Seminar on PRECISION AGRICULTURE

with Embassy of Japan, KUSANONE, and FEDEARROZ

（Seminario Agricultura de Precision）

Saldaña-Tolima, Colombia

Global trends in rice markets

- Seeking strategies to compete with the rice exporters -

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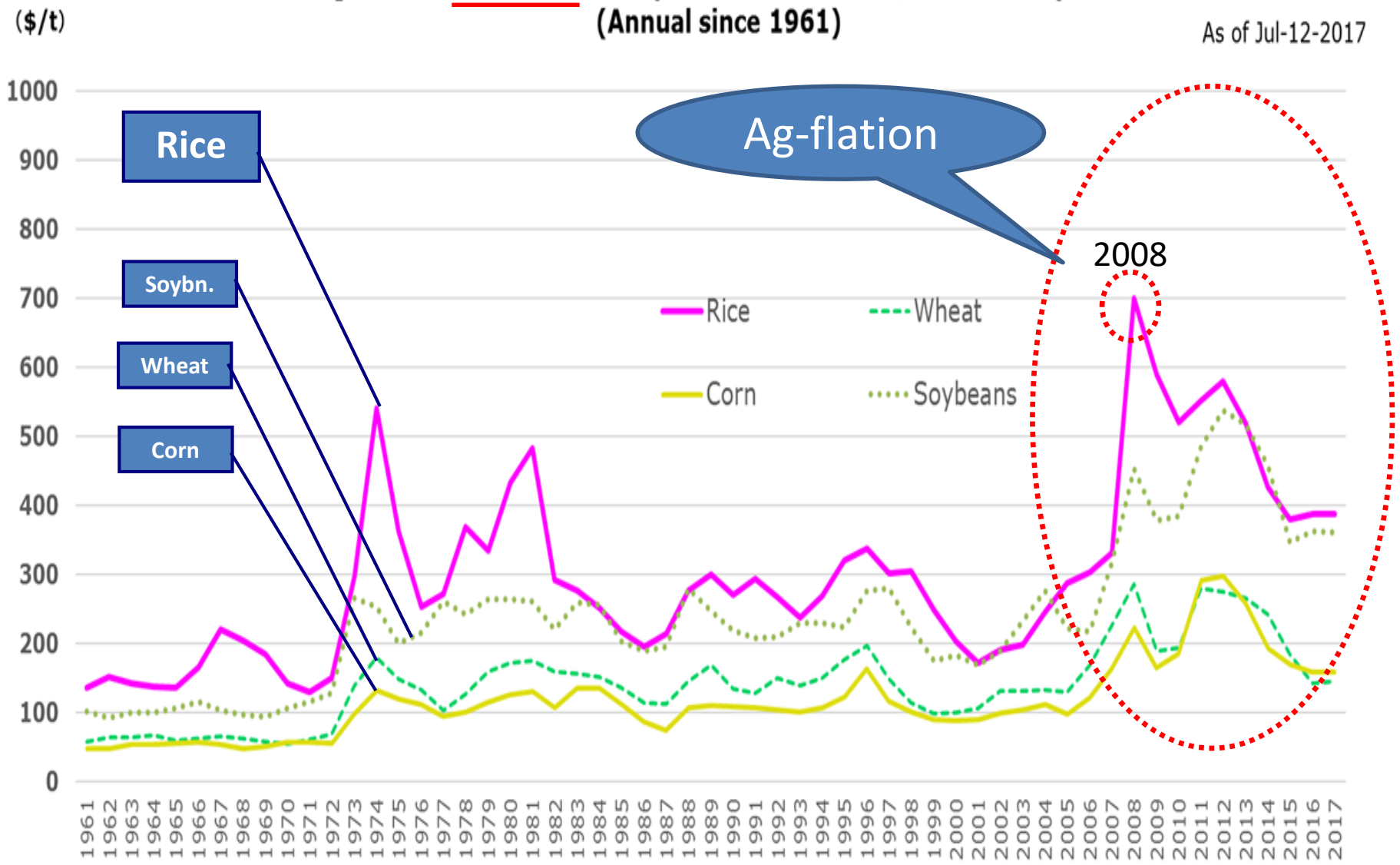
May 21, 2018

- Today's Features -

- Trend of global rice prices
- Grains are fuel nowadays
- Rice production mechanism in the world
- Ag-flation 2006-14 and the impacts
- The current rice situations in the U.S.A.
- What to expect for the future of rice?
- Strategies to compete with the rice exporters

Contemporary Rice Price Movement Mechanism in the World…

Fig.&Table1. Nominal world prices of rice, wheat, corn and soybean (Annual since 1961)



Source: IMF: International Financial Statistics (IFS)

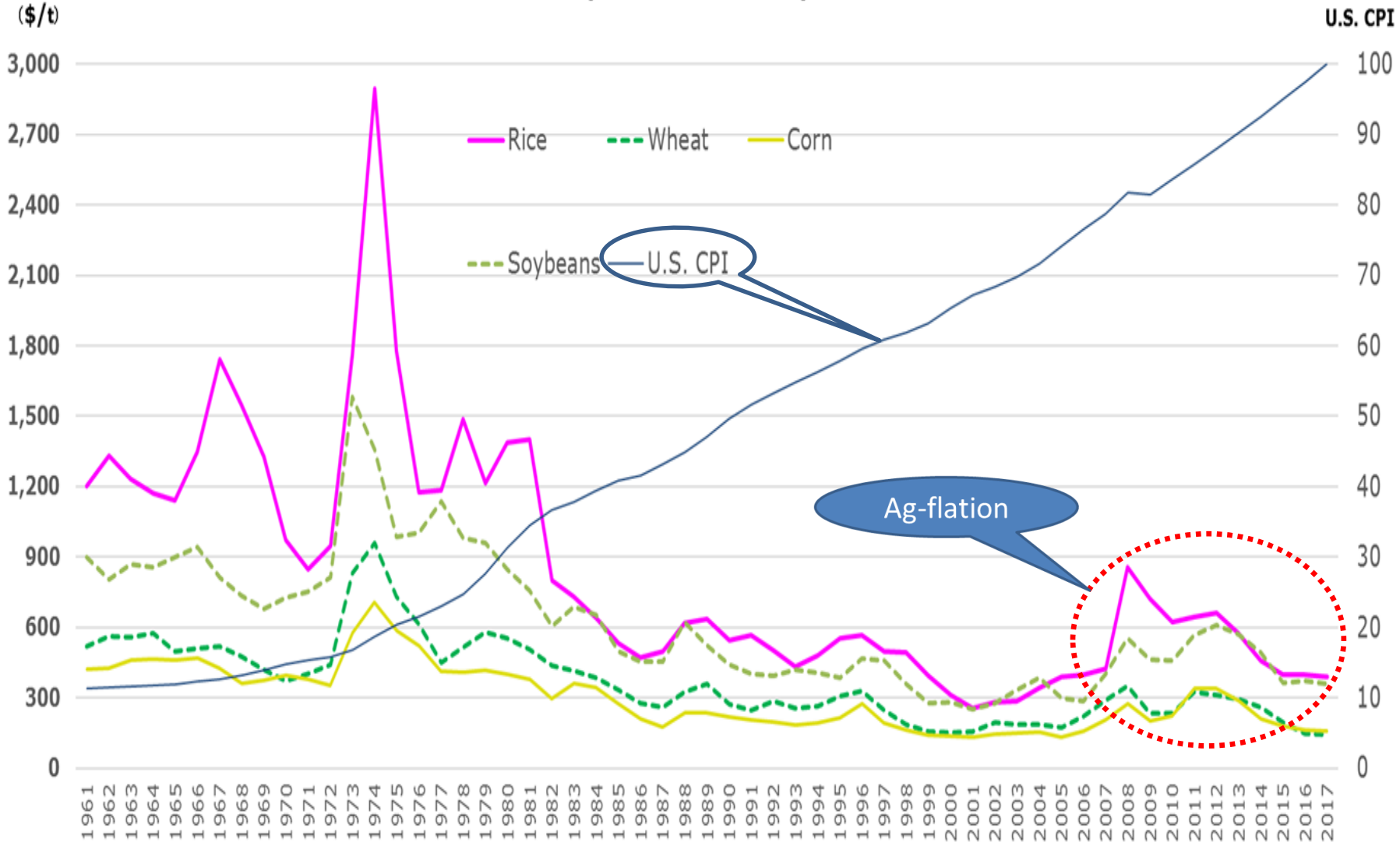
Note 1: Rice: Bangkok, 5% broken, milled.

Note 2: Rice, corn, and soybean, calendar year

Note 3: Wheat: 1961-1995: Gulf of Mexico (calendar year), and 1996-2015: Texas Gulf (season average price)

As of Jul-14-2017

Fig.&Table2. Real world prices of rice, wheat, corn and soybeans (Annual since 1961)



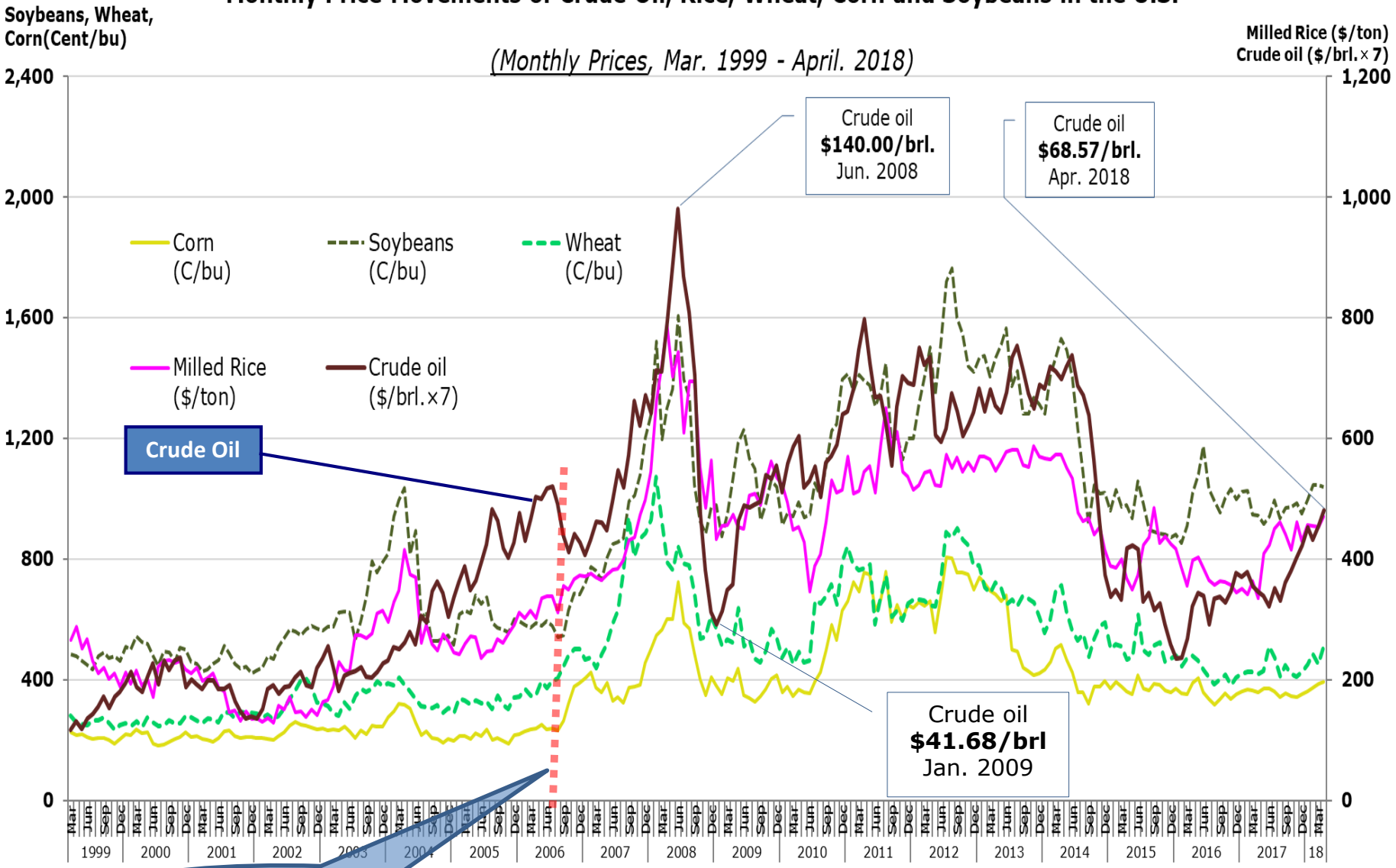
Source: IMF: International Financial Statistics (IFS)

Note 1: Rice: Bangkok, 5% broken, milled. Note 2: Rice, corn, and soybean, calendar year

Note 3: Wheat: 1961-1995: Gulf of Mexico (calendar year), and 1996-2017: Texas Gulf (season average price)

Note 4: The real prices are calculated with the US 2017 Consumer Price Index (CPI) to be 100 as the base year

Monthly Price Movements of Crude Oil, Rice, Wheat, Corn and Soybeans in the U.S.



RFS2 in the US

Rice prices are reported on original website in the rough rice basis in unit of US$/cwt. Milled rice price data were calculated from equation: Original data multiplied by 1000/(45.36*0.6) for 1 ton, which implies approximately equivalent to 4-percent-broken milled rice package for U.S. No.1. Prices of corn, wheat and soybeans are reported on original website in unit of US$/bu respectively.

Source: GFT - Online Futures Trading, http://futures.tradingcharts.com

Estimates for price movements of crops

$$P_{it} = f(P_{oil,t}, X_{si,t})$$

where,

P_i: Daily prices of food commodities, US$/cwt for rice, US$/bu for corn, wheat and soybeans;

P_{oil}: Daily oil prices, US$/barrel;

X_{si}: Other variables, such as dummy and trend variables;

i: Food commodities; and

t: Period from July 2, 2007 to August 4, 2008.

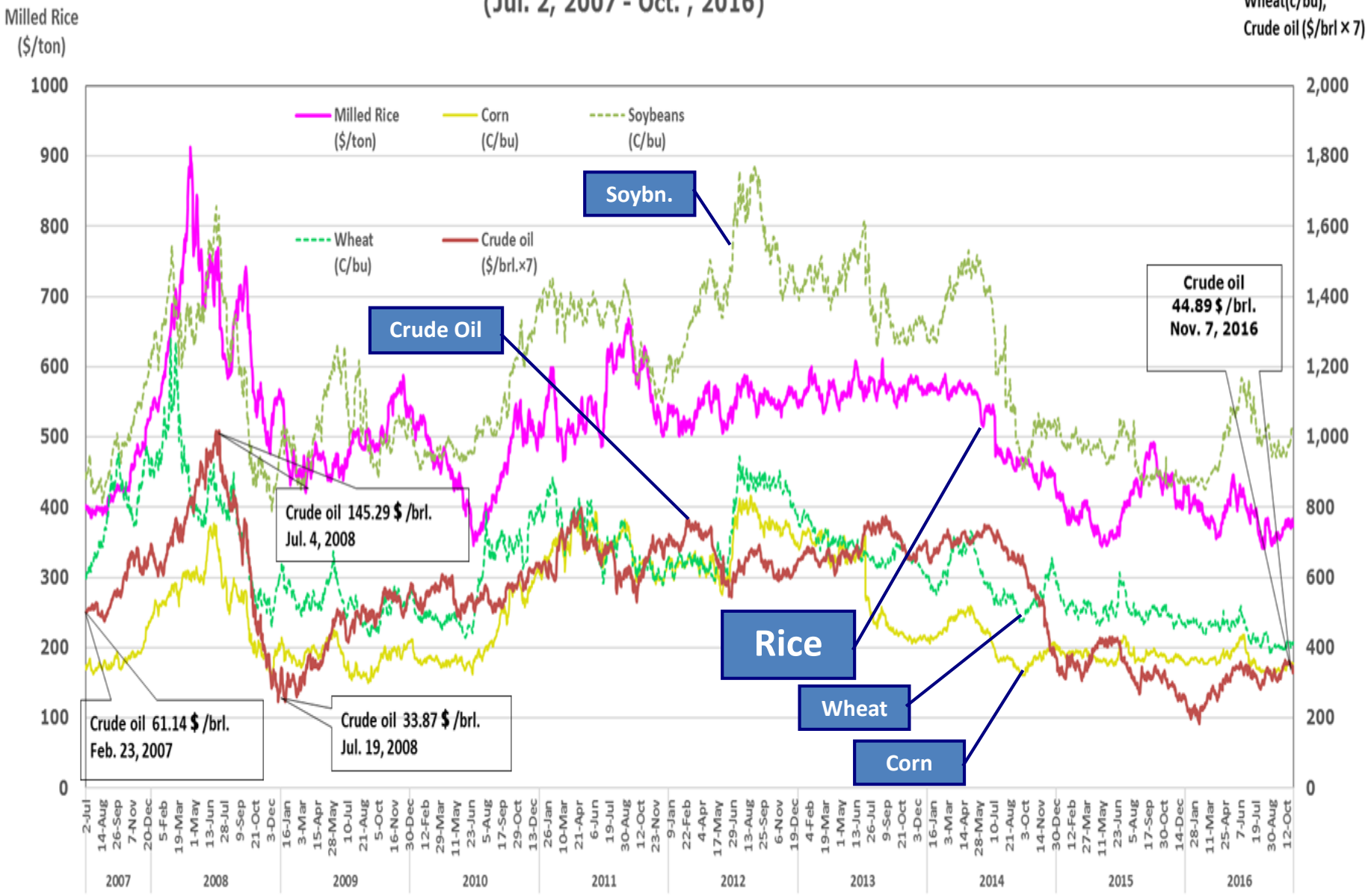
Source: Ito, et al. (2009)

Table 2. Results of the regression analysis of rice, corn, wheat and soybeans prices relative to oil prices (Daily data basis)

Variable	Rice	Corn	Wheat	Soybeans
POIL	0.180 *(0.00)****	5.15 *(0.08)****	4.41 *(0.56)****	10.1 *(0.18)****
RTDRICQ	-0.341 *(0.06)****			
SDVXB	0.0340 *(0.00)****			
DTHS	3.33 *(0.31)****			
SDCRNQ		-0.700 *(0.05)****		
DJAN1_415		67.7 *(3.97)****		
RTDWHTQ			-26.3 *(3.30)****	
SDJL07			-2.00 *(0.25)****	
SDA_S07			0.440 *(0.23)**	
SDJ_MR08			1.81 *(0.12)****	
DEXRSTR			156 *(28.67)****	
SDSBNSQ				1.99 *(0.10)****
Intercept	-4.06	-20.5	490	122
R-squared	0.917	0.950	0.757	0.923
Adjusted R-squared	0.915	0.950	0.752	0.922
No. observations	276	276	276	276

Source: Ito, et al. (2009)

Daily Price Movements of Crude Oil, Rice, Wheat, Corn and Soybeans in the U.S (Jul. 2, 2007 - Oct. , 2016)



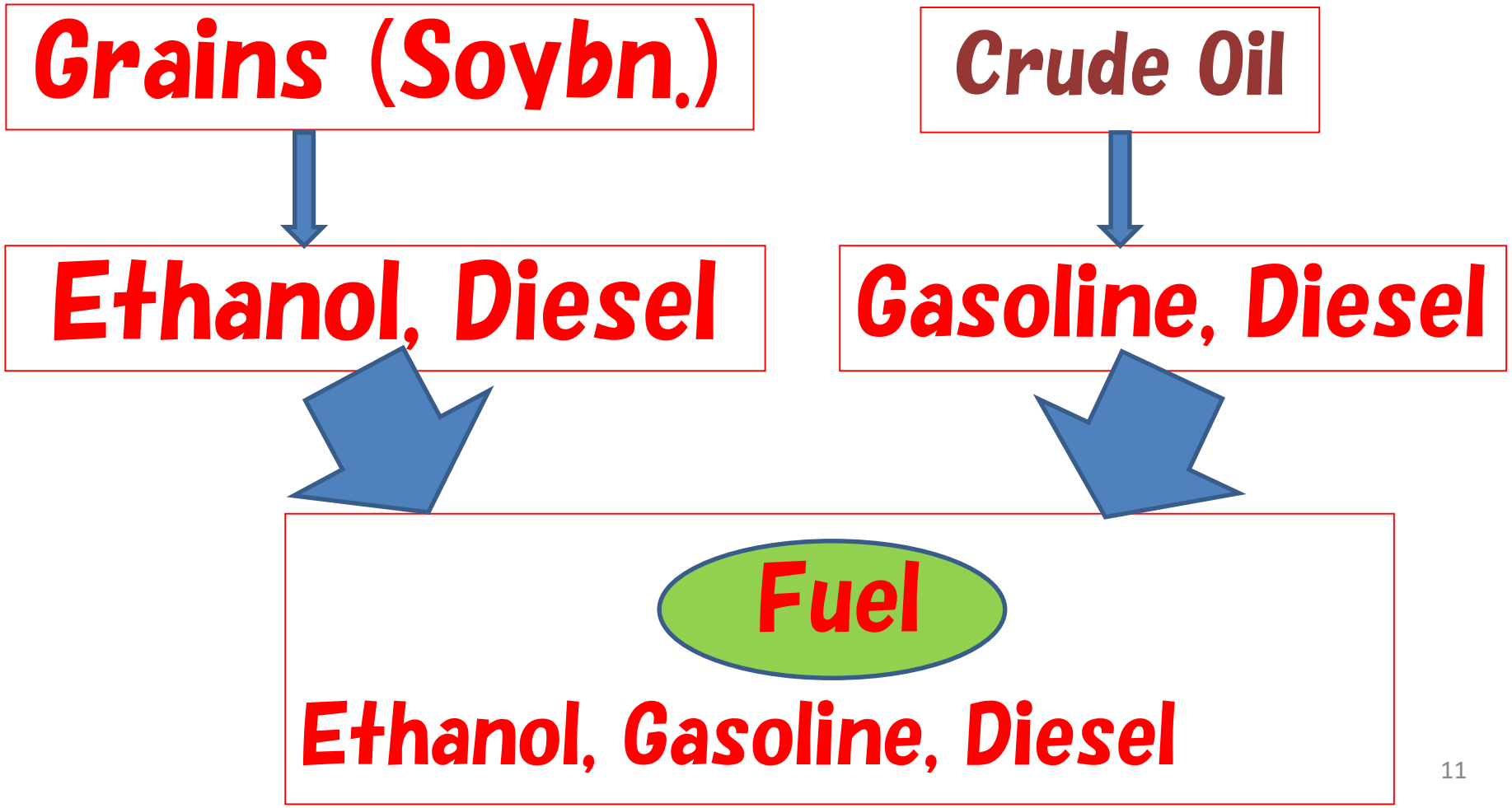
Source: GFT-Online Futures Trading, HTTP://futures. tradingchart.com; http://finance. yahoo.com

Contemporary structural changes・・・1

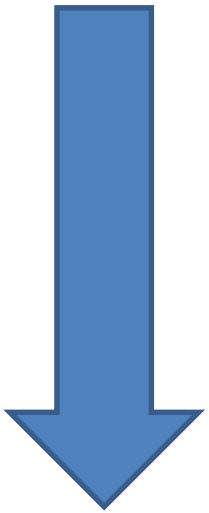
Now, food becomes fuel:
They (grains and gasoline) are "substitutes."

So, Grain Prices fluctuate with Oil Prices!
(Demand for grains expanded greatly!)

Now, grains are "substitutes" for crude oil

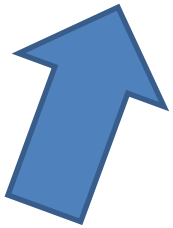


Therefore,
If Crude Oil Prices Drop, then

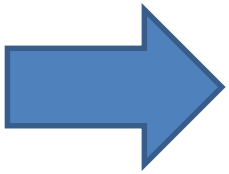


Grain Prices Drop!!
(Corn, Soybeans, Wheat, Rice)

So, which direction will rice prices go from here?



Go up?



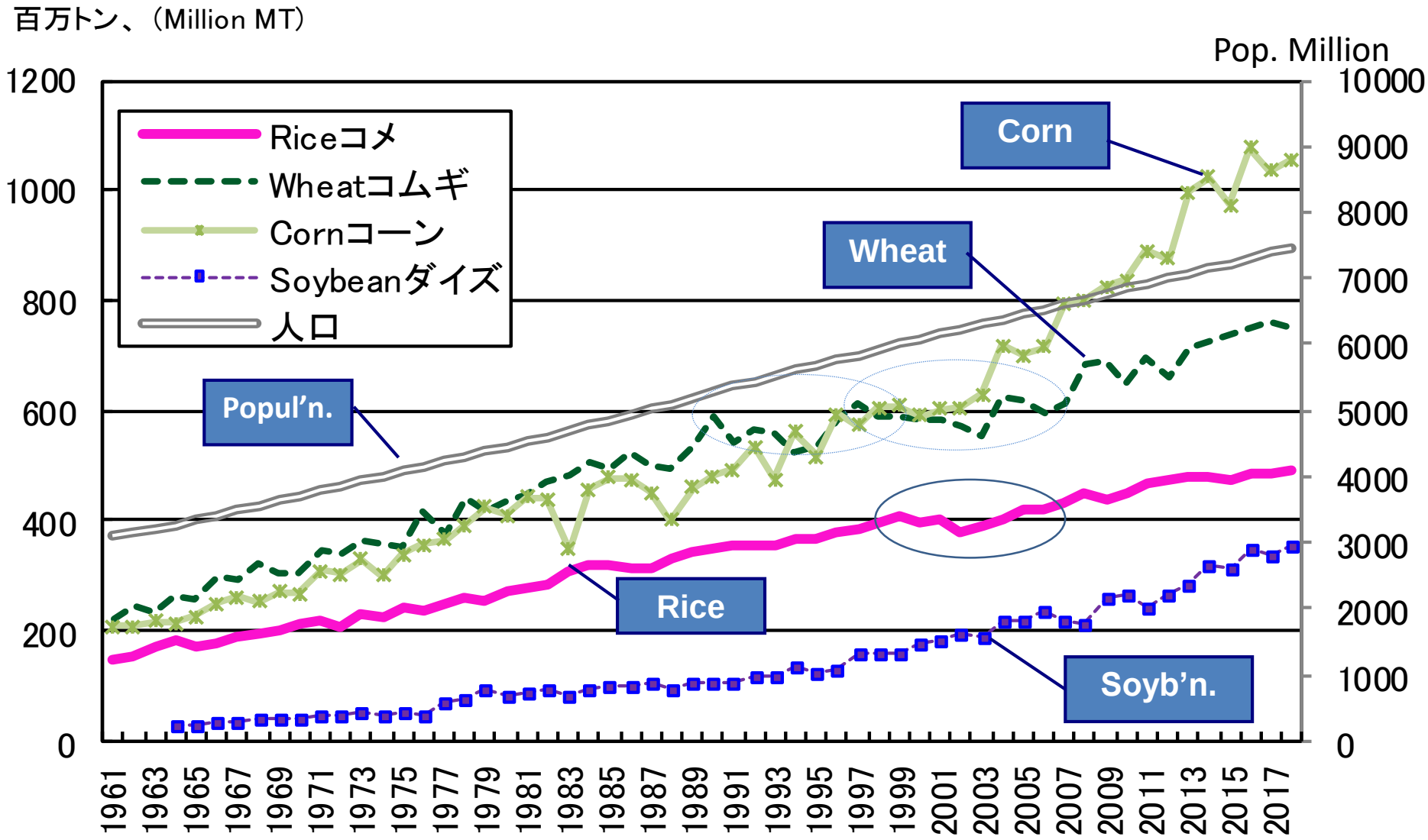
Go flat?

Go down?

So, rice prices depend on supply/demand as well as oil prices!

How about production…?

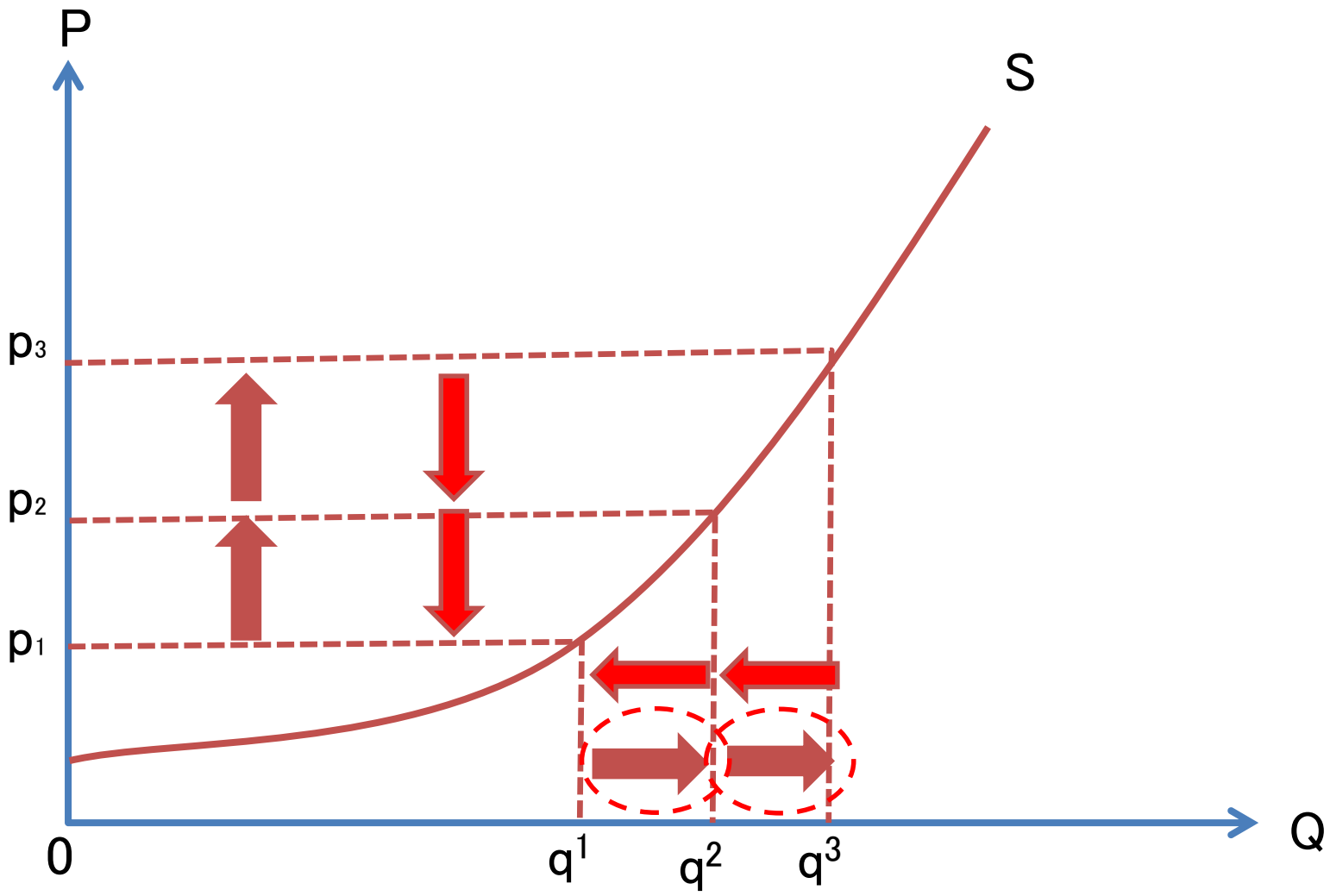
Fig. 1. Evolution of world total production for rice, wheat, corn and soybeans, '61-'18



Source: S. Ito; World Food Statistics and Graphics (http://worldfood.apionet.or.jp), Kyushu University, Japan May 2018.
(Original sources are from ERS/USDA; PSD Online May 2018,). Note: Rice is milled basis.

ソース:伊東正一 「世界の食料統計」http://worldfood.apionet.or.jp/graph/index.html, May 2018.

Fig. 2-4 The impacts of prices on production



Impacts of price hike on production・・・

- **The global growth rates: 2006-2014**

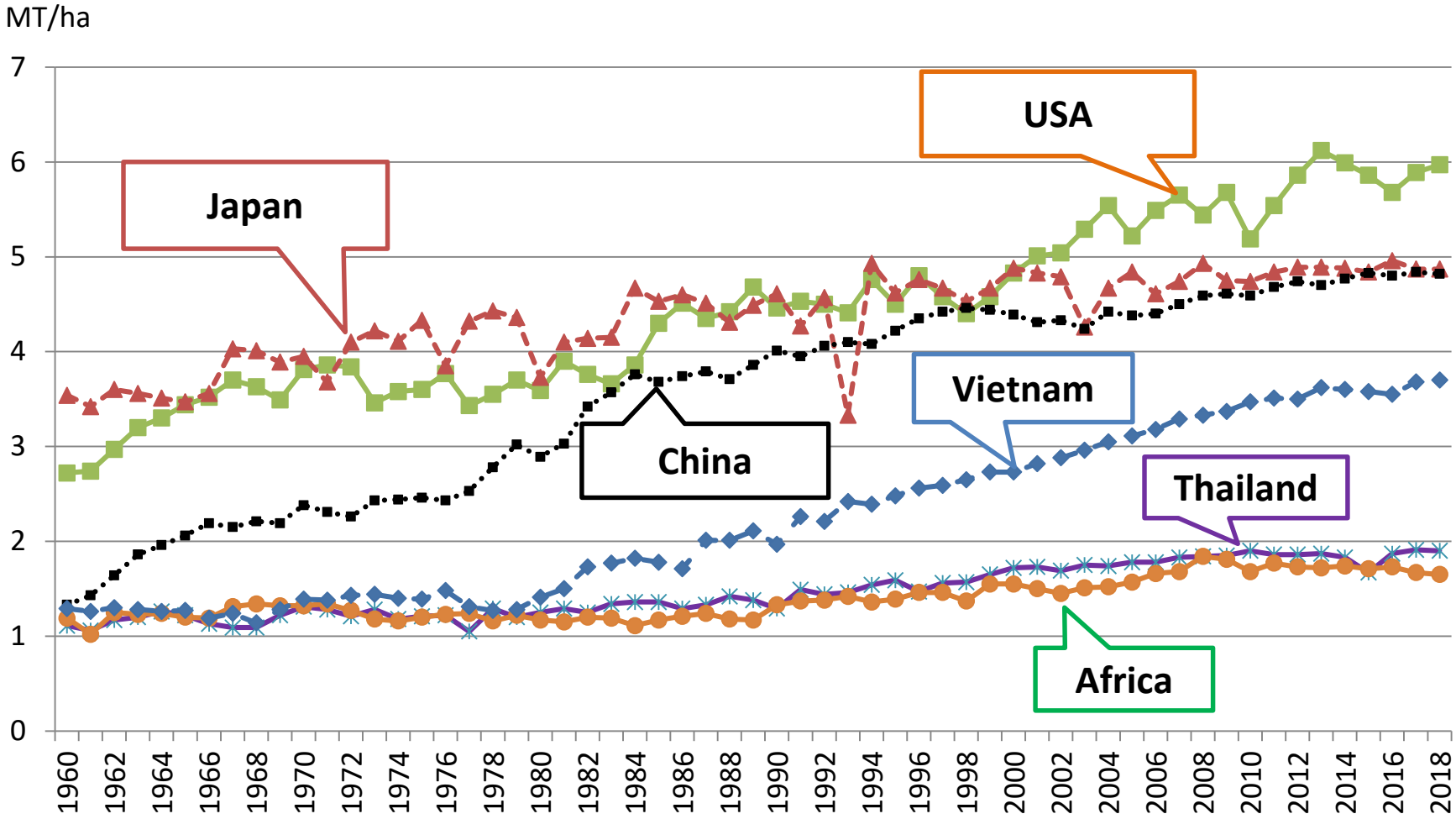
	2006 - 14	2014
– Populn.	9.5%	7.2 billion people
– Rice	14.3%	480 million ton (milled base)
– Wheat	20.0%	720 million ton
– Corn	37.5%	990 million ton
– Soybn.	29.2%	310 million ton

- Prices of rice were high in the late 1990's.
  However, ・・・
  - The prices plunged during 2000 - 2005.

Great potential to increase food production in the world!!

So, be ready for prices to drop!!

Yields for rice in Japan, US, China, Vietnam, Thailand and Africa, MT/ha (1960-2018)

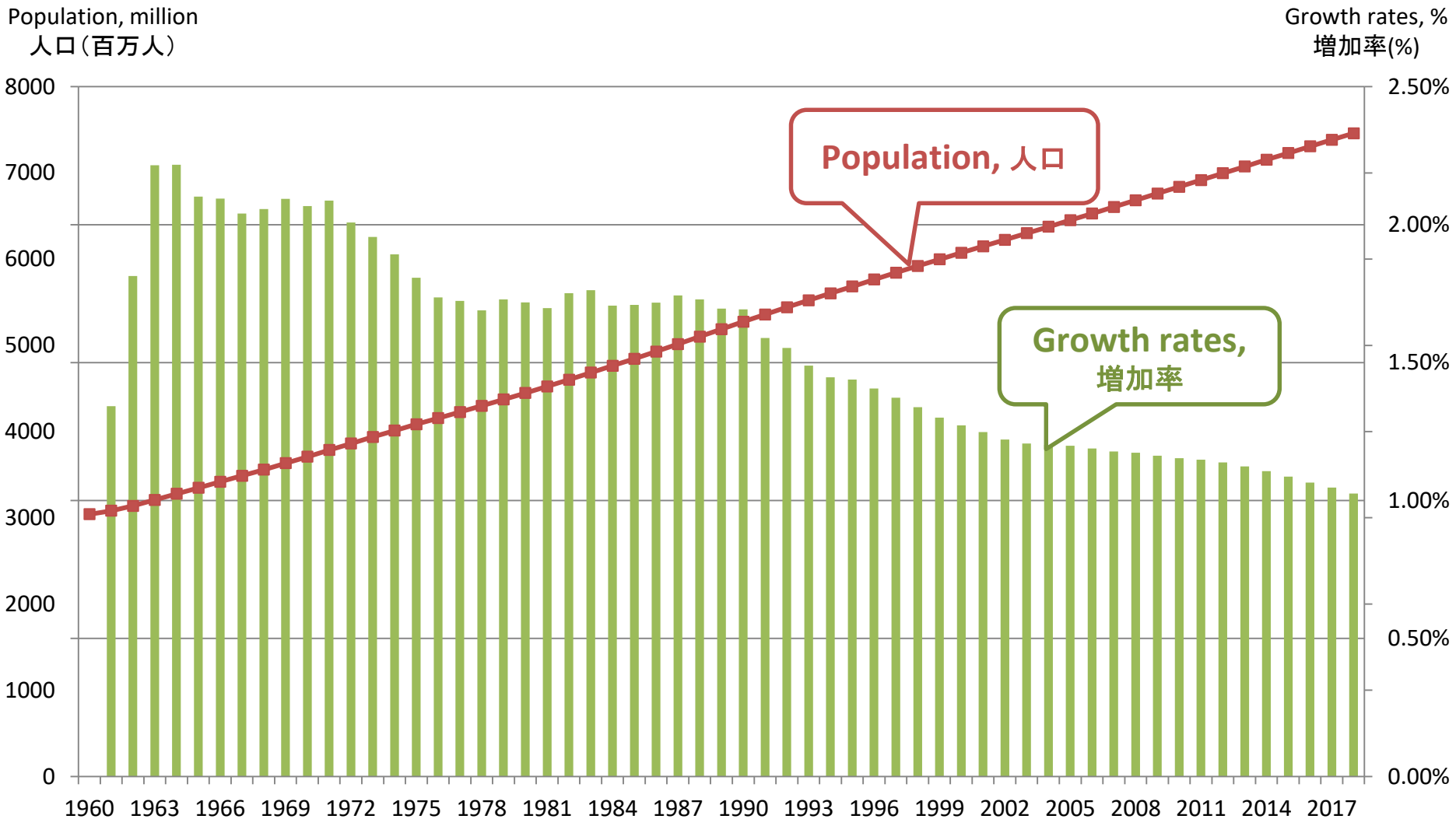


Source: Ito (2018) Global Food Graphics and Statistics http://worldfood.apionet.or.jp/ May 2018

No population explosion!!

人口爆発は来ない！！

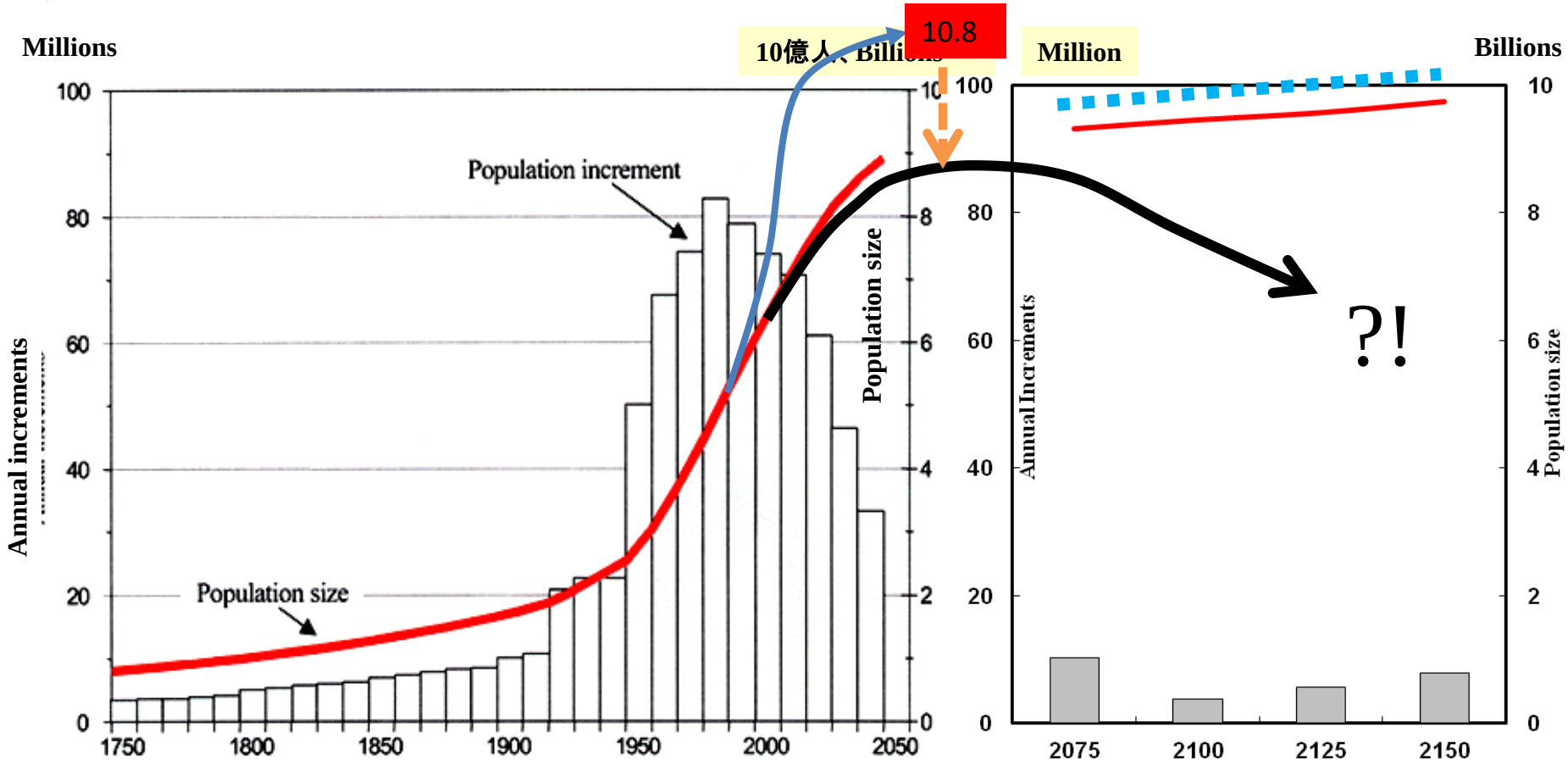
Global population and grow rates, 1960-2018
世界の人口と増加率の比較(1960-2018)



Source: Ito (2018) Global Food Graphics and Statistics http://worldfood.apionet.or.jp/ May 2018

Fig. 8. Long-term world population growth, 1750 to 2150

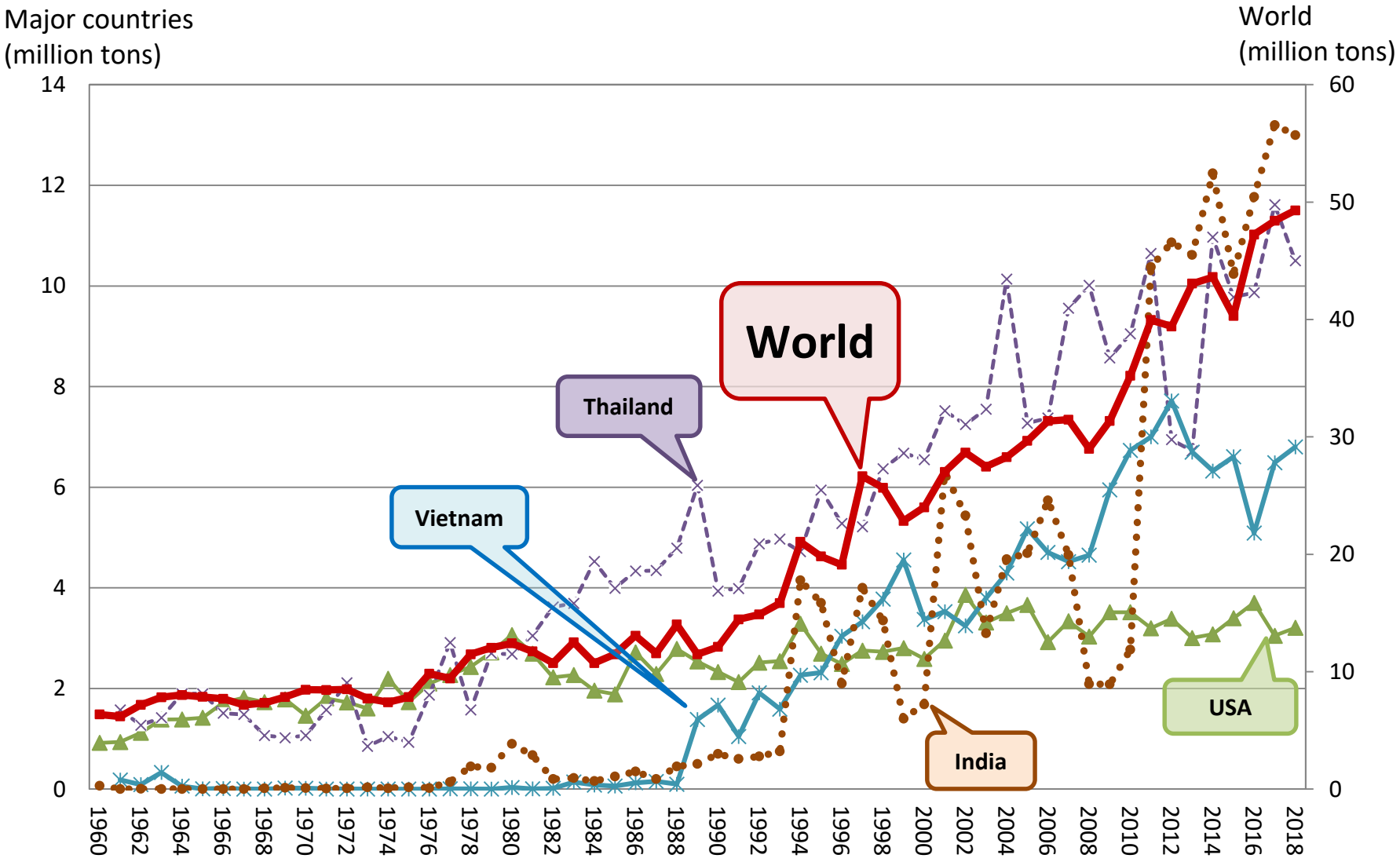
世界における人口の変化と予測, 1750 to 2150



Source: United Nation: Long-range World Population Projections: Based on the 1998 Revision, Executive Summary, (http://www.un.org/esa/population/publications/longrange/longrange.htm), The World at Six Billion, (http://www.un.org/esa/population/publications/sixbillion/sixbillion.htm)

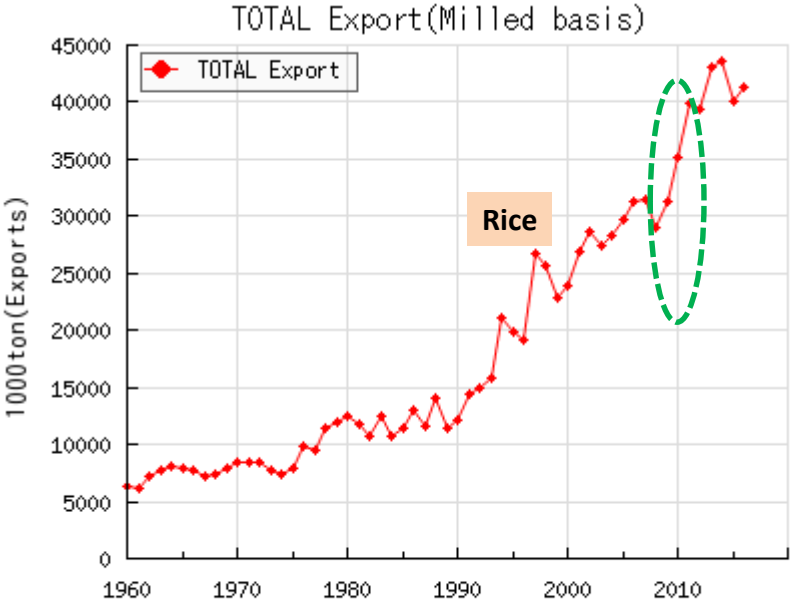
How about the trade of rice…?

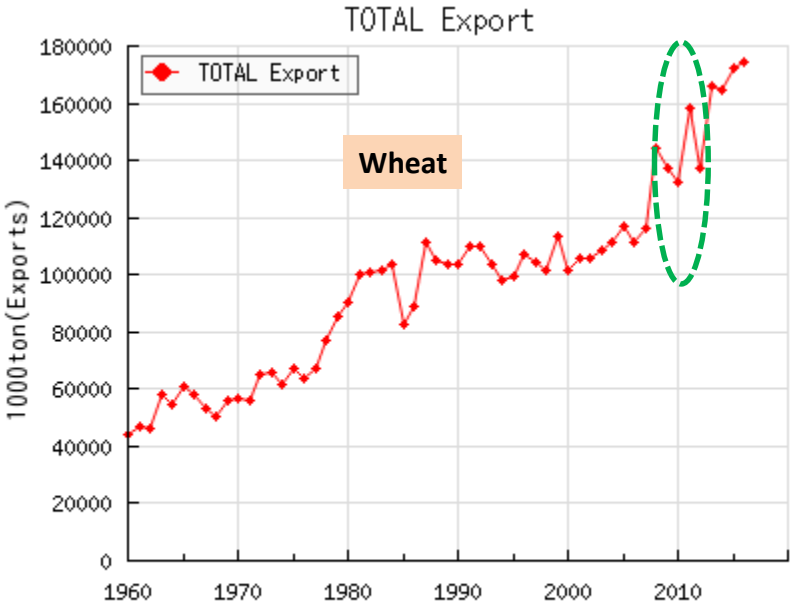
Fig. 2. Rice exports from major countries and world total (1960-2018)

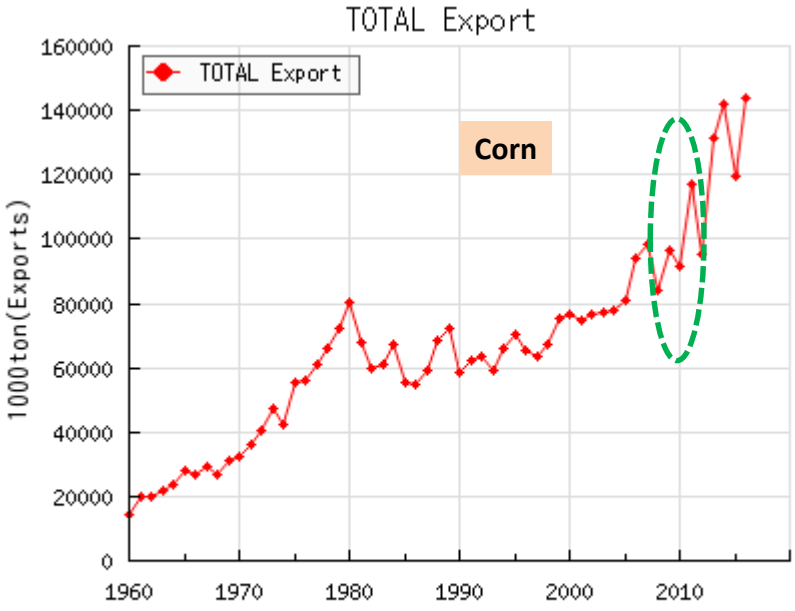


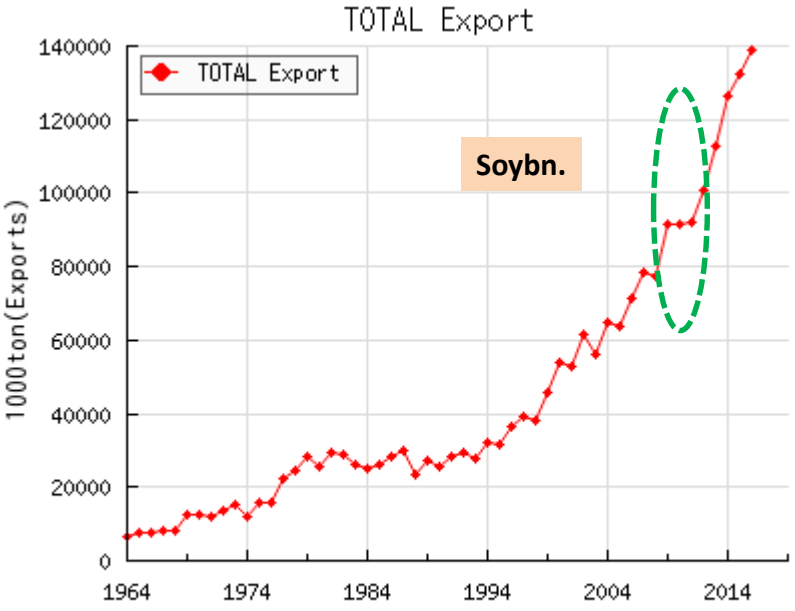
Source：伊東正一「一緒に世界をみませんか・・・」 http://worldfood.apionet.or.jp/ May 2018

Change in volumes of global trade: Rice, Wheat, Corn and Soybeans







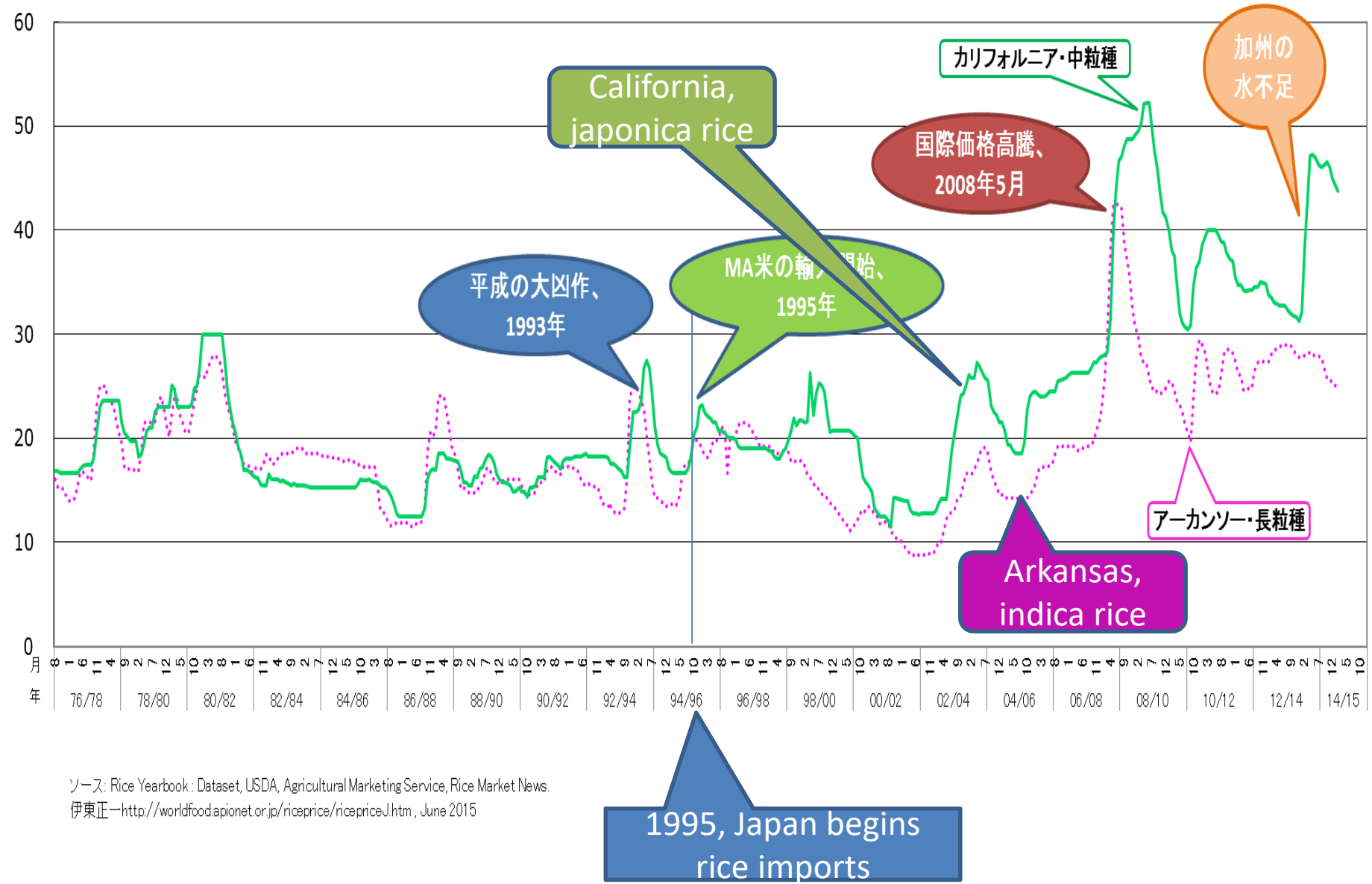


Sources: 伊東正一：世界の食料統計、http://worldfood.apionet.or.jp/

Again, the global market prices of rice recently…?

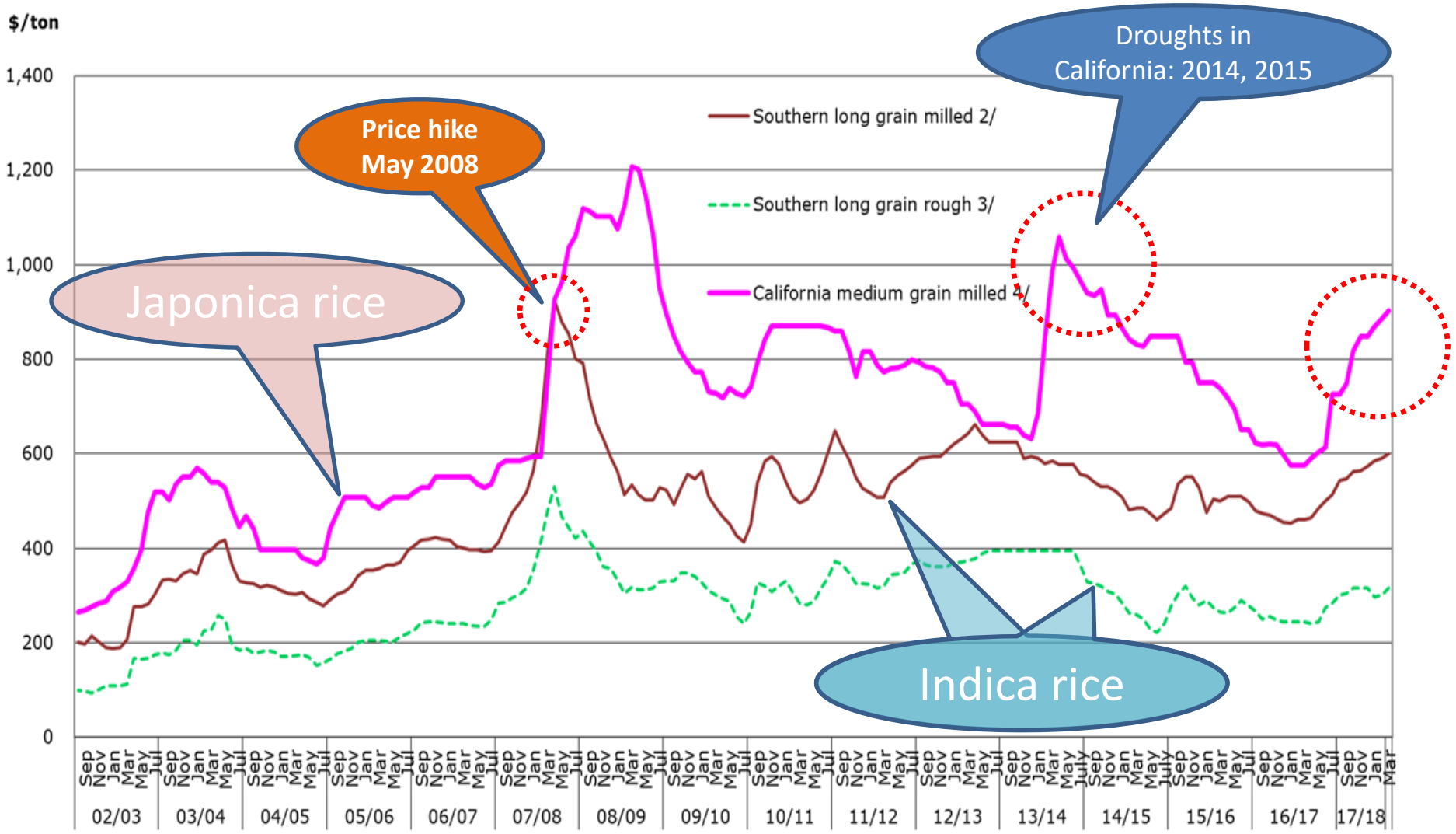
Characteristics of japonica vs. indica rice prices…

Price differences of japonica and indica rice in the U.S., FOB prices (Aug. 1976 – Feb. 2015)



ソース: Rice Yearbook : Dataset, USDA, Agricultural Marketing Service, Rice Market News.
伊東正一http://worldfood.apionet.or.jp/riceprice/ricepriceJ.htm , June 2015

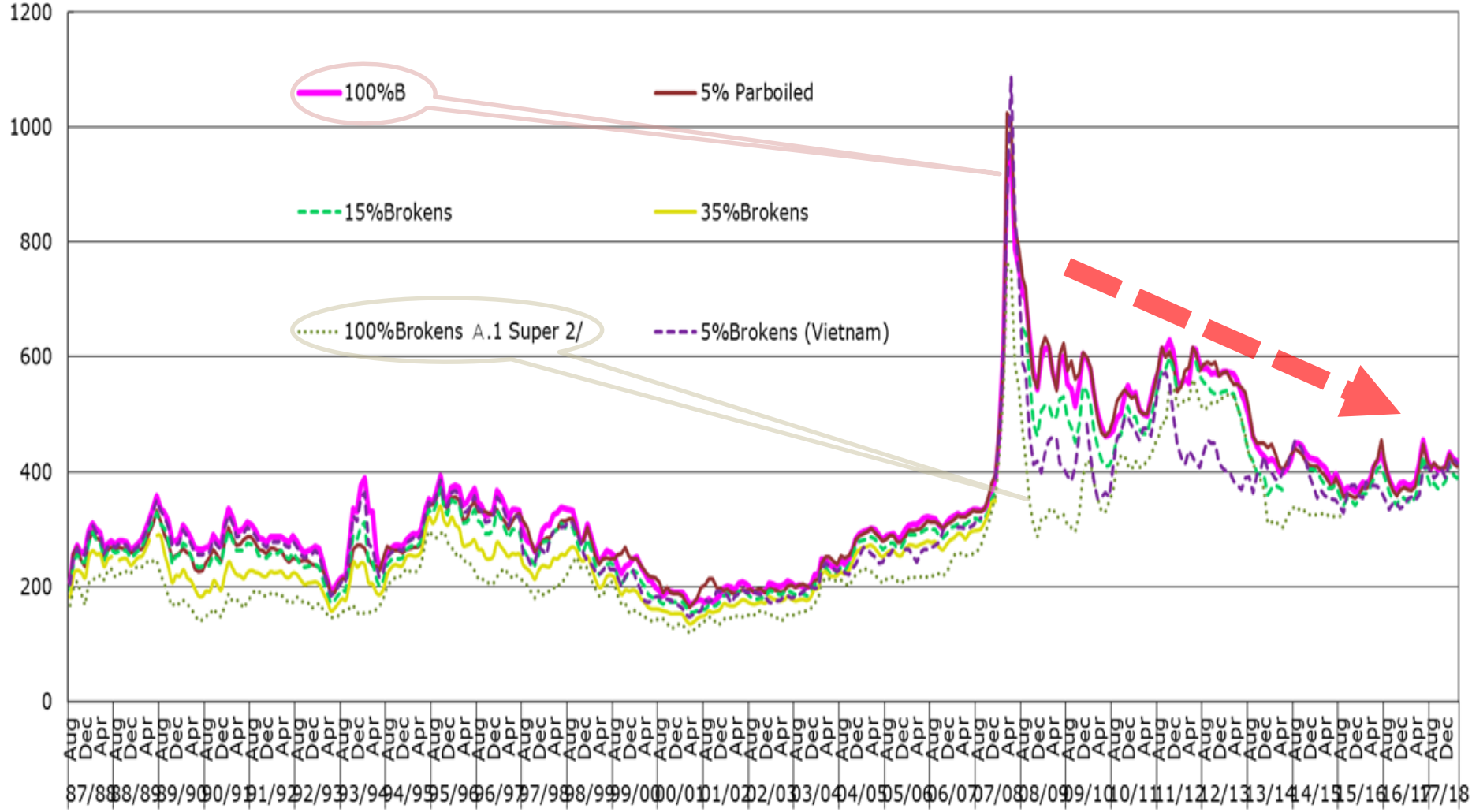
Fig.&Table 3-3. U.S. prices of milled rice (Aug. 2002 - Mar. 2018)



Source: USDA, Rice Situation and Outlook Yearbook Rice Outlook, Mar. 12, 2018

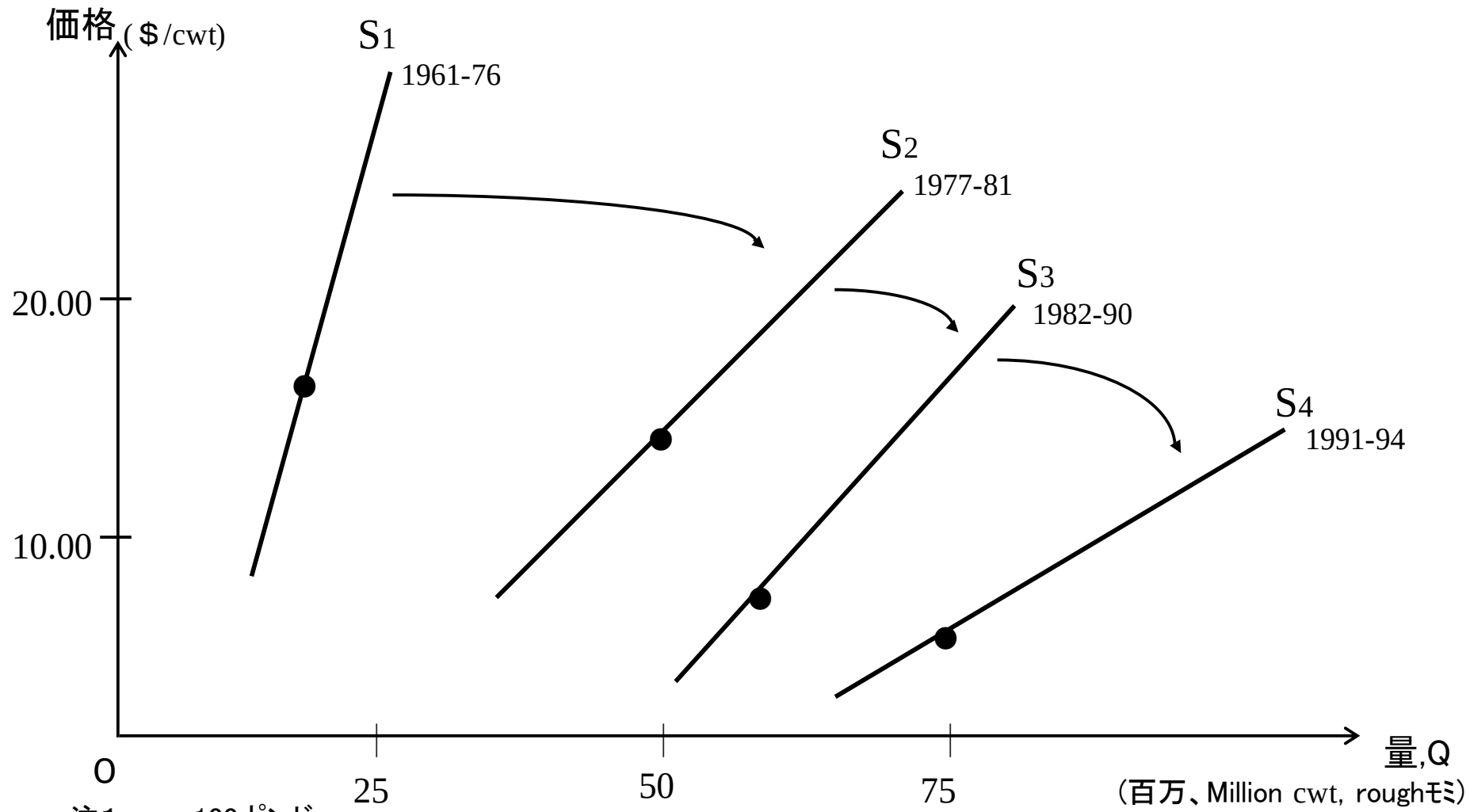
S. Ito, Department of Agricultural and Resource Economics, Faculty of Agriculture, Kyushu University, Japan

Fig.&Table. 3-5a. Rice export prices in Thailand and Vietnam (From Aug. 1987- Mar. 2018)



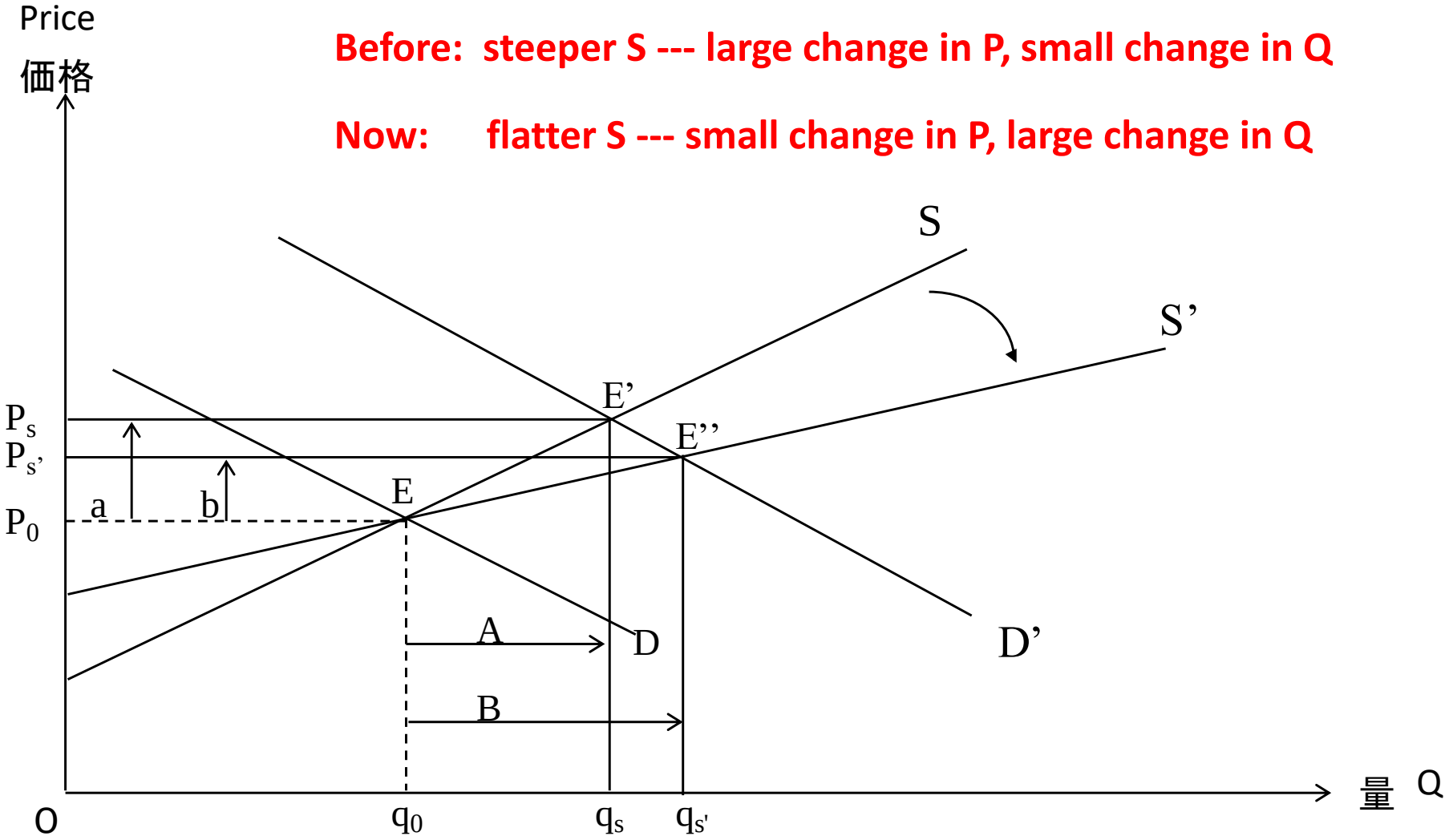
NA=Not available. 1/ Simple average of weekly price quotes. Includes cost o f bags. 2/ 100-percent brokens.
Source: Thailand Grain and Feed Weekly Rice Price Update, U.S. Embassy, Bangkok. Last updated May 19, 2007,
Source: Aug. 1997~Aug. 2004 (USDA): Rice Situation and Outlook Yearbook Aug. 2004 ~、Rice Outlook, Mar. 12, 2018
S. Ito, Department of Agricultural and Resource Economics, Faculty of Agriculture, Kyushu University, Japan

Fig 6. Outward shifts in rice supply curve in Arkansas during 1960s – 1990s:
Due to technology innovations



注1：cwt=100ポンド
資料：Ito,et al.,1999.

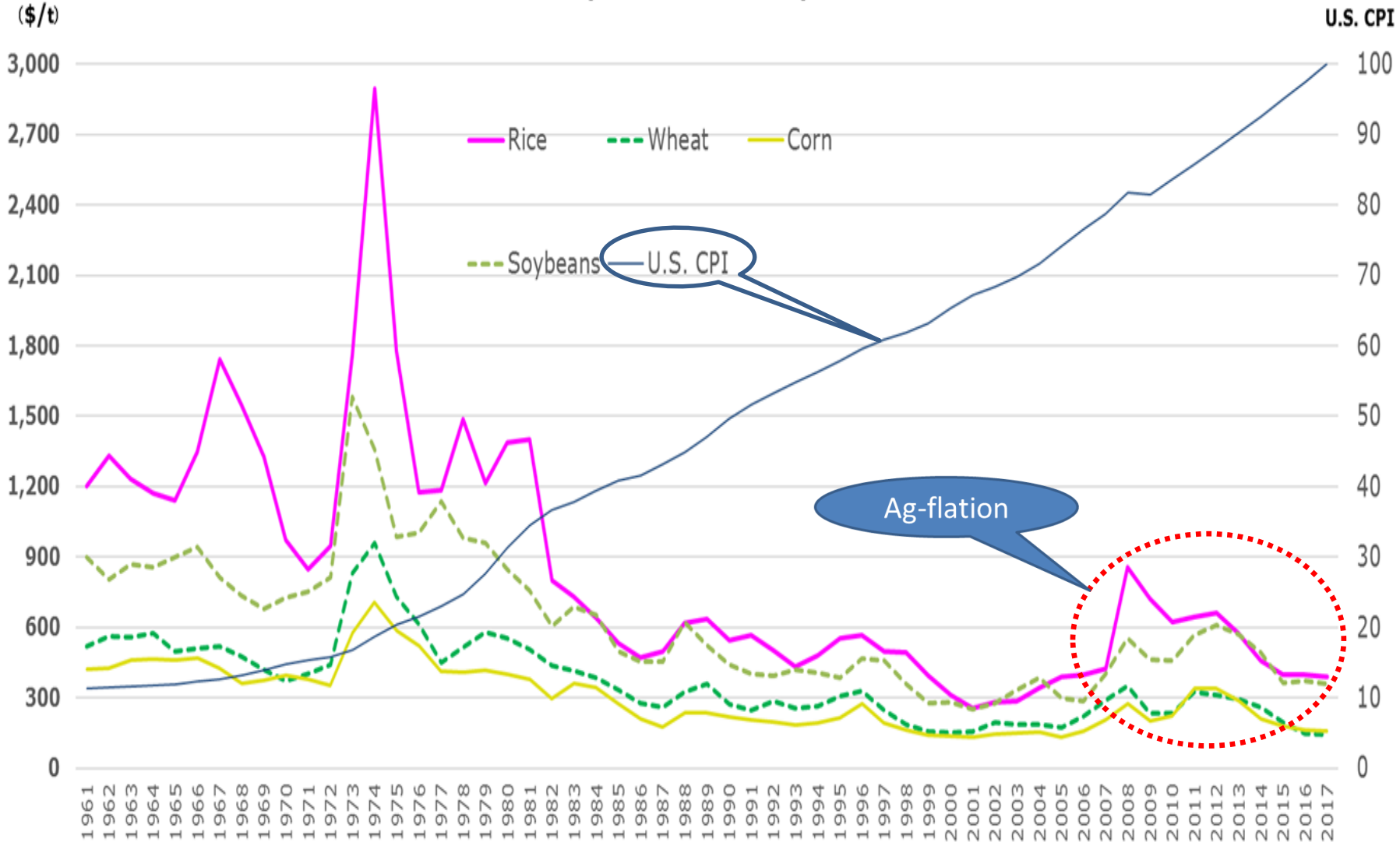
Fig. 7. Impacts of change in slope of supply curve on market prices



注釈：供給線の傾きがより平らになりSからS'にシフトした状態では需要曲線がDからD'に何らかのショックでシフトした場合に価格の変動はSのとき,a, よりもS'のとき,b, の方が小さい。逆に供給量の変動はSのとき,A,よりS'のとき,B,の方がより多くなる。

As of Jul-14-2017

Fig.&Table2. Real world prices of rice, wheat, corn and soybeans (Annual since 1961)



Source: IMF: International Financial Statistics (IFS)

Note 1: Rice: Bangkok, 5% broken, milled. Note 2: Rice, corn, and soybean, calendar year

Note 3: Wheat: 1961-1995: Gulf of Mexico (calendar year), and 1996-2017: Texas Gulf (season average price)

Note 4: The real prices are calculated with the US 2017 Consumer Price Index (CPI) to be 100 as the base year

Contemporary structural changes・・・2

- **Technological improvements**
  - Because of technological improvement, supply curves of grains have shifted outward and got flatter over time (Ito, et al. 1999),
  - Ag-flation must have shifted the supply curves further out,
  - Various technology including ICT (information communication technology) should have contributed to shift the grain supply curves to shift out and even flatter now,
  - Those above indicate that grain production has become more sensitive to change in prices and flexible to produce more quantity with the more needed:
  - **the more needed, the more produced, the more efficiently and with the more volume.**

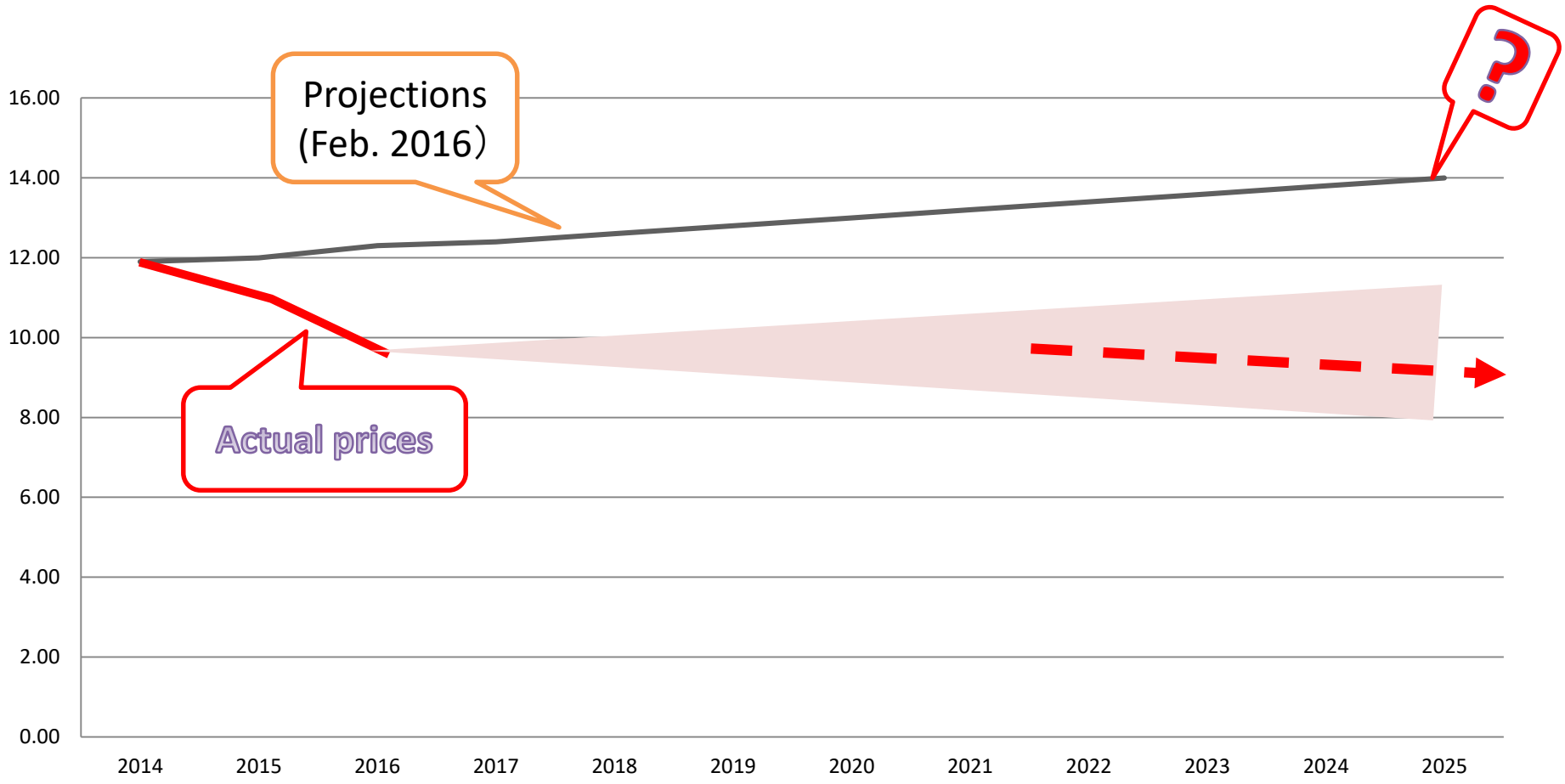
Because of technological improvements, the grain prices in real term decreased over time.

So, what to expect in prices for the future…?

Yes, prices drop over time. Higher price periods are only short and exceptional!!

It is important to reduce costs, always!!

USDA long-grain rice price projections to 2025



Source: USDA/ERS, USDA Baseline,, Feb. 2016.

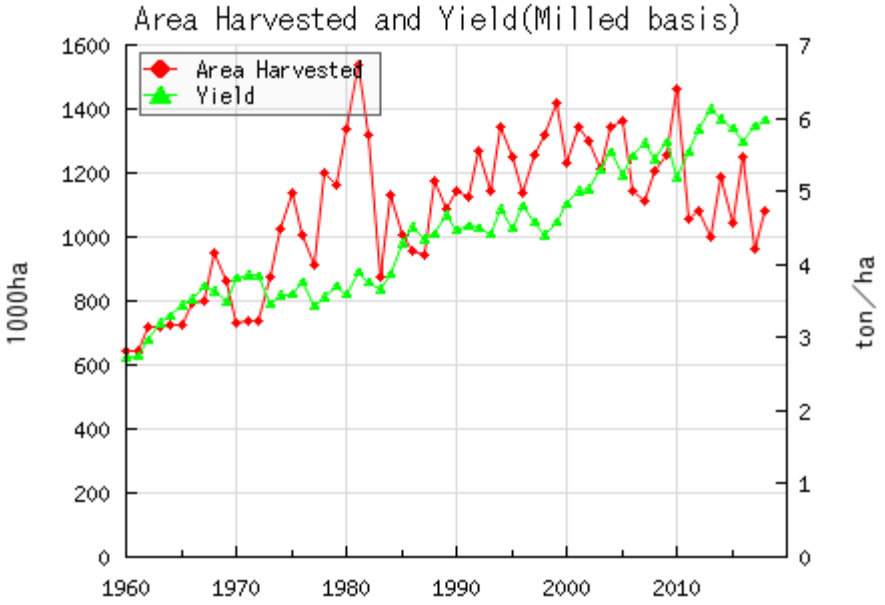
What's happening in the U.S.A.?

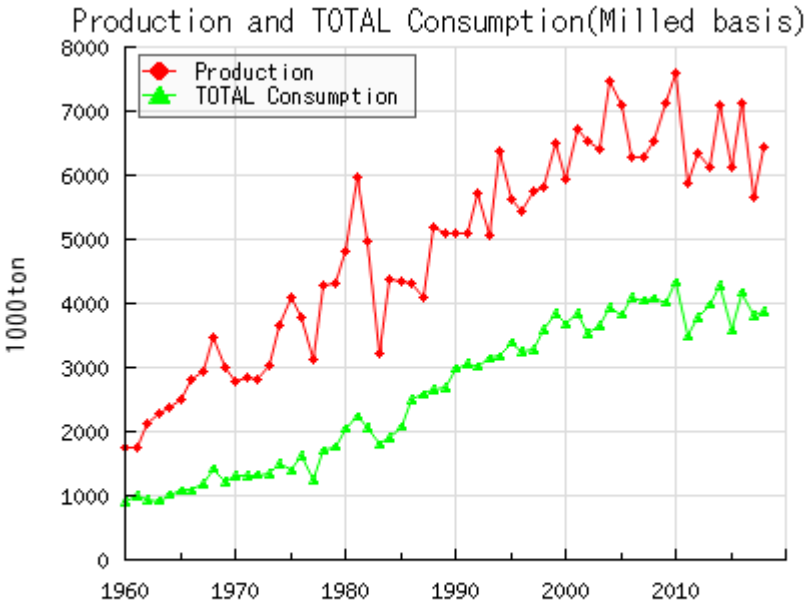
The recent rice situation in the U.S. ···

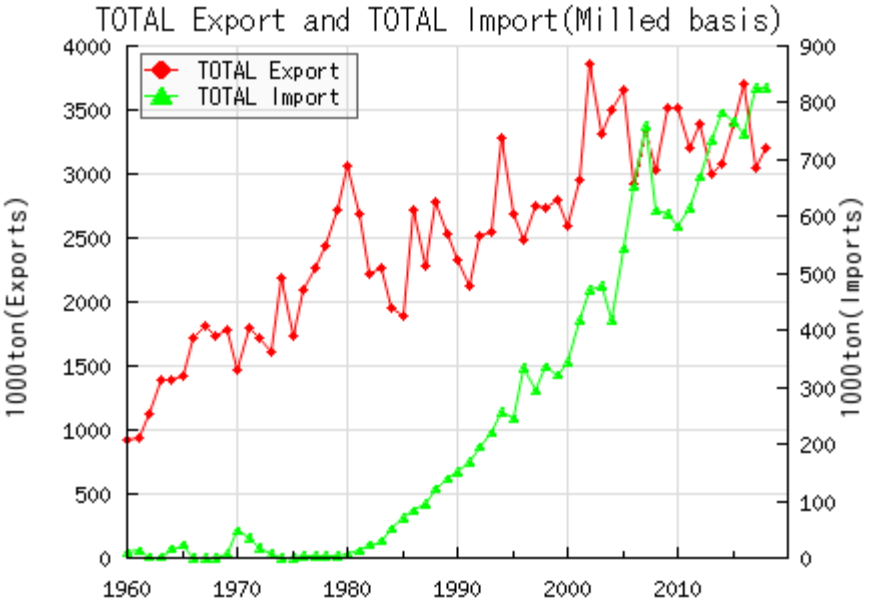
- **Prodn. 7.0 million MT (Milled basis)**
  - Japonica rice: 1.5 mill. MT (Only in Calif.)
- **Exports 3.3 million MT** (fluctuate!)
- **Imports 0.8 million MT** (increasing!)

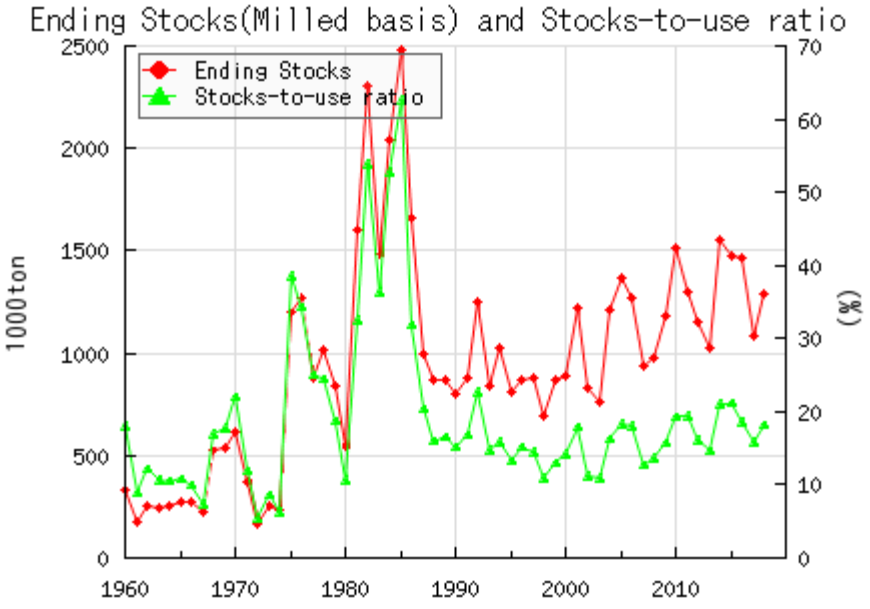
- **Rice areas decided by relative prices:**
  - Among corn, soybeans, cotton, feed, tomato, etc.
- **Stress in the South:**
  - Potential for prod. increases is large, but…,
  - Prices lower than California
  - Challenging with hybrid rice, but quality is bad!!

Rice statistics in the U.S.



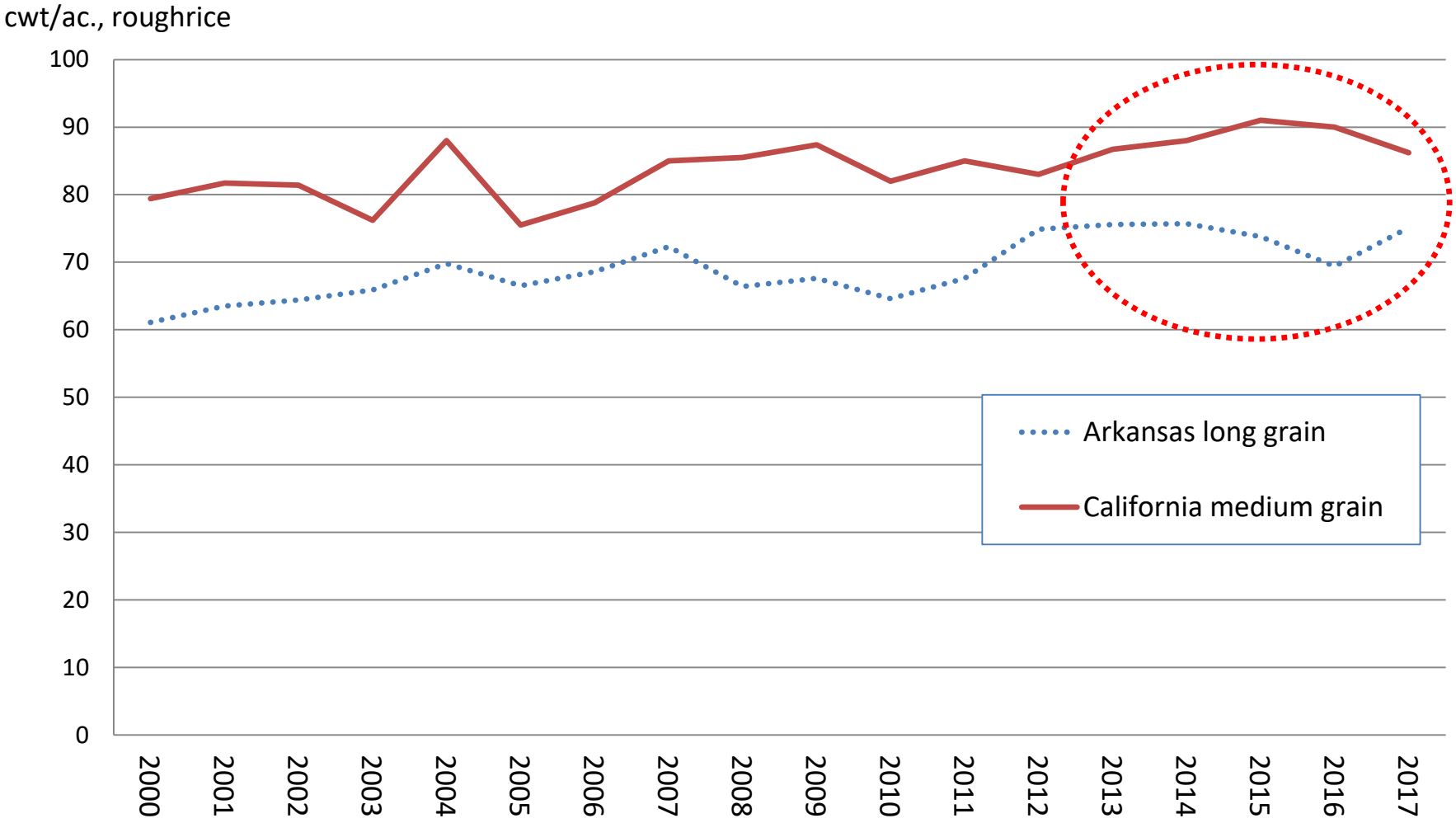






Source: USDA: PSD Online, May 2018

Change in rice yields in Arkansas and California, 2000-2017



Source: USDA: Rice Yearbook, several issues

Rice production costs and returns per planted acre, excluding Government payments, 2014-2015 1/

Item	United States		Ark Non-Delta		California		Mississippi River Delt		Gulf Coast	
	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
	dollars per planted acre									
Gross value of production										
Primary product: Rice	1,152.10	1,078.92	1,018.17	921.18	1,698.40	1,858.40	1,019.10	880.84	1,199.35	933.16
Total, gross value of production	1,152.10	1,078.92	1,018.17	921.18	1,698.40	1,858.40	1,019.10	880.84	1,199.35	933.16
Operating costs:										
Seed	98.91	98.90	103.83	104.60	63.04	63.50	118.49	119.36	94.64	95.33
Fertilizer 2/	135.40	125.57	139.94	129.94	135.84	126.14	144.59	134.27	115.18	106.96
Chemicals	100.36	96.47	96.19	91.82	146.89	140.21	93.10	88.87	82.42	78.67
Custom operations	60.69	64.44	45.29	47.16	129.59	134.94	49.48	51.52	56.10	58.42
Fuel, lube, and electricity	109.58	70.71	121.08	78.70	64.72	42.07	116.56	75.76	109.45	71.14
Repairs	47.68	47.22	52.17	51.98	33.90	33.77	51.40	51.21	43.79	43.62
Purchased irrigation water	11.78	13.07	0.71	0.74	50.54	52.63	0.38	0.40	19.96	20.78
Commercial drying	36.72	24.63	19.82	12.40	96.95	65.88	11.24	7.03	56.57	35.47
Interest on operating capital	0.18	0.44	0.18	0.43	0.20	0.50	0.18	0.44	0.17	0.40
Total, operating costs	601.30	541.45	579.21	517.77	721.67	659.64	585.42	528.86	578.28	510.79
Allocated overhead:										
Hired labor	26.81	27.88	27.41	28.42	35.54	36.85	27.65	28.68	17.97	18.64
Opportunity cost of unpaid labor	66.21	69.13	65.26	67.68	78.70	81.61	41.81	43.36	83.70	86.80
Capital recovery of machinery and equipment	127.59	130.39	136.46	140.12	93.16	95.65	132.45	136.00	127.89	131.31
Opportunity cost of land (rental rate)	150.15	155.89	132.98	135.80	316.94	323.68	128.75	131.48	86.34	88.18
Taxes and insurance	16.45	19.42	18.67	22.04	17.13	20.23	14.58	17.22	12.65	14.94
General farm overhead	25.09	25.28	23.55	23.47	44.54	44.37	22.28	22.20	16.88	16.81
Total, allocated overhead	412.30	427.99	404.33	417.53	586.01	602.39	367.52	378.94	345.43	356.68
Total costs listed	1,013.60	969.44	983.54	935.30	1,307.68	1,262.03	952.94	907.80	923.71	867.47
Value of production less total costs listed	138.50	109.48	34.63	-14.12	390.72	596.37	66.16	-26.96	275.64	65.69
Value of production less operating costs	550.80	537.47	438.96	403.41	976.73	1198.76	433.68	351.98	621.07	422.37
Supporting information:										
Yield (cwt per planted acre)	82	81	81	78	88	92	79	76	85	82
Price (dollars per cwt at harvest)	14.05	13.32	12.57	11.81	19.30	20.20	12.90	11.59	14.11	11.38
Enterprise size (planted acres) 1/	569	569	565	565	520	520	609	609	610	610

1/ Developed from survey base year, 2013.

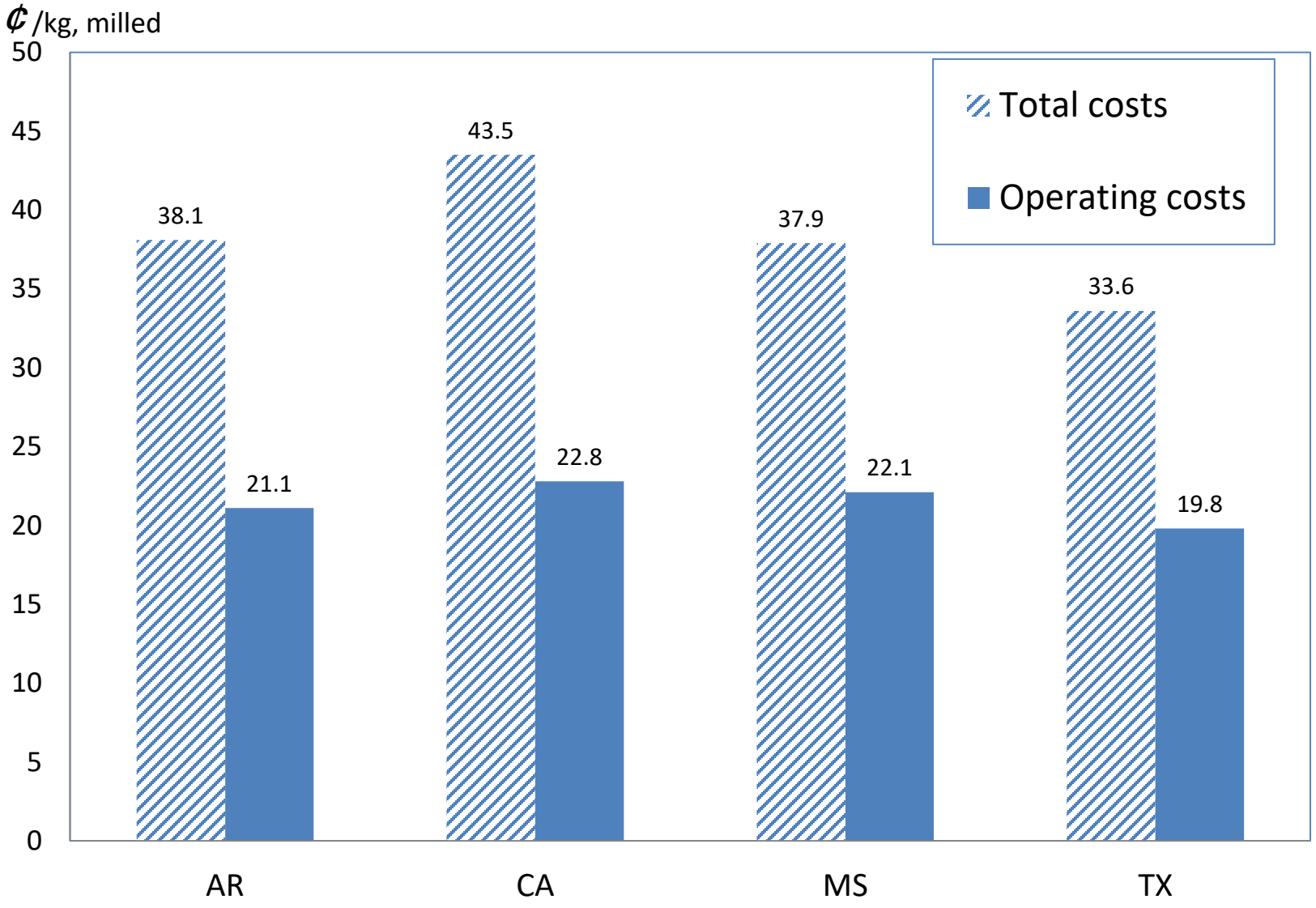
2/ Commercial fertilizer and soil conditioners.

Prod/ha/milled

6.14 6.93 7.25 6.22 5.99 6.69 6.46

Source: USDA: Compiled by ERS using Agricultural Resource Management Survey data and other sources.

Production costs of rice in the US, 2015



Source: USDA/ERS, Rice Costs and Returns, 2016. Recalculated from rough, pound and acre bases to milled and kilogram bases.

U.S. rice production costs and returns per planted acre, excluding Government payments, 2013-2017 1/

Item	2013	2014	2015	2016	2017
	dollars per planted acre				
Gross value of production					
Primary product: Rice	1,395.23	1,152.10	1,060.29	863.46	970.40
Total, gross value of production	1,395.23	1,152.10	1,060.29	863.46	970.40
Operating costs:					
Seed	84.39	98.91	101.77	99.03	97.24
Fertilizer 2/	138.82	135.40	124.68	105.65	95.13
Chemicals	102.41	100.36	96.82	100.55	99.06
Custom operations	65.65	60.69	64.68	66.41	66.71
Fuel, lube, and electricity	106.07	109.58	70.44	61.47	72.22
Repairs	45.25	47.68	47.29	47.30	47.74
Purchased irrigation water	15.57	11.78	13.16	13.63	14.56
Commercial drying	44.09	36.72	24.51	21.22	26.11
Interest on operating capital	0.27	0.18	0.44	1.14	2.64
Total, operating costs	602.52	601.30	543.79	516.40	521.41
Allocated overhead:					
Hired labor	26.83	26.81	27.88	29.04	29.60
Opportunity cost of unpaid labor	66.62	66.21	69.09	71.46	74.65
Capital recovery of machinery and equipmen	119.65	127.59	129.87	130.48	132.70
Opportunity cost of land(rental rate)	158.54	150.15	156.24	143.27	143.56
Taxes and insurance	16.01	16.45	19.36	18.00	18.12
General farm overhead	26.21	25.09	25.37	25.65	26.12
Total, allocated overhead	413.86	412.30	427.81	417.90	424.75
Total costs listed	1,016.38	1,013.60	971.60	934.30	946.16
Value of production less total costs listed	378.85	138.50	88.69	-70.84	24.24
Value of production less operating costs	792.71	550.80	516.50	347.06	448.99
Supporting information:					
Yield (cwt per planted acre)	83	82	81	78	80
Price (dollars per cwt at harvest)	16.81	14.05	13.09	11.07	12.13
Enterprise size (planted acres) 1/	569	569	569	569	569

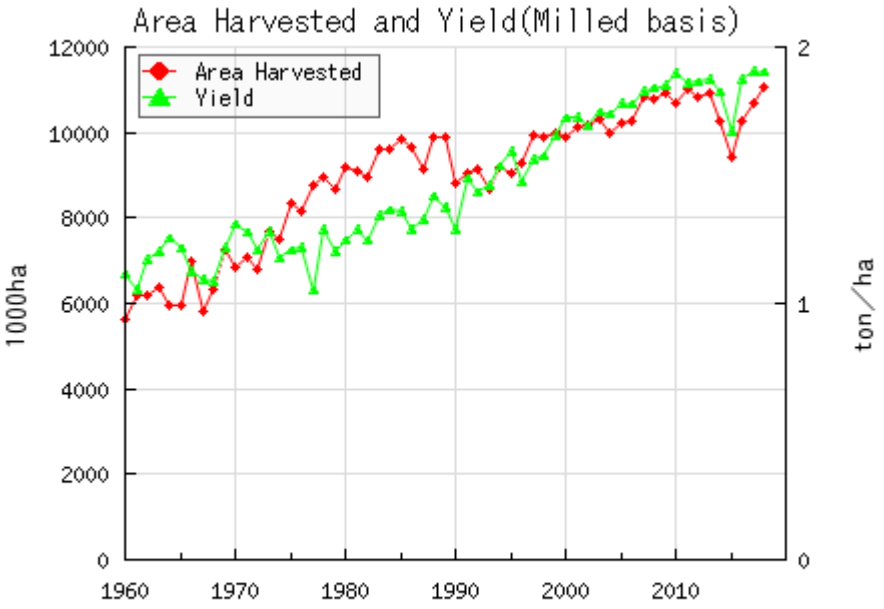
1/ Developed from survey base year, 2013.
2/ Commercial fertilizer and soil conditioners.
Source: Compiled by ERS using Agricultural Resource Management Survey data and other sources.

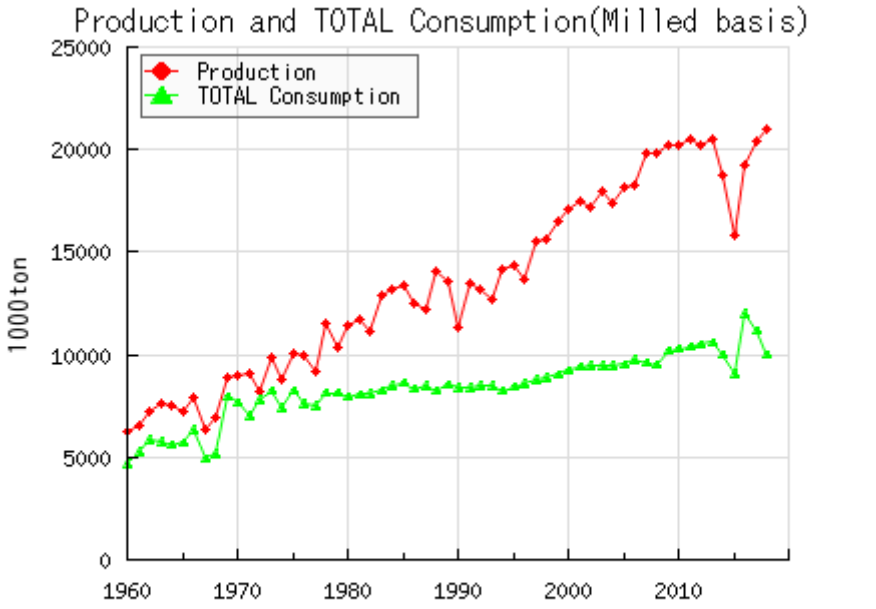
Source: USDA/ERS: ttps://www.ers.usda.gov/webdocs/DataFiles/47913/RUSRice.xls?v=43221 (Visited on May20, 2018)

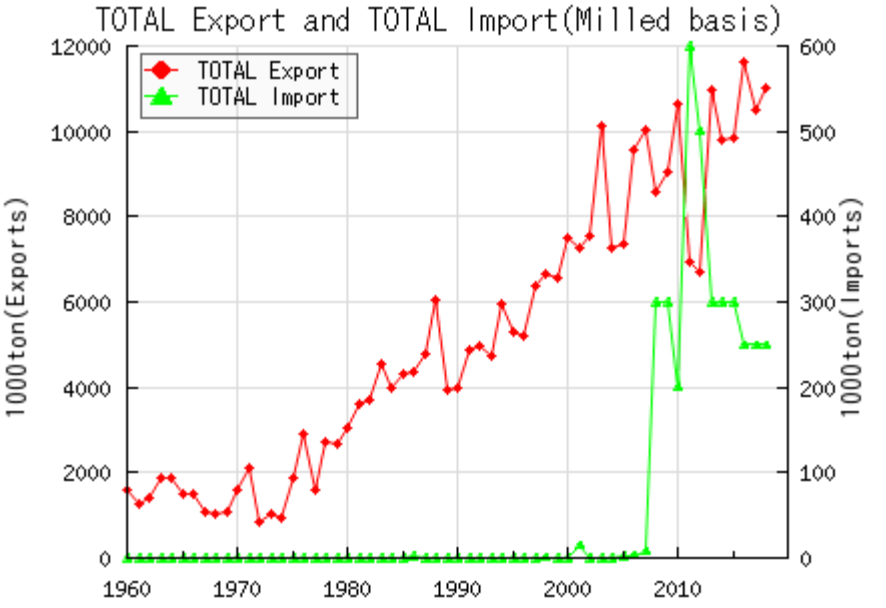
Attention to the costs:
Important thing is not the national average costs, but **YOUR** costs relative to the market prices!!

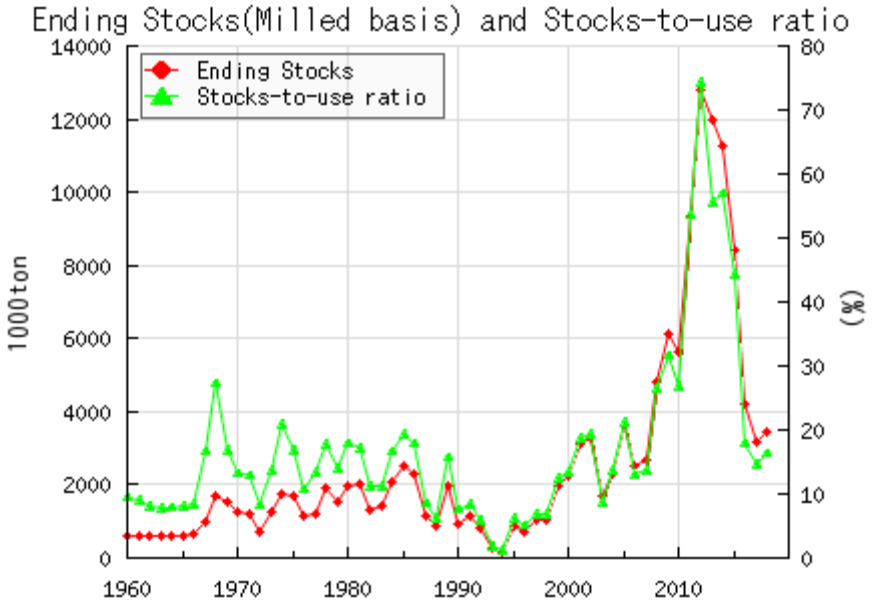
Overview on some major rice countries, 1960-2018 …

Rice statistics in THAILAND



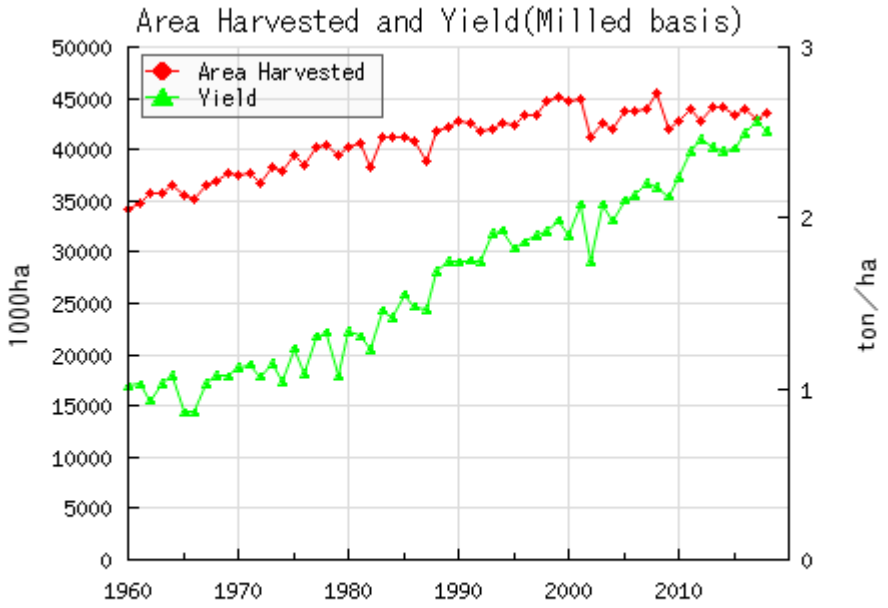


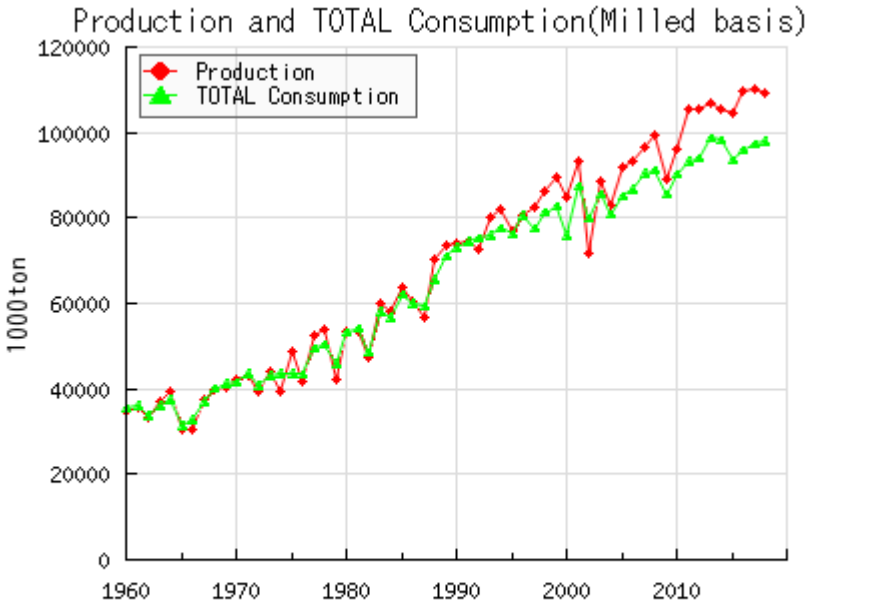


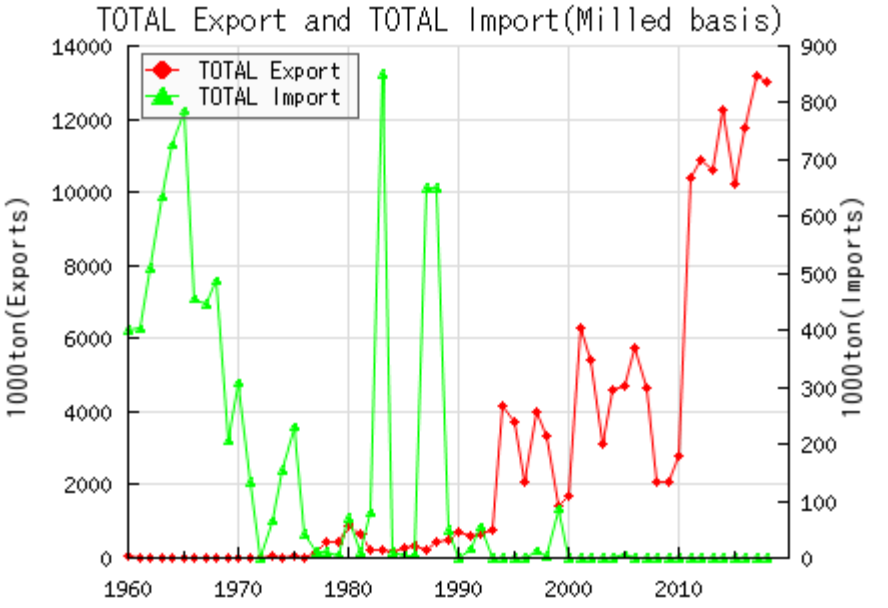


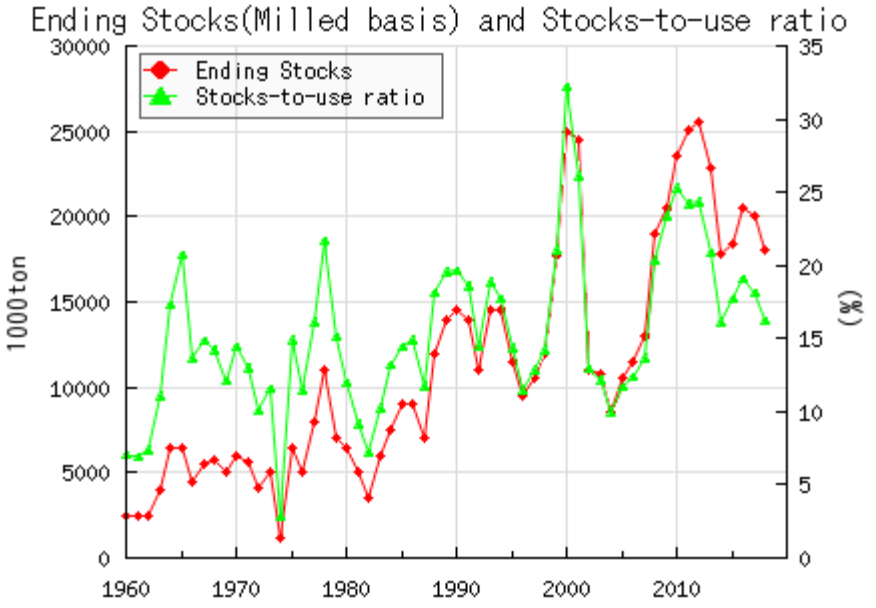
Source: USDA: PSD Online, May 2018

Rice statistics in INDIA



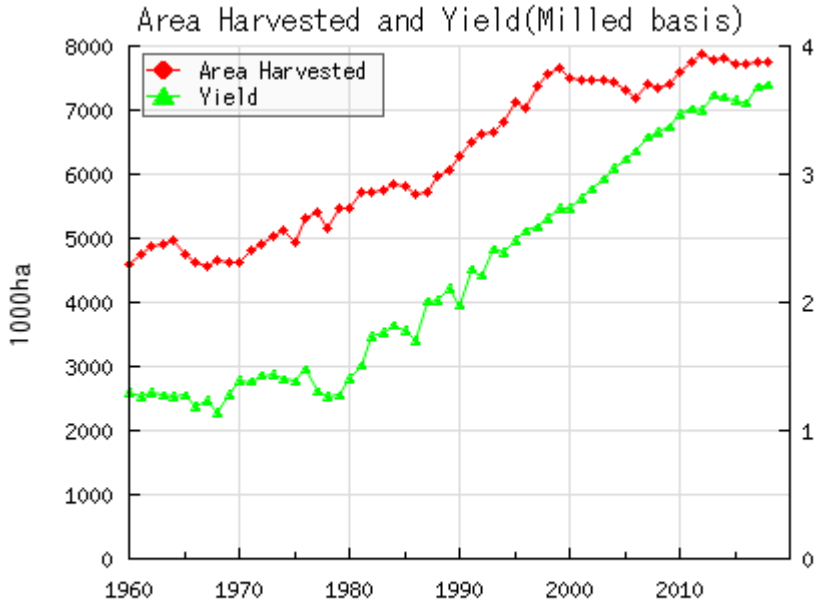


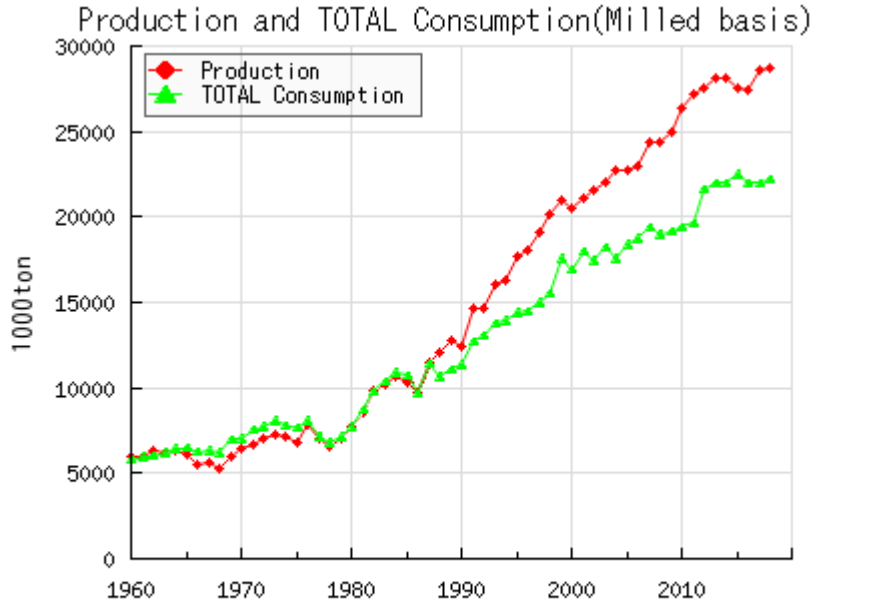


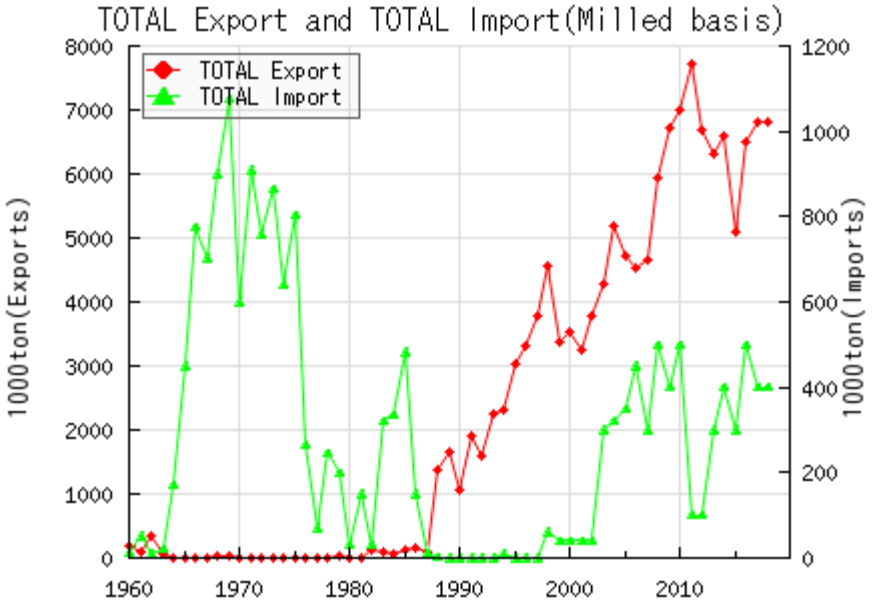


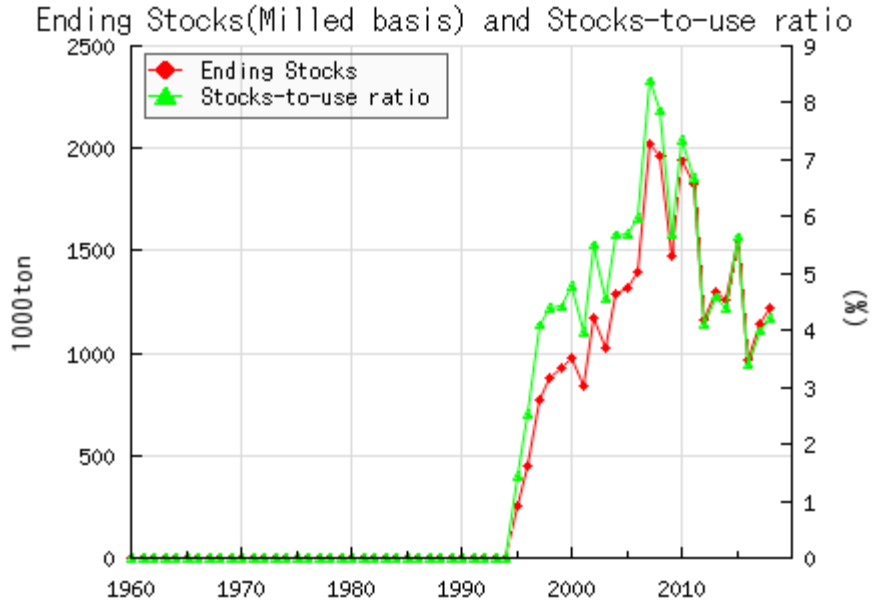
Source: USDA: PSD Online, May 2018

Rice statistics in VIETNAM



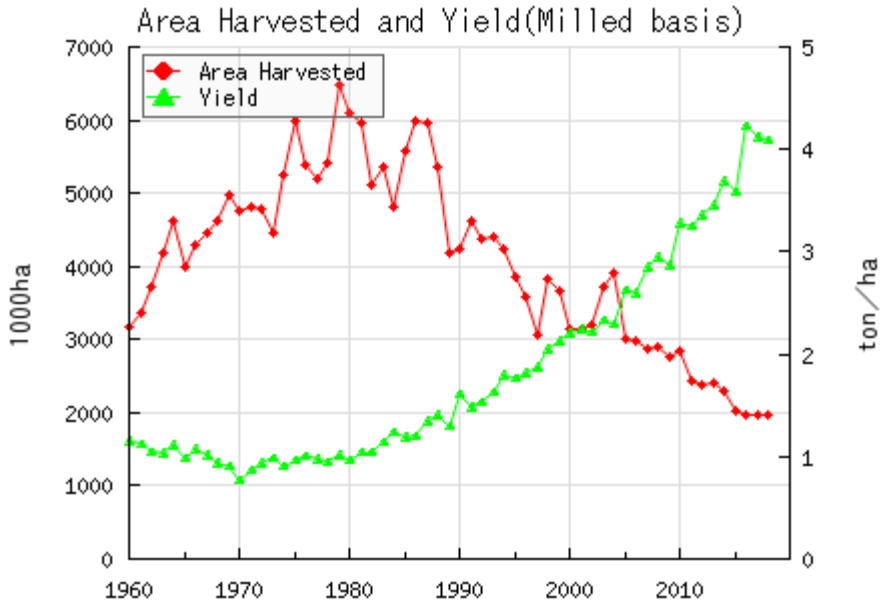


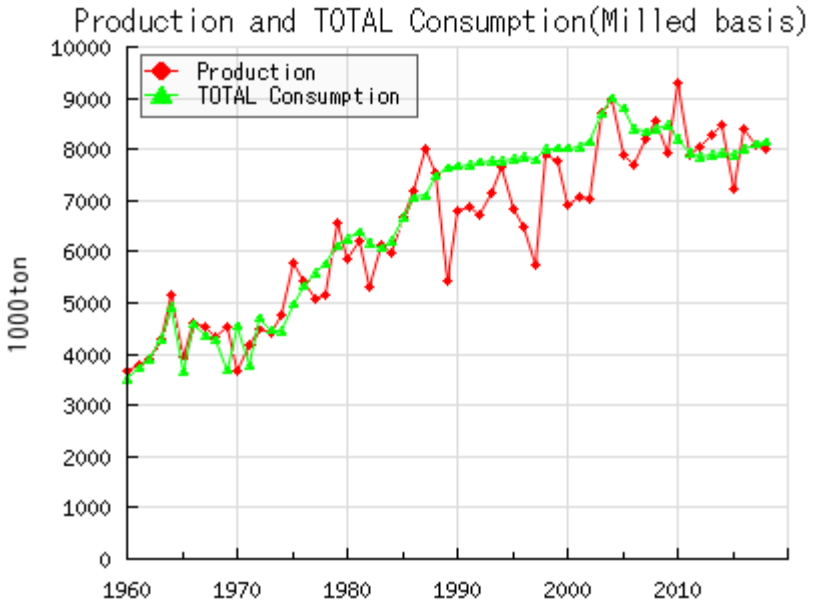


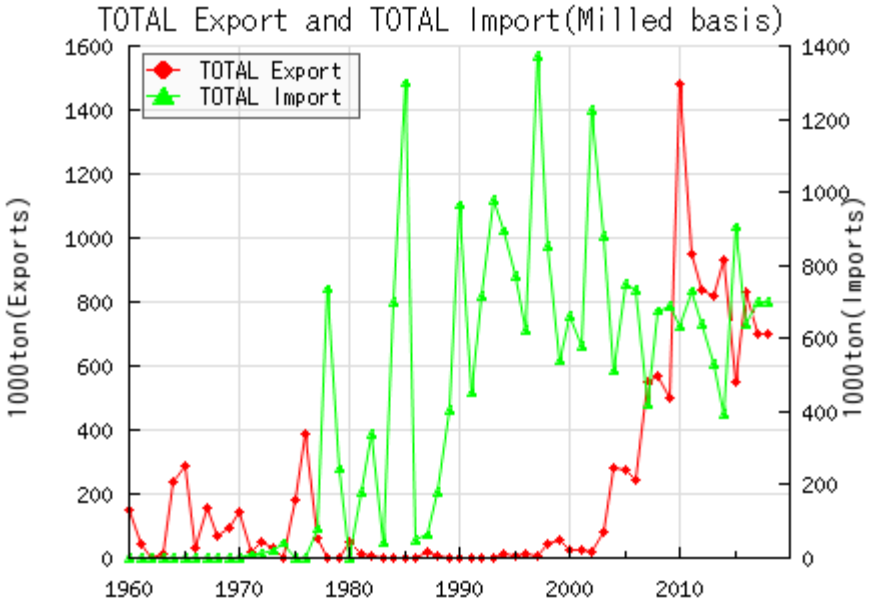


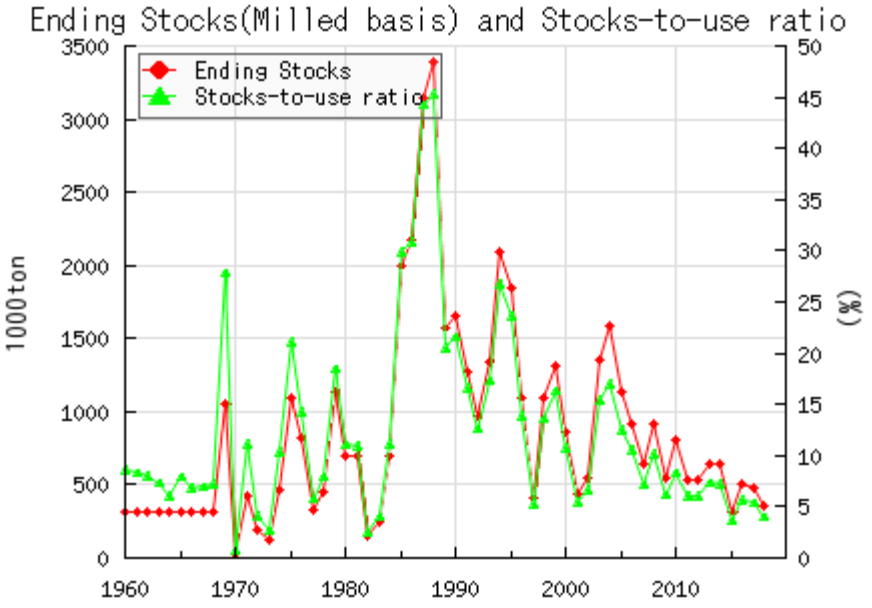
Source: USDA: PSD Online, May 2018

Rice statistics in Brazil



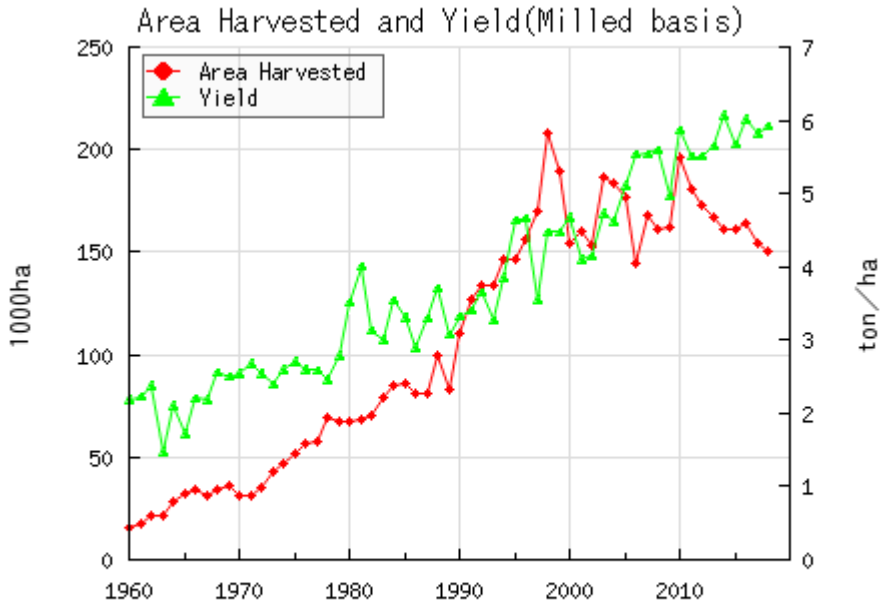


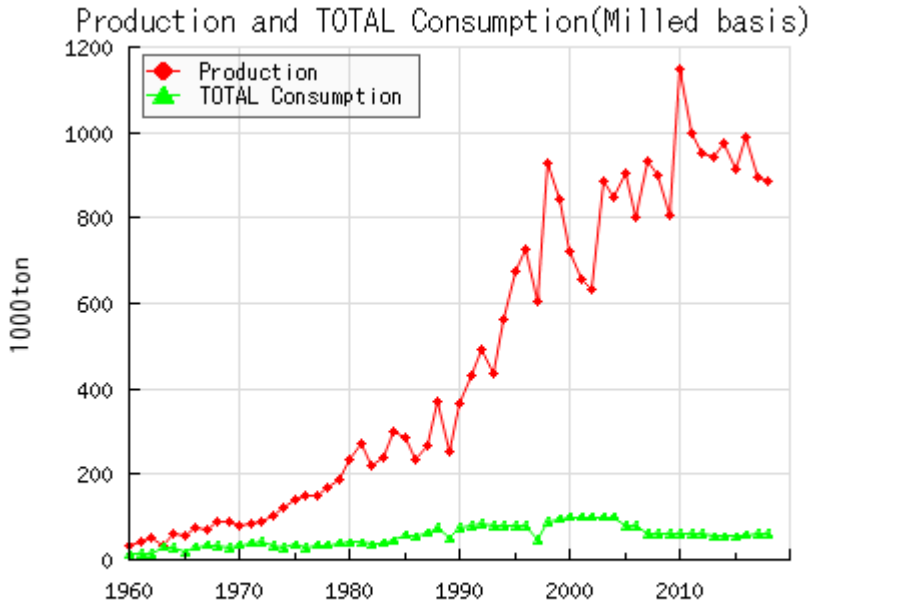


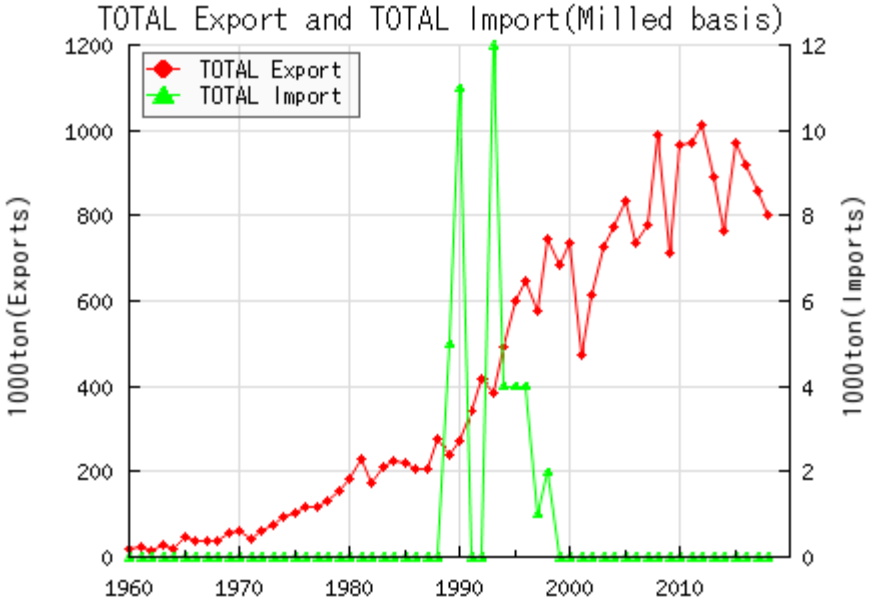


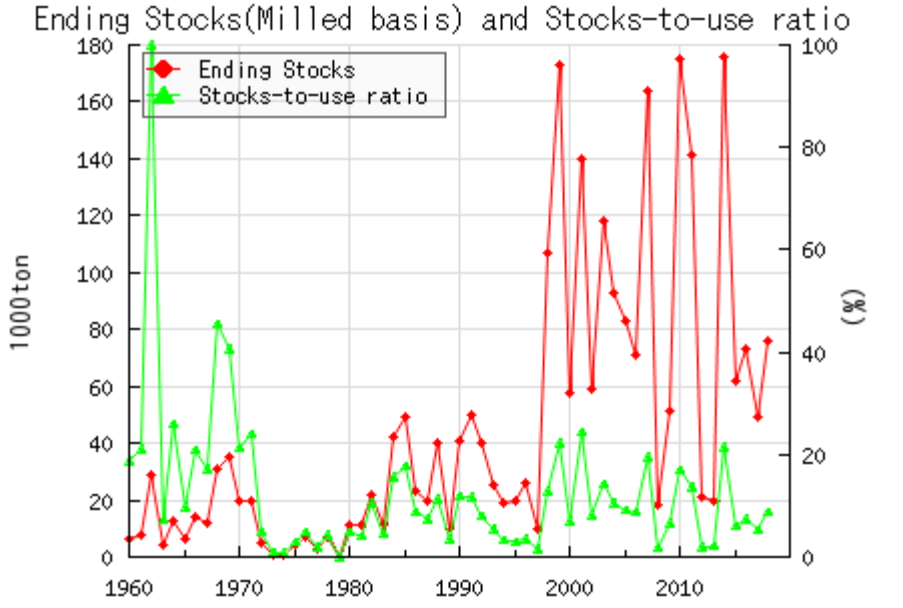
Source: USDA: PSD Online, May 2018

Rice statistics in URUGUAY



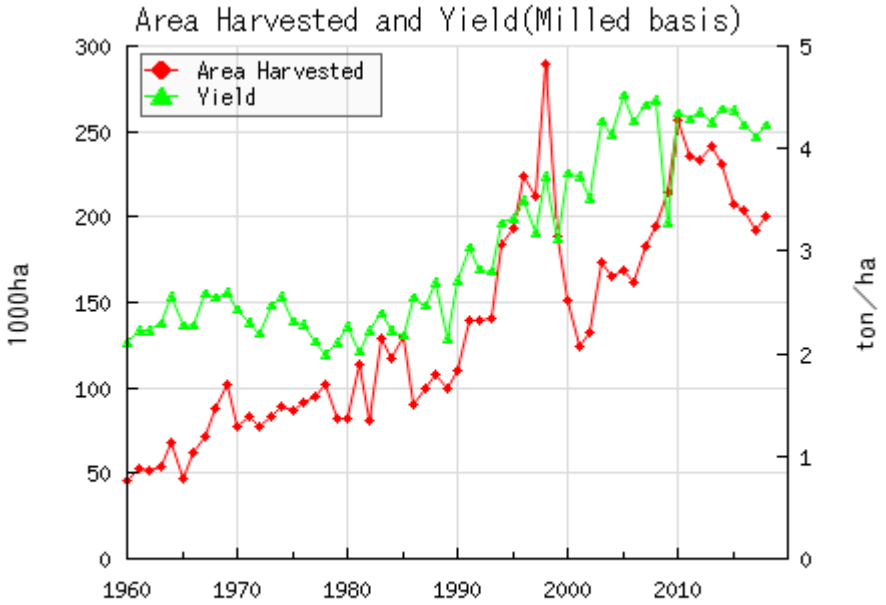


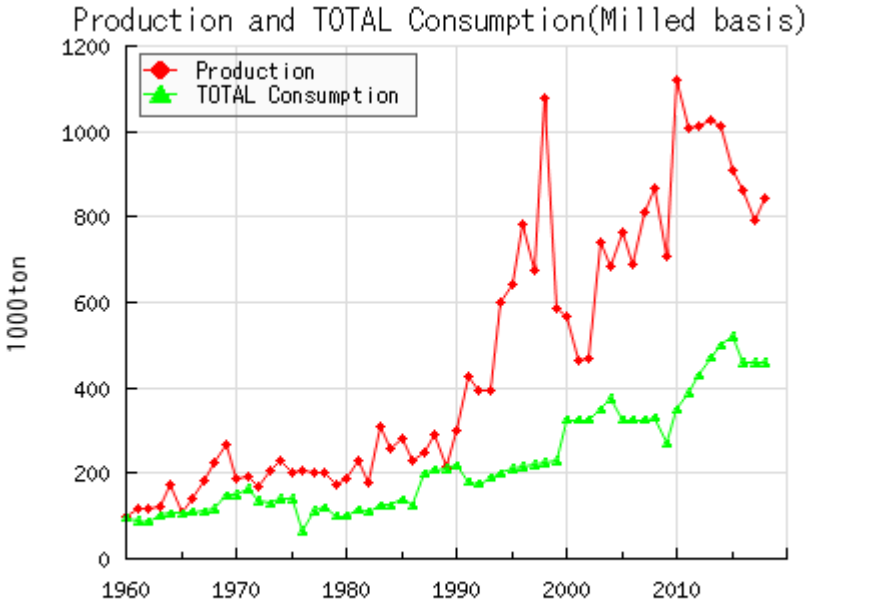


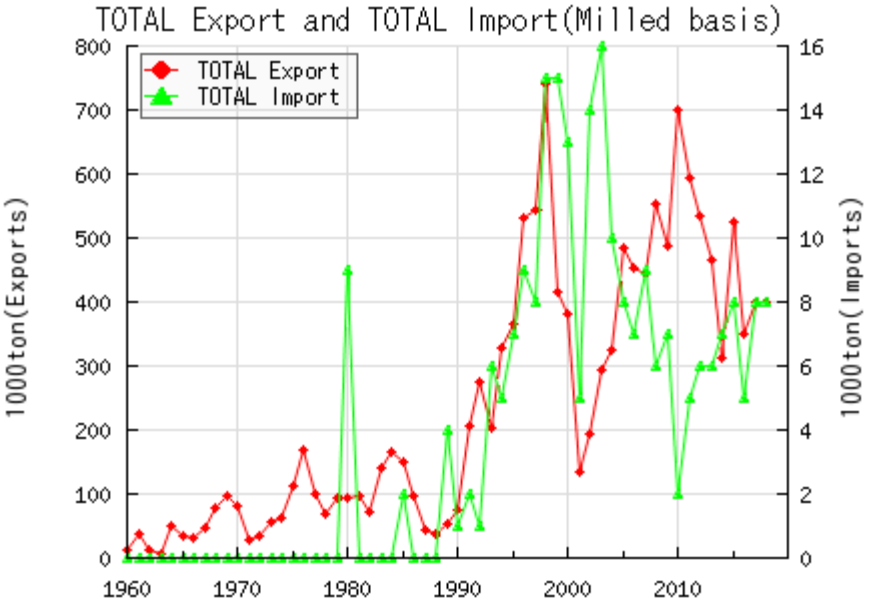


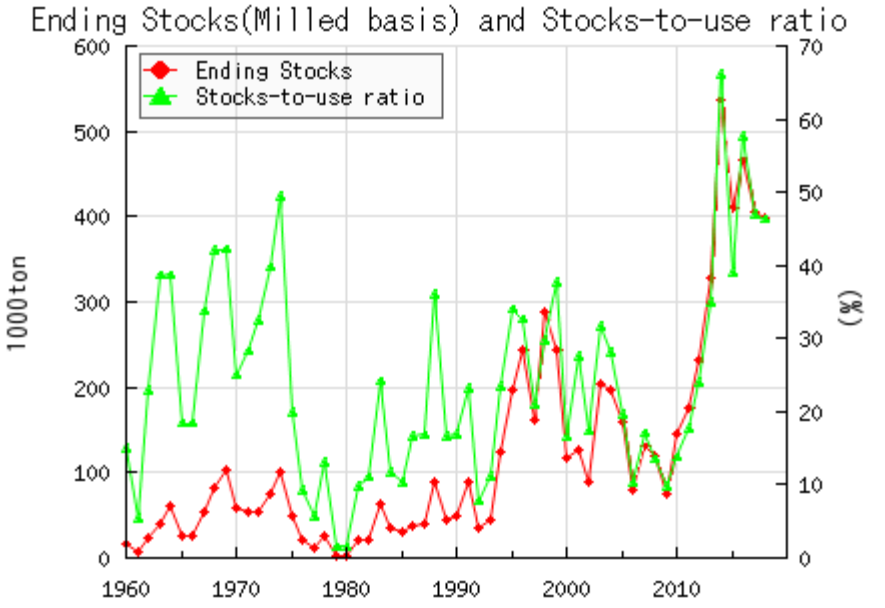
Source: USDA: PSD Online, May 2018

Rice statistics in ARGENTINA



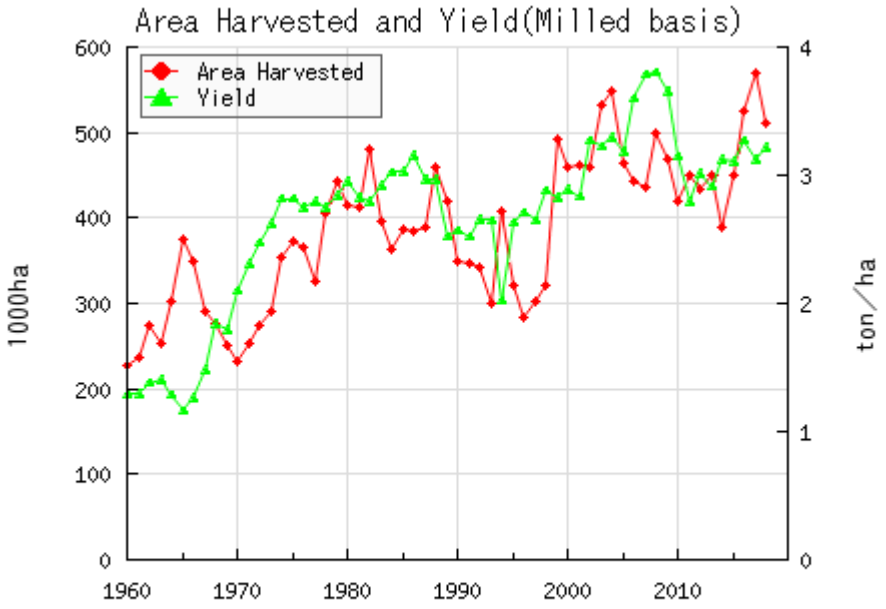


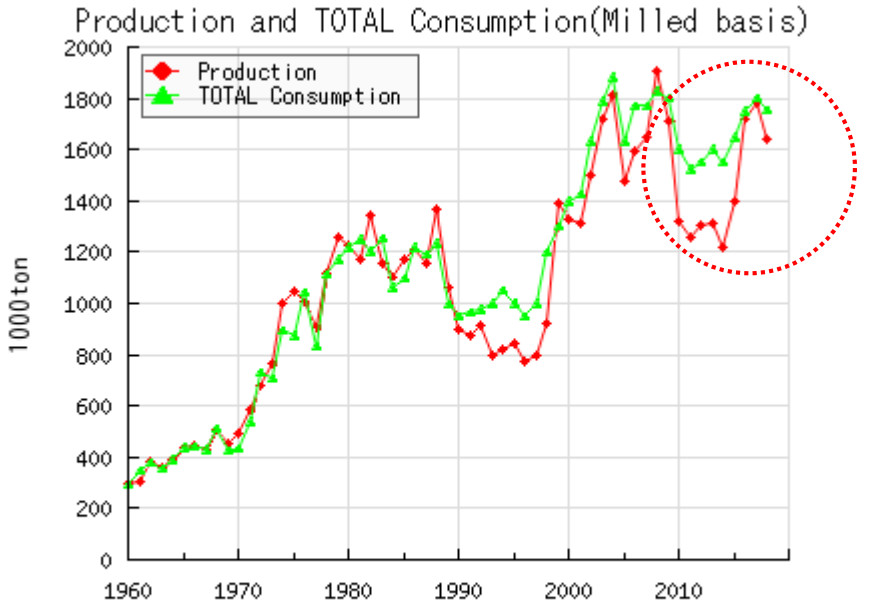


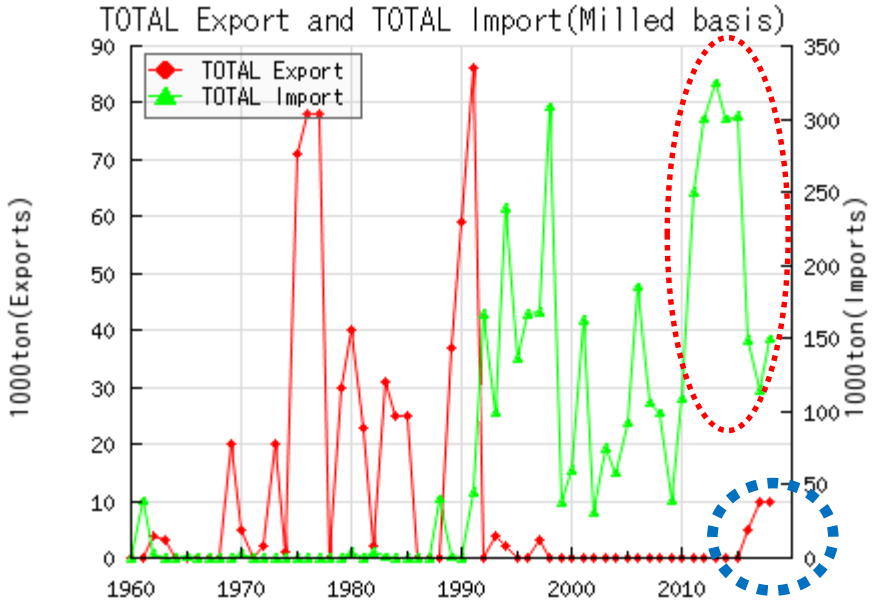


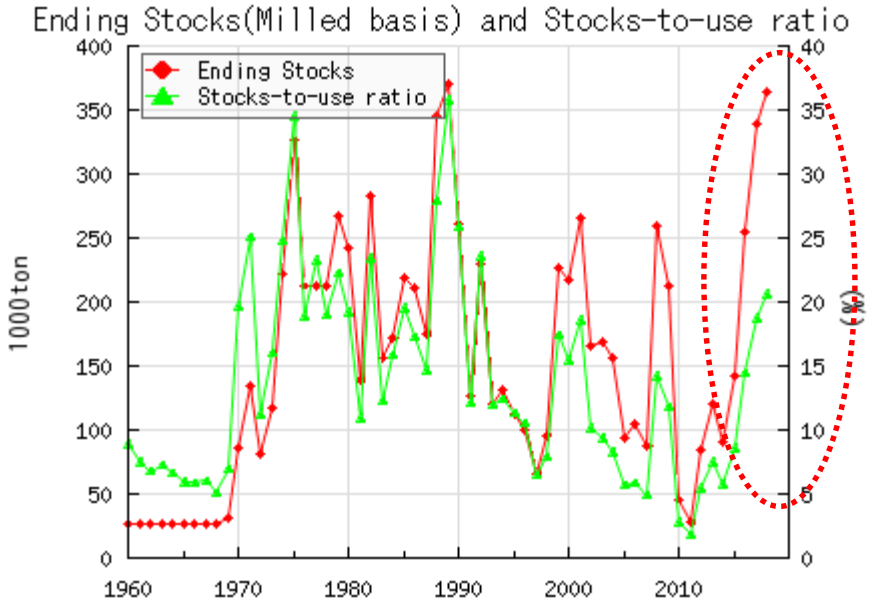
Source: USDA: PSD Online, May 2018

Rice statistics in COLOMBIA

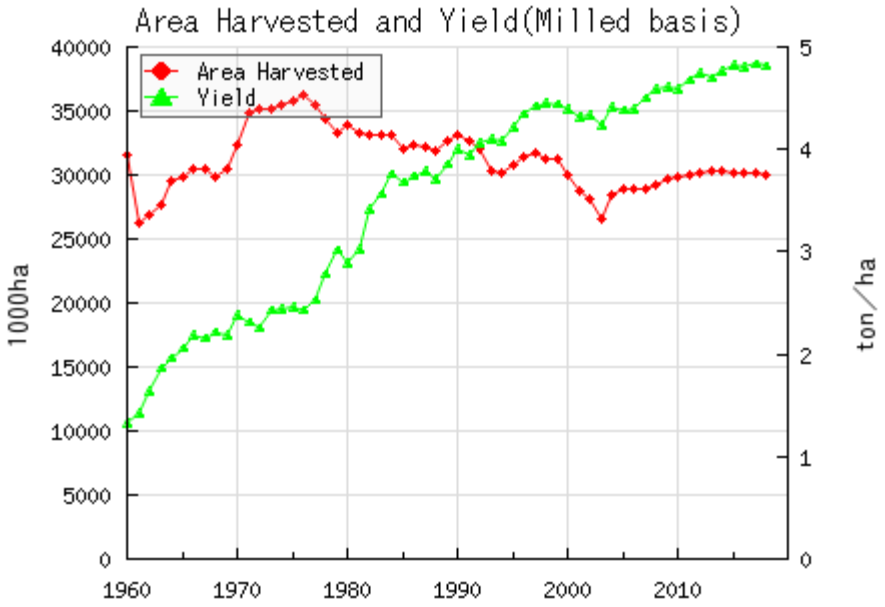


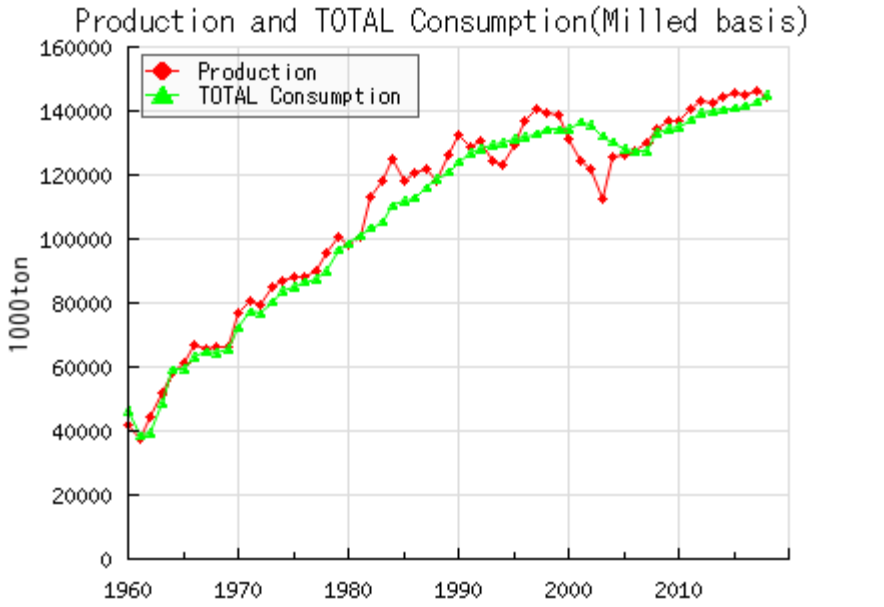


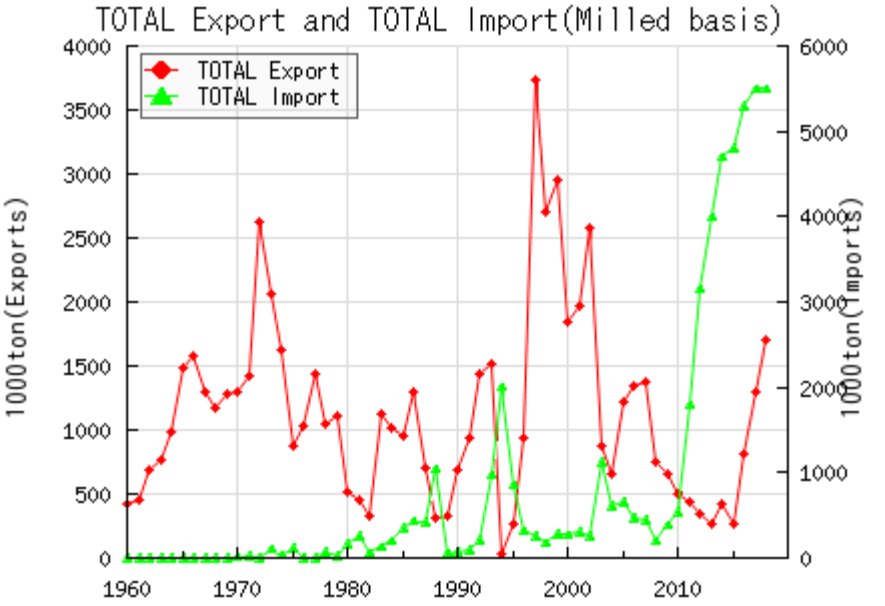


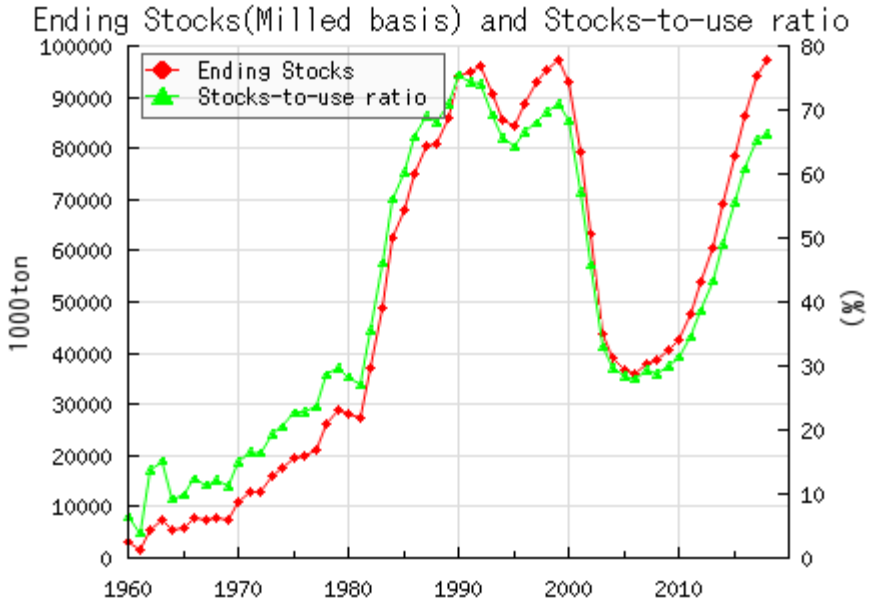


Rice statistics in CHINA









So, what should we do now to compete with the rice exporters?

Contemporary structural changes・・・3

- **Economies of scale**
  - Average size of rice farms in the U.S. has been increased over time, from 278 acres in 1992 to 453 acres in 2007 (Baldwin, et al., 2011).
  - New large scale agricultural developments have been conducted in various areas such as Brazil, Argentina, etc. A large scale farm in Brazil is as large as over 200,000 ha, producing soybeans, etc. (Ito, 2014 and Hongo, 2014),
  - Even in Asia, large-sized farms are appearing…,
  - These situations indicate that Ag-flation must have shifted the supply curves further out,

Rice Farms Expand in Scale as Number of Farms Dwindles

Two of the most notable trends identified by the 2007 and earlier agricultural censuses are the ongoing decline in the number of rice farms and the steady rise in the average number of acres of rice on the remaining farms. Both trends are not unique to rice production (table 1).[1] The 6,084 U.S. rice farms reported in 2007 represent a 46-percent decline in farms since 1992. Over the same period, the average rice acreage per farm rose 63 percent.[2] Rice farms in 2007 had the second-highest average acreage of all farms that produced major field crops. Cotton farms had the largest average acreage (564 acres), followed by rice (453 acres), wheat (317 acres), corn (248 acres), and soybeans (229 acres).[3]

The distribution of farm size share has also changed markedly over the last three agricultural censuses, with larger farms now accounting for a greater share of the total number of rice farms than in previous years (table 2). Farms with 1,000 or more acres of rice accounted for a larger percentage of all rice farms in 2007 (10 percent) than in previous agricultural censuses.

Table 1
U.S. rice farm statistics

	1992	1997	2002	2007
Number of farms	11,212	9,627	8,046	6,084
Individual, family, or family-held corporation farms	8,291	6,525	5,749	3,848
Average all-farm rice acreage	278	328	397	453
Total rice acreage	3,117,718	3,161,576	3,197,641	2,758,792

Note: While "number of farms" and "total rice acreage" are updated in the Census of Agriculture subsequent to the original data release, farm classifications as individual or family farms are not. In the interest of including the most recent data available, we have included updated farm numbers and acreage in this table. However, farm classification data come from the original data release.

Source: USDA, NASS, Census of Agriculture, 1992, 1997, 2002, 2007.

Table 2
Distribution of rice farms by size

Harvested acres of rice	1992		1997		2002		2007	
	Farms	Rice acres	Farms	Rice acres	Farms	Rice acres	Farms	Rice acres
1-99	2,620	134,587	1,937	98,867	1,502	75,963	1,047	55,674
100-249	3,772	634,961	3,001	511,085	2,214	371,716	1,459	246,020
250-499	3,296	1,130,817	2,837	991,624	2,199	775,819	1,616	569,073
500-999	1,232	804,740	1,437	936,483	1,504	1,001,665	1,346	892,471
1,000+	292	412,613	415	623,517	627	972,478	616	995,554
Total	11,212	3,117,718	9,627	3,161,576	8,046	3,197,641	6,084	2,758,792

Note: For Table 2 and all of the following tables and figures, data for 1992 comes from the 1997 Census.
Source: USDA, NASS, Census of Agriculture, 1997, 2002, 2007.

[1]In fact, the same holds true for corn, cotton, soybean, and wheat farms. Between 1992 and 2007, the number of farms growing each of these field crops declined by at least 25 percent, while the average acreage per farm of the specified commodity increased at least 50 percent.

[2]While the number of rice farms and rice acreage declined between the 1997 and 2007 agricultural censuses, rice production was higher in 2007 because yield growth more than offset the decline in acreage. Between the 2002 and 2007 censuses, declining farm numbers more than offset the impacts of larger farm size and higher yields, resulting in a 6-percent decline in production—from 210 million hundredweight (100 pounds (cwt)) to 199 million cwt. Both area and production have increased since 2007, with 3.615 million acres harvested in 2010, producing a record 243.10 million cwt. Data on the number of farms will not be known until the next Census of Agriculture is taken in 2012.

[3]These figures refer to average acres planted to the specific commodity mentioned. Overall farm size is typically much larger, as many operations plant numerous crops or hold acreage fallow.

Source: Baldwin, *et al.*, 2011

Actual Trends…

- Economies of scale,
  - All sizes of farmers becoming larger …
    …Everywhere in the world:
    - US, Italy, Asia, etc.
    - Successful small farmers grow bigger…,
    - No difference between non-ag. Industries and agriculture,
    - The number of farmers decreases over time, but total production increases…,
    - The larger the farm size, the faster the new technology adopted…

Strategies to compete・・・1

- **Develop more custom-work companies,**
  - Introduction of technology such as ICT with the custom-work, because ICTs are expensive for small size farms,
  - FEDEARROS can be a candidate for that.
- **Importance of enlarging a farm size,**
  - Increase in farm sizes for the economies of scale, This is critical to cut down costs and increase revenues,
  - Group-farming or consolidation of farms can be a means….

Strategies to compete・・・2

- **Do not repeat the failure of Japanese agriculture**
  - Illusion of "Small is beautiful" or small "Family farm"
  - Technology was fine, but too much costs for small farms,
  - Turned out to be high costs, high prices,
  - Failure to compete with imported products,
  - No agricultural exports, closed markets, defensive attitude,
  - Aging, disappearing agriculture

  - **Now trying to recover the power of agriculture in Japan!!**
    - **With larger scale and more exports…**

- **Promote domestic rice consumption including process (rice juice, putting, beer, etc.) and feeding (pet food, livestock, etc.),**
- **Promote rice exports: broken rice can be exported,**
- **Explore japonica rice,**


Be Ready for …
Rice Prices to Drop!!
Thank You!

3rd ISRGH 2018 in KYOTO

The 3rd International Symposium on Rice Science in Global Health

Dates: Nov 29 (Thu.) - 30 (Fri.) 2018

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- Organizing Committee / Organizer
- Scientific Program / Speaker's Profile
- General Information / Access
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Venue

Venue : Kyoto International Conference Center (ICC Kyoto)
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TEL : 075-705-1234

http://www.c-linkage.co.jp/rice-studies/