

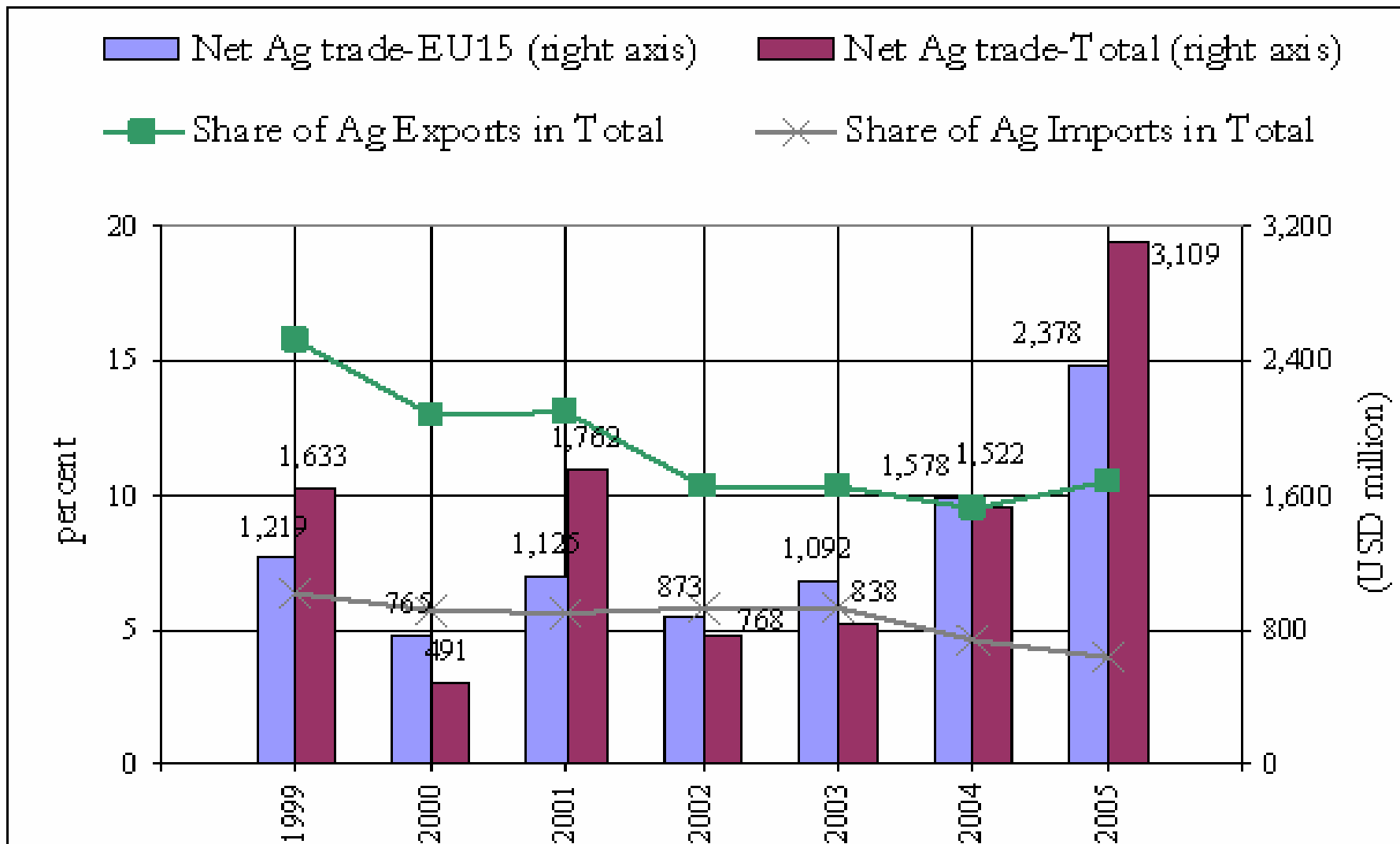
Trade Liberalization and Turkish Agriculture

Erol H. Cakmak

**Department of Economics
Middle East Technical University (METU), Ankara**

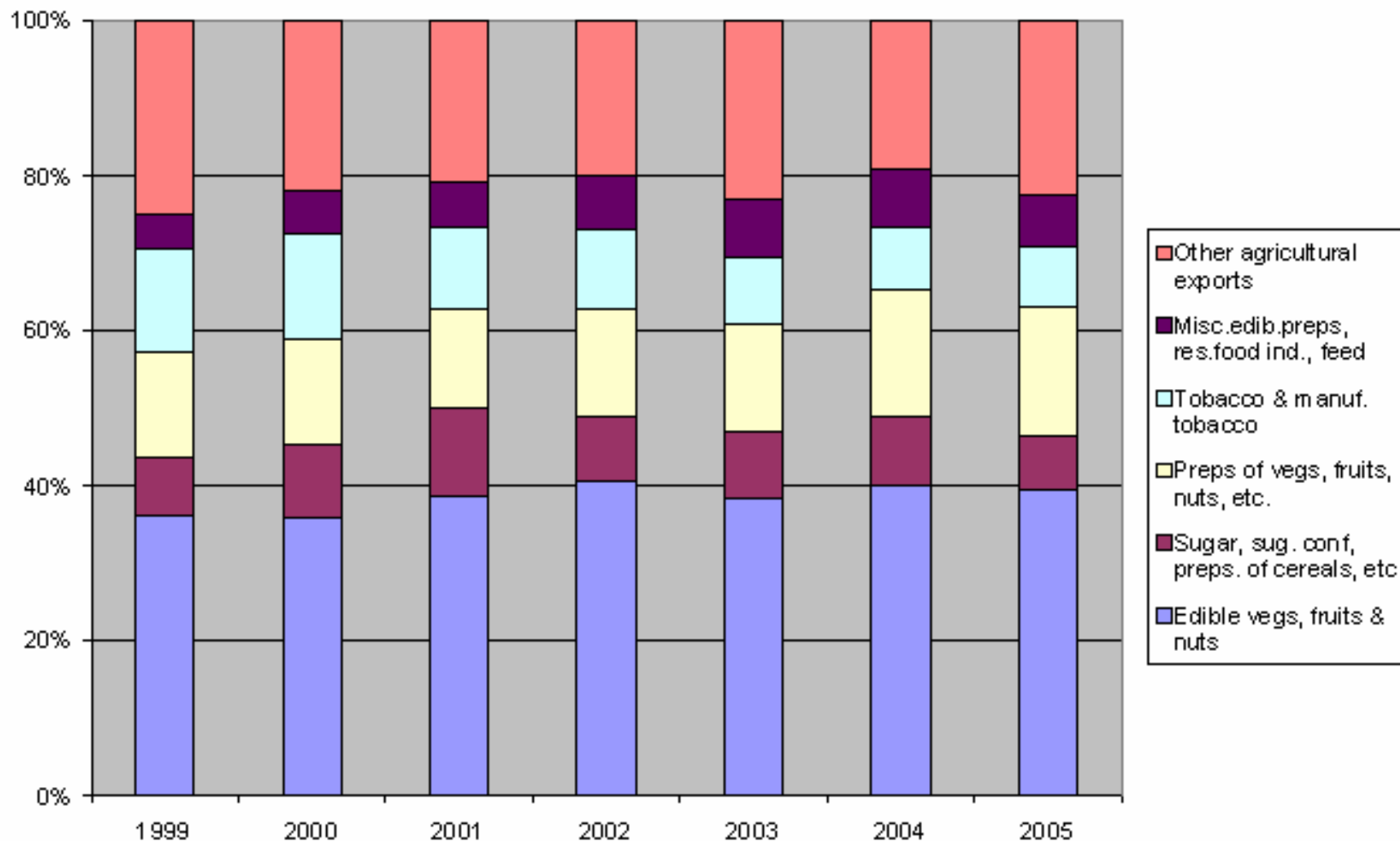
- **Background (Trade and tariffs)**
- **Model**
- **Scenarios & Results**
- **Concluding Remarks**

Agro-Food Trade, 1999-2005



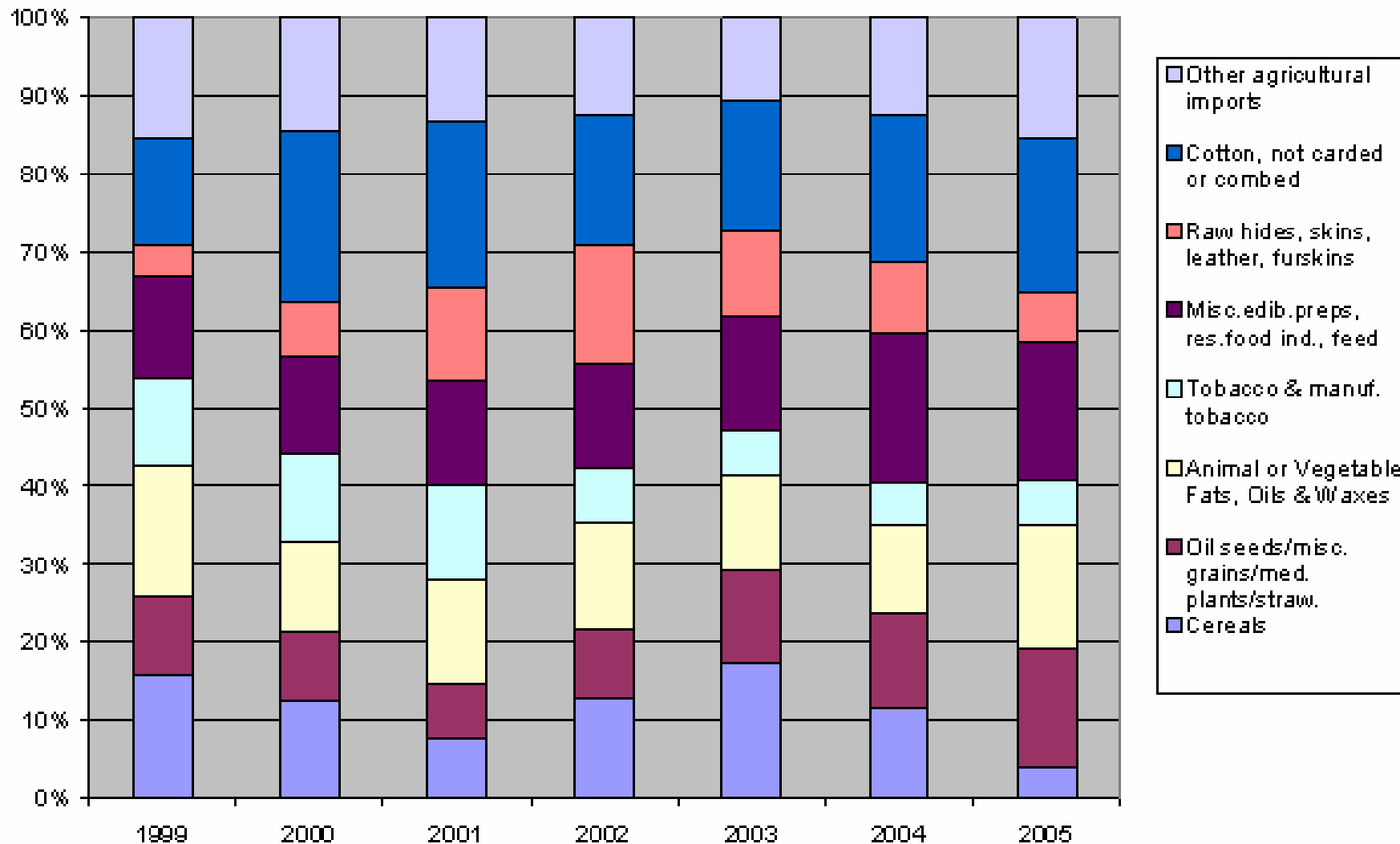
Source: TurkStat (2006c).

Agro-Food Exports, 1999-2005



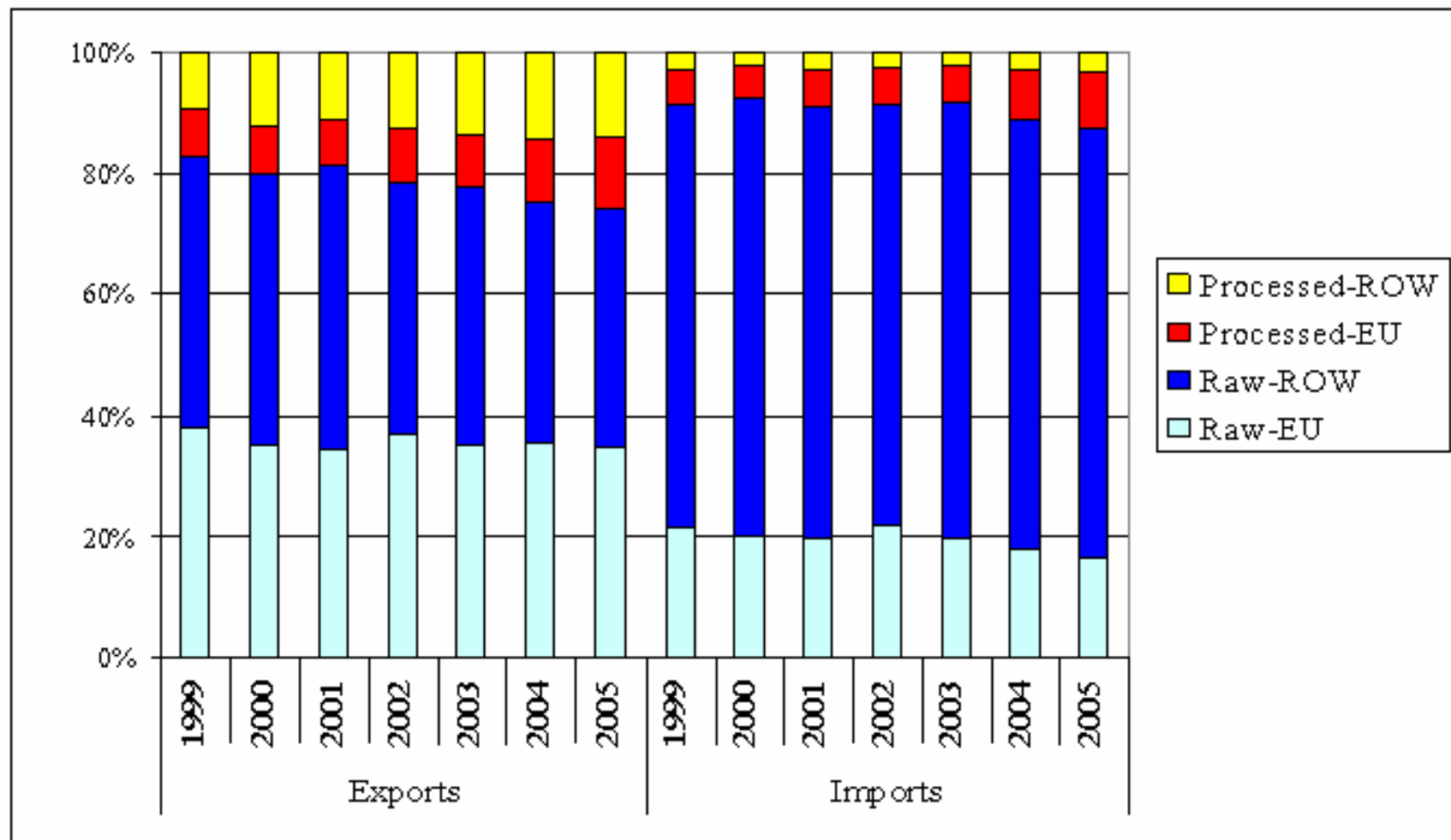
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Agro-Food Imports, 1999-2005



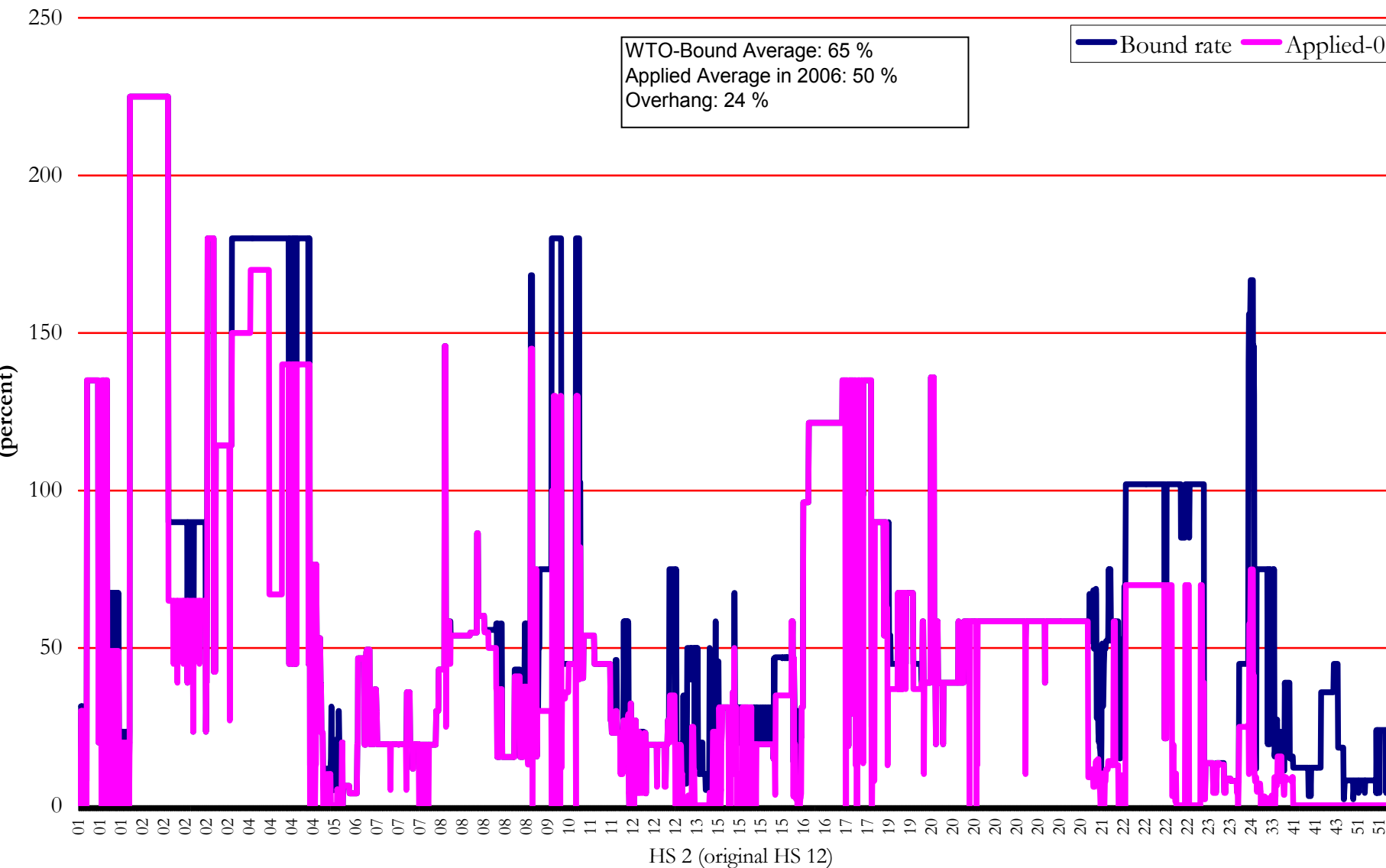
Source: TurkStat (2006c).

Trade in raw and processed agro-food products, 99-05



Source: TurkStat (2006c).

Bound and Applied Tariffs, 2006



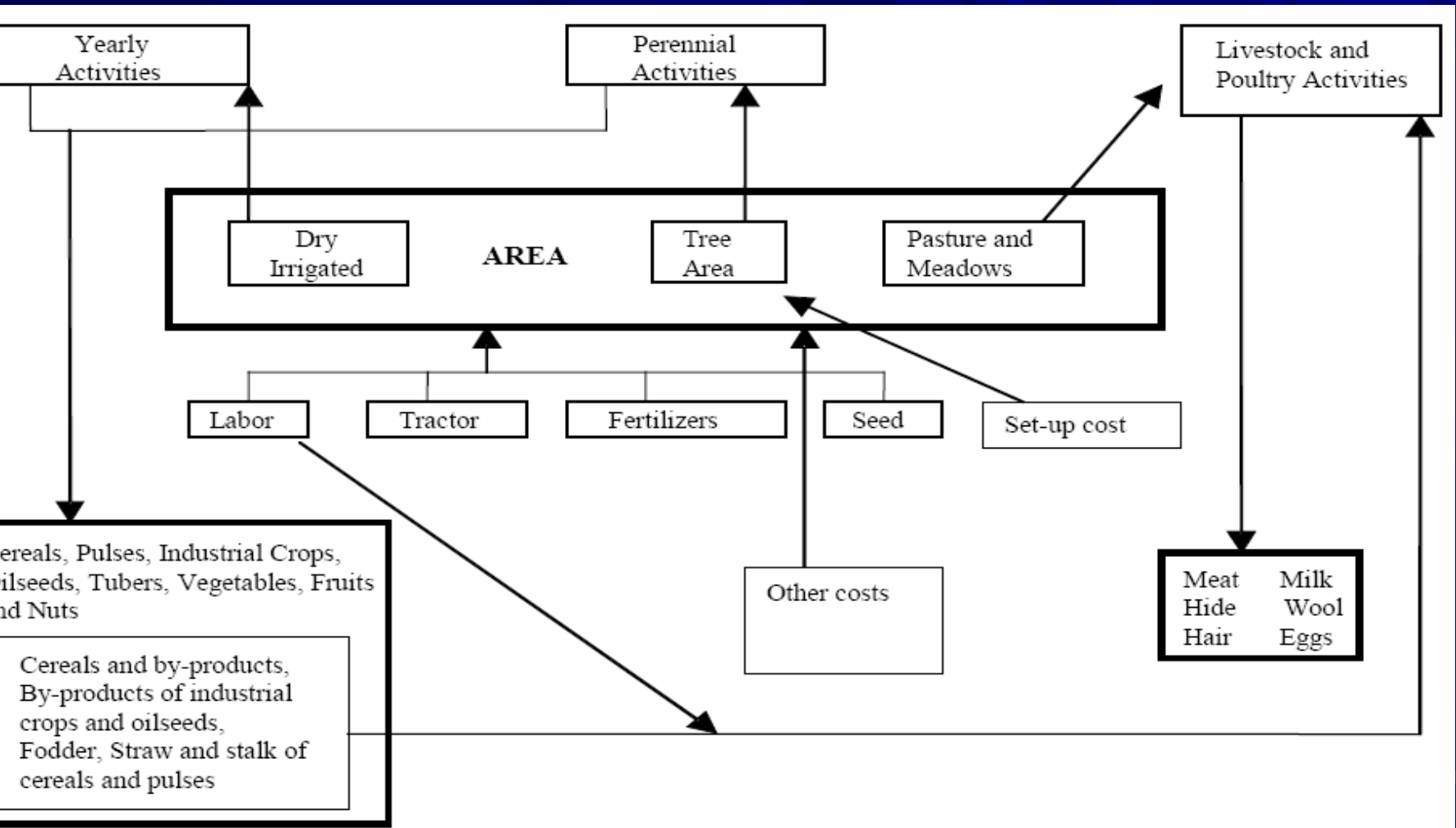
Turkey and the EU

- Turkey's journey to EU started in 1963.
- Membership, *if it ever happens*, will involve full liberalization of trade in agricultural products with EU.
- *Impact of liberalization on Turkish agriculture depends on:*
 - *the path of agricultural policies in Turkey and EU, and also on accession negotiations.*
 - *EU's MED policies*
 - *Multilateral negotiations*

MODEL

- Model maximizes the sum of consumers' and producers' surplus [Samuelson (1952) and Takayama and Judge (1964)].
 - Output prices are *endogeneous* to the model.
- Partial equilibrium *static optimization* model.
- Basic approach undertaken for supply calibration is *Positive Mathematical Programming (PMP) with Maximum Entropy* [*Paris and Howitt (1998), Heckelevi and Britz (1999 and 2000)*].

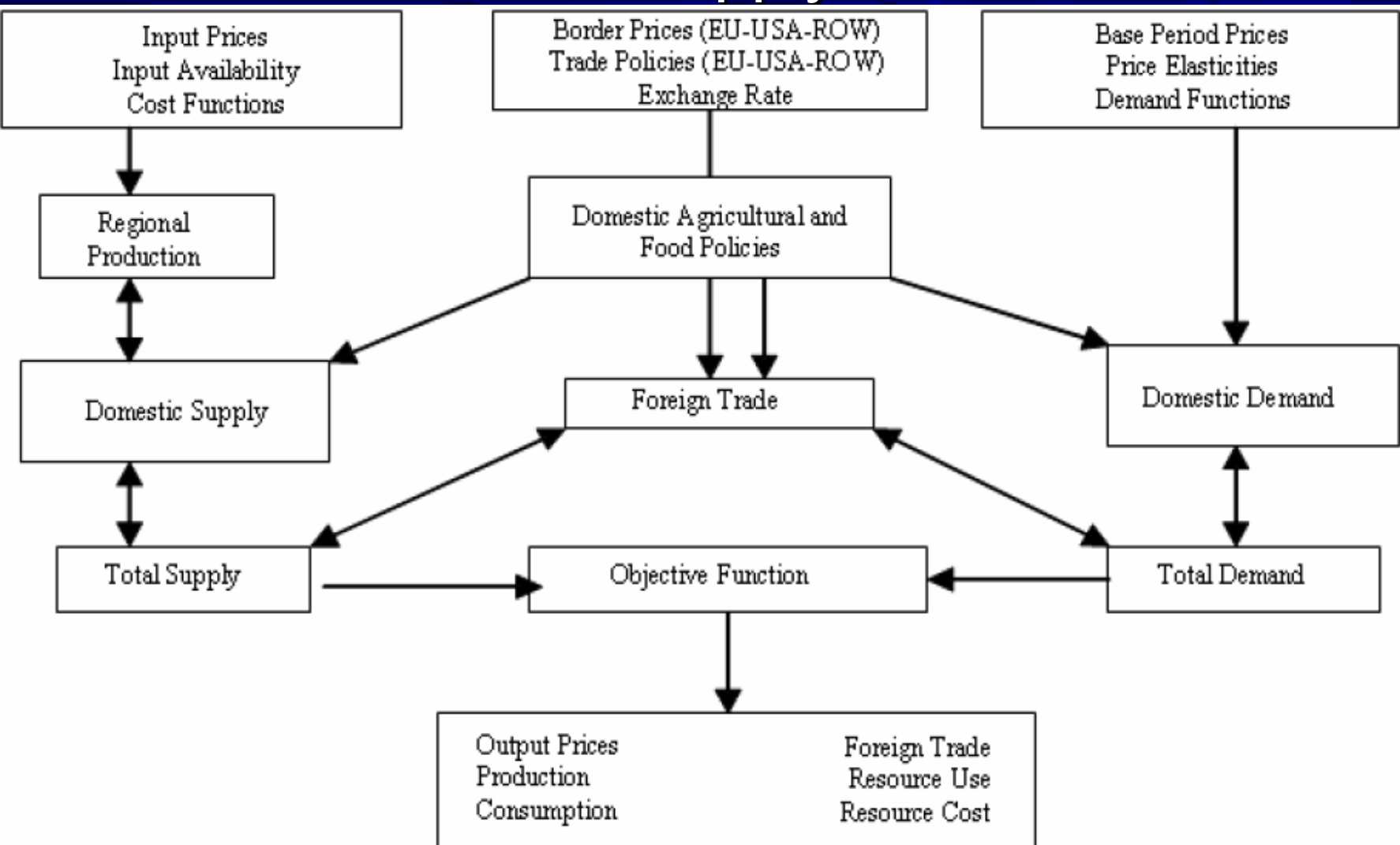
I/O Structure in Production-4 regions



■ covers 95% of agriculture (96.3%); Crop and livestock sub-sectors are integrated endogenously

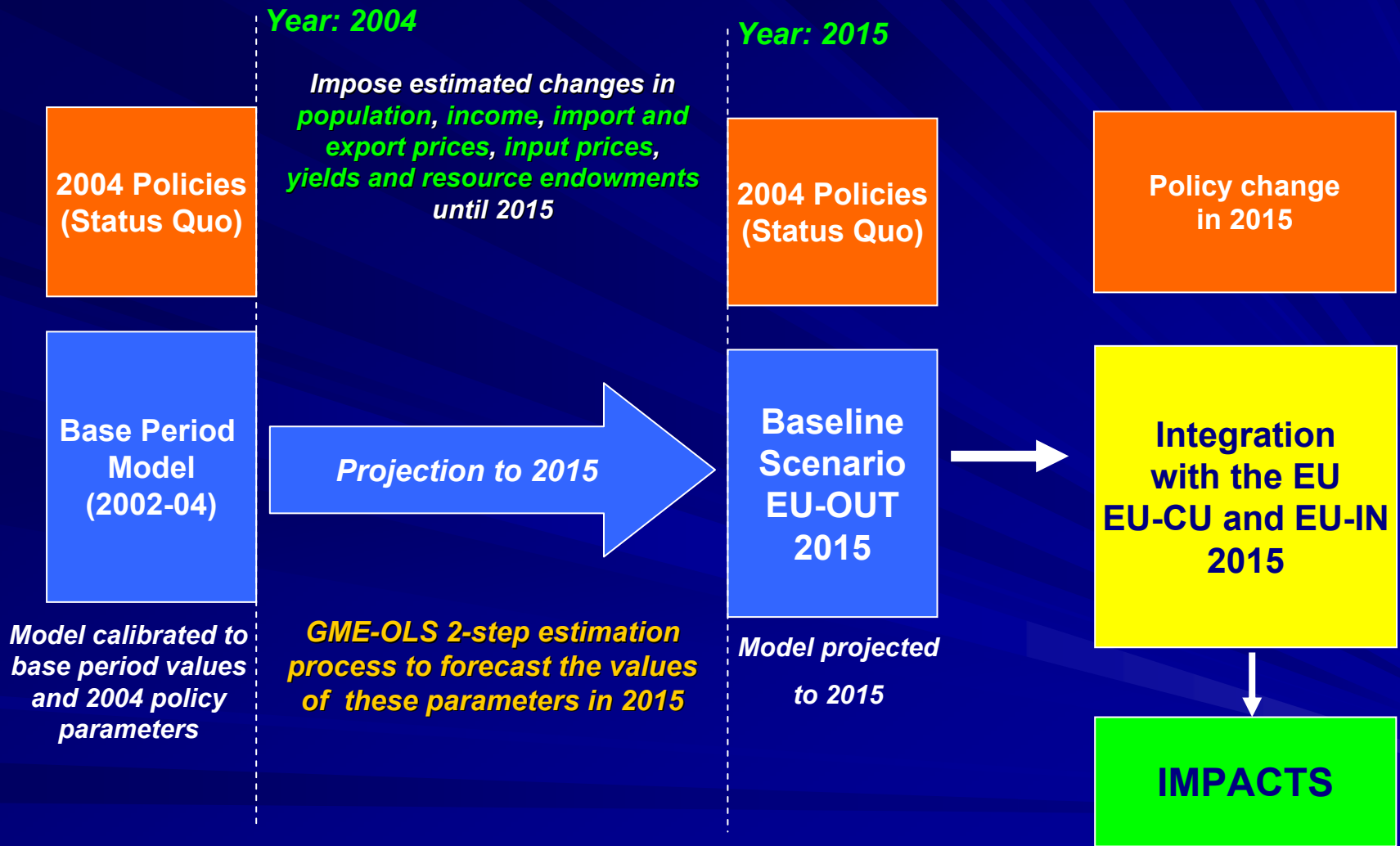
■ 200 activities to produce 55 commodities with ~250 equations and 350 variables

Demand and Supply Interactions



- Trade is allowed in raw and in raw equivalent form for processed products.
- Foreign trade is differentiated for EU, USA and ROW.

Scenarios: EU-OUT, EU-CU, EU-IN



Projection Assumptions to 2015

- 1.4 percent population growth per year
 - Population growth rate is determined from FAOSTAT
- 1.3 percent net per capita income growth per year.
 - GDP per capita in 1987 prices (linear trend)
- 210,000 ha increase in irrigated area (150,000 ha in GAP and 60,000 ha in ROT)
-
- Prices are adjusted to 2015 using FAPRI (2005) price projections and FAO export unit values data (1961-2004).
- Yield Increases until 2015: The yield growths are estimated using last 10 years data with GME taken last 45 years data estimates with OLS as support vector center points, i.e., a priori information.

to 2015...

- EU-OUT: Baseline

- EU-CU: CU extended to agro-food products

- EU-IN: CU+
 - Intervention purchases
 - Compensatory payments (cereals, oilseeds and protein crops and set-aside)
 - Other supports (durum, olive oil, cotton, milk, beef, mutton)

General Results - 1/2

	2002-04 BASE	2015			Change from EU-OUT (%)	
		EU-OUT	EU-CU	EU-IN	EU-CU	EU-IN
Total Surplus (Index)	100.0	105.1	105.2	105.2	0.1	0.1
<i>with CAP Support</i>	-	-	-	107.1		1.9
Producers' Surplus	100.0	101.7	100.8	100.8	-0.9	-0.9
<i>with CAP Support</i>	-	-	-	102.9		1.1
Consumers' Surplus	100.0	141.6	153.0	153.1	8.0	8.1
Total Production						
Volume ^a	33,997	42,951	40,795	40,461	-5.0	-5.8
Value	33,997	43,343	37,696	37,739	-13.0	-12.9
Crop Production						
Volume ^a	23,191	29,536	27,941	27,616	-5.4	-6.5
Value	23,191	28,152	26,121	26,172	-7.2	-7.0
Livestock Production						
Volume ^a	10,806	13,415	12,854	12,845	-4.2	-4.2
Value	10,806	15,192	11,575	11,568	-23.8	-23.9
Total Consumption						
Volume ^a	29,441	37,376	40,335	40,276	7.9	7.8
Value	29,441	37,870	36,222	36,079	-4.4	-4.7
Crop Consumption						
Volume ^a	18,368	23,713	23,849	23,790	0.6	0.3
Value	18,368	22,366	21,873	21,730	-2.2	-2.8
Livestock Consumption						
Volume ^a	11,073	13,663	16,486	16,486	20.7	20.7
Value	11,073	15,505	14,349	14,349	-7.5	-7.5
Net Exports	2,264	3,564	77	-306	-97.8	-108.6
Crop Products	2,537	3,909	2,889	2,633	-26.1	-35.7
Livestock Products	-273	-346	-2,811	-2,818	713.6	715.6
Price Index (Laspeyres)	100.0	102.0	91.3	91.3	-10.5	-10.5
Crop Products	100.0	94.6	92.1	92.0	-2.7	-2.7
Livestock Products	100.0	114.3	90.1	90.1	-21.2	-21.2

Almost no change in total welfare

With CAP it increases by 2 %.

Without CAP slight reduction in producers' welfare

Slight increase with CAP

Significant increase in the consumers' surplus

Limited impact on total production

Membership brings 11% decrease in prices

Significant decrease in the prices of livestock products

Total consumption volume increase by 8%, but the expenditure declines by 5%

More amplified in the case of livestock products

General Results - 2/2

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Membership makes Turkey net importer in agricultural products

Boom in the imports of livestock products can not be compensated by the increase in the exports of crop products

Significant changes in the volume of production and trade

Impact on Net Exports

Net Trade Results of the Scenarios (USD million)

	2002-04	EU-OUT (2015)		EU-CU (2015)		EU-IN (2015)	
	TOTAL	EU	TOTAL	EU	TOTAL	EU	TOTAL
<i>Crop Products</i>	2537	3042	3909	2048	2889	1659	2512
Cereals	-240	4	-187	-1054	-1229	-1284	-1464
Pulses	190	47	249	53	263	53	263
Industrial Crops	615	756	922	795	961	672	856
Oilseeds	-747	3	-922	-176	-1100	-210	-1136
Tubers	55	4	88	4	85	4	85
Vegetables	598	360	874	413	902	413	902
Fruits And Nuts	2064	1868	2885	2013	3007	2013	3007
<i>Livestock and Poultry</i>	-273	-124	-346	-2589	-2811	-2596	-2818
Meat	11	0	2	-1980	-1969	-1983	-1972
Milk	-14	1	24	-490	-466	-494	-470
Hide, Wool and Hair	-290	-250	-518	-248	-527	-248	-527
Poultry	19	125	146	129	150	129	150
Total	2264	2918	3564	-541	77	-936	-306

Apart from livestock products, net imports of cereals and oilseeds go up in CU and membership – wheat and maize

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On the other hand, net exports of pulses, fruits and vegetables increase – chickpeas, peppers, tomatoes, cucumbers, hazelnuts, apples, apricots and citrus

CONCLUSION

- Overall welfare effect is small.
- Consumers will benefit from EU integration due to declining prices.
- Increased consumption will be realized with a lower level of expenditure.
- CAP supports are important for the welfare of producers.
- Increase in net exports of crop products will be far from compensating the increase in the net imports of livestock products.

Agricultural Cost Estimate of Turkey to EU

EUR million (at 2004 prices)	Current Policies			Reduction in Direct Payments		
	2015 Full	2015, 25%	2025	2015 Full	2015, 25%	2025
Total Crop Payments	4,416	1,104	3,844	3,159	790	1,967
<i>Compensatory Area Pay.</i>	2,130	532	1,854	1,523	381	948
Cereals	1,963	491	1,708	1,404	351	874
Oilseeds	62	16	54	44	11	28
Protein Crops	105	26	91	75	19	47
<i>Other Direct Crop Pay.</i>	2,287	572	1,990	1,636	409	1,018
Durum Wheat	274	69	239	196	49	122
Hazelnut	33	8	28	23	6	15
Tobacco	298	75	260	213	53	133
Olive Oil	191	48	166	137	34	85
Cotton	1,490	372	1,297	1,066	266	664
Total Livestock Payments*	1,456	364	1,267	1,042	260	649
<i>Beef Payments</i>	601	150	523	430	107	268
<i>Sheep Meat Payments</i>	492	123	429	352	88	219
<i>Milk Payments</i>	363	91	316	260	65	162
TOTAL	5,873	1,468	5,111	4,201	1,050	2,615