826	8,503	7	1,331	475	417	-1	56
	14 Fruits and nuts	2,195	2,147	52	101	77	64	-11	2
	15 Stimulants and spices	155	176	32	12	7	15	7	-1
2 Livestock products	21 Meat	1,694	1,700	6	0	153	154	1	0
	22 Milk	1,363	1,471	107	0	97	90	-7	0
	23 Eggs	315	316	0	0	31	31	0	0
3 Aquatic products	31 Freshwater fishes	1,476	1,469	0	8	135	135	0	0
	32 Marine fishes	1,636	1,318	5	323	149	111	1	39
	33 Crustaceans	149	4	2	147	-16	1	1	-17
	34 Molluscs	0	0	0	0	0	0	0	0
	35 Aquatic animals, nei	9	7	0	2	1	0	0	1
	36 Aquatic plants	0	0	0	0	0	0	0	0
4 Processed food, nei	41 Sugar	1,190	1,213	66	11	27	33	18	1
	42 Fat and oils	865	1,290	426	1	36	61	25	0
	43 Food, nei	0	1	1	0	0	0	0	0
	44 Alcoholic beverages	14	83	71	1	0	18	18	0

IC1 = item category level 1, IC2 = item category level 2, nei = not elsewhere included.

Note: 'IC1' and 'IC2' comprise the author's classifications of broader product categories and more specific groups, respectively (Appendix 2.2). This table is based on an aggregation of all the data available from FAOSTAT's Food Balance Sheet (FBS). Data classification: FBS items.

Sources: FAO (2019); Appendix 3.4.

Table 9.5 shows FBS items (as designated by FAOSTAT) listed in descending order of total supply quantity within each category in 2004–2013, corresponding to the quadrants in Figure 9.15. The products existing in large quantities—such as rice, sugar cane, other vegetables, and beans—are concentrated in the column for domestic-oriented products. Most products are in the cells representing stable or expanding markets of domestic- or import-oriented products.

Beans were notable as a domestic-oriented product by its large quantity of supply and rapid growth. Aquatic products such as marine fishes (other than demersal and pelagic fishes), milk, and pulses (other than beans and peas) were also remarkable for their accelerated growth. With regard to export-oriented products, the supply of minor oil crops rose sharply, while that of crustaceans dramatically decreased. Palm oil, followed by beer and coffee, are examples of rapidly expanding import-oriented products during that period.

Table 9.5. Total Quantities of Supply for Product Categories, in Descending Order, 2004–2013

(1,000 metric tons)

Category		Domestic-oriented			Export-oriented			Import-oriented			Trade-oriented		
Provided by		Domestic market			Domestic market			Foreign market					
Consumed in		Domestic market			Foreign market			Domestic market			Foreign market		
Change	Rank	IC2	FBS items	Quantity	IC2	FBS items	Quantity	IC2	FBS items	Quantity	IC2	FBS items	Quantity
Annual change rate, 2004–2013 (%) r > 5 Expanding	1	13	Beans	3,058	12	Oilcrops, other	11	42	Palm oil	393			
	2	32	Marine fish, other	1,632				44	Beer	65			
	3	31	Freshwater fish	1,476				15	Coffee and products	34			
	4	22	Milk - excluding butter	1,471				11	Barley and products	19			
	5	13	Pulses, other and products	1,241				44	Wine	2			
-5 < r < 5 Stable	1	11	Rice (milled equivalent)	19,654	15	Spices, other	7	41	Sugar (raw equivalent)	40			
	2	12	Sugar cane	9,004				14	Apples and products	4			
	3	13	Vegetables, other	3,457				43	Infant food	1			
	4	14	Fruits, other	1,341				15	Cocoa beans and products	0.9			
	5	13	Onions	1,008				21	Meat, other	0.5			
r < -5 Shrinking	1	42	Ricebran oil	70	33	Crustaceans	151	42	Oilcrops oil, other	26			
	2							42	Palmkernel oil	1			
	3												
	4												
	5												

FBS = Food Balance Sheet (FAOSTAT), IC2 = item category level 2, r = average annual change rate.
Notes: The values in this table represent the averages for 2004–2013. Data classification: FBS items.
Sources: FAO (2019); Appendix 3.4.

Trade Prices and Volumes

The export prices of aquatic products such as raw and processed molluscs (34), raw aquatic animals, nei (35), and raw crustaceans (33) were remarkably high during 2014–2016 (Table 9.6). The export values of raw crustaceans were relatively high, compared with the values of these other products. A comparatively large amount of raw marine fishes (32) were also exported at high prices. We can conclude that raw crustaceans and marine fishes that were exported in large quantities had high enough values to induce active trade.

The import prices of some aquatic products (including raw fishes, nei [38]; raw marine fishes; and processed freshwater fishes [31]), raw sugar (41), alcoholic beverages (44), and processed stimulants and spices (15) exceeded those of many other products. The import values of most of these high-priced products were quite small.

It is not clear from Table 9.6 whether primary or processed products were traded at higher prices. That would have basically depended on the differences between exports and imports, amongst IC2 product groups, and in the composition of the more complex products within each IC2 group. As with the other ASEAN countries, however, it is evident that Myanmar's import prices for sugar and for a few raw aquatic products were higher than those for processed products.

Table 9.6. Prices and Values of Exported/Imported Agri-food Products, 2014–2016

IC1	IC2	Price ($/kg)				Value ($ million)			
		Export		Import		Export		Import	
		Primary products	Processed products	Primary products	Processed products	Primary products	Processed products	Primary products	Processed products
1 Vegetable products	11 Cereals	0.8	0.5	0.3	0.9	439	107	4	187
	12 Oil and sugar crops	1.4	1.0	1.3	1.1	271	1	6	1
	13 Vegetables	1.3	1.8	0.6	1.3	1,138	15	17	6
	14 Fruits and nuts	0.8	1.1	0.8	1.6	234	0.3	43	6
	15 Stimulants and spices	2.8	2.3	3.7	4.4	53	0.5	7	48
2 Livestock products	21 Meat	—	3.4	—	3.9	0.0	0.5	0.0	4
	22 Milk	0.9	—	1.1	2.4	0.0	0.0	9	94
	23 Eggs	—	—	1.5	—	0.0	0.0	0.5	0.0
3 Aquatic products	31 Freshwater fishes	1.8	2.1	1.1	5.2	141	4	0.2	1
	32 Marine fishes	3.1	1.4	5.9	0.2	168	2	3	3
	33 Crustaceans	4.0	1.9	0.4	—	117	15	0.2	0.0
	34 Molluscs	4.0	5.3	2.9	—	22	0.6	0.2	0.1
	35 Aquatic animals, nei	4.8	—	—	3.2	0.2	0.0	0.1	32
	36 Aquatic plants	—	—	3.9	—	0.0	0.0	0.1	0.0
	38 Fishes, nei	2.1	2.6	7.7	3.0	24	6	0.1	0.2
4 Processed food, nei	41 Sugar	2.7	0.8	5.9	1.0	4	349	0.1	503
	42 Fat and oils	—	1.7	—	1.3	0.0	2	0.0	532
	43 Food, nei	—	0.1	—	2.5	0.0	0.6	0.0	100
	44 Alcoholic beverages	—	0.1	—	5.4	0.0	2	0.0	6

IC1 = item category level 1, IC2 = item category level 2, kg = kilogram, nei = not elsewhere included.
Notes: This table shows the averages for 2014–2016. The values indicated for exports are based on 'free on board' (FOB) prices, and those for imports are based on 'cost, insurance, and freight' (CIF) prices. Data category: IC2 groups based on the Broad Economic Categories (BEC) classifications of primary products (11) and processed products (12).
Sources: UNSD (2017); Appendix 3.6.

4. The Competitiveness of Each Product in the ASEAN Region

Commodities Imported by ASEAN Countries

Tables 9.7 and 9.8 provide information about the agri-food products imported by ASEAN countries from Myanmar in 2014–2016. ASEAN countries imported many of these products from Myanmar more cheaply than they did from other ASEAN+6 countries (Table 9.7). Roughly 70%–100% of items in the IC2 groups were imported as low-priced products. Myanmar exported notably more to Thailand and Malaysia than to the other ASEAN states; its next-largest exports went to countries with similar values, except for Brunei, Lao PDR, and Cambodia (Table 9.8).

As shown in Table 9.7, other ASEAN countries imported 2% of the vegetables (13) in the low-price range in 2014–2016, a significantly greater quantity than had been estimated based on approximate lines. Meanwhile, the products imported by other ASEAN countries in smaller quantities than had been estimated are more conspicuous in Table 9.7. Such products include milk (22) and fat and oils (42) in the low-price range; cereals (11) and sugar (41) in low- and mid-price ranges; and food, nei (43), in low- and high-price ranges.

Table 9.7. Prices and Values of Products Imported by ASEAN Countries, by IC2 Group, 2014–2016

IC1	IC2	Price ($/kg)	Value ($ million)	Number of imported products by price ranges (%)			Number of products deviated from approx. lines (%)						Obs.
							Imported larger			Imported smaller			
				Price ranges			Price ranges			Price ranges			
				Low	Mid	High	Low	Mid	High	Low	Mid	High	
1 Vegetable products	11 Cereals	0.9	9	72	14	14	0	0	0	28	7	0	29
	12 Oil and sugar crops	1.1	23	91	0	9	0	0	0	17	0	0	23
	13 Vegetables	1.0	182	85	6	9	2	0	0	7	1	0	85
	14 Fruits and nuts	1.1	11	84	11	5	0	0	0	18	2	2	57
	15 Stimulants and spices	1.7	9	94	3	3	0	0	0	12	3	0	34
2 Livestock products	21 Meat	0.9	0.0	—	—	—	—	—	—	—	—	—	0
	22 Milk	1.8	0.1	100	0	0	0	0	0	57	0	0	7
	23 Eggs	—	—	—	—	—	—	—	—	—	—	—	0
3 Aquatic products	31 Freshwater fishes	1.7	1	100	0	0	0	0	0	0	0	0	12
	32 Marine fishes	2.0	10	89	7	4	0	0	0	7	0	0	28
	33 Crustaceans	6.7	30	70	20	10	0	0	0	3	0	0	30
	34 Molluscs	2.2	8	90	5	5	0	0	0	15	0	0	20
	35 Aquatic animals, nei	1.4	0.1	100	0	0	0	0	0	17	0	0	6
	36 Aquatic plants	0.9	0.0	100	0	0	0	0	0	0	0	0	1
	38 Fishes, nei	2.1	39	95	5	0	0	0	0	24	0	0	21
4 Processed food, nei	41 Sugar	1.2	4	83	11	6	0	0	0	28	6	0	18
	42 Fat and oils	1.1	0.2	100	0	0	0	0	0	38	0	0	8
	43 Food, nei	4.9	1.0	75	0	25	0	0	0	25	0	13	8
	44 Alcoholic beverages	1.4	0.7	100	0	0	0	0	0	25	0	0	8

ASEAN = Association of Southeast Asian Nations, IC1 = item category level 1, IC2 = item category level 2, kg = kilogram, nei = not elsewhere included.

Notes: The prices and values represent the averages for 2014–2016. 'Price' refers to the import price, including cost, insurance, and freight (CIF) added to the tariff established by the ASEAN *Trade* in Goods Agreement (ATIGA). 'Value' refers to the imported value (CIF) without the tariff. See Appendix 3.6 for price ranges and approximate lines. The products for which the externally studentized residual was significantly large or small at the 10% level were counted. 'Obs.' refers to the number of detailed commodities classified according to the Broad Economic Categories (BEC) three-digit category numbers and used for applying approximation lines. Data category: FAOSTAT Commodity List (FCL) and adjusted groups under the International Standard Statistical Classification of Aquatic Animals and Plants (ISSCAAP), classified under BEC 111, 112, 121, and 122.

Sources: UNSD (2017); Appendix 3.6.

Table 9.8. Prices and Values of Products Imported into the ASEAN Region, by Country, 2014–2016

Importer	Price ($/kg)	Value ($ million)	Number of imported products by price ranges (%)			Number of products deviated from approx. lines (%)						Obs.
						Imported larger			Imported smaller			
			Price ranges			Price ranges			Price ranges			
			Low	Mid	High	Low	Mid	High	Low	Mid	High	
Singapore	1.2	24	93	5	2	0	0	0	0	28	1	122
Brunei	1.8	0.3	75	25	0	0	0	0	0	13	0	8
Malaysia	1.3	86	87	6	6	1	0	0	0	9	0	108
Thailand	1.4	108	81	10	9	0	0	0	1	10	5	111
Indonesia	0.7	51	89	6	6	6	0	0	6	11	0	18
Philippines	0.9	10	83	0	17	0	0	0	0	0	0	6
Viet Nam	2.5	50	69	6	25	0	0	0	0	6	0	16
Lao PDR	—	0.0	—	—	—	—	—	—	—	—	—	0
Camboodia	0.9	0.1	100	0	0	0	0	0	0	50	0	2
Myanmar	1.6	0.0	75	0	25	0	0	0	0	0	0	4

ASEAN = Association of Southeast Asian Nations, kg = kilogram, nei = not elsewhere included.

Notes: The prices and values represent the averages for 2014–2016. 'Price' refers to the import price, including cost, insurance, and freight (CIF) added to the tariff established by the ASEAN *Trade* in Goods Agreement (ATIGA). 'Value' refers to the imported value (CIF) without the tariff. See Appendix 3.6 for price ranges and approximate lines. The products for which the externally studentized residual was significantly large or small at the 10% level were counted. 'Obs.' refers to the number of detailed commodities classified according to the Broad Economic Categories (BEC) three-digit category numbers and used for applying approximation lines. Data category: FAOSTAT Commodity List (FCL) and adjusted groups under the International Standard Statistical Classification of Aquatic Animals and Plants (ISSCAAP), classified under BEC 111, 112, 121, and 122.

Sources: UNSD (2017); Appendix 3.6.

Goods Imported in Smaller/Larger Quantities than Estimated Based on Prices: Non-price Competitiveness in the ASEAN Region

Myanmar's vegetable products in the low-price range, especially vegetables (13) such as dried beans, pulses, nes, and bambara beans, tended to be imported in great quantities by other ASEAN countries in 2014–2016, considering their prices (Table 9.9). Regarding aquatic products, crustaceans (33) such as shrimps, prawns, and crabs, nei, and fishes, nei (38), were imported in significantly larger volumes than had been estimated based on their import prices. It might be beneficial to seek opportunities to develop further export markets for these products. Moreover, research on the causes of such active import demand, including production and sales methods, would help identify pathways toward increasing the sales of other items.

Research on the characteristics of the goods actively exported by other countries to Myanmar might also trigger a reconsideration of production and marketing strategies for domestic products that could compete with goods produced by other states in the ASEAN region, for instance: soya paste, miscellaneous aquatic products, and infant food from Malaysia; breakfast cereals from Thailand; sugar confectionery from Viet Nam; and potatoes, nutmeg/mace/cardamons, condensed whey, whole condensed milk, salmons/trouts/smelts, food preparations, nes, and sesame oil from Singapore.[1]

There were also many products for which import quantities were significantly smaller during 2014–2016, considering their prices. Examples included vegetable products in all price ranges; and livestock and aquatic products and processed food, nei, in the low-price range. Although these products were certainly exported to other ASEAN countries, they might not have been as competitive as the same products from other ASEAN and +6 countries. If these items are to be promoted as export goods destined for other ASEAN countries, active and intensive product differentiation will be necessary.

[1] For reference, see tables 2.9 to 9.9. See also Table A4.2 on major exports from the +6 countries.

Table 9.9. Goods Imported by ASEAN Countries in Smaller/Larger Quantities than Estimated Based on Prices, in Ascending Order of P-values, 2014–2016

A. Larger Quantities of Exports than Estimated Based on Prices

IC1	Rank	Price ranges																			
		Low							Mid							High					
		Importer	IC2	BEC	Detailed commodity name	Price ($/kg)	Value ($ million)	p-value	Importer	IC2	BEC	Detailed commodity name	Price ($/kg)	Value ($ million)	p-value	Importer	IC2	BEC	Detailed commodity name	Price ($/kg)	Value ($ million)	p-value
1 Vegetable products	1	IDN	13	112	Beans, dry	1.0	41	0.05													
	2	MYS	13	112	Pulses, nes	1.0	8	0.10													
	3	THA	13	112	Beans, dry	1.1	28	0.13													
	4	PHL	13	112	Bambara beans	0.5	0.2	0.17													
	5	SGP	13	112	Pulses, nes	1.7	2	0.18													
2 Livestock products	1																				
	2																				
	3																				
	4																				
	5																				
3 Aquatic products	1	THA	38	112	Fish and fish products, nei	0.4	22	0.13	MYS	33	112	Shrimps, prawns	6.7	6	0.12	VNM	33	112	Crabs, nei	10.2	0.9	0.11
	2	MYS	33	112	Shrimps and prawns, nei	6.3	2	0.15	THA	33	112	Lobsters, spiny-rock lobsters	17.3	1	0.20							
	3																				
	4																				
	5																				
4 Processed food, nei	1																				
	2																				
	3																				
	4																				
	5																				

B. Smaller Quantities of Exports than Estimated Based on Prices

IC1	Rank	Price ranges																			
		Low							Mid							High					
		Importer	IC2	BEC	Detailed commodity name	Price ($/kg)	Value ($ million)	p-value	Importer	IC2	BEC	Detailed commodity name	Price ($/kg)	Value ($ million)	p-value	Importer	IC2	BEC	Detailed commodity name	Price ($/kg)	Value ($ million)	p-value
1 Vegetable products	1	SGP	13	112	Pumpkins, squash and gourds	0.5	0.000	0.00	THA	15	122	Chocolate products nes	10.0	0.000	0.00	THA	14	122	Juice, plum, single strength	13.0	0.000	0.05
	2	SGP	14	122	Juice, plum, single strength	1.3	0.000	0.00	THA	14	122	Fruit, prepared nes	5.3	0.000	0.00	SGP	14	122	Juice, citrus, single strength	1.6	0.000	0.13
	3	MYS	14	122	Juice, fruit nes	0.6	0.008	0.01	SGP	13	112	Vegetables, fresh nes	2.8	0.000	0.01							
	4	SGP	14	112	Fruit, stone nes	1.4	0.000	0.01	THA	11	122	Pastry	8.7	0.000	0.01							
	5	SGP	11	122	Bread	1.4	0.025	0.02	THA	11	122	Cereals, breakfast	4.8	0.000	0.09							
2 Livestock products	1	SGP	22	112	Milk, whole fresh cow	1.1	0.000	0.00														
	2	SGP	22	122	Milk, whole condensed	1.2	0.000	0.04														
	3	SGP	22	112	Milk, skimmed cow	0.9	0.000	0.06														
	4	THA	22	122	Milk, whole condensed	2.2	0.000	0.09														
	5																					
3 Aquatic products	1	THA	34	112	Molluscs, nei	3.6	0.000	0.00														
	2	SGP	38	122	Fish and fish products, nei	11.0	0.000	0.00														
	3	SGP	38	122	Fish and fish products, nei	1.8	0.022	0.02														
	4	SGP	32	122	Miscellaneous pelagic fishes	1.4	0.000	0.02														
	5	SGP	34	112	Molluscs, nei	6.3	0.000	0.03														
4 Processed food, nei	1	SGP	41	122	Beverages, non alcoholic	1.2	0.000	0.01	THA	41	122	Sugar confectionery	7.0	0.000	0.00	IDN	43	122	Food preparations, nes	50.5	0.000	0.05
	2	BRN	43	122	Food preparations, nes	4.9	0.000	0.01								THA	41	122	Beverages, non alcoholic	5.8	0.000	0.17
	3	SGP	42	121	Fat, nes, prepared	0.9	0.000	0.01														
	4	THA	42	122	Margarine, liquid	7.0	0.000	0.01														
	5	SGP	42	121	Oil, coconut (copra)	1.4	0.000	0.03														

BEC = Broad Economic Categories, United Nations Statistics Division (UNSD), BRN = Brunei, IC1 = item category level 1, IC2 = item category level 2, IDN = Indonesia, kg = kilogram, MYS = Malaysia, nei = not elsewhere included, nes = not elsewhere specified, PHL = Philippines, SGP = Singapore, THA = Thailand, VNM = Viet Nam.

Notes: The values listed in this table represent the averages for 2014–2016. The top five agri-food products within each IC1 grouping are listed in ascending order of p-value < 0.2, under the BEC as follows: primary products mainly for industry (111), primary products mainly for household consumption (112), processed products mainly for industry (121), and processed products mainly for household consumption (122). 'Price' refers to the CIF (cost, insurance, and freight) import price added to the tariff set by the ASEAN *Trade* in Goods Agreement (ATIGA). 'Value' refers to the imported value (CIF) without the tariff. The expression 'p-value' refers to the p-value of the t-stat against the externally studentized residual. See Appendix 3.6. Data category: FAOSTAT Commodity List and the adjusted groups under the International Standard Statistical Classification of Aquatic Animals and Plants (ISSCAAP) classified under BEC 111, 112, 121, and 122.

Sources: UNSD (2017); Appendix 3.6.

Inter-commodity and Inter-country Comparisons of Land/Feed Productivity

The median land productivity of vegetables (13) were the highest of the agri-food products, followed by fruits and nuts (14), in 2011–2015 (Table 9.10). The ratio of the yield is an indicator of comparative advantage in the ASEAN region; that value for all IC2 groups in the category of vegetable products were at similar levels during this period, with the exception of stimulants and spices (15).

Table 9.10. Median Levels of Productivity and Resource Allocation in Each IC2 Group

IC1	IC2	Land productivity (MK million/ha)	Chg (%)	Ratio of the yield Index (Yi/Yi')	Chg (%)	Area harvested (1,000 ha)	Chg (%)	Obs.
1 Vegetable products	11 Cereals	0.8	3	0.8	-1	229	1	6
	12 Oil and sugar crops	0.7	0	0.9	0	197	0	8
	13 Vegetables	3.2	0	0.9	-2	66	1	10
	14 Fruits and nuts	2.7	0	0.8	1	29	2	6
	15 Stimulants and spices	1.4	4	0.6	-1	47	1	4
	Total	1.3	2	0.8	-1	90	1	34
IC1	**IC2**	**Feed productivity (MK million/100 PU)**	**Chg (%)**	**Ratio of the yield Index (Yi/Yi')**	**Chg (%)**	**Producing animals (million PU)**	**Chg (%)**	**Obs.**
2 Livestock products	21 Meat	0.8	—	0.9	—	6	9	9
	22 Milk	0.4	—	0.5	—	6	8	4
	23 Eggs	1.6	—	1.2	—	14	7	2
	Total	0.8	—	0.8	—	6	9	15

MK = kyats (Myanmar currency).

ha = hectare, IC1 = item category level 1, IC2 = item category level 2, PU = unit of pig feed requirements, Yi = yield in Myanmar, Yi' = average yield in other ASEAN countries.

Notes: Land/feed productivity, ratio of the yield, and area harvested/producing animals represent the average values for 2011–2015. 'Chg' refers to the average annual rates of change during 2006–2015 (%). 'Obs.' refers to the number of items in the FAOSTAT Commodity List (FCL). The data on land productivity was deflated to constant 2015 kyat prices. The figures are estimates based on all the FAOSTAT data under the 'Production' rubric. Data category: FCL.

Sources: FAO (2019); Appendix 3.7.

In the IC2 vegetables (13) group, the land productivity and ratios of the yield of garlic, fresh vegetables, nes, and dried onions were higher than for the other products during the same period (Table 9.11). The productivity and ratio of the yield of garlic gradually increased, with a slight expansion in the harvested land area. Meanwhile, the productivity of fresh vegetables, nes, and of dried onions decreased; and their ratios of the yield decreased or stagnated. In the vegetable products category, wheat, coconuts, and areca nuts outstripped the other product groups in their ratios of the yield, and they had relatively high productivity, as well. Similarly, pork and hen eggs had high feed productivity and ratios of the yield compared with those of the other livestock products. Although the harvested land areas or the number of producing animals for the products mentioned above were small (except for fresh vegetables, nes), and were not necessarily increasing, the potential of these products as exports to other ASEAN countries could be high if they became competitive with the same products from those other countries by means of physical productivity.

As shown in the second column from the right in Table 9.11, which lists examples of products imported by other ASEAN countries from Myanmar during 2014–2016 in greater quantities than expected based on their prices, only dried beans had non-price competitiveness or were differentiated from the same item produced by other countries. Agri-food products in Myanmar should be actively improved for the sake of developing the FVC in that country.

Table 9.11. Levels of Productivity and Resource Allocation for Individual Items

No.	IC2	FCL name	Land or feed productivity (MK million/ha or MK million/100 PU)	Chg (%)	Ratio of the yield Index (Yi/Yi')	Chg (%)	Area or producing animals (1,000 ha or million PU)	Chg (%)	Intpn. A	Intpn. B	Items imported larger or smaller compared with the price (p<0.2) Imported larger	in	Imported smaller	in
1	11	Rice, paddy	1.3	3	0.9	-2	7,030	-2	iii	i				
2		Maize	1.1	3	0.9	-1	440	4	iii	i				
3		Wheat	0.8	-3	1.8	-2	98	0	iii	i				
4		Millet	0.3	5	0.7	-3	228	1	iv	iv				
5		Cereals, nes	0.2	8	0.3	6	18	-7	iv	iv				
6		Sorghum	—	—	0.5	0	230	1	—	—				
7	12	Sugar cane	2.0	20	0.9	0	163	1	i	ii				
8		Groundnuts, with shell	1.6	0	0.9	4	926	2	i	ii				
9		Coconuts	1.5	-2	2.0	3	47	0	i	i				
10		Sesame seed	0.7	2	0.7	-2	1,505	1	iv	ii				
11		Sunflower seed	0.7	-4	1.0	-7	505	-5	iii	iii				
12		Soybeans	0.6	-6	0.7	-5	154	-1	iv	iv				
13		Seed cotton	0.1	11	3.0	26	230	-3	iii	iii				
14		Castor oil seed	—	—	1.2	1	15	0	—	—				
15	13	Garlic	8.6	4	1.3	1	29	1	i	i				
16		Vegetables, fresh nes	7.6	-4	1.2	-2	260	2	i	i				
17		Onions, dry	6.6	-2	2.1	0	75	2	i	i				
18		Potatoes	6.5	1	0.9	-1	37	0	i	i				
19		Cassava	4.9	6	0.6	-3	44	10	ii	ii				
20		Sweet potatoes	1.4	1	0.8	-3	7	-1	ii	iv				
21		Beans, dry	1.1	3	1.5	3	2,896	2	iii	iii	Beans, dry	IDN		
22		Peas, dry	0.8	-1	0.2	—	56	2	iv	iv				
23		Pigeon peas	0.6	-5	0.5	-7	632	1	iv	iv				
24		Cow peas, dry	0.5	-7	0.3	-5	137	-4	iv	iv				
25	14	Areca nuts	10.0	0	1.9	4	56	2	i	i				
26		Plantains and others	2.7	3	1.1	2	75	2	i	i				
27		Fruit, fresh nes	1.4	0	0.4	2	360	2	ii	iv				
28		Mangoes, mangosteens, guavas	—	—	0.8	-2	0	3	—	—				
29		Fruit, tropical fresh nes	—	—	0.8	1	1	-1	—	—				
30		Cashew nuts, with shell	—	—	0.5	1	2	10	—	—				
31	15	Coffee, green	1.8	4	0.6	0	12	4	ii	i				
32		Tea	1.4	3	0.7	-1	82	1	ii	i				
33		Chillies and peppers, dry	0.4	4	0.5	-1	112	-2	iv	iv				
34		Spices, nes	—	—	0.1	-2	3	1	—	—				
35	21	Meat, pig	10.2	—	2.3	—	6	6	i	i				
36		Meat, turkey	1.3	—	0.7	—	0	6	ii	ii				
37		Meat, cattle	1.0	—	1.2	—	25	9	i	i				
38		Meat, goose and guinea fowl	0.9	—	0.9	—	1	9	i	i				
39		Meat, goat	0.8	—	1.6	—	8	11	i	i				
40		Meat, buffalo	0.6	—	0.7	—	6	8	iv	iv				
41		Meat, sheep	0.5	—	1.1	—	2	12	iii	iii				
42		Meat, duck	0.5	—	0.7	—	27	9	iv	iv				
43		Meat, chicken	0.5	—	0.8	—	309	10	iii	iv				
44	22	Milk, whole fresh cow	1.1	—	0.4	—	41	7	ii	ii				
45		Milk, whole fresh buffalo	0.6	—	0.5	—	9	-1	iv	i				
46		Milk, whole fresh sheep	0.3	—	0.7	—	0	10	iv	iii				
47		Milk, whole fresh goat	0.2	—	0.4	—	2	11	iv	iv				
48	23	Eggs, hen, in shell	1.9	—	1.4	—	25	7	i	i				
49		Eggs, other bird, in shell	1.3	—	1.0	—	3	7	i	iv				

MK = kyats (Myanmar currency).

FCL = FAOSTAT Commodity List, ha = hectare, IC2 = item category level 2, IDN = Indonesia, Intpn. = interpretation, nes = not elsewhere specified, p = p-value, PU = unit of pig feed requirements, Yi = yield in Myanmar, Yi' = average yield in other ASEAN countries.

Notes: 'Area' refers to the total harvested area, and 'producing animals' refers to the number of producing animals. Land/feed productivity, ratio of the yield, and area harvested/producing animals represent the average values for 2011–2015. 'Chg' refers to the average annual rates of change during 2006–2015 (%). The data on land productivity was deflated to constant 2015 kyat prices. The figures are estimates based on all the FAOSTAT data provided under the 'Production' rubric. In the 'Intpn' column, the codes are as follows: i = both productivity and ratio of the yield are high; ii = productivity is high, but the ratio of the yield is low; iii = productivity is low, but the ratio of the yield is high; and iv = both productivity and ratio of the yield are low. The codes under 'A' reflect the median of the broader product categories in IC1 (item category level 1), and those under 'B' reflect the median of the specific products in IC2 included here. Regarding the items imported in larger or smaller quantities compared with their prices (p<0.2), the names of the FCL items (classified according to the Broad Economic Categories) listed in the table are those with the smallest p-value < 0.2 estimated based on data during 2014–2016. Data category: FCL.

Source: Appendix 3.7.

Table 9.12 shows a positive correlation between the land productivity and ratios of the yield of cereals (11) and vegetables (13) during 2011–2015. In other words, the profitability per unit area of FCL items tended to be high when they had a comparative advantage in terms of physical productivity within the ASEAN region. This did not apply, however, for products in the oil and sugar crops (12) group.

Weak or non-existent correlations are observed between land/feed productivity or ratios of the yield and the extent of harvested areas or number of producing animals for all IC2 product groups. Such results show that most of the land and producing animals in Myanmar were simply not allocated to products characterised by high productivity or competitiveness.

Table 9.12. Correlation Matrix of Comparative Advantage, Productivity, and Resource Allocation, 2011–2015

	Land or feed productivity						Ratio of the yield					
IC2	11 Cereals	12 Oil and sugar crops	13 Vegetables	14 Fruits and nuts	15 Stimulants and spices	21 Meat	11 Cereals	12 Oil and sugar crops	13 Vegetables	14 Fruits and nuts	15 Stimulants and spices	21 Meat
Ratio of the yield	0.70	-0.18	0.71	—	—	0.52	—	—	—	—	—	—
Area or producing animals	0.90	0.04	-0.39	—	—	-0.60	0.40	-0.14	0.05	—	—	-0.12
Obs.	5	7	10	3	3	9	5	7	10	3	3	9

IC2 = item category level 2.
Notes: 'Area' refers to the total harvested area, and 'producing animals' refers to the number of producing animals. This table uses Spearman's rank correlation coefficient of average values during 2011–2015. The values were estimated based on the data for items on the FAOSTAT Commodities List (FCL) relating to land/feed productivity, the ratio of the yield, and the number of producing animals and the land area they used. FCL items with correlation coefficients less than 4 were omitted. 'Obs.' refers to the number of FCL items. Data category: FCL.
Source: Author's calculations, see Appendix 3.7.

5. Summary

Social and Economic Conditions

- Although Myanmar's population is middling in size compared with the populations of the other ASEAN states, the country's strong prospect of population and economic growth suggests a large potential as a consumption market of agri-food products.
- VA of the wholesale and retail trade sectors has been a major component of Myanmar's GDP; for instance, their total VA accounted for about 14% of GDP in 2015. While the proportion of GDP due to the VA of the food and beverage industry shrank, that due to the VA of most FVC-related industries expanded, especially in the case of fishing and agriculture.
- Interindustry and intra-industry transactions in Myanmar had special characteristics compared with those in the other countries covered in this report. Most products of the agriculture, fishing, and food-and-beverage industries were destined for intra-industry transactions. The FVC in Myanmar expanded rapidly with regard to intra-industry transactions, while inter-industry transactions increased only gently.

Linkages amongst FVC-related Industries

- The increase in final demand in downstream sectors of the FVC, particularly the food and beverage industries, had an impact on the VA of upstream sectors. This result suggests that interventions into the food and beverage industries do contribute to the development of agriculture.
- The effects of downstream industries on the VA of fishing was notable, as the size of the fishing market is very limited. It is also suggested that the services provided by the wholesale/retail trade sectors are necessary, but alone not sufficient, to automatically drive the development of the FVC-related industries.
- Production growth can accompany a rise in per capita employee compensation in many FVC-related industries, particularly agriculture.
- The hotel and restaurant industries, which had remarkably high per capita compensation and a sharp increase in the number employees, seem to have been one of the more attractive sectors in terms of labour absorption, although the number of employees was actually very limited.

Supply–Demand Balance of Agri-food Products

- Most agri-food products, particularly cereals, oil and sugar crops, and vegetables, were mainly produced and consumed in the domestic market. However, a comparatively large quantity of fat and oils was imported, followed by cereals and milk. Exports of vegetables consisted mainly of beans, and the quantity was remarkably large. The second- and third-largest export goods were cereals and marine fishes, respectively. Even though cereals are mainly produced/consumed at home, the little that's produced/consumed in foreign markets are in large enough volumes to rank high compared with other exports and imports. The supply–demand structure in Myanmar had some unique features, such as a high self-sufficiency in milk and a high dependency on imports for alcoholic beverages, unlike the other ASEAN countries covered in this report.
- The export prices of aquatic products—such as raw and processed molluscs; raw aquatic animals, nei; and raw crustaceans—were remarkably high. A noticeable amount of raw marine fishes were also exported at high prices. And the export values of raw crustaceans were relatively high. We can conclude that raw crustaceans and marine fishes exported in large volumes had high enough values to induce active trade.

The Competitiveness of Each Product in the ASEAN Region

- Myanmar's vegetable products in the low-price range—especially vegetables such as dried beans; pulses, nes; and bambara beans—tended to be imported in great quantities by other ASEAN countries in 2014–2016, considering to their prices. Among the aquatic products, crustaceans (such as shrimps, prawns, and crabs, nei) and fishes, nei, were imported in significantly larger quantities than had been estimated based on their import prices.
- Research on the characteristics of the goods actively exported by other ASEAN countries to Myanmar might trigger a reconsideration of production and marketing strategies for domestic products that could compete with goods produced by other ASEAN states, for instance: soya paste, miscellaneous aquatic products, and baby food from Malaysia; breakfast cereals from Thailand; sugar confectionery from Viet Nam; and potatoes, nutmeg/mace/cardamons, condensed whey, whole condensed milk, salmons/trouts/smelts, food preparations, nes, and sesame oil from Singapore.

- In the vegetables group, land productivity and ratios of the yield were higher for garlic, fresh vegetables, nes, and dried onions than for the other products. Within the overall vegetable products category, wheat, coconuts, and areca nuts outstripped the other products in their ratios of the yield; and they had relatively high land productivity. Similarly, pork and hen eggs had high feed productivity, and their ratios of the yield were comparable with those of most other livestock products. The potential of these products as exports to other ASEAN countries could be high if they became competitive with the same products from those other countries by means of greater physical productivity.