



Poverty and Distributional Impact of Alternative Rice Policies in the Philippines



Caesar B. Cororaton and Krista Danielle S. Yu
Virginia Tech / De La Salle University

Henry Sy Sr. Hall
De La Salle University, Manila
March 31, 2017

Objective/Method

- To analyze the poverty and distributional effects of alternative rice policies in the Philippines:
 - Limit imports of rice
 - Eliminate rice QR
 - Tariffy rice QR and use revenue as cash transfer
 - Rice tariffs reduced to 25 percent in 10 years
- Economy-wide model (CGE) linked to poverty microsimulation

Rice and Poverty

(percentage of total expenditure)

	Poor		Non-Poor	
	2009	2012	2009	2012
Philippines				
Total food	60.1	61.0	40.7	41.5
Cereals	25.7	25.6	10.9	11.1
Rice	19.7	19.4	8.1	7.9
Rural				
Total food	60.7	61.8	45.0	45.1
Cereals	26.8	26.5	14.8	13.8
Rice	20.4	20.2	11.6	10.3
Urban				
Total food	58.2	57.8	38.5	38.9
Cereals	22.0	22.2	8.9	9.1
Rice	17.3	16.3	6.3	6.2

Background

- National Food Authority (NFA)

- Mission:

- “Ensure reasonable rate of return to Filipino farmers, provide adequate supply and **affordable rice** and corn for the country...”

- Key programs:

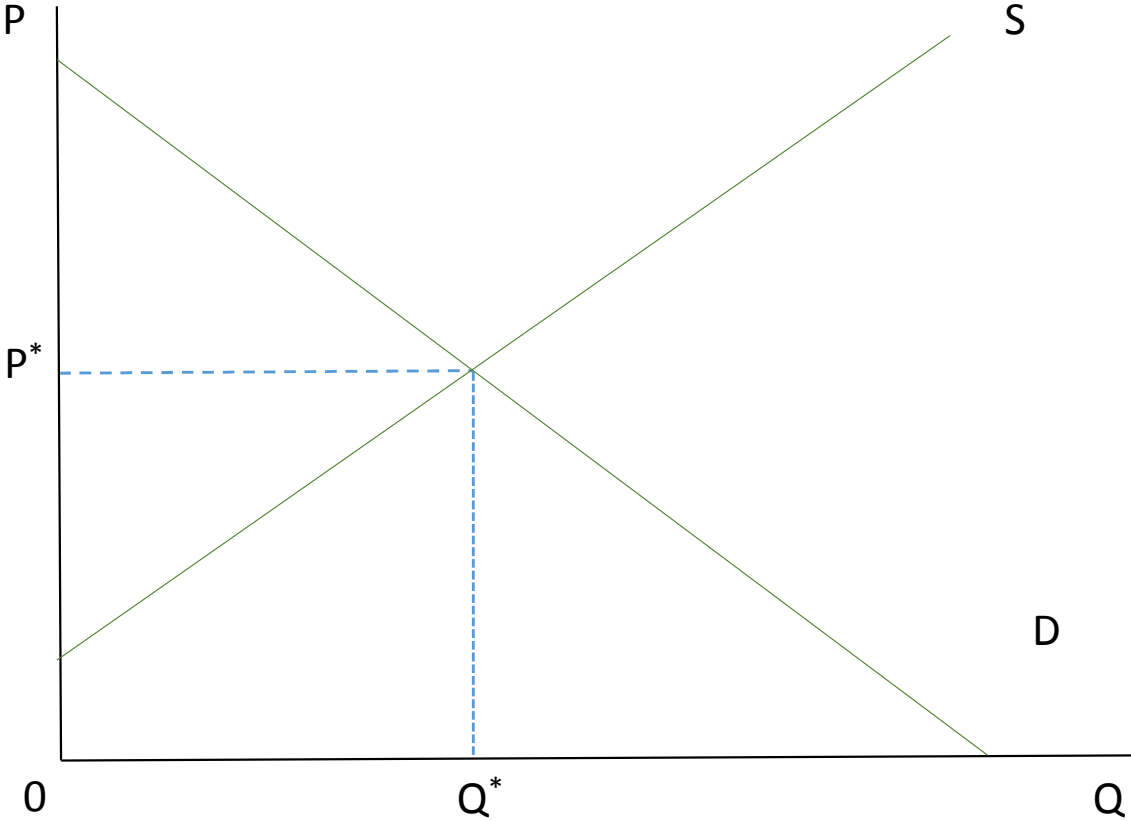
- Procure palay from farmers at support price – Php 17/kg
 - (2012-2016 average NFA procurement 1.2 % of palay production)
 - Release price (regular-milled) – Php 27/kg

- Goal: **“DA targets rice self-sufficiency by 2020, intensifies the promotion of hybridization of rice”**

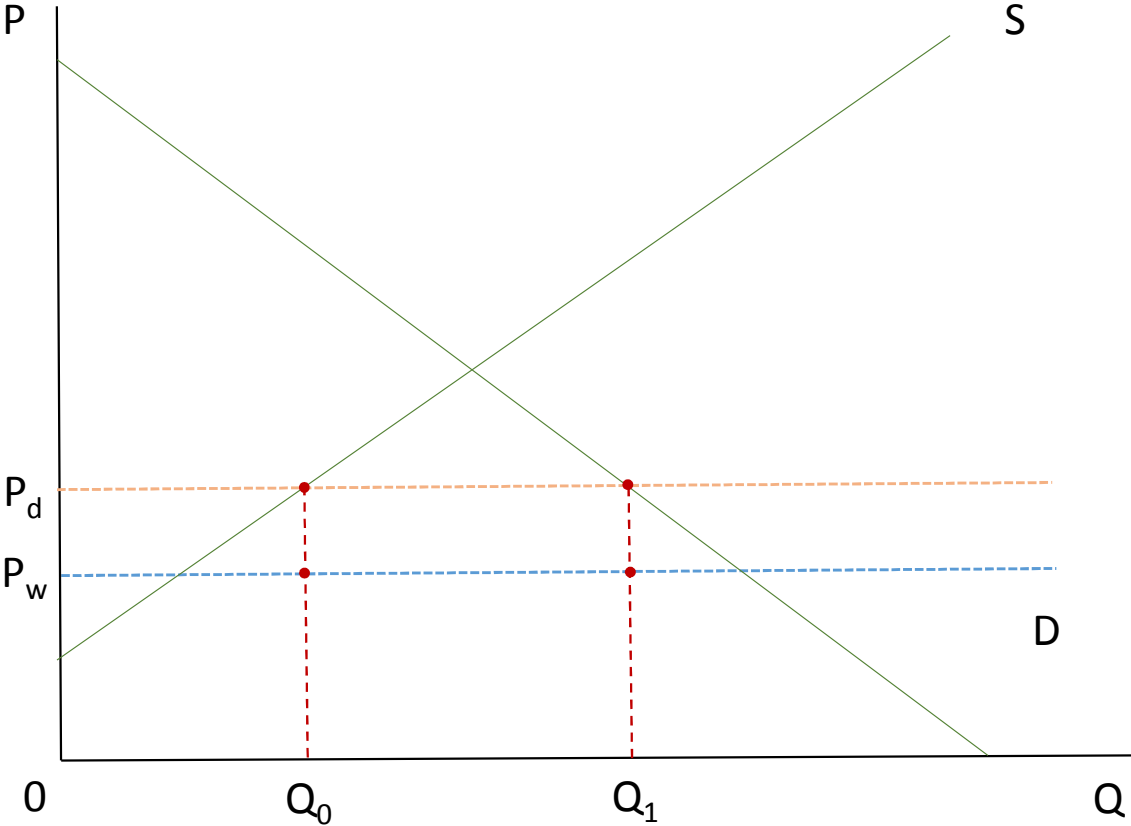
- Trade: Rice QR

- 1995 to 2005
 - 2006 to June 2012
 - 2013 to June 2017

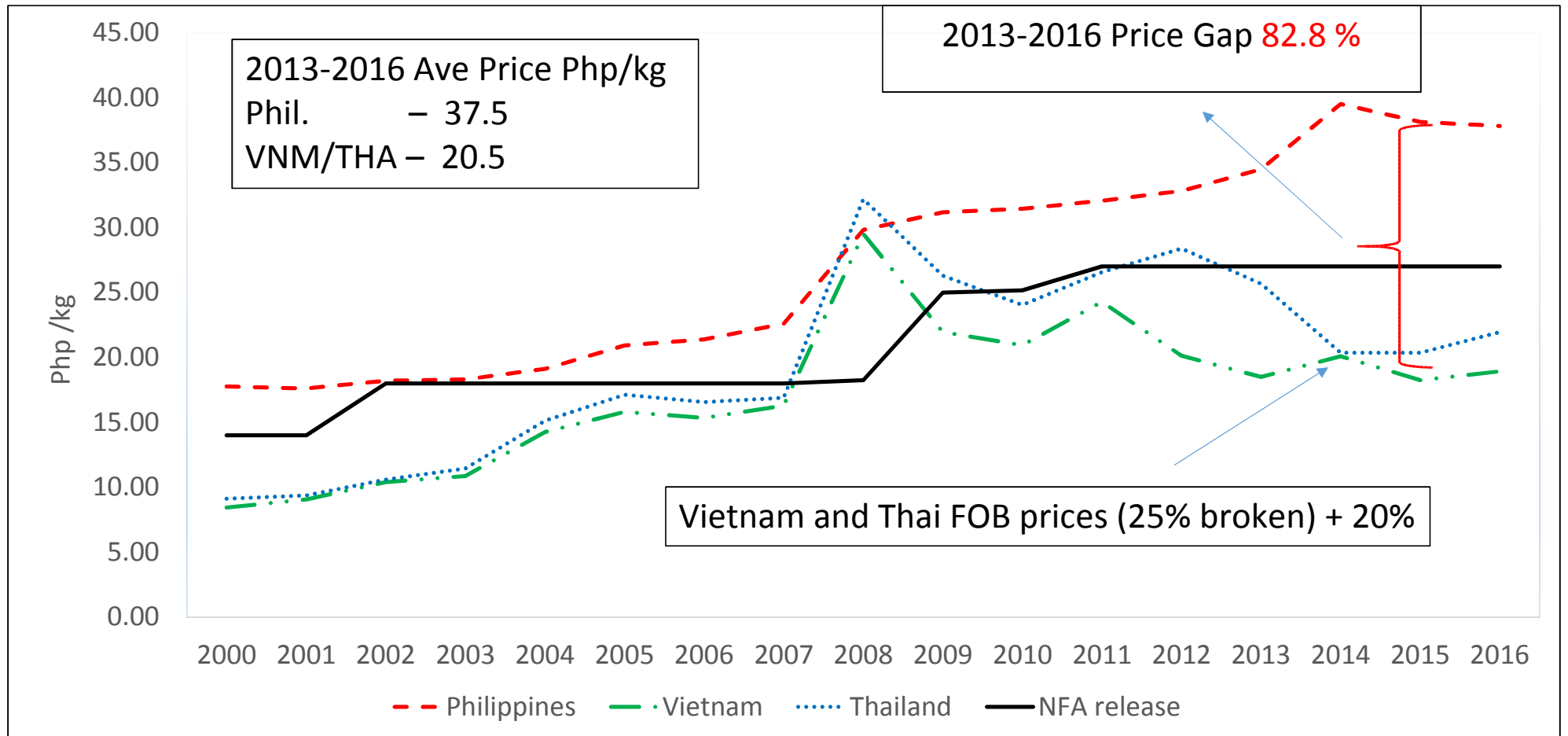
The Impact of QR on prices



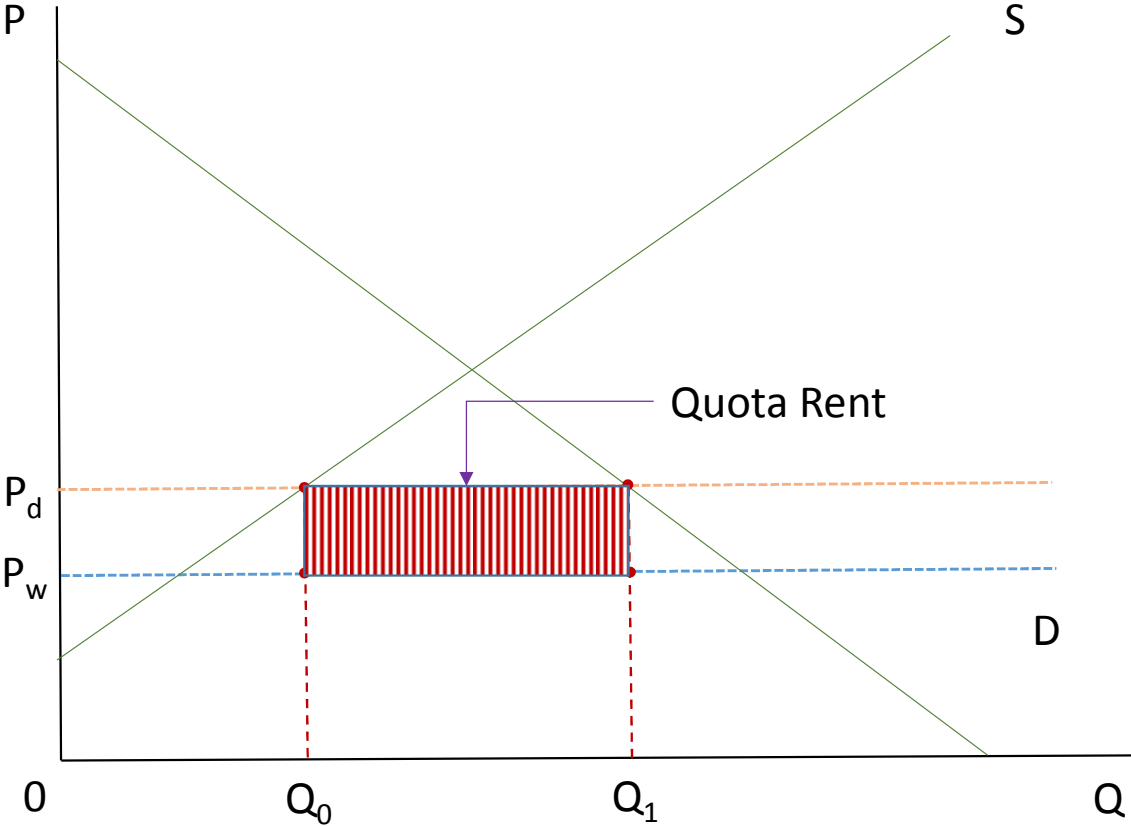
The Impact of QR on prices



Rice Price Gap (25% broken)



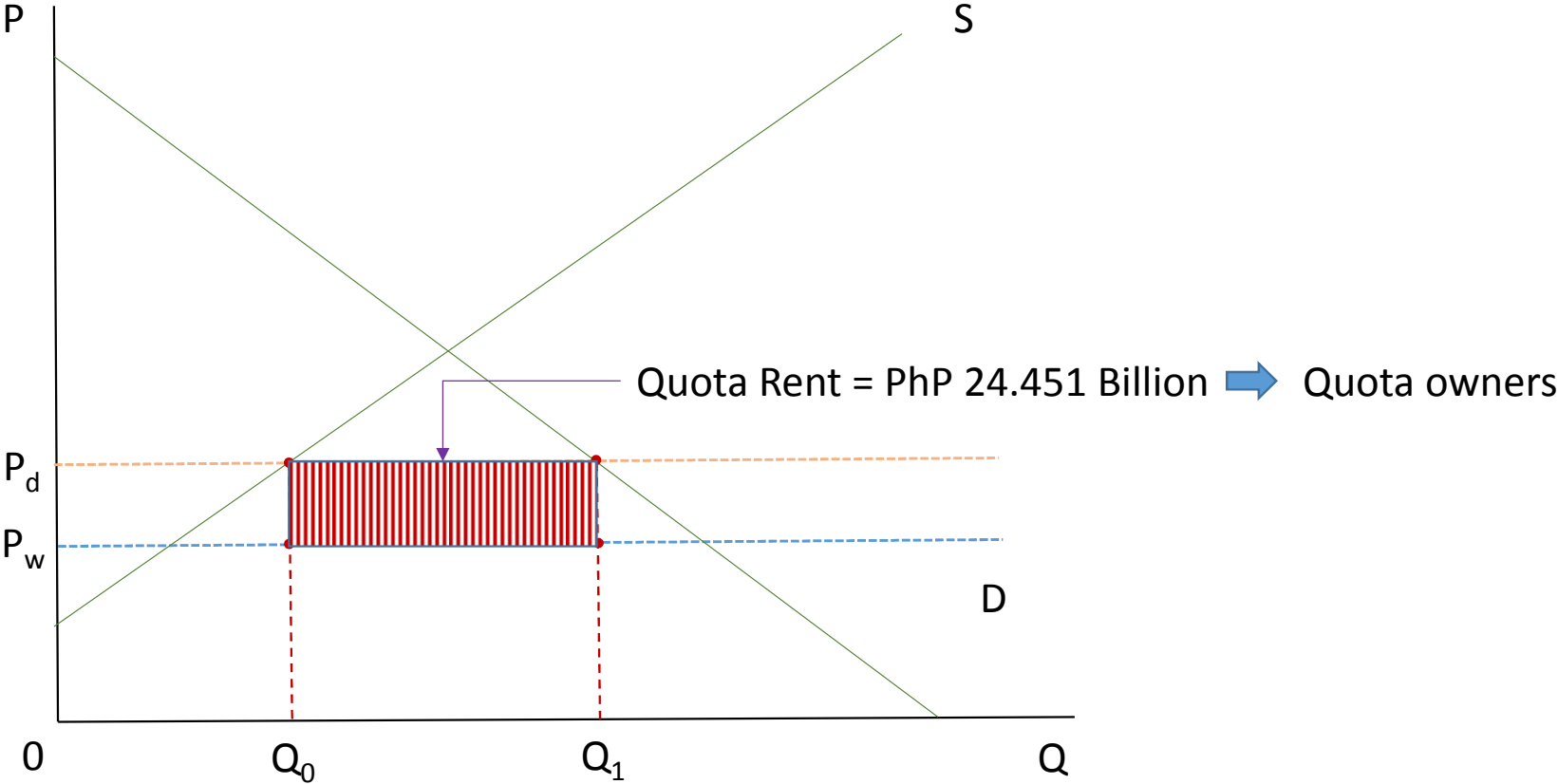
The Impact of QR on prices



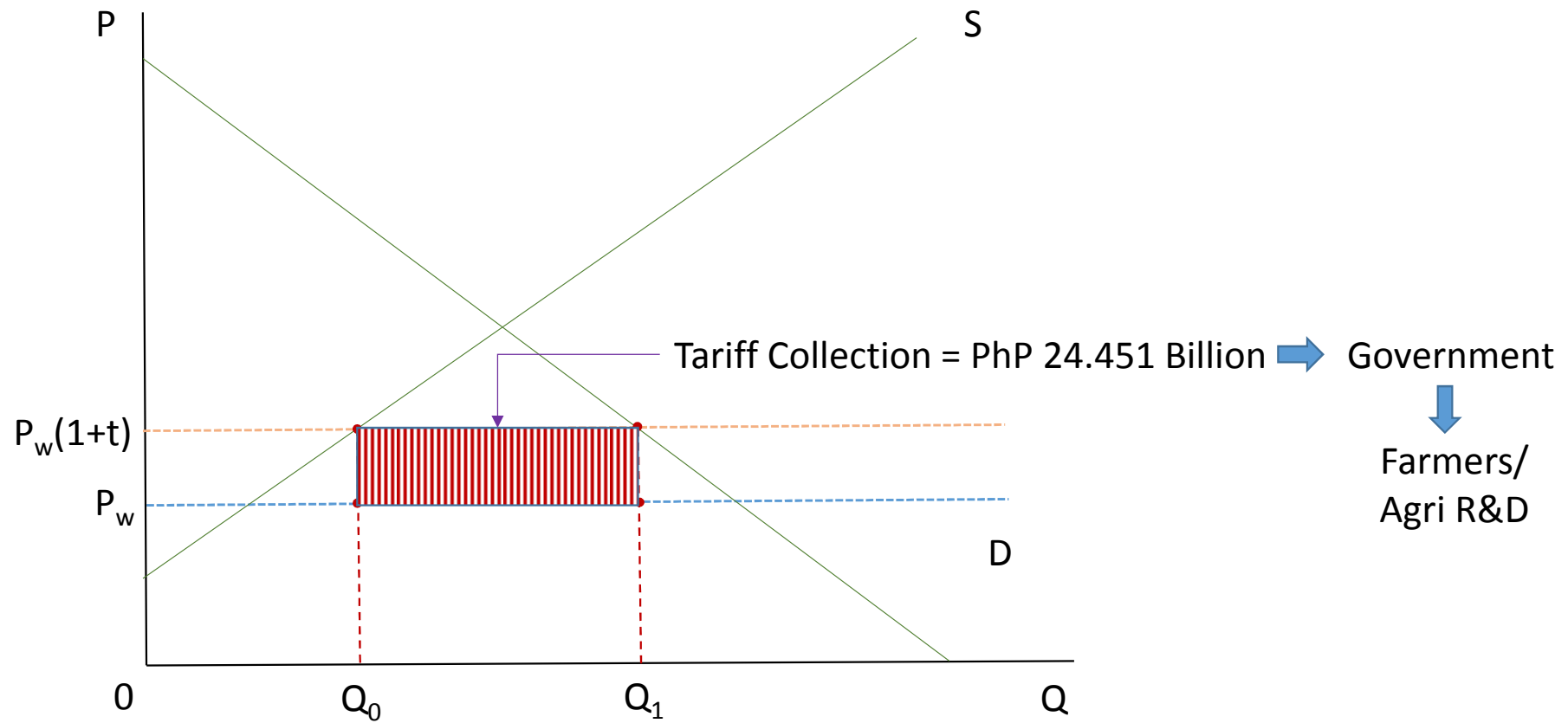
Estimation of Rice Quota Rent

Philippine price, Php/kg	38.83
<u>Average of Vietnam and Thailand prices, Php/kg</u>	<u>19.76</u>
Price gap, Php/kg	19.07
<u>Imports, million kg</u>	<u>1,283</u>
Value of imports at Philippine price, million Php	49,793
<u>Value of imports at Vietnam and Thailand prices, million Php</u>	<u>25,342</u>
Estimate of quota rent, million Php	24,451
Estimate of rate quota rent, %	49.10

The Impact of QR on prices



The Impact of QR on prices



Economic Models Used

- 19-sector Philippine CGE model calibrated using 2015 SAM
- Rice quota incorporated as constraint; the CGE model is set up as MCP (mixed complementarity problem)
- Land-use
- CGE results utilized in poverty microsimulation
- Poverty microsimulation
 - Employment/unemployment – bootstrapping, process repeated 30 times
 - Uses 2012 FIES
 - Computes FGT poverty indices (P0, P1, P2) and GINI coefficient

Alternative Rice Scenarios

- SIM 1 – Rice imports reduced by 50% (towards rice self-sufficiency)
- SIM 2 – Rice quota eliminated
- SIM 3 – Rice quota replaced by tariff equivalent; tariff revenue earmarked as cash transfer:
 - 40 % decile 1
 - 30% decile 2
 - 20% decile3
 - 7% decile 4
 - 3% decile 5
- SIM 4 – Rice tariff reduced gradually to 25% in 10 years, tariff revenue earmarked as cash transfer

Effects on Palay and Rice, % ch. from base

		Production	Imports	Consumption
<u>SIM1 - Reduced Imports</u>				
Volume	Palay	4.42	10.18	4.43
	Rice	5.35	-50.00	-1.92
Price	Palay	2.26	0.00	2.26
	Rice	6.91	37.06	9.49
<u>SIM 2- Quota eliminated</u>				
Volume	Palay	-7.62	-15.63	-7.63
	Rice	-9.20	113.26	3.49
Price	Palay	-3.71	0.00	-3.71
	Rice	-10.85	-32.93	-14.65
<u>SIM 3 - Tariffication + Cash transfer</u>				
Volume	Palay	0.21	0.48	0.21
	Rice	0.25	1.60	0.41
Price	Palay	0.11	0.00	0.11
	Rice	0.31	-0.13	0.26
<u>SIM 4 - Gradual reduction in tariff + Cash transfer</u>				
Volume	Palay	-1.77	-3.42	-1.77
	Rice	-2.15	28.71	1.82
Price	Palay	-0.52	0.00	-0.52
	Rice	-0.76	-8.13	-2.00

SIM 1 – rice imports cut by 50%

SIM 2 – rice quota eliminated

SIM 3 – rice quota replaced by tariff equivalent; revenue as cash transfer

SIM 4 – rice tariff reduced gradually to 25% in 10 years; revenue as cash transfer

Effects on Factor Prices (net of inflation), % ch. From base

	SIM 1	SIM 2	SIM 3	SIM 4
Skilled	-0.265	0.451	-0.001	0.043
Unskilled	-0.068	0.183	0.017	0.018
Returns to capital	-0.320	0.520	0.008	0.132
Returns to land	3.635	-5.238	0.260	-0.804
Consumer price index	0.755	-1.383	0.011	-0.245

SIM 1 – rice imports cut by 50%

SIM 2 – rice quota eliminated

SIM 3 – rice quota replaced by tariff equivalent; revenue as cash transfer

SIM 4 – rice tariff reduced gradually to 25% in 10 years; revenue as cash transfer

Effects on Land-Use, % ch. From base

	Base				
	share	SIM 1	SIM 2	SIM 3	SIM 4
Palay	45.8	5.50	-10.02	0.22	-1.50
Corn	8.6	-4.08	6.62	-0.06	1.83
Coconut	15.7	-3.27	5.20	-0.13	1.41
Sugar	6.8	-3.19	5.09	-0.11	1.43
Other crops	7.7	-7.92	14.01	-0.43	2.02
Other uses*	15.5	-5.15	8.85	-0.29	1.74
*Excluding land for dwellings					

SIM 1 – rice imports cut by 50%

SIM 2 – rice quota eliminated

SIM 3 – rice quota replaced by tariff equivalent; revenue as cash transfer

SIM 4 – rice tariff reduced gradually to 25% in 10 years; revenue as cash transfer

Effects on Household Income and Prices, % ch. from base

	SIM 1		SIM 2		SIM 3		SIM 4	
	Income	Prices	Income	Prices	Income	Prices	Income	Prices
H1	0.56	1.92	-1.06	-3.15	5.13	0.06	23.98	-0.49
H2	0.56	1.81	-1.05	-2.98	2.01	0.06	9.27	-0.46
H3	0.57	1.61	-1.06	-2.67	0.97	0.05	4.36	-0.42
H4	0.57	1.40	-1.06	-2.36	0.28	0.05	1.12	-0.38
H5	0.57	1.18	-1.07	-2.02	0.09	0.04	0.27	-0.33
H6	0.57	1.01	-1.06	-1.77	-0.01	0.03	-0.21	-0.30
H7	0.56	0.86	-1.06	-1.54	-0.02	0.02	-0.22	-0.27
H8	0.55	0.72	-1.05	-1.32	-0.03	0.01	-0.23	-0.24
H9	0.54	0.58	-1.02	-1.11	-0.03	0.00	-0.23	-0.21
H10	0.53	0.38	-1.50	-0.81	-0.56	-0.01	-0.86	-0.16

SIM 1 – rice imports cut by 50%

SIM 2 – rice quota eliminated

SIM 3 – rice quota replaced by tariff equivalent; revenue as cash transfer

SIM 4 – rice tariff reduced gradually to 25% in 10 years; revenue as cash transfer

FGT Poverty Indices

- P0 – Poverty incidence
Number of people below poverty line (poor)/total population
- P1 – Poverty gap
Average distance of poor from poverty line
- P2 – Poverty severity
Poverty gap squared – captures degree of inequality among poor

Poverty and Distribution Effects of Rice Policies

	Base 2012	SIM 1		SIM 2		SIM 3		SIM 4	
	Level	Level	% ch.	Level	% ch.	Level	% ch.	Level	% ch.
GINI	0.4713	0.4722	0.204	0.4686	-0.569	0.4686	-0.568	0.4613	-2.114
Philippines									
P0	24.848	24.972	0.499	24.227	-2.502	24.454	-1.587	22.581	-9.124
P1	6.836	6.920	1.224	6.589	-3.616	6.558	-4.067	5.562	-18.646
P2	2.679	2.724	1.701	2.559	-4.470	2.512	-6.233	1.961	-26.777
Urban									
P0	11.570	11.682	0.965	11.309	-2.257	11.425	-1.259	10.556	-8.764
P1	2.794	2.845	1.817	2.689	-3.738	2.691	-3.662	2.321	-16.923
P2	0.989	1.015	2.606	0.945	-4.491	0.933	-5.745	0.744	-24.803
Rural									
P0	35.584	35.718	0.377	34.671	-2.566	34.988	-1.674	32.303	-9.219
P1	10.105	10.215	1.091	9.742	-3.589	9.685	-4.157	8.182	-19.031
P2	4.044	4.106	1.522	3.864	-4.466	3.788	-6.329	2.946	-27.167

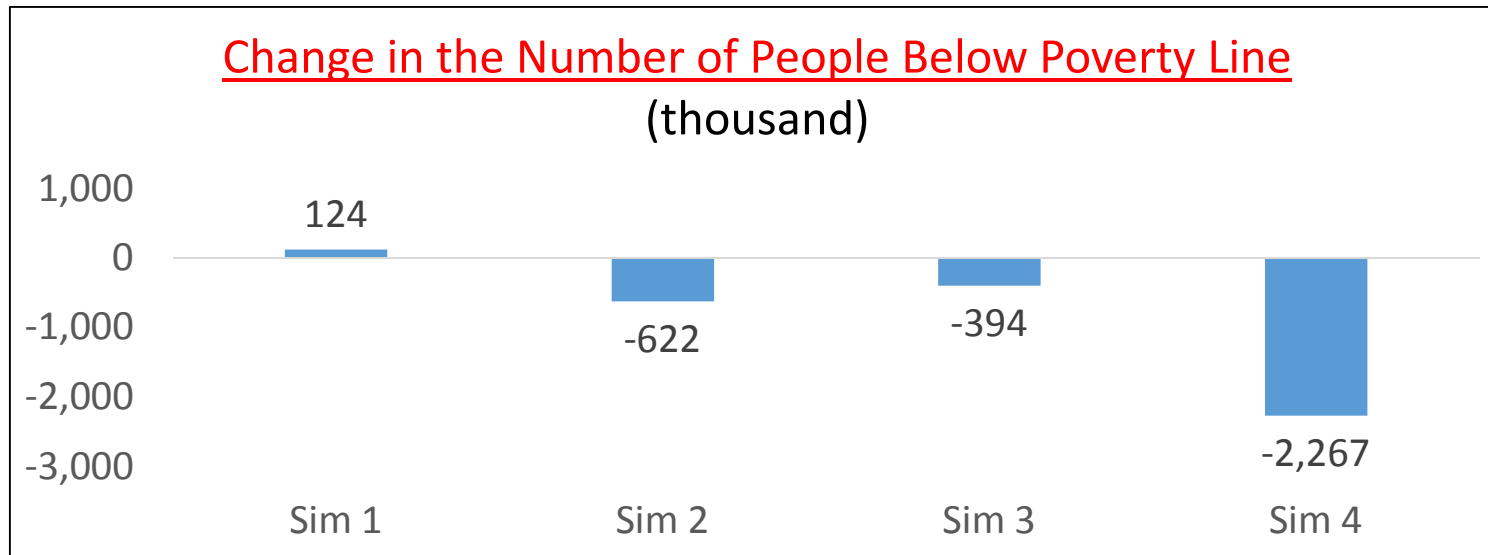
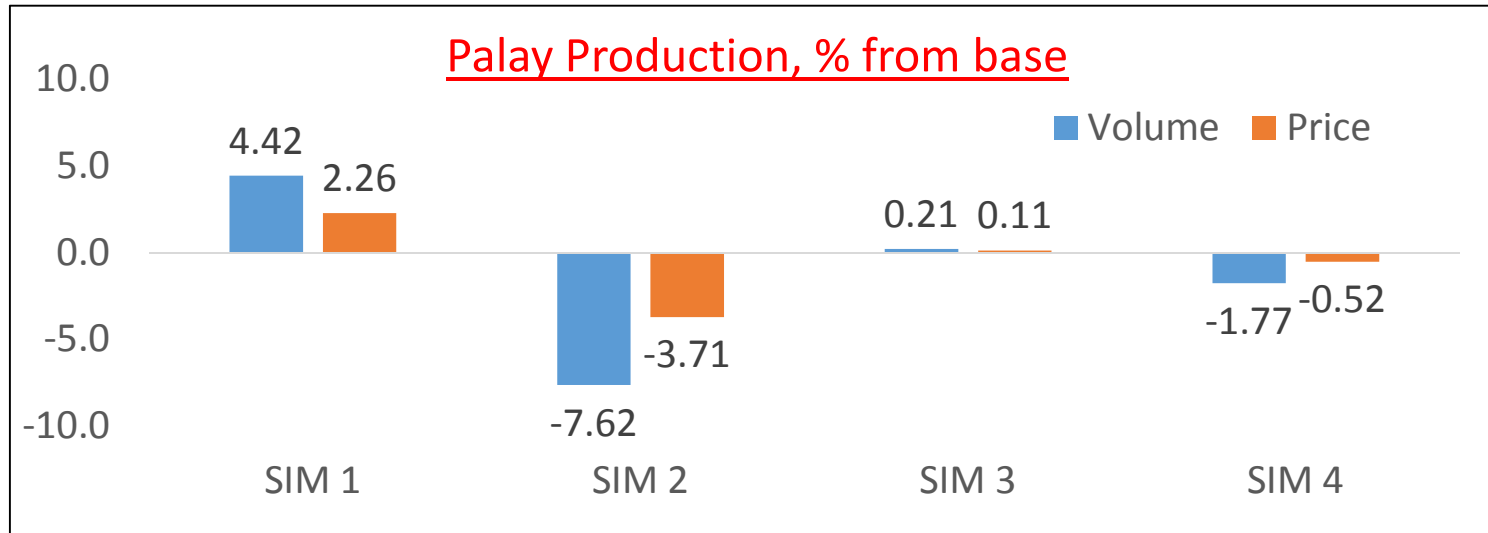
SIM 1 – rice imports cut by 50%

SIM 2 – rice quota eliminated

SIM 3 – rice quota replaced by tariff equivalent; revenue as cash transfer

SIM 4 – rice tariff reduced gradually to 25% in 10 years; revenue as cash transfer

Palay and the Number of Poor



SIM 1 – rice imports cut by 50%

SIM 2 – rice quota eliminated

SIM 3 – rice quota replaced by tariff equivalent; revenue as cash transfer

SIM 4 – rice tariff reduced gradually to 25% in 10 years; revenue as cash transfer

Policy Insights

- Domestic prices of rice are 80% higher than comparable rice from Vietnam and Thailand
- Limiting entry of cheaper rice will hurt vulnerable poor households
- Rice is NOT affordable, especially for poor households; runs counter to NFA's mission of making rice affordable for Filipinos
- Current rice policy (rice QR) is cash transfer from poor to rich; heavy burden on low income households
- Rice policy reform is critical in making the rice market equitable
 - Convert QR to tariff and earmark revenue as cash transfer to poor, assistance to palay farmers, for productivity improvement, etc.