Financial Support

Potential Sub-Sectors and Factors for Diversification in Agriculture and Agro-Processing Industry in Cambodia

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Outline

1 This Paper

2 Model

3 Data

4 Some Results

This Paper

- ▶ What I Do
 - Explore to identify key factors or sub-sectors in agriculture and agro-processing that the Agricultural and Rural Development Bank should focus on providing financial support.
- Main Research Question
 - What are the sub-sectors and factors in agriculture and agro-processing industry that the Agricultural and Rural Development Bank should support financially?

This Paper

► Sub-Research Question:

- Why is the diversification of agricultural products essential in the Cambodian context?
- **2** What products of the agriculture and agro-processing industry have the potential to develop?
- **3** What are the essential factors to stimulate production in the agriculture and agro-processing industry sectors?
- What are the critical factors in the agriculture and agro-processing industry that require financial support?
- **5** What types of policies are necessary for the Agricultural and Rural Development Bank to respond to sustainable development in agriculture and agro-processing industry?

- ▶ Before the Leontief analysis, we need to have the IOT or the SUT.
 - In this model, we assume that input or comsumptation (C) = output or production (P).

$$C = P \tag{1}$$

■ Thus, when we know the ValueAdded (GVA_{MP}), ValueOutput of each product, we will know the IntermediateConsumption (IC).

$$GVA_{MP} = P - IC (2)$$

■ When we do not know P, it equals to:

$$P = NVA_{FC} + FV + NIT (3)$$

NIT

$$NIT = GST - Subsidy (4)$$

$$GVA_{MP} = NVA_{FC} + FV + (GST - Subsidy)$$
 (5)

Were NVA_{FC} = Net value added at factor cost, FV = Depreciation, NIT = Negative income tax, GST = Goods and services tax

Or Total output of each product:

$$Output = IC + HFCE + NPISH + GFCE + GFCF + CI + X (6)$$

Where HFCE = Households final consumption expenditure, NPISH = Non-profit organisations serving household, GFCE = General government final consumption expenditure, CFCF = Gross fixed capital formation, CI = Changes in inventories, X = Export

- ► Some advice from I/O experts:
 - Antonio F. Amores and Jose M. Rueda-Cantuche:
 - Building a supply-use or input-output framework is a highly complex major statistical operation that requires lots of expertise to reconcile are data sources.
 - They suggest using the Cambodian table embedded in any multiregional input-output database (i.e. GTAP, ASEAN and EORA). Is better than what anyone can build with very limited data, resources and expertise.
 - Jan Oosterhaven:
 - To build an IOT or SUT from the meager data you indicate is very difficult.
 - Most importantly imports and exports. No data on (IC) you need to select a group of countries is economically similar to Cambodia and use the CRAS method. It's like Mike, Bong Theara and Bong Keo Chettra (NIS) adivced.

■ Keo Chettra:

- There are no words to get enough data in the analysis, but the question is how to use the data we have in the analysis.
- It requires extensive knowledge in mathematics and statistics (econometrics).
- Diversification: Should focus on market.
- ▶ But, we can not access *IC* data of each products in the agricultural sector.
 - In Cambodia, we have the IOT by ADB between 2010-2017 with 35 sectors. Our Sothea, the IOT in 2003 with 20 sectors (8 agricultural sectors).
- ▶ I am now waiting for the NIS and MAFF data.

New Model: Power Market

▶ Market Participants and Shares: The Herfindahl-Hirschman Index (HHI) is a common measure of market concentration and is used to determine market competitiveness, often pre- and post-Mergers and Acquisitions (M&A) transactions.

$$HHI = \sum_{i=1}^{N} s_i^2; HHI^* = \frac{(HHI - 1/N)}{1 - 1/N}; i = 1, ..., n$$
 (7)

$$s_i = \frac{AR_i}{D}100; N > 1 \tag{8}$$

Wher N = Number of market participants; $s_i = \text{Market share of participan } i$, D = Total system demand, $AR_i = \text{Resource}$ allocated to participant i.

New Model: Power Market

- An HHI below 0.01 (or 100) indicates a highly competitive industry.
- An HHI below 0.15 (or 1,500) indicates an unconcentrated industry.
- An HHI between 0.15 to 0.25 (or 1,500 to 2,500) indicates moderate concentration.
- An H above 0.25 (above 2,500) indicates high concentration.
- ➤ The corresponding disadvantage is that concentration is about relative revenue and thus includes no information about costs or profits.

New Model: Price Estimation

▶ I will use the ARIMA model (Autoregressive integrated moving average) model for price forecasting in agriculture. Many statistical studies have suggested that the model is the most accurate of individual forecasting techniques.

$$\left(1 - \sum_{i=1}^{p'} \alpha_i L^i\right) X_t = \left(1 + \sum_{i=1}^q \theta_i L^i\right) \varepsilon_t \tag{9}$$

Where L is the lag operator, the α_i are the parameters, of the autoregressive part of the model, the θ_i are the parameters of the moving average part and the ε_t are error terms.

▶ Data: I will use the MAFF agricultural price (Monthly Market Report) in 2007-2020.

New Model: Potential Products based on Input

- ▶ I will use the Fixed effect model or OLS model, or GMM model (Generalized method of moments) to understand relationship between input and output.
- ▶ Data: Production output, Agricultural land, Producer prices, FDI in agriculture, Credit to agriculture, Subsidy to agriculture, Labour costs, Labour participation, Pesticide use, Fertilizer use, Agricultural tractors, Temperature change.

Data

Table 1: Descriptive Statistics of Gross Agricultural Production in 1959-2018 in Million USD

Code	Commodity		195	9-1988		1989-2018				1959-2018			
	Commonly	Min	Mean	Max	St. Dev.	Min	Mean	Max	St. Dev.	Min	Mean	Max	St. Dev
C01	Bananas	11.95	22.80	34.77	6.08	24.34	29.88	34.55	2.38	11.95	26.34	34.77	5.82
C02	Cassava	3.30	11.88	66.19	13.72	12.76	770.63	2926.18	991.71	3.30	391.25	2926.18	797.35
C03	Castor oil seed	0.01	0.13	0.44	0.14	0.15	0.17	0.18	0.01	0.01	0.15	0.44	0.10
C04	Coconuts	4.79	11.72	16.31	2.79	15.31	20.72	25.83	3.01	4.79	16.22	25.83	5.30
C05	Cotton lint	0.04	2.14	11.71	3.36	0.11	0.11	0.13	0.01	0.04	1.13	11.71	2.58
C06	Cottonseed	0.01	0.38	2.09	0.60	0.01	0.02	0.02	0.00	0.01	0.20	2.09	0.46
C07	Dry beans	5.80	11.69	19.83	2.96	5.31	23.82	50.14	15.99	5.31	17.76	50.14	13.00
C08	Dry chillies and peppers	1.85	2.83	3.60	0.46	3.42	4.72	5.92	0.72	1.85	3.78	5.92	1.13
C09	Fibre crops nes	0.18	0.63	1.37	0.41	0.25	0.41	0.52	0.09	0.18	0.52	1.37	0.33
C10	Fresh nes fruit	3.67	8.78	14.70	3.56	15.07	22.52	27.93	4.41	3.67	15.65	27.93	7.9
C11	Fresh nes vegetables	120.51	161.75	183.22	17.85	171.77	191.73	239.71	16.56	120.51	176.74	239.71	22.83
C12	Grapefruit and pomelos	0.26	0.94	2.78	0.74	0.48	0.63	0.72	0.07	0.26	0.78	2.78	0.5
C13	Green coffee	0.02	0.87	2.31	0.69	0.58	1.12	1.43	0.27	0.02	0.99	2.31	0.5
C14	Groundnuts with shell	0.60	8.12	18.33	5.22	2.14	11.66	21.62	7.07	0.60	9.89	21.62	6.46
C15	Jute	0.02	0.31	0.95	0.23	0.02	0.08	0.24	0.07	0.02	0.19	0.95	0.2
C16	Lemons and limes	0.09	0.49	1.50	0.48	0.25	0.48	0.64	0.12	0.09	0.48	1.50	0.3
C17	Maize	5.17	14.60	33.48	7.68	5.78	43.79	129.49	39.45	5.17	29.20	129.49	31.95
C18	Mangoes, mangosteens and guavas	1.56	6.13	12.77	3.43	4.67	9.86	15.67	3.48	1.56	7.99	15.67	3.93
C19	Natural rubber	1.15	5.97	12.22	3.53	3.28	6.86	10.42	2.14	1.15	6.41	12.22	2.9
C20	Nuts nes	0.07	0.17	0.23	0.05	0.15	0.30	0.40	0.08	0.07	0.24	0.40	0.1
C21	Oilseeds nes	1.28	4.22	8.55	2.39	0.43	1.14	3.42	1.04	0.43	2.68	8.55	2.4
C22	Oranges	22.56	37.54	50.75	7.49	47.37	67.26	73.59	8.75	22.56	52.40	73.59	16.9
C23	Paddy rice	74.74	279.89	529.88	110.94	308.56	798.72	1535.96	396.98	74.74	539.31	1535.96	390.1
C24	Pepper and piper spp	1.23	2.30	4.44	0.65	2.64	3.93	4.52	0.55	1.23	3.12	4.52	1.0
C25	Pineapples	1.52	4.07	9.98	2.12	3.35	5.61	7.75	1.35	1.52	4.84	9.98	1.9

Data

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Table 1 continued from previous page

Code	Commodity		1959-1988			1989-2018				1959-2018			
	Commonly	Min	Mean	Max	St. Dev.	Min	Mean	Max	St. Dev.	Min	Mean	Max	St. Dev
C26	Roots and tubers nes	0.62	0.91	1.86	0.36	2.02	4.29	6.51	1.34	0.62	2.60	6.51	1.95
C27	Seed cotton	0.04	2.12	11.59	3.32	0.10	0.11	0.22	0.02	0.04	1.12	11.59	2.55
C28	Sesame seed	0.83	5.17	10.15	2.43	3.14	17.97	74.41	15.17	0.83	11.57	74.41	12.61
C29	Soybeans	0.32	1.90	4.18	1.14	5.55	27.95	57.63	18.42	0.32	14.93	57.63	18.44
C30	Sugar cane	52.87	316.17	693.89	145.89	156.18	404.02	853.12	241.26	52.87	360.09	853.12	204.14
C31	Sweet potatoes	1.48	3.24	9.05	1.77	2.90	4.82	9.20	1.46	1.48	4.03	9.20	1.80
C32	Unmanufactured tobacco	6.13	14.16	31.59	5.79	4.80	20.84	33.73	7.45	4.80	17.50	33.73	7.46
L01	Buffalo meat	1.15	16.80	30.70	11.43	24.91	32.28	38.84	4.05	1.15	24.54	38.84	11.55
L02	Buffalo meat indigenous	4.28	19.59	31.39	8.74	28.85	33.26	38.84	2.95	4.28	26.42	38.84	9.44
L03	Cattle meat	8.39	16.42	25.82	4.67	29.10	55.05	70.65	12.98	8.39	35.73	70.65	21.63
L04	Cattle meat indigenous	8.39	16.63	25.84	5.16	29.10	56.55	70.65	13.92	8.39	36.59	70.65	22.55
L05	Chicken meat	7.82	18.49	42.72	7.76	37.65	54.05	70.39	6.97	7.82	36.27	70.39	19.25
L06	Chicken meat indigenous	7.82	18.49	42.72	7.76	37.65	53.61	70.39	6.75	7.82	36.05	70.39	19.01
L07	Duck meat	0.91	4.02	7.42	1.68	7.54	13.92	18.41	3.85	0.91	8.97	18.41	5.77
L08	Duck meat indigenous	0.91	4.02	7.42	1.68	7.54	13.80	17.68	3.72	0.91	8.91	17.68	5.68
L09	Hen eggs in shell	3.33	5.37	7.87	1.28	8.48	13.49	20.19	3.29	3.33	9.43	20.19	4.76
L10	Other bird eggs in shell	0.55	2.31	3.15	0.83	3.18	4.35	5.31	0.68	0.55	3.33	5.31	1.27
L11	Pig meat	13.05	65.39	149.09	37.67	150.58	253.88	344.16	46.66	13.05	159.63	344.16	103.34
L12	Pig meat indigenous	13.05	67.71	149.09	35.33	150.58	235.71	341.69	45.44	13.05	151.71	341.69	93.34
L13	Silkworm coiling cocoons	0.14	0.29	0.34	0.07	0.21	0.33	0.47	0.08	0.14	0.31	0.47	0.08
L14	Whole fresh cow milk	0.59	0.86	1.10	0.13	0.91	8.74	10.75	2.26	0.59	4.80	10.75	4.25

Note: The table presents the descriptive statistics of Gross Agricultural Production of each commodity in Cambodia between 1959 to 2018 at a price constant in 2004-2006 in million USD. The author used data from FAOSTAT with 46 agricultural products between 1961-2018. The author used linear interpolation and multiplicative cubic spline interpolation to estimate the gross agricultural production value between 1959-1960 and some missing data based on FAOSTAT data.

Some Results

Table 2: Cambodian Agricultural Market Participation Between 1959-2018

Code	Commodity	1959-1973	1974-1988	1989-2003	2004-2018	1959-2018
C01	Bananas	0.0199	0.0178	0.0155	0.0064	0.0116
C02	Cassava	0.0038	0.0180	0.0151	0.3171	0.1729
C03	Castor oil seed	0.0001	0.0001	0.0001	0.0000	0.0001
C04	Coconuts	0.0082	0.0118	0.0099	0.0048	0.0072
C05	Cotton lint	0.0027	0.0005	0.0001	0.0000	0.0005
C06	Cottonseed	0.0005	0.0001	0.0000	0.0000	0.0001
C07	Dry beans	0.0096	0.0100	0.0050	0.0080	0.0078
C08	Dry chillies and peppers	0.0021	0.0028	0.0022	0.0011	0.0017
C09	Fibre crops nes	0.0007	0.0003	0.0002	0.0001	0.0002
C10	Fresh nes fruit	0.0045	0.0110	0.0098	0.0056	0.0069
C11	Fresh nes vegetables	0.1174	0.1578	0.0958	0.0427	0.0781
C12	Grapefruit and pomelos	0.0011	0.0004	0.0003	0.0001	0.0003
C13	Green coffee	0.0010	0.0003	0.0005	0.0003	0.0004
C14	Groundnuts with shell	0.0083	0.0047	0.0027	0.0038	0.0044
C15	Jute	0.0003	0.0002	0.0001	0.0000	0.0001
C16	Lemons and limes	0.0006	0.0001	0.0002	0.0001	0.0002
C17	Maize	0.0151	0.0083	0.0071	0.0156	0.0129
C18	Mangoes, mangosteens and guavas	0.0066	0.0031	0.0036	0.0027	0.0035
C19	Natural rubber	0.0061	0.0035	0.0045	0.0011	0.0028
C20	Nuts nes	0.0001	0.0001	0.0001	0.0001	0.0001
C21	Oilseeds nes	0.0046	0.0021	0.0009	0.0001	0.0012
C22	Oranges	0.0294	0.0337	0.0329	0.0152	0.0232
C23	Paddy rice	0.2600	0.1976	0.2409	0.2399	0.2383
C24	Pepper and piper spp	0.0020	0.0018	0.0019	0.0009	0.0014
C25	Pineapples	0.0042	0.0023	0.0023	0.0014	0.0021
C26	Roots and tubers nes	0.0005	0.0011	0.0017	0.0011	0.0011
C27	Seed cotton	0.0027	0.0005	0.0001	0.0000	0.0005
C28	Sesame seed	0.0049	0.0035	0.0033	0.0062	0.0051
C29	Soybeans	0.0016	0.0015	0.0057	0.0095	0.0066
C30	Sugar cane	0.2981	0.2173	0.1277	0.1191	0.1591
C31	Sweet potatoes	0.0019	0.0038	0.0022	0.0012	0.0018
C32	Unmanufactured tobacco	0.0125	0.0109	0.0083	0.0055	0.0077
L01	Buffalo meat	0.0075	0.0226	0.0185	0.0062	0.0108
L02	Buffalo meat indigenous	0.0116	0.0226	0.0187	0.0066	0.0117
L03	Cattle meat	0.0128	0.0148	0.0239	0.0137	0.0158
L04	Cattle meat indigenous	0.0131	0.0148	0.0241	0.0142	0.0162
L05	Chicken meat	0.0103	0.0222	0.0272	0.0119	0.0160
L06	Chicken meat indigenous	0.0103	0.0222	0.0271	0.0118	0.0159
L07	Duck meat	0.0021	0.0050	0.0056	0.0036	0.0040
L08	Duck meat indigenous	0.0021	0.0050	0.0056	0.0036	0.0039
L09	Hen eggs in shell	0.0032	0.0062	0.0058	0.0034	0.0042

Table 2 continued		

Code	Commodity	1959-1973	1974-1988	1989-2003	2004-2018	1959-2018
L10	Other bird eggs in shell	0.0013	0.0028	0.0020	0.0010	0.0015
L11	Pig meat	0.0451	0.0669	0.1185	0.0598	0.0705
L12	Pig meat indigenous	0.0485	0.0669	0.1184	0.0522	0.0670
L13	Silkworm coiling cocoons	0.0003	0.0002	0.0002	0.0001	0.0001
L14	Whole fresh cow milk	0.0006	0.0008	0.0040	0.0021	0.0021
46	Total Market Participation	1.0000	1.0000	1.0000	1.0000	1.0000
	нні	0.1775	0.1251	0.1170	0.1820	0.1301

Note: The table presents the agricultural market participation between 1959-2018. The author assumed that the total participation equated to 6 agricultural commodities; it means a landerd percent participation in the market. The full share of each agricultural product to market is equal to 1 or a hundred percent. The author used gross agricultural products to while at a price contains between 2018-203 to bmild the coefficient. An BHII between 0.18-0.25 for 1,509-2,500 indicates moderate concentration. As a result of the BHII between 0.18-0.25 for 1,509-2,500 indicates moderate concentration as for the BHII between 1959-2018 and others, the agricultural sector is not much competitive industry. But between 1959-2018 and others, the agricultural sector is an unconcentrated industry because the wine of BHII is below 0.15 for 1,5000.

Some Results

Table 3: Classification of the Contribution of the Agricultural Product to the Market

1	No	Code	Commodity	1959-1973	1974-1988	1989-2003	2004-2018	1959-2018
3. 0. Signar came 0.2881 0.2287 0.1277 0.1591 0.1591 5. 0. 1. 1. Pig ment 0.0451 0.0090 0.1155 0.0092	1	C23	Paddy rice	0.2600	0.1976	0.2409	0.2399	0.2383
4 Cl. Final has regetables 0.1174 0.1175 0.0988 0.0272 0.0781 6 1.12 Pig most indigenous 0.0485 0.0699 0.1184 0.0222 0.0781 7 C.22 Crauger 0.0249 0.0185 0.0099 0.1184 0.0222 0.0572 8 L.12 Pig most indigenous 0.0111 0.0122 0.0272 0.0112 0.0112 10 L.65 Clacken most indigenous 0.0133 0.0222 0.0271 0.0118 0.0118 11 L.13 Cattle most 0.0118 0.0222 0.0271 0.0118 0.0121 12 C.17 Alace 0.0118 0.0222 0.0271 0.0118 0.0123 13 L.02 C.17 Alace 0.0116 0.0283 0.0371 0.0156 0.0177 0.0156 0.0172 14 C.17 Databla most 0.0100 0.0028 0.0017 0.0036 0.0107 0.0036 0.0117	2	C02	Cassava	0.0038	0.0180	0.0151	0.3171	0.1729
5. LI Pig ment 0.0451 0.0069 0.1155 0.0069 0.1755 6 LIZ Pig ment inflagross 0.0354 0.0009 0.1184 0.0022 0.0755 7 Q 22 Crosape 0.0244 0.0137 0.0224 0.0122 0.0222 9 LS Calethe ment indigenous 0.0103 0.0222 0.0272 0.0119 0.0169 11 LS Calethe ment indigenous 0.018 0.0022 0.0272 0.0119 0.0169 12 LZ CARET ment 0.018 0.0022 0.0177 0.0152 0.022 0.0177 0.0152 0.012 0.0172 0.018 0.012 0.0152 0.012 0.0152 0.012 0.0152 0.012 0.0152 0.012 0.0152 0.012 0.0152 0.012 0.0152 0.002 0.0152 0.0172 0.0152 0.0172 0.0152 0.0172 0.0152 0.0172 0.0152 0.0172 0.0152 0.0172 0.0152	3	C30	Sugar cane	0.2981	0.2173	0.1277	0.1191	0.1591
6 LIZ Pig most indigenous 0.0485 0.0090 0.1184 0.0222 0.0870 8 C C22 Comman 0.0184 0.0134 0.0142 0.0152 0.0070 8 LA Cattle meat indigenous 0.0131 0.0124	4	C11	Fresh nes vegetables	0.1174	0.1578	0.0958	0.0427	0.0781
7 22 Omage 0.0294 0.0294 0.0295 0.0292 0.0292 8 Lal Calte ment indigenous 0.0118 0.0122 0.0272 0.0119 0.0109 1 Lal Calte ment indigenous 0.0188 0.0222 0.0271 0.0118 0.0129 1 Lal Calte ment indigenous 0.0188 0.0084 0.0291 0.0171 0.0152 0.0127 0.0153 0.0127 0.0153 0.0127 0.0153 0.0127 0.0153 0.0222 0.0271 0.0152 0.0127 0.0154 0.0222 0.0271 0.0152 0.0152 0.0202 0.0157 0.0526 0.0171 0.0152 0.0172 0.0152 0.0162 0.0152 0.0022 0.0152 0.0171 0.0152 0.0172 0.0152 0.0172 0.0152 0.0171 0.0052 0.0171 0.0052 0.0171 0.0052 0.0171 0.0052 0.0171 0.0052 0.0072 0.0052 0.0072 0.0072 0.0072 0.0072	5	L11	Pig meat	0.0451	0.0669	0.1185	0.0598	0.0705
8 LA Cathe most indigenous 0.0131 0.0148 0.0241 0.0122 0.0120 10 Los Los Chicken most 0.0108 0.0222 0.0222 0.0213 0.0184 0.0182 10 Los Chicken most indigenous 0.0103 0.0222 0.0271 0.0118 0.0182 12 LO Molito most indigenous 0.0151 0.0208 0.0071 0.0066 0.0129 14 LO Bolfalio most indigenous 0.0199 0.0175 0.0155 0.0064 0.0176 0.0062 0.0116 0.0126 0.0127 15 LO Buffalio most indigenous 0.0067 0.0226 0.0118 0.0062 0.0108 0.0072 0.0116 0.0062 0.0116 0.0072 0.0116 0.0072 0.0116 0.0072 0.0116 0.0072 0.0116 0.0072 0.0116 0.0072 0.0116 0.0072 0.0072 0.0117 0.0072 0.0072 0.0072 0.0072 0.0072 0.0072 0.0072 <td>6</td> <td>L12</td> <td>Pig meat indigenous</td> <td>0.0485</td> <td>0.0669</td> <td>0.1184</td> <td>0.0522</td> <td>0.0670</td>	6	L12	Pig meat indigenous	0.0485	0.0669	0.1184	0.0522	0.0670
9 16 Chicken meat 0.0103 0.0222 0.0272 0.0119 0.0105 11 1.0 1.0 1.0 0.0	7	C22	Oranges	0.0294	0.0337	0.0329	0.0152	0.0232
10	8	L04	Cattle meat indigenous	0.0131	0.0148	0.0241	0.0142	0.0162
11. 18. Catle meat 0,028 0,018* 0,028* 0,013* 0,182* 12. C.1 Maise 0,016 1,008* 0,007* 0,016* 0,016* 13. L.0 Bullado meat indigenous 0,016 0,028* 0,017* 0,006* 0,017* 15. L.0 Bullado meat 0,097 0,028* 0,018* 0,002* 0,008* 15. L.0 L.0 Bullado meat 0,007* 0,000* 0,008* 0,008* 17. C.7 Dy Demas 0,002* 0,018* 0,000* 0,008* 0,007* 18. C.0 Coccusts 0,001* 0,011* 0,009* 0,008* 0,009* 19. C.0 Fresh nes fruit 0,001* 0,001* 0,009* 0,009* 0,009* 20. C.28 Seome seed 0,001* 0,001* 0,000* 0,000* 0,000* 0,000* 0,001* 0,002* 0,001* 0,002* 0,001* 0,002* <td>9</td> <td>L05</td> <td>Chicken meat</td> <td>0.0103</td> <td>0.0222</td> <td>0.0272</td> <td>0.0119</td> <td>0.0160</td>	9	L05	Chicken meat	0.0103	0.0222	0.0272	0.0119	0.0160
12 C12 Maine 0.0151 0.0088 0.0071 0.0166 0.0127 14 1.02 Balannas 0.0199 0.0229 0.0255 0.0064 0.0116 15 1.01 Balannas 0.0099 0.0128 0.0155 0.0064 0.016 16 1.01 Balannas 0.0096 0.0109 0.0025 0.0083 0.0078 16 1.01 Bullah ment 0.0096 0.0109 0.0083 0.0053 0.0078 17 C12 Crammachterute folace 0.0152 0.0109 0.0083 0.0055 0.0092 18 C10 Fresh nes fruit 0.0015 0.0110 0.0089 0.0052 0.0052 19 C12 Sesme seed 0.0010 0.0001 0.0037 0.0052 0.0052 10 Hes eggs in shell 0.0021 0.0002 0.0053 0.0054 0.0052 10 1.07 Deatume with shell 0.0012 0.0002 0.0060 0.006<	10	L06	Chicken meat indigenous	0.0103	0.0222	0.0271	0.0118	0.0159
13. In 18. In	11	L03	Cattle meat	0.0128	0.0148	0.0239	0.0137	0.0158
14 Cl. Beamans 0.0199 0.01185 0.0164 0.0116 15 L0 Bladba meat 0.0076 0.0226 0.0255 0.0080 0.0080 16 L0 Bloth meat 0.0096 0.0100 0.0080 0.0080 0.0072 17 Cl. Unamodateruse (backeo 0.0125 0.0109 0.0083 0.0052 0.0072 18 Cl. Concents 0.0082 0.0116 0.0098 0.0052 0.0072 19 Cl. Frobens 0.0016 0.0015 0.0057 0.0052 0.0062 20 Cl. Somme seed 0.0016 0.0015 0.0057 0.0052 0.0061 21 Cl. Somme seed 0.0021 0.0017 0.0027 0.0061 0.0072 0.0061 21 L. De Hee eggs in shell 0.0021 0.0007 0.0057 0.0061 0.0061 0.0061 0.0061 0.0061 0.0061 0.0061 0.0061 0.0061	12	C17	Maize	0.0151	0.0083	0.0071	0.0156	0.0129
15. In 16. Or.	13	L02	Buffalo meat indigenous	0.0116	0.0226	0.0187	0.0066	0.0117
15	14	C01	Bananas	0.0199	0.0178	0.0155	0.0064	0.0116
17	15	L01	Buffalo meat	0.0075	0.0226	0.0185	0.0062	0.0108
18	16	C07	Dry beans	0.0096	0.0100	0.0050	0.0080	0.0078
19 10 Feeh nee fruit 0,004 0,004 0,005 0,006 0,007 0,007 0,007 0,007 0,007	17	C32	Unmanufactured tobacco	0.0125	0.0109	0.0083	0.0055	0.0077
20	18	C04	Coconuts	0.0082	0.0118	0.0099	0.0048	0.0072
21	19	C10	Fresh nes fruit	0.0045	0.0110	0.0098	0.0056	0.0069
22 C1.6 Groundmust with shell 0.0081 0.0081 0.0082 0.0084 0.0084 0.0084 0.0084 0.0084 0.0084 0.0084 0.0084 0.0084 0.0084 0.0084 0.0086 0.0087 0.0055 26 C18 Natural rubher 0.0012 0.0025 0.0025 0.0021 0.0021 0.0022 0.0011 0.0022 0.0011 0.0022 0.0011 0.0022 0.0011 0.0022 0.0011 0.0022 0.0012 0.0022 0.0011 0.0022 0.0012 0.0022 0.0012 0.0022 0.0012 0.0022 0.0012 0.0022 0.0012 0.0022 0.0012 0.0022 0.0012 0.0012 0.0024 0.002 0.0014 0.002 0.0014 0.00	20	C29	Soybeans	0.0016	0.0015	0.0057	0.0095	0.0066
25 Los Her eggs in shell 0,0032 0,0032 0,0032 0,0034 0,0032 25 Los Los Los 0,0021 0,0000 0,0006 0,0006 0,0006 0,0006 0,0006 0,0006 0,0006 0,0006 0,0006 0,0006 0,0006 0,0006 0,0006 0,0006 0,0007 0,0008 0,0009 0,0008 0,0009 0,0001 0,0002 0,0001 0,0002 0,0001 0,0002 0,0001 0,0002 <	21	C28	Sesame seed	0.0049	0.0035	0.0033	0.0062	0.0051
24 LV Desk meet 0.0021 0.0050 0.0050 0.0050 25 LS Desk meet indigenom 0.0021 0.0050 0.0056 0.0030 0.0056 0.0030 0.0052 0.0052 26 C19 Natural rubber 0.0061 0.0032 0.0023 0.0012 0.0023 0.0013 0.0014 0.0022 0.0023 0.0012 0.0023 0.0014 0.0022 0.0012 0.0023 0.0012 0.0023 0.0014 0.0022 0.0012 0.0023 0.0012 0.0023 0.0012 0.0023 0.0012 0.0023 0.0012 0.0023 0.0012 0.0023 0.0012 0.0023 0.0012 0.0023 0.0012 0.0023 0.0012 0.0023 0.0012 0.0023 0.0012 0.0023 0.0012 0.0023 0.0012 0.0023 0.0012 0.0023 0.0012 0.0023 0.0012 0.0023 0.0012 0.0023 0.0012 0.0024 0.0024 0.0003 0.0014 0.0014 0.0024	22	C14	Groundnuts with shell	0.0083	0.0047	0.0027	0.0038	0.0044
55 Los More mark inferences 0.0021 0.0050 0.0050 0.0050 0.0050 0.0050 0.0050 0.0050 0.0050 0.0050 0.0050 0.0050 0.0050 0.0051 0.0051 0.0051 0.0051 0.0051 0.0051 0.0051 0.0051 0.0051 0.0051 0.0051 0.0051 0.0051 0.0052	23	L09	Hen eggs in shell	0.0032	0.0062	0.0058	0.0034	0.0042
26 Cl. Mangres, mangrateras and gausen 0.0061 0.0031 0.0022 0.0035 26 Cl. Natural rubber 0.0061 0.0023 0.0031 0.0014 0.0021 28 2.5 Piesagaphe 0.0042 0.0023 0.0031 0.0021 0.0023 30 L1 Whale fresh cow milk 0.0019 0.0038 0.0022 0.0012 0.0028 31 Cl. Sweet potation 0.0019 0.0028 0.0022 0.0011 0.0015 32 L1 Other brid eggs in shelf 0.001 0.0028 0.0022 0.0011 0.0015 33 C4 Pepper and piepe sp 0.004 0.0012 0.001 0.0014 0.0014 0.0014 34 C4 Pieper and piepe sp 0.004 0.0021 0.0001 0.0001 0.0014 0.0014 35 C4 Fields ns 0.004 0.0014 0.0014 0.0014 0.0014 0.0014 0.0014 0.0014 0.0014	24	L07	Duck meat	0.0021	0.0050	0.0056	0.0036	0.0040
27 21 Natural rubber 0.0061 0.0035 0.0062 0.0011 0.0022 28 C3 Prepareles 0.0042 0.0023 0.0014 0.0022 29 L4 Whole fresh cow milk 0.006 0.0088 0.0022 0.0012 0.0012 31 C3 Sex potates 0.0021 0.0028 0.0022 0.0011 0.0017 31 C8 Dry chillies and peppers 0.0021 0.0028 0.002 0.0010 0.0011 0.0017 32 C4 Popper and piper sep 0.0020 0.0021 0.0028 0.002 0.0010 0.0014 34 C21 Gloss ose 0.0024 0.0021 0.002 0.000 0.0014 0.0014 35 C26 Roots and tubers res 0.005 0.0011 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 <t< td=""><td>25</td><td>L08</td><td>Duck meat indigenous</td><td>0.0021</td><td>0.0050</td><td>0.0056</td><td>0.0036</td><td>0.0039</td></t<>	25	L08	Duck meat indigenous	0.0021	0.0050	0.0056	0.0036	0.0039
28 25 Pissapples 0.0042 0.0023 0.0014 0.0021 30 L14 Whole fresh cow mills 0.0008 0.0008 0.0002 0.0021 0.0021 30 C18 Seest potatore 0.0019 0.0028 0.0022 0.0011 0.0018 31 C18 Dry chillies and peppers 0.0013 0.0028 0.0022 0.0011 0.0015 32 C11 Obtech ind eggs in shell 0.003 0.0018 0.0021 0.0008 0.0019 0.0016 0.0012 33 C41 Obtech sea 0.0020 0.0021 0.0001 0.0012 <td>26</td> <td>C18</td> <td>Mangoes, mangosteens and guavas</td> <td>0.0066</td> <td>0.0031</td> <td>0.0036</td> <td>0.0027</td> <td>0.0035</td>	26	C18	Mangoes, mangosteens and guavas	0.0066	0.0031	0.0036	0.0027	0.0035
29	27	C19	Natural rubber	0.0061	0.0035	0.0045	0.0011	0.0028
30 Cl. Sweet potatoes 0,0019 0,0038 0,0022 0,0012 0,0018 31 Ols Dyrellies and peppers 0,0021 0,002 0,002 0,002 0,002 0,001 0,0015 22 L10 Other bird eggs in shell 0,0013 0,0018 0,0019 0,0015 0,0015 0,0015 0,0015 0,0015 0,0015 0,0016 0,0012 0,0007 0,0017 0,	28	C25	Pineapples	0.0042	0.0023	0.0023	0.0014	0.0021
13	29	L14	Whole fresh cow milk	0.0006	0.0008	0.0040	0.0021	0.0021
32 LiO Other bird eggs in shell 0.0013 0.0028 0.0020 0.0010 0.0015 32 C24 Pepper and piper spp 0.002 0.001 0.0009 0.0001 0.0012 34 C21 Olkeeds are 0.0046 0.0021 0.0009 0.0011 0.0012 35 C8 Rotts and tubers are 0.0005 0.0001 0.0001 0.0005 0.0001 0.0000 0.0005 37 C27 Seed cotton 0.0002 0.0003 0.0004 0.0003 0.0004 <td>30</td> <td>C31</td> <td>Sweet potatoes</td> <td>0.0019</td> <td>0.0038</td> <td>0.0022</td> <td>0.0012</td> <td>0.0018</td>	30	C31	Sweet potatoes	0.0019	0.0038	0.0022	0.0012	0.0018
33 C24 Pepper and piper spp 0.0020 0.0018 0.009 0.0004 0.0014 34 C21 Giberecks nes 0.006 0.0021 0.0007 0.0011 0.0011 35 C26 Rost and tubers nes 0.0065 0.0011 0.0017 0.0011 0.001 0.0015 36 C35 Cotton list 0.0027 0.005 0.0001 0.0002 0.005 0.001 0.0004 0.005 38 C13 Green coffee 0.001 0.0004 0	31	C08	Dry chillies and peppers	0.0021	0.0028	0.0022	0.0011	0.0017
34 C21 Observed user 0.0046 0.0021 0.0009 0.0001 0.0012 35 C26 Rosts and tubers nes 0.0007 0.0011 0.0017 0.0013 0.0005 36 C15 Cotton lins 0.0027 0.0005 0.0001 0.0000 0.0005 37 C27 Seed cotton 0.0007 0.0005 0.0001 0.0000 0.0005 38 C13 General med pomelos 0.0011 0.0004 0.0003 0.0001 0.0004 4 D0 D0 February 0.0002 0.0001 0.0002 0.0001 0.0002	32	L10	Other bird eggs in shell	0.0013	0.0028	0.0020	0.0010	0.0015
35 C26 Roots and tubers nes 0.0005 0.0011 0.0017 0.0011 0.0011 36 C35 Cetton lint 0.0027 0.0005 0.0001 0.0000 0.0005 37 C27 Sectotton 0.002 0.0005 0.0001 0.0000 0.0004 38 C13 Green coffee 0.001 0.0004 0.0004 0.0004 0.0004 0.0004 9 C12 Grapefruit and pomelos 0.001 0.0003 0.0002 0.0001 0.0002 40 O19 Fibre crops nes 0.007 0.0003 0.0002 0.0001 0.0002	33	C24	Pepper and piper spp	0.0020	0.0018	0.0019	0.0009	0.0014
36 Chi Castea list 0.0027 0.0005 0.0001 0.0000 0.0005 37 C27 Seed cotton 0.007 0.0003 0.0005 0.0001 0.0005 38 C33 Green control and pomento 0.0011 0.0003 0.0003 0.0001 0.0003 39 C12 Grapefrist and pomento 0.0011 0.0004 0.0003 0.0001 0.0001 4 O19 Fibre crops as 0.0007 0.0003 0.0002 0.0001 0.0002	34	C21	Oilseeds nes	0.0046	0.0021	0.0009	0.0001	0.0012
37 C27 Seed cotton 0.0027 0.0005 0.0001 0.0000 38 C13 Green coffee 0.001 0.003 0.0005 0.003 0.0003 9 C12 Grapefruit and pomelos 0.001 0.0003 0.0003 0.0001 0.0003 40 O39 Fibre crops nes 0.0007 0.0003 0.0002 0.0001 0.0002	35	C26	Roots and tubers nes	0.0005	0.0011	0.0017	0.0011	0.0011
38 Cl3 Green coffee 0.0010 0.0003 0.0005 0.0003 0.0004 39 Cl2 Grapefruit and pomelos 0.001 0.0004 0.0003 0.0001 0.0003 4 C09 Fibre crops use 0.0007 0.0003 0.0002 0.0001 0.0002	36	C05	Cotton lint	0.0027	0.0005	0.0001	0.0000	0.0005
39 C12 Grapefruit and pomelos 0.0011 0.0004 0.0003 0.0001 0.0003 40 C09 Fibre crops nes 0.0007 0.0003 0.0002 0.0001 0.0002	37	C27	Seed cotton	0.0027	0.0005	0.0001	0.0000	0.0005
40 C09 Fibre crops nes 0.0007 0.0003 0.0002 0.0001 0.0002	38	C13	Green coffee	0.0010	0.0003	0.0005	0.0003	0.0004
	39	C12	Grapefruit and pomelos	0.0011	0.0004	0.0003	0.0001	0.0003
$41 \text{C16} \text{Lemons and limes} \qquad \qquad 0.0006 0.0001 0.0002 0.0001 0.0002$	40	C09	Fibre crops nes	0.0007	0.0003	0.0002	0.0001	0.0002
	41	C16	Lemons and limes	0.0006	0.0001	0.0002	0.0001	0.0002

	Table 3 continued from previous page									
No	Code	Commodity	1959-1973	1974-1988	1989-2003	2004-2018	1959-2018			
42	L13	Silkworm coiling cocoons	0.0003	0.0002	0.0002	0.0001	0.0001			
43	C20	Nuts nes	0.0001	0.0001	0.0001	0.0001	0.0001			
44	C06	Cottonseed	0.0005	0.0001	0.0000	0.0000	0.0001			
45	C15	Jute	0.0003	0.0002	0.0001	0.0000	0.0001			
46	C03	Castor oil seed	0.0001	0.0001	0.0001	0.0000	0.0001			

0.1820 0.1301

1,0000 1,0000 1,0000 1,0000 1,0000

Total Market Share

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THANK YOU!