

Appendix B: Key supply and demand parameters of the model

Table B1: Demand and Supply Agricultural Quantities					
Commodity	Demand (MMton)			Supply (MMton)	
	MX	ROW	U.S.	ROW	U.S.
Alfafa	4.715	0.229	0.042	0.042	0.229
Barley	0.808	0.586	0.422	0.450	0.621
Bean	1.086	0.043	0.040	0.040	0.155
Corn Silage	6.671	4.620	0.251	10.411	4.056
Oat Silage	2.252	0.007	0.111	0.138	0.018
Green Chilli	2.212	0.584	0.730	0.532	0.108
Mezcal	1.139	0.350	0.427	0.000	0.000
Oat	0.196	0.038	1.611	1.711	0.043
Orange	2.933	0.632	0.106	0.087	0.652
Sorghum	2.896	1.564	0.623	1.047	3.354
Soybean	3.714	34.539	0.426	0.498	37.81
Soybean Meal	0.331	6.961	0.090	0.722	7.273
Soybean Oil	0.270	0.935	0.059	0.063	1.142
Sugar	4.685	0.568	2.964	2.663	0.002
Tequila	101.057	38.449	89.715	0.000	0.000
Wheat	6.639	26.892	2.827	3.811	28.574
White Corn	19.336	0.720	0.340	0.762	0.707
Yellow Corn	3.097	33.622	0.568	0.568	41.226
Pasture ¹	201.131	0	0	0	0

¹ Amounts to total grass consumed by grazing cattle

Table B2:
Demand and Supply Prices

Commodity	Demand Prices (MXN\$)			Supply Price (US\$)	
	MX	ROW	U.S.	ROW	U.S.
Alfafa	358.86	298.16	298.16	328.88	196.83
Bean	8,119.79	950.42	1,100.22	331.76	209.97
Barley	2,951.65	322.92	274.53	1,041.61	759.51
Green Chilli	5,128.51	974.77	1,417.37	336.09	247.55
Corn Silage	373.68	215.81	253.14	680.90	1,124.50
Oat Silage	343.64	654.28	615.63	1,210.05	1,002.73
Oat	3,610.50	445.11	246.16	0.00	0.00
Orange	885.02	564.50	1,103.88	259.58	233.35
Sorghum	2,342.00	662.71	329.20	684.93	820.94
Soybean	5,019.23	780.72	514.68	282.10	233.45
Soybean Meal	5,831.75	789.51	764.78	497.71	447.49
Soybean Oil	17,278.30	1,255.48	1,140.21	594.89	438.47
Sugar	6,473.73	622.33	624.12	1,014.60	1,045.97
Wheat	2,772.55	298.29	284.89	731.03	628.57
White Corn	3,439.60	275.91	832.98	294.44	295.16
Yellow Corn	3,154.00	209.97	235.14	0.00	0.00
Mezcal	295.27	37.41	38.82	247.13	250.24
Tequila	276.26	29.63	29.25	233.60	233.60
Pasture ¹	2000.00	2000.00	2000.00	0.00	0.00

¹ Amounts to price for feeding grazing cattle

Table B3:**Agricultural Land use in Mexico**

Crops	Land Planted (MMHa)
Agave Mezcalero	0.018
Agave Tequilana	0.149
Alfafa	0.395
Barley	0.323
Bean	1.626
Corn Silage	0.496
Oat Silage	0.731
Green Chile	0.146
Oats	0.105
Orange	0.345
Grass	2.368
Sorghum	1.938
Soybean	0.088
Sugarcane	0.738
Wheat	0.862
Yellow Corn	0.371
White Corn	7.520
Pastureland	
Planted	18.983
Natural	8.440

Table B4:
Elasticities of supply by country

ROW				U.S.		
Commodity	Calibrated	Compiled	Source	Calibrated	Compiled	Source
Commodities						
Alfafa	0.12	0.12	FAPRI	0.037	0.35	Russo et al. (2008)
Barley	0.12	0.12	FAPRI	0.20	0.37	FAPRI ^a
Bean	0.31	0.22	USDA	0.22	0.22	own calibration
Corn Silage	1.22	0.18	FAPRI	1.11	0.18	FAPRI ^a
Oat Silage	0.39	0.39	Hoffman and Livezey (1987) ^b	0.26	0.26	Hoffman and Livezey (1987)
Green Chilli	0.40	0.40	own calibration	0.20	0.20	own calibration
Oat	0.39	0.39	Hoffman and Livezey (1987) ^b	0.26	0.26	Hoffman and Livezey (1987)
Orange	0.83	0.50	Summer (2003) ^b	0.50	0.50	Summer (2003)
Sorghum	0.53	0.53	FAPRI	0.53	0.53	FAPRI
Soybean	0.34	0.34	Meyers et al. (1991)	0.24	0.24	FAPRI
Soybean Meal	0.20	0.34	Meyers et al. (1991)	0.44	0.24	FAPRI
Soybean Oil	0.16	0.34	Meyers et al. (1991)	0.35	0.24	FAPRI
Sugar	0.50	0.80	Rowhani et al. (2010)	0.20	1.50	Rowhani et al. (2010)
Wheat	0.33	0.33	FAPRI	0.12	0.12	Haniotis et al. (1998)
White Corn	0.25	0.18	FAPRI	0.22	0.18	FAPRI ^a

Table B4:
Elasticities of supply by country

ROW				U.S.		
Commodity	Calibrated	Compiled	Source	Calibrated	Compiled	Source
Yellow Corn	0.25	0.18	FAPRI	0.22	0.18	FAPRI ^a
Pasture	0.20	0.20	own calibration	0.20	0.20	own calibration
Fuels						
Petroleum	0.21	0.20	VTPI (2017)	3.00	0.20	VTPI (2017)
Natural Gas	1.80	1.60	VTPI (2017)	3.80	0.20	own calibration
Ethanol	0.75	0.75	own calibration	0.37	0.37	own calibration
Gasoline	0.90	0.80	IAEE	0.90	0.80	IAEE
Diesel	1.20	1.20	own calibration	1.20	1.20	own calibration
Jet Fuel	0.20	0.20	own calibration	0.20	0.20	own calibration
LPG	1.80	0.20	own calibration	1.60	0.20	own calibration
Fueloil	0.20	0.20	own calibration	0.20	0.20	own calibration
Others	0.20	0.20	own calibration	0.20	0.20	own calibration

^aSame as ROW's.

^bSame as U.S.'s.

Table B5:
Elasticities of demand by country

ROW				U.S.		
Commodity	Calibrated	Compiled	Source	Calibrated	Compiled	Source
Commodities						
Alfafa	-0.05	-0.15	FAPRI	-0.11	-0.11	Russo et al. (2008)
Barley	-0.27	-0.27	FAPRI	-0.20	-0.27	FAPRI ^a
Bean	-0.25	-0.12	FAPRI ^b	-0.20	-0.12	FAPRI
Corn Silage	-0.20	-0.21	FAPRI	-0.15	-0.40	Vittetoe (2009)
Oat Silage	-0.10	-1.27	Hoffman and Livezey (1987) ^b	-0.11	-1.27	Hoffman and Livezey (1987)
Green Chilli	-0.17	-0.17	Ali (2006)	-0.15	-0.24	USDA-ERS
Mezcal	-0.11	-1.17	USDA-ERS	-0.11	-0.11	Euromonitor Internacional
Oat	-0.20	-0.11	Hoffman and Livezey (1987) ^b	-0.11	-0.11	Hoffman and Livezey (1987)
Orange	-0.13	-0.81	Brown (2010)	-0.12	-0.99	USDA-ERS
Sorghum	-0.06	-0.60	FAPRI	-0.06	-0.06	FAPRI
Soybean	-0.20	-0.20	FAPRI	-0.20	-0.20	FAPRI ^a
Soybean Meal	-0.10	-0.35	FAPRI	-0.10	-0.35	FAPRI ^a
Soybean Oil	-0.38	-0.38	FAPRI	-0.66	-0.38	FAPRI ^a
Sugar	-0.05	-0.11	FAPRI	-0.37	-0.11	FAPRI ^a
Tequila	-0.17	-1.17	USDA-ERS	-0.17	-0.11	Euromonitor Internacional
Wheat	-0.34	-0.34	FAPRI	-0.07	-0.60	Haniotis et al. (1998)
White Corn	-0.15	-0.28	FAPRI	-0.21	-0.14	Vittetoe (2009)
Yellow Corn	-0.28	-0.28	FAPRI	-0.12	-0.14	Vittetoe (2009)
Pasture	-0.20	-0.20	own calibration	-0.20	-0.20	own calibration
Fuels						
Petroleum	-0.06	-0.27	VTPI (2017)	-0.06	-0.06	IAEE (2012)
Natural Gas	-0.20	-0.20	own calibration	-0.39	-0.39	own calibration
Ethanol	-0.41	-0.41	own calibration	-0.60	-0.60	own calibration
Gasoline	-0.15	-0.15	IES (2011)	-0.02	-0.02	IAEE (2012)
Diesel	-0.10	-0.10	VTPI (2017)	-0.07	-0.07	Galindo (2005)

Table B5: Elasticities of demand by country						
ROW				U.S.		
Commodity	Calibrated	Compiled	Source	Calibrated	Compiled	Source
Jet Fuel	-0.10	-0.10	VTPI (2017)	-0.20	-0.20	own calibration
LPG	-0.12	-0.15	VTPI (2017)	-0.12	-0.12	own calibration
Fueloil	-0.20	-0.20	own calibration	-0.20	-0.20	own calibration
Others	-0.13	-0.13	own calibration	-0.11	-0.11	own calibration

^aUse the same from ROW.

^bUse the same from U.S.

Table B6:
Demand elasticities for Mexico

Mexico			
Commodity	Calibrated	Compiled	Source
Commodities			
Alfalfa	-0.5	-0.110	own calibration
Barley	-0.27	-0.24	FAPRI
Bean	-0.25	-0.12	own calibration
Corn Silage	-0.20	-0.15	FAPRI
Oat Silage	-0.10	-0.44	FAPRI
Green Chilli	-0.17	-0.27	Fin. Rural
Mezcal	-0.11	-0.29	own calibration
Oat	-0.20	-0.15	own calibration
Orange	-0.13	-0.31	own calibration
Sorghum	-0.06	-0.44	FAPRI
Soybean	-0.20	-0.20	own calibration
Soybean Meal	-0.10	-0.35	own calibration
Soybean Oil	-0.38	-0.38	own calibration
Sugar	-0.05	-0.11	FAPRI
Tequila	-0.17	-1.17	own calibration
Wheat	-0.34	-0.34	FAPRI
White Corn	-0.15	-0.28	FAPRI
Yellow Corn	-0.28	-0.28	FAPRI
Others	-0.20	-0.20	own calibration
Fuels			
Petroleum	-0.06	-0.05	own calibration
Natural Gas	-0.20	-0.10	own calibration
Ethanol	-0.41	-0.20	own calibration
Gasoline	-0.15	-0.28	Reyes, et. al (2010)
Diesel	-0.10	-0.25	Reyes, et. al (2010)
Jet Fuel	-0.10	-0.20	own calibration
LPG	-0.12	-0.07	own calibration
Fueloil	-0.20	-0.15	own calibration
Others	-0.13	-0.10	own calibration

Table B7:
Demand and Supply Fuel Quantities

Commodity	Demand (MMBbl)			Production (MMBbl)	Supply (MMBbl)	
	MX	ROW	U.S.		ROW	U.S.
Petroleum	437.635	144.94	3,239.48	948.574	3,239.480	22.078
Natural Gas (MMft ³)	1,198,051.00	842,570.00	3,494,342.50	1,317,893.330	3,482,261.000	1,311,550.00
Ethanol	0.000	126.262	301.205	0.000	134.322	307.979
Gasoline	291.1995	59.942	51.959	158.294	89.550	117.118
Diesel	139.181	255.902	68.56	112.956	70.020	290.25
Jet Fuel	21.499	36.929	29.766	21.091	29.310	36.524
LPG	104.39	59.39	61.599	9.143	72.520	59.343
Fueloil	74.083	324.445	68.56	108.095	79.366	290.25
Others	14.144	173.353	150.411	50.966	158.810	167.07

Table B8:
Demand and Supply Fuel Prices

Commodity	Demand Price (US\$/lt)			Supply Price (US\$/lt)	
	MX*	ROW	U.S.	ROW	U.S.
Petroleum	5.92	0.48	0.48	0.47	0.48
Natural Gas (\$/Mft ³)	52.76	2.41	5.20	3.41	3.68
Ethanol	-	0.56	0.55	0.65	0.62
Gasoline	7.77	1.10	0.82	0.65	0.50
Diesel	7.79	0.72	0.72	0.50	0.50
Jet Fuel	8.66	0.68	0.71	0.72	0.72
LPG	3.10	0.65	0.37	0.35	0.35
Fueloil	5.95	0.72	0.77	0.56	0.56
Others	3.08	0.25	0.25	0.51	0.51

*MXN\$/lt