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Research Report

Farm level evaluation of the U.S. Doha round proposal on U.S. representative crop and livestock farms

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Farm Level Evaluation of the U.S.
Doha Round Proposal on U.S.
Representative Crop and
Livestock Farms



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Farm Level Evaluation of the U.S. Doha Round Proposal on U.S. Representative Crop and Livestock Farms

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Executive Summary

Background

This briefing paper provides a farm level evaluation of the November 2005 USTR Doha Round proposal on 102 U.S. representative crop and livestock farms. This report is a companion to FAPRI-UMC Report #17-05.

Data and Methods

The analysis of each representative farm (for detailed information on each representative farm see AFPC Working Paper 05-1) was conducted over the 2005-2013 planning horizon using FLIPSIM, AFPC's whole farm simulation model and representative farm data, along with projected prices, policy variables, and input inflation rates from the FAPRI January 2005 Baseline. The FAPRI January 2005 Baseline was modified to include the elimination of the cotton Step 2 program.

Four scenarios were analyzed for each representative farm (each are described further in the FAPRI report):

- **Baseline.** FAPRI January 2005 baseline, adjusted for elimination of the cotton Step 2 program.
- **Unilateral, No Compensation Scenario.** Reduces crop loan rates and milk price supports by 11%, sugar price supports by 16%, and target prices by 7%, increases U.S. sugar TRQ, with no policy changes in other countries.
- **Multilateral, No Compensation Scenario.** Same as Unilateral, except other countries change policies consistent with provisions of the October 2005 U.S. WTO proposal.
- **Multilateral, With Compensation Scenario.** Same as Multilateral, No Compensation Scenario, except target prices set at baseline levels and direct payment rates increased by 7% of the baseline target price.

Results

AFPC uses three color codes to depict the projected overall financial position of each operation over the 2005 to 2013 period. **Green (Good)** indicates the farm has less than a 25% chance of a negative ending cash balance and losing real net worth. **Yellow (Marginal)** indicates the farm has a 25 - 50% chance of a negative ending cash balance and losing real net worth. And **Red (Poor)** indicates the farm has greater than 50% chance of a negative ending cash balance and losing real net worth. The color codes for 102 representative farms are summarized in Tables 1-6. In addition to the color codes the average annual net cash farm income for 2005-2013 are included for each farm under the **Baseline** scenario. Changes in net cash farm income from the **Baseline** are presented for each farm under the alternative policy scenarios.

Relative to the **Baseline**, the **Unilateral, No Compensation Scenario** results in the largest net cash farm income losses of the three policy scenarios. Decreases in average annual net cash farm income for the representative farms are: feed grains \$25,300, wheat \$9,000, cotton \$53,000,

rice \$30,000, dairy \$17,000, and beef \$300. These losses in net cash income result in three feedgrain farms, two wheat farms, and four cotton farms moving from the marginal to the poor category. The negative impacts on net cash income did not cause a category/color code change for rice, dairy and beef.

The projected results for the **Multilateral, No Compensation Scenario** are slightly better than the **Unilateral, No Compensation Scenario**, but generally not back to **Baseline** net cash farm income levels. Average annual decreases in net cash farm income from the **Baseline** for the representative farms are: feedgrains \$17,200, wheat \$2,900, and cotton \$46,700. Net cash income increases an average of \$12,000 per year for rice. The category changes (marginal to poor) resulting from the scenario are consistent with the **Unilateral, No Compensation Scenario** for the crop farms with one less wheat farm moving from marginal to poor. Relative to the **Baseline**, this scenario generates slightly higher net cash farm incomes for the dairy farms (\$53,600) and cattle ranches (\$10,900). As a result, four dairy farms and two cattle ranches moved from a lower to a higher category under this scenario relative to the **Baseline**.

The **Multilateral, With Compensation Scenario** results are roughly the same across all farms as the **Baseline** with some farms projected to have slightly higher average net cash farm income relative to the **Baseline** and some projected to be slightly lower. Under the scenario, there are a few farms (one feedgrain, one cotton, and one rice) that move from poor to marginal and three farms (two cotton farms and one rice farm) that move from marginal to good. The results for the rice farms appear to be better across the board under this scenario even though there are only two farms that change categories/color codes. This results from the considerably higher average net cash farm incomes projected under the **Multilateral, With Compensation Scenario** for the rice farms (\$42,600 per year). Both types of livestock operations are projected to experience modest improvement in financial viability under this scenario relative to the **Baseline**. Again, net cash farm income under the scenario averages well above **Baseline** levels for all of the dairy farms (\$95,600) and cattle ranches (\$16,500).

In summary, analysis of the three scenarios on U.S. representative crop farms indicate that the **Unilateral, No Compensation Scenario** would result in the most significant negative impact of the three followed by the **Multilateral, No Compensation Scenario**. For many farms, especially rice and wheat, the **Multilateral, With Compensation Scenario** is projected to result in improved financial viability relative to the **Baseline**. The results for the representative livestock operations indicate improvement relative to the **Baseline** for the **Multilateral, No Compensation** and **Multilateral, With Compensation Scenarios**. Significant improvement in economic viability is projected for the **Multilateral, With Compensation Scenario** for both dairy farms and cattle ranches.

Table 1. Comparison of Alternative Trade Policies Impacts on Representative Feedgrain Farms (Overall Ranking of Economic Viability Displayed as a Color and Average Annual Net Cash Farm Income for Baseline and Differences from Baseline (\$1,000), 2005-2013)

	Baseline	Unilateral	Multilateral Changes	
		No Compensation	No Compensation	With Compensation
IAG1350	68.9	-14.7	-9.9	0.2
IAG2750	241.7	-22.7	-15.3	-1.9
IAG4200	337.2	-46.1	-31.6	-2.5
NEG1960	315.7	-27.7	-16.3	-6.0
NEG4300	361.2	-48.2	-28.4	0.3
MOCG1700	193.4	-14.0	-9.3	-4.1
MOCG3630	391.0	-24.0	-16.0	-7.1
MONG1850	168.9	-16.0	-4.3	7.7
TXHG2000	6.1	-15.6	-9.9	5.4
TNG900	26.9	-7.1	-4.1	1.0
TNG2750	258.7	-20.4	-12.4	-3.0
SCG1500	64.6	-15.8	-10.3	6.2
SCG3500	318.7	-41.7	-30.5	1.0
ING1000	-5.9	-9.0	-6.2	5.1
ING2200	23.6	-21.7	-15.0	7.5
TXWG1400	19.7	-10.6	-6.2	5.1
TXUG1200	63.1	-24.4	-20.4	-7.0
TXPG3760	306.4	-76.3	-63.6	-34.7

Baseline: From FAPRI early 2005 stochastic baseline, adjusted for elimination of Step 2 program

Unilateral, No Compensation Scenario: Reduces crop loan rates and milk price supports by 11%, sugar price supports by 16%, and target prices by 7%, increases U.S. sugar TRQ, with no policy changes in other countries

Multilateral, No Compensation Scenario: Same as above, except other countries change policies consistent with provisions of the October 2005 U.S. WTO proposal

Multilateral, With Compensation Scenario: Same as above, except target prices set at baseline levels and direct payment rates increased by 7% of the baseline target price

**Table 2. Comparison of Alternative Trade Policies Impacts on Representative Wheat Farms
(Overall Ranking of Economic Viability Displayed as a Color and Average Annual Net Cash Farm
Income for Baseline and Differences from Baseline (\$1,000), 2005-2013)**

	Baseline	Unilateral No Compensation	Multilateral Changes	
			No Compensation	With Compensation
WAW1725	111.8	-5.8	-1.2	1.8
WAW5000	277.1	-15.6	-1.8	13.0
WAAW3500	89.7	-4.1	-1.3	1.6
NDW2180	25.7	-8.2	-4.7	5.3
NDW6250	282.5	-22.1	-9.9	8.8
KSCW1385	53.7	-5.3	-2.8	1.5
KSCW4000	207.7	-11.8	-3.1	2.3
KSNW4300	113.2	-13.1	-2.7	7.3
KSNW2800	37.0	-7.6	-2.2	6.6
COW3000	153.1	-4.8	-2.2	-1.1
COW5640	198.9	-7.8	-2.2	0.5
MTW4500	176.7	-6.3	-2.6	5.9
ORW4000	132.9	-4.5	-1.3	2.2

Baseline: From FAPRI early 2005 stochastic baseline, adjusted for elimination of Step 2 program

Unilateral, No Compensation Scenario: Reduces crop loan rates and milk price supports by 11%, sugar price supports by 16%, and target prices by 7%, increases U.S. sugar TRQ, with no policy changes in other countries

Multilateral, No Compensation Scenario: Same as above, except other countries change policies consistent with provisions of the October 2005 U.S. WTO proposal

Multilateral, With Compensation Scenario: Same as above, except target prices set at baseline levels and direct payment rates increased by 7% of the baseline target price

**Table 3. Comparison of Alternative Trade Policies Impacts on Representative Cotton Farms
(Overall Ranking of Economic Viability Displayed as a Color and Average Annual Net Cash Farm
Income for Baseline and Differences from Baseline (\$1,000), 2005-2013)**

	Baseline	Unilateral No Compensation	Multilateral Changes	
			No Compensation	With Compensation
TXNP3000	141.1	-39.1	-34.4	-15.5
TXNP7000	447.9	-92.4	-81.5	-51.9
TXSP2239	99.6	-22.1	-21.4	-9.8
TXSP3745	185.0	-34.0	-32.8	-17.3
TXRP2500	70.9	-10.9	-10.1	-0.3
TXCB2250	55.3	-33.1	-31.2	-1.0
TXCB5500	-8.4	-75.5	-71.1	-11.5
TXVC4500	164.2	-56.0	-53.1	-3.5
TXPC2500	34.9	-42.2	-40.1	2.0
TXMC3500	178.9	-55.7	-50.8	-12.7
TXEC5000	24.6	-61.8	-60.8	-11.6
GAC1700	129.5	-33.9	-32.0	-24.8
TNC1900	325.4	-29.1	-26.1	-8.8
TNC4050	138.4	-71.6	-67.2	0.4
LAC2640	152.2	-45.9	-40.6	1.8
ARC6000	422.0	-108.4	-46.5	19.2
ARNC5000	280.2	-120.5	-117.3	-27.4
ALC3000	101.7	-51.8	-48.1	7.0
NCC1100	10.8	-23.0	-22.3	3.7

Baseline: From FAPRI early 2005 stochastic baseline, adjusted for elimination of Step 2 program

Unilateral, No Compensation Scenario: Reduces crop loan rates and milk price supports by 11%, sugar price supports by 16%, and target prices by 7%, increases U.S. sugar TRQ, with no policy changes in other countries

Multilateral, No Compensation Scenario: Same as above, except other countries change policies consistent with provisions of the October 2005 U.S. WTO proposal

Multilateral, With Compensation Scenario: Same as above, except target prices set at baseline levels and direct payment rates increased by 7% of the baseline target price

**Table 4. Comparison of Alternative Trade Policies Impacts on Representative Rice Farms
(Overall Ranking of Economic Viability Displayed as a Color and Average Annual Net Cash Farm
Income for Baseline and Differences from Baseline (\$1,000), 2005-2013)**

	Baseline	Unilateral No Compensation	Multilateral Changes	
			No Compensation	With Compensation
CAR550	-3.6	-11.8	6.7	18.6
CAR2365	-428.6	-58.4	30.4	108.3
CAR2365	-428.6	-58.4	30.4	108.3
CABR1100	-176.7	-23.8	14.1	45.7
CACR715	-148.1	-17.1	10.8	34.9
TXR1350	29.6	-10.1	6.6	16.5
TXR2400	65.8	-20.7	17.4	31.3
TXBR1800	77.8	-16.3	13.5	23.0
TXER3200	-18.2	-28.7	16.5	47.5
LASR1200	-59.5	-11.0	5.7	19.5
LANR2500	49.6	-37.2	-3.1	31.0
ARSR3640	271.7	-29.2	3.7	29.0
ARWR1200	-150.9	-16.4	5.5	41.5
ARHR3000	-57.4	-45.0	20.6	65.1
MOWR4000	492.3	-48.9	11.1	36.8
MOER4500	454.8	-48.5	-0.2	24.1

Baseline: From FAPRI early 2005 stochastic baseline, adjusted for elimination of Step 2 program

Unilateral, No Compensation Scenario: Reduces crop loan rates and milk price supports by 11%, sugar price supports by 16%, and target prices by 7%, increases U.S. sugar TRQ, with no policy changes in other countries

Multilateral, No Compensation Scenario: Same as above, except other countries change policies consistent with provisions of the October 2005 U.S. WTO proposal

Multilateral, With Compensation Scenario: Same as above, except target prices set at baseline levels and direct payment rates increased by 7% of the baseline target price

**Table 5. Comparison of Alternative Trade Policies Impacts on Representative Dairy Farms
(Overall Ranking of Economic Viability Displayed as a Color and Average Annual Net Cash Farm
Income for Baseline and Differences from Baseline (\$1,000), 2005-2013)**

	Baseline	Unilateral No Compensation	Multilateral Changes	
			No Compensation	With Compensation
CAD1710	973.0	-36.3	84.4	145.2
NMD2125	1313.6	-31.6	120.0	188.8
WAD250	183.9	-4.8	15.6	19.0
WAD850	107.3	-20.3	57.7	104.5
IDD1000	265.7	-18.4	69.4	128.9
IDD3000	1785.5	-61.8	184.7	318.0
TXCD550	-80.1	-9.0	27.6	59.3
TXCD1300	710.9	-19.9	65.9	111.8
TXED550	165.5	-6.8	25.4	41.1
TXED1000	560.6	-16.7	49.9	87.3
TXND2400	982.9	-40.0	129.7	233.8
WID145	158.2	-3.8	9.7	16.6
WID775	970.5	-17.9	46.0	77.9
NYWD1200	242.3	-27.7	76.3	163.9
NYWD800	146.3	-19.9	55.6	107.5
NYCD110	174.2	-2.5	7.1	11.1
NYCD500	353.4	-10.7	31.7	56.5
VTD134	123.4	-2.7	9.0	14.6
VTD350	70.1	-8.1	22.7	48.0
MOD85	68.9	-1.2	5.1	7.0
MOD400	273.5	-6.6	20.9	36.0
FLND550	696.5	-7.8	23.7	30.9
FLSD1500	-391.5	-20.6	93.8	198.4

Baseline: From FAPRI early 2005 stochastic baseline, adjusted for elimination of Step 2 program

Unilateral, No Compensation Scenario: Reduces crop loan rates and milk price supports by 11%, sugar price supports by 16%, and target prices by 7%, increases U.S. sugar TRQ, with no policy changes in other countries

Multilateral, No Compensation Scenario: Same as above, except other countries change policies consistent with provisions of the October 2005 U.S. WTO proposal

Multilateral, With Compensation Scenario: Same as above, except target prices set at baseline levels and direct payment rates increased by 7% of the baseline target price

Table 6. Comparison of Alternative Trade Policies Impacts on Representative Beef Cattle Ranches (Overall Ranking of Economic Viability Displayed as a Color and Average Annual Net Cash Farm Income for Baseline and Differences from Baseline (\$1,000), 2005-2013)

	Baseline	Unilateral No Compensation	Multilateral Changes	
			No Compensation	With Compensation
MTB500	99.5	-0.1	11.7	15.9
WYB500	-27.6	0.0	11.5	21.8
COB250	46.6	-0.1	5.9	9.3
MOB150	59.4	-1.6	2.7	5.9
MOCB350	23.5	0.0	9.2	13.9
NMB240	23.0	0.1	4.3	6.8
FLB1155	5.0	-0.1	24.7	40.0
NVB700	15.1	-0.1	15.8	24.6
TXBB150	16.7	-1.4	18.6	22.5
CAB500	-25.4	0.1	12.4	21.2
SDB450	48.0	-0.4	10.3	14.8
TXSB250	58.7	0.0	5.2	7.5
TXRB500	105.1	0.1	9.1	10.8

Baseline: From FAPRI early 2005 stochastic baseline, adjusted for elimination of Step 2 program
Unilateral, No Compensation Scenario: Reduces crop loan rates and milk price supports by 11%, sugar price supports by 16%, and target prices by 7%, increases U.S. sugar TRQ, with no policy changes in other countries

Multilateral, No Compensation Scenario: Same as above, except other countries change policies consistent with provisions of the October 2005 U.S. WTO proposal

Multilateral, With Compensation Scenario: Same as above, except target prices set at baseline levels and direct payment rates increased by 7% of the baseline target price