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Theoritical Study on The Impact of Trade Liberalization to The Economic Performance of Corn In Indonesia

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ABSTRACT: *This research purposed to: 1) analyze the full impact of trade liberalization on economic performance of maize in Indonesia. 2) Analyze the impact of external shock for the economic performance of corn in Indonesia on trade liberalization era. This research using secondary data about 1975 – 2014, that gotten from many sources, there are BPS, Kementan, APPI, , FAOSTAT, NASS-USDA, ERS-USDA, Unites States of Cencus Beureau, EPI, and Worldfood. Analyze of data using system of simultaneous equations (2SLS). The results of research show that: 1) when the trade liberalization totally implemented, the world corn import had been increased higher than the increment of world corn export, so the world corn price is increase. For Indonesia, if compared with basic condition, although the world corn price increase but the effect of totally implementation trade liberalization (import corn price equal with world corn price) so Indonesian import corn price is lower than before, then made the decline of Indonesian corn price and the increment of Indonesian corn import. 2) the increment of corn's demand from main importer countries and the decrease of corn production from main exporter countries on trade liberalization era cause the increment of world corn price. That increase of world corn price causing the increment of Indonesian corn import price then made increase of Indonesian corn price and decrease of Indonesian corn import price. On the other hand, Indonesian corn production is increase.*
Keywords: *Impact, Trade Liberalization, Performance, Economic, Corn*

I. INTRODUCTION

Corn is the second important plant after rice (Deptan, 2005). Corn is use to support the endurance of food and the sufficienty of ensilage. The position of corn in food diversification is decreasing the dependence of rice. Corn is also useful in garment and food industries. The necessary of corn for industry is significally increase each year (Zubachtirodin, *et.al*, 2007). Corn is main component (60%) in field rations. The majority of domestic corn necessary is use for fodder or fodder industry (55%), about 30% for food, and its residual use to another industry and seed (Kasryono, et al, 2007).

The condition of corn market in Indonesia shows that demand of corn is higher than can produced. Its make Indonesia still importing corn to met the domestic demand. Corn importing is a dilemma that have to look for its solution, because in one hand import is detrimental to farmers because import price is cheaper than local corn price, on the other hand the necessary of fodder enterpriser can not be met from domestic.

The world trade liberalization effect efford to increase national corn production (if maybe attain corn self-sufficient), have to more pay attention external factor beside of internal factor. External factors like the totally applying of world trade liberalization, demand of world corn, and the supply of world corn that influence the world price. The world corn price is direct impacted to the Indonesian corn import price, then the corn import price influence the quantity of Indonesian corn import.

The totally trade liberalization happened when there is no obstacle on international trade. According to KTT VI WTO in Hongkong December 2005, all form of export subsidy and the rule that concerned with it is deleted on 2013 (Hutabarat, dkk, 2006; Haryadi, 2010). The abolition of export subsidy is expected to increase the competitiveness of Indonesian agricultural product.

This research purposed to: 1) analyze the totally impact of trade liberalization for the economic performance of corn in Indonesia. 2) Analyze the impact of external shock for the economic performance of corn in Indonesia on trade liberalization era.

II. METHOD OF DATA RESEARCH

This research using secondary data about 1975 – 2014, that gotten from many sources, there are Central Bureau Of Statistics (BPS), Agricultural Ministry, Association of Indonesian Manure Produser (APPI), *Food Agriculture Organization* (FAO), *National Agriculture Statistic Service -United States Department of Agriculture* (NASS USDA), *Economics Research Service-United States Department of Agriculture* (ERS USDA), *Unites States of Cencus Beureau*, *Earth Policy Institute* (EPI), dan *Worldfood*.

Econometric Model

Econometric model of Indonesian corn economic is grouped in two blocks, there are domestic corn market block and world corn market block. This model is has been encountered several respecification then finally the entire variable is arrange each its equality have been met the economic criteria that expected.

1. Domestic Corn Market

Domestic market block include of supply (harvest area, productivity, production, and import), demand, and price of corn.

(1) Harvested area of Corn: $LJIN = a0 + a1PP + a2LLJIN + \mu 1$

(2) Price of corn in produsen level: $PP = b0 + b1PJIN + b2LPP + \mu 2$

(3) The productivity of Corn: $YJIN = c0 + c1PP + c2LYJIN + \mu 3$

(4) The production of corn: $QJIN = LJIN * YJIN$

(5) The indonesian corn demand:

$$DJIN = DJFE + DJFO + DJS$$
$$DJFE = d0 + d1PK + d2LDJFE + \mu 4$$
$$PK = e0 + e1PKIN + e2LPK + \mu 5$$
$$DJFO = f0 + f1GDP + f2LDJFO + \mu 6$$
$$GDP = g0 + g1POP + \mu 7$$

(6) The Indonesia Corn Import:

$$IJIN = h0 + h1DJIN + h2QJIN + h3ERI + \mu 8$$

(7) The price of Indonesian Corn Import: $PI = (1 + RESTI)PJW$

(8) The price of Indonesian Corn:

$$PJIN = i0 + i1DJIN + i2QJIN + i3PI + \mu 9$$

Where:

LPIN = Indonesian corn harvested area
PP = The price of corn in produsen level
PJIN = Price of corn
PKIN = The price of indonesian soybean
POP = The population of indonesia
GDP = *Gross Domestic Product*
PI = The price of indonesian corn import
PJW = The price of world corn
YJIN = Indonesian corn productivity
QJIN = Indonesian corn production
DJIN = Indonesian corn demand
DJFE = Demand of corn to fodder
DJFO = Demand of corn to food
DJS = Demand of corn residual of indonesia
POP = The population of indonesia
IJIN = Quantity of Indonesian corn Import
ERI = *Exchange rate* Indonesia
RESTI = Trade Restriction of Indonesia
LLJIN = Lag of Indonesian corn harvested area
LYJIN = Lag of Indonesian corn productivity
LPP = Lag of corn price in producer level
LDJFE = Lag of corn demand for fodder
LDJFO = Lag of corn demand for food

2. World Market of Corn

The market consists of the world's corn exports, imports, and world corn prices.

(9) Price of Corn in World Market: $PJW = j1IJW + j2EJW + j3LPJW + \mu 10$

(10) The World Export of Corn:

$$EJW = EJAS + EJBR + EJAR + EJSW$$

$$EJAS = k1PJW + k2QJAS + k3DJAS + k4LEJAS + \mu 11$$
$$EJBR = l0 + l1PJW + l2QJBR + l3DJBR + l4LEJBR + \mu 12$$
$$EJAR = m0 + m1PJW + m2QJAR + m3DJAR + m4LEKAR + \mu 13$$

(11) Comodity Export of Corn

$$IJW = IJJP + IJKO + IJME + IJIN + IJSW$$
$$IJJP = n0 + n1DJJP + n2NPRJP + \mu 14$$
$$IJKO = o0 + o1DJKO + o2NPRKO + o3LIJKO + \mu 15$$
$$IJME = p0 + p1DJME + p2NPRME + p3LIJME + \mu 16$$

Where:

IJW = The World Import of Corn
IJJP = Japan Import of Corn
IJKO = Korean Import of Corn
IJME = Mexico Import of Corn
IJSW = The World Import of Residual Corn
EJW = The World Export of Corn
EJAS = USA Import of Corn
EJBR = Brazilia Import of Corn
EJAR = Argentina Import of Corn
EJSW = The World Export of Residual Corn
QJAS = US Corn Production
QJBR = Brazilia Corn Production
QJAR = Argentina Corn Production
DJAS = US Demand of Corn
DJBR = Brazilia Demand of Corn
DJAR = Argentina Demand of Corn
DJJP = Japan Demand of Corn
DJKO = Korean Demand of Corn
DJME = Mexico Demand of Corn
NPRJP = *Nominal protection rate* Jepang
NPRKO = *Nominal protection rate* Korea
NPRME = *Nominal protection rate* Meksiko
LPJW = Lag of World Price of Corn
LEJAS = Lag of US Export of Corn
LEBR = Lag of Brazilia Export of Corn
LEJAR = Lag of Argentina Export of Corn
LIJKO = Lag of Korea Export of Corn
LIJME = Lag of Mexico Export of Corn

This model has 21 equations, which include of 5 identity equations and 16 structural equations.

III. RESULT AND DISCUSSION

Econometric model is built representative enough to describe the impact of trade liberalization to the Indonesia economic performance of corn. This is look from the evaluation economic criteria and statistic indicator values that already got, there is coefficient determination (R^2), F test ($F_{calculated}$ and real degree (α) and Durbin Watson Test (DW). The result of statistic indicator values is completely shown in table 1 below.

Tabel 1: Statistic Indicator Values: R^2, $F_{calculated}$, Real Degree, dan DW

No.	Endogen Variable	R^2	$F_{calculated}$	α	DW
(1)	(2)	(3)	(4)	(5)	(6)
1.	Harvested Corn of Indonesia ($LJIN_t$)	0.57681	24.53	<0.0001	2.133202
2.	Price of Corn in Producer Level (PP_t)	0.98586	1254.89	<.0001	1.695970
3.	Indonesia Productivity of Corn ($YJIN_t$)	0.99418	3074.13	<.0001	2.004238
4.	Demand of Corn for Fodder($DJFE_t$)	0.97051	592.45	<.0001	1.718123
5.	Price of Soybean (PK_t)	0.98566	1236.89	<.0001	1.797267

6.	Corn Demand for Food ($DJFO_t$)	0.66838	36.28	<.0001	2.143777
7.	*Gross Domestic Product* (GDP_t)	0.67346	76.31	<.0001	0.104804
8.	Indonesia Corn Import ($IJIN_t$)	0.99777	5230.24	<.0001	2.054065
9.	Indonesia Price of Corn ($PJIN_t$)	0.91524	125.97	<.0001	1.806903
10.	World Price of Corn (PJW_t)	0.94975	226.83	<.0001	1.571683
11.	US Corn Export ($EJAS_t$)	0.97069	289.73	<.0001	2.111830
12.	Brazilia Corn Export ($EJBR_t$)	0.92670	107.47	<.0001	2.566751
13.	Argentina Corn Export ($EJAR_t$)	0.80432	34.94	<.0001	1.998061
14.	Japan Corn Import ($IJJP_t$)	0.97508	704.26	<.0001	2.169830
15.	Korea Corn Import ($IJKO_t$)	0.91824	131.02	<.0001	2.312162
16.	Mexico Corn Import ($IJME_t$)	0.78937	43.72	<.0001	2.398561

Keterangan: α = real degree (*level of significance*)

The evaluation of economic criteria to the all of guesser parameter that find on each equation that used to build econometric model of Indonesian corn economic have mark and quantity that compatible with economic criteria that expected (table 2 column 2). Then, coefficient determination value of equation has high value. From table 1 column 2 shows that from 16 structural equations R^2 value (equation 2, 3, 4, 6, 7, 8, 9, 10, 12, 13, 15, 16, 17, 19, 20, 21), that has R^2 value >60% is 15 equation and that has R^2 value<60% is 1 equation. It means explanatory variables that entered to the equation are able to describe behavior of its endogen variables.

Tabel 2: Econometric Model of Corn

Model	**Variable**	**Coefficient**	**t-statistic**	**Prob.**
(1)	**(2)**	**(3)**	**(4)**	**(5)**
1. QJIN	QJIN = YJIN*LJIN			
2. LJIN	Intersep	63200.07	1.65	0.1074
	$PJIN_t$	0.08299	1.37	0.1793
	LPP_t	0.914108	7.8	<.0001
3. PP	Intersep	63200.07	1.65	0.1074
	$PJIN_t$	0.08299	1.37	0.1793
	LPP_t	0.914108	7.8	<.0001
4. YJIN	Intersep	0.122346	1.34	0.1894
	PP_t	7.14E-08	1.39	0.1742
	$LYJIN_t$	0.96249	17.82	<.0001
5. DJIN	DJIN = DJFE+DJFO+DJS			
6. DJFO	Intersep	1281525	3.05	0.0042
	GDP_t	0.000526	1.76	0.087
	$LDJFO_t$	0.597749	4.35	0.0001
7. GDP	Intersep	-9,13E+11	-6.69	<.0001
	stic Product (GDP_t)	6.065.034	8.74	<.0001
8. DJFE	Intersep	174953	1.53	0.1341
	PK_t	0.125492	2.67	0.0114
	$LDJFE_t$	0.899212	14.03	<.0001
9. PK	Intersep	238071.4	2.8	0.0082
	$PJIN_t$	0.165547	3.16	0.0032
	LPK_t	0.777429	8.61	<.0001
10. IJIN	Intersep	-37878.5	-2.5	0.0171
	$DJIN_t$	0.995703	83.43	<.0001
	$QKIN_t$	-0.99187	-73.63	<.0001
	$(ERI_t$	-1.1187	-0.35	0.7264
11. PI	PI = (**1**+RESTI)*PJW			
12. PJIN	Intersep	-2627606	-9.43	<.0001
	$DJIN_t$	0.487273	2.69	0.0109
	$QJIN_t$	-0.23926	-1.17	0.2487
	PI_t	7074.417	4.05	0.0003
13. PJW	IJW_t	9.19E-07	2.42	0.0207

	EJW_t	-2.22E-07	-0.72	0.4781
	$LPJW_t$	0.543584	4.06	0.0003
14. EJW	EJW=EJAS+EJBR+EJAR+EJSW			
15. EJAS	PKW_t	28927.98	0.78	0.4414
	$QJAS_t$	0.054062	0.82	0.4192
	$DJAS_t$	-0.04165	-0.52	0.6051
	$LEJAS_t$	0.814667	7.06	<.0001

Tabel 2: Continue

(1)	(2)	(3)	(4)	(5)
16. EJBR	Intersep	-3426518	-2.77	0.0090
	(PJW	21864.10	3.07	0.0041
	$QJBR_t$	0.339739	4.89	<.0001
	$DJBR_t$	-0.26827	-3.22	0.0028
	$LEJBR_t$	0.391784	3.60	0.0010
17. EJAR	Intersep	-556206	-0.42	0.6741
	PJW_t	14044.77	1.59	0.1217
	$QJAR_t$	0.589188	4.60	<.0001
	$DJAR_t$	-0.51538	-1.17	0.2518
	$LEJAR_t$	0.234825	1.97	0.0570
18. IJW	IJW = IJJP+IJKO+IJME+IJIN+IJSW			
19. IJJP	Intersep	-919511	-2.13	0.0403
	$DJJP_t$	1.063011	37.2	<.0001
	$NPRJP_t$	-267133	-1.59	0.1209
20. IJKO	Intersep	-10019.4	-0.03	0.979
	$DJKO_t$	0.937592	10.6	<.0001
	$NPRKO_t$	-1978536	-9.39	<.0001
	$LIJKO_t$	0.160957	2.18	0.036
21. IJME	Intersep	-1209001	-1.66	0.1057
	$QJME_t$	0.20733	3.88	0.0004
	$NPRME_t$	-1037039	-1.8	0.0798
	$LIJME_t$	0.430008	3.07	0.0042

The result of F test (Look at table 1 column 4) to the entire equation that used to build econometric model of Indonesian corn economic show that all of the explanatory variables that arrange the equation simultaneous is really influenced to its endogen variables on the real degree at 1%. This is show if we did t test (partial test) to each equation, therefore any one or more explanatory variable is real influenced to its endogen variable (Look at table 2 column 5).

The result of Autocorrelation test to the entire equation that used to build econometric model of corn economic using Dubin Watson test (DW test) show that from 16 structural equations that used to bulid model, only 1 equation that has autocorrelation indication, so guessers of coefficient regression that gotten still unbias, but the varians of disturbance variable less efficient if compared with not any autocorrelation indication. Therefore, the result of prediction model in this research is good enough to describe corn economic phenomenon in Indonesia.

The result of Model Validation

The result of anlyzis economic model of Indonesia corn with using indicators *Root Mean Square Error* (RMSE) and *Root Means Square Percent Error* (RMSPE) that showed by deviation value on table 3.

Tabel 3: Validation Result with Indicator Values: Deviasi, U-Theil, U^M, U^S, and U^C

No.	Variable	Deviation (%)	U-Theil	U^M	U^S	U^C
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Harvested Corn of Indonesia ($LJIN_t$)	-0.05	0.05	0.00	0.15	0.85
2.	Price of Corn in Producer Level (PP_t)	-0.63	0.04	0.00	0.04	0.96
3.	Indonesia Productivity of Corn ($YJIN_t$)	-0.01	0.02	0.00	0.00	1.00
4.	Indonesia Production of Corn ($QJIN_t$)	0.43	0.05	0.00	0.00	1.00
5.	Indonesia Demand of Corn ($DJIN_t$)	0.00	0.03	0.00	0.02	0.98
6.	Demand of Corn for Fodder($DJFE_t$)	0.00	0.05	0.00	0.01	0.99

7.	Price of Soybean (PK_t)	0.00	0.04	0.00	0.00	1.00
8.	Corn Demand for Food ($DJFO_t$)	0.00	0.05	0.00	0.15	0.85
9.	*Gross Domestic Product* (GDP_t)	0.00	0.21	0.00	0.10	0.90
10.	Indonesia Corn Import ($IJIN_t$)	-5.27	0.23	0.00	0.11	0.89
11.	Import Price (PI_t)	-4.86	0.10	0.05	0.16	0.79
12.	Indonesia Price of Corn ($PJIN_t$)	-5.54	0.19	0.01	0.01	0.98
13.	World Price of Corn (PJW_t)	-0.57	0.11	0.00	0.22	0.78
14.	World Export of Corn (EJW_t)	-6.26	0.12	0.06	0.08	0.86
15.	US Corn Export ($EJAS_t$)	-0.04	0.07	0.00	0.46	0.54
16.	Brazilia Corn Export ($EJBR_t$)	-0.48	0.13	0.00	0.02	0.98
17.	Argentina Corn Export ($EJAR_t$)	-0.12	0.11	0.00	0.06	0.94
18.	World Corn Import (IJW_t)	-0.90	0.01	0.13	0.02	0.85
19.	Japan Corn Import ($IJJP_t$)	0.00	0.01	0.00	0.00	1.00
20.	Korea Corn Import ($IJKO_t$)	0.00	0.06	0.00	0.02	0.98
21.	Mexico Corn Import ($IJME_t$)	0.00	0.13	0.00	0.06	0.94
	Rata-rata	**-1.16**	**0.09**	**0.01**	**0.08**	**0.91**

Forecasting of Indonesia Corn Economic Basic Condition

The result of forecasting analyzis basic conditions economic Indonesian Corn to period 2016 – 2020 showed on table 4. From table 4 show that price of world corn is UDS $207, 1 / ton and price of Indonesian corn import achieve 477/ton. That price of Indonesian corn import is higher than the price of world corn show any trade obstacle to the corn product from overseas coming into Indonesia. On that price rate, price of Indonesian corn is 7,41 million/ton rupiah and Indonesian Corn import only 260.393 ton. With the harvested corn area of Indonesia that achieve 4,45 million hectare and productivity Corn of Indonesia is 5,93 ton/ hectare, so the Indonesian corn production is 26,45 million ton. It means corn domestic production capable to met all of corn demand of Indonesia and only 0,98% that still imported from overseas.

Tabel 4: Forecasting of Indonesia Economic Basic Condition of Corn

No.	Variable	Basic Value
1.	Harvested Corn of Indonesia (LJIN)	4451956
2.	Indonesia Productivity of Corn (YJIN)	5.9335
3.	Indonesia Production of Corn (QJIN)	26451500
4.	Indonesia Demand of Corn (DJIN)	26662286
5.	Indonesia Corn Import (IJIN)	260393
6.	Indonesia Price of Corn (PJIN)	7410416
7.	Harga Jagung Impor Indonesia (PI)	477
8.	World Price of Corn (PJW)	207.1

Simulation Implementation of Trade Liberalization and the External Shocks

The result of simulation analyzis which totally happened implementation trade liberalization and external shocks showed in table 5.

Tabel 5: Totally Implementation of Trade Liberalization

No.	Variable	Change (%)			
		Sim 1	Sim 2	Sim 3	Sim 4
(1)	(2)	(3)	(4)	(5)	(6)
1.	Harvested Corn of Indonesia ($LJIN_t$)	-0.87	0.02	0.01	0.03
2.	Price of Corn in Producer Level (PP_t)	-3.18	0.07	0.03	0.10
3.	Indonesia Productivity of Corn ($YJIN_t$)	-0.18	0.00	0.00	0.01
4.	Indonesia Production of Corn ($QJIN_t$)	-1.07	0.02	0.01	0.03
5.	Indonesia Demand of Corn ($DJIN_t$)	0.00	0.00	0.00	0.00

6.	Demand of Corn for Fodder($DJFE_t$)	0.00	0.00	0.00	0.00
7.	Price of Soybean (PK_t)	0.00	0.00	0.00	0.00
8.	Corn Demand for Food ($DJFO_t$)	0.00	0.00	0.00	0.00
9.	*Gross Domestic Product* (GDP_t)	0.00	0.00	0.00	0.00
10.	Indonesia Corn Import ($IJIN_t$)	51.56	-1.13	-0.52	-1.66
11.	Import Price (PI_t)	-130.15	2.77	1.29	3.98
12.	Indonesia Price of Corn ($PJIN_t$)	-33.07	0.72	0.33	1.05
13.	World Price of Corn (PJW_t)	0.10	2.77	1.29	3.98
14.	World Export of Corn (EJW_t)	0.01	0.23	-8.80	-8.53
15.	US Corn Export ($EJAS_t$)	0.01	0.31	-3.96	-3.62
16.	Brazilia Corn Export ($EJBR_t$)	0.02	0.45	-30.42	-29.65
17.	Argentina Corn Export ($EJAR_t$)	0.02	0.41	-23.44	-22.81
18.	World Corn Import (IJW_t)	0.21	4.64	0.00	4.64
19.	Japan Corn Import ($IJJP_t$)	0.00	15.14	0.00	15.14
20.	Korea Corn Import ($IJKO_t$)	0.00	20.77	0.00	20.77
21.	Mexico Corn Import ($IJME_t$)	0.00	15.68	0.00	15.68

Explanation:
Sim = simulation
Sim 1= Totally Implementation of Trade Liberalization
Sim 2= Increased Corn Demand from Major Importer Countries by 25 %
Sim 3= Decreased Corn Demand from Major Exporter Countries by 20 %
Sim 4= Increased Corn Demand From Major Importer Countries by 25 % and Decreased Corn Demand From Major Exporter Countries by 20 %

Totally implementation of trade liberalization

Totally implementation trade liberalization without trade restriction impacted to the world corn import and world corn export. The world corn import increase about 0,21%, wher The import corn of Japan, Korea, and Mexico is constant, so predicted that increase is from another countries's import excepted of three countries above. The world corn export increase about 0,01% where USA corn export increase about 0,1%, Brasil and Argentina increase about 0,02%. The increment of world corn import higher than the increment of world corn export cause the world corn price increase about 0,10% (table 5 column 3).

For Indonesia, although the world corn price increase from US $ 207 to be US $ 207, 2(0,10%) but the impact of liberalization (the world corn price equal with the wold corn impor) so the first Indonesian impor corn price that was US $ 476,90 decrease to US $ 207,2. The cheaper corn price of impor impacted on the increment quantity of Indonesian corn import about 51,56%. Although from the percentage show high increment, but in fact only 277.164 ton, which was from 260.393 ton to 537.557. If compared with the total production of corn that produced, so that Indonesian import is too small.

The decrease of that corn price is also impacted to the decrease of corn price in Indonesia about 33,07%. The decrease of Indonesian corn price impacted to the decrease of corn price in produsen level (farmers) about 3,20%. This condition impact to decreasing of farming corn competitiveness, so Indonesian corn harvested area decrease about 0,89% and productivity decrease about 0,19%. Decrease of harvested area and productivity impact to decrease of Indonesian corn production about 1,08%. In other hand, in demand side, the decrease of Indonesian corn price there is no impact to the increment of Indonesian corn demand, good both of food and fodder.

This clearly show that totally implementation of trade liberalization without trade restriction impacted to decresing domestic price of corn and increasing import of corn. Those results appropriate with the result of research that doing by Erwidodo and Hadi (1999), Triana (2009) and Ferrianta (2012). But the result of this research doesn't same with the research's result by Imron (2007) he declare that trade liberalization causing production and income of domestic corn is increase extremely because of the high increment of domestic corn price.

External Shocks: The demand Increment of corn from Major Importer Country and The decrement of Corn Production from Major Exporter Country

The demand increment of corn from Major Importer Country and the decrement of corn production from Major Exporter Country that happened simultaneous have same impact with the demand increment of corn from Major Importer Country or the decrement of corn production from Major Exporter Country, that world price of corn is increase. But because of happened simultaneous, so the rate of change more big than before. From table 5 column 6 can be known that the demand increment from Major Importer Country and The production decrement of Corn from Major Exporter Country causing The world import of Corn increase about 4,64%. Whereas in export side, The world export of corn decrease 8,53%. Any increment of world corn import in one hand, and decrement of world corn export in another hand causing the world price of corn increase 3,98%.

For Indonesia, the increment of world price about 3,98% on trade liberalization era impacting the increment of import corn price on same rate (3,98%), Indonesian price of corn increment is 1,05%, and price of corn in produsen's level increase 0,1%. That increment causing Indonesian corn import is decrease about 1,66%. Whereas the increment of Indonesian corn price cause the corn farming competitiveness increase though small. Harvested area of corns increase is 0,03% and corn productivity is 0,01%. Finally, the production of corn increase 0,03%. Meanwhile, Indonesian demand of corn is relatively constan.

IV. CONCLUSION AND SUGGESTION

Conclusion

1. When the trade of liberalization totally implemented, the world import of corn through increment higher than increment of world corn export, therefore the world price of corn is increase. For Indonesia, if compared with basic condition, although the world price of corn increase but cause of totally implementation of trade liberalization so Indonesia price of corn still cheaper than before, therefore the decrement of Indonesian corn price and the increment of Indonesian corn import are happened.
2. The demand increment of corn from Major Importer Country and the production decrement of corn from Major Exporter Country causing the increment of world corn price. For Indonesia, the increment of world corn price on trade liberalization era causing the increment of Indonesian corn import price so the decrement of Indonesian corn price and the increment of Indonesian corn import are happened. In other hand, Indonesia production of corn is increase.

Suggestion

1. The world price of corn tended to increase showing its unavailability in market. So the government of Indonesia, by Agriculture Ministry, must more seriously increase the production by the optimise productivity and extensification area.
2. Efforts to coaching and mentoring the corn farmers must be intensified to enable them to carry out their farming efficiency and increase their corn farming productivity.
3. In order to extensification of corn farming can effectively did, so must doing together with all of stake holders, it was Ministry of Agriculture , the National Land Agency , and the Ministry of State-Owned Enterprises , especially farmers.
4. In trade liberalization era, Indonesia needs comprehensive policy to support corn chain management cohesiveness. Then, production increment effort by policy of increasing productivity and expansion, must pay attention for correlation with others subsystem, such as post harvest, management, transportation, and saving. Bulog also must involve in price stabilization and supports production.

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