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**Potential Economic Effects of the Reduction in Agricultural and Nonagricultural Trade Barriers in the Transatlantic and Investment Partnership - Slides**

**Caesar B. Cororaton and David Orden**

*Selected Paper prepared for presentation at the International Agricultural Trade Research Consortium's (IATRC's) 2016 Annual Meeting: Climate Change and International Agricultural Trade in the Aftermath of COP21, December 11-13, 2016, Scottsdale, AZ.*

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# Potential Economic Effects of the Reduction in Agricultural and Nonagricultural Trade Barriers in the Transatlantic Trade and Investment Partnership

Caesar B. Cororaton and David Orden

Presented at the 2016 IATRC Annual Meeting  
Scottsdale, Arizona

Paper available at:

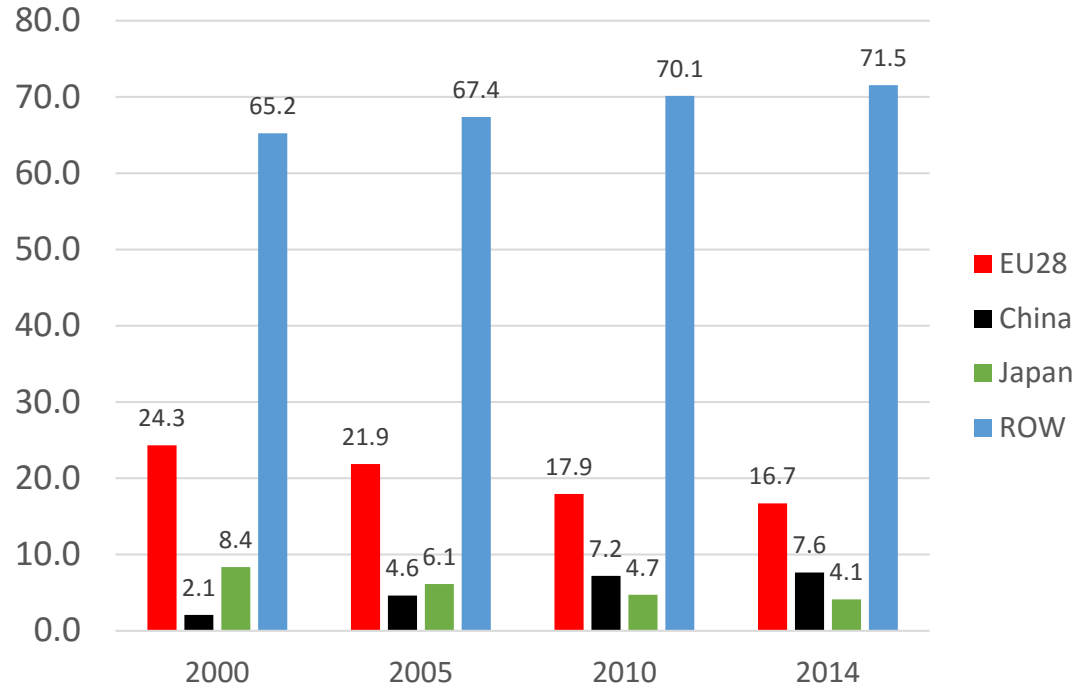
[https://www.researchgate.net/publication/301282422\\_Potential\\_Economic\\_Effects\\_of\\_the\\_Reduction\\_in\\_Trade\\_Barriers\\_in\\_the\\_Transatlantic\\_Trade\\_and\\_Investment\\_Partnership](https://www.researchgate.net/publication/301282422_Potential_Economic_Effects_of_the_Reduction_in_Trade_Barriers_in_the_Transatlantic_Trade_and_Investment_Partnership)

# Objectives

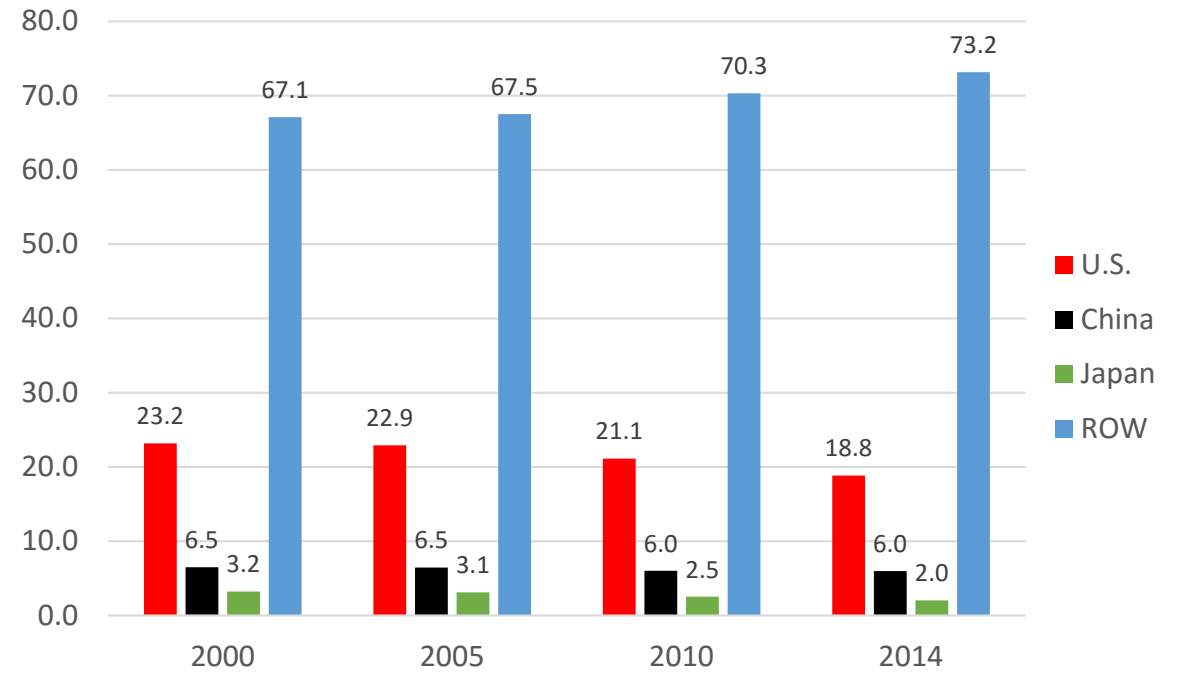
- To assess the potential economic effects in the U.S. and EU28 of a reduction in bilateral trade barriers
  - Estimate AVE of non-tariff measures (NTMs) within TTIP and include them in the computation of trade barriers
  - Simulate bilateral trade barrier reductions in TTIP using global CGE

# Background: Declining U.S.-EU28 bilateral merchandise export shares

Market Shares for U.S. Exports (%)



Market Shares for EU28 Exports (%)  
(excluding intra-EU28 exports)



# NTM Estimation: A Gravity-Border Effect Approach

- We follow **Olper, A. and V. Raimondi. 2008.** Agricultural Market Integration in the OECD: A gravity-border effect approach. *Food Policy* 33, 165-175.
- Gravity equations estimated with U.S. / EU28 border effects using GTAP 8 database, country fixed effects for multilateral resistance, PPML estimation
- Estimates for 10 sectors: Cereals, Sugar, Milk, Meat, Other Agri., Other Food, Extraction, Light Manufacturing, Heavy Manufacturing
- AVE of NTMs computed from estimated border effect coefficients and GTAP elasticities of substitution, taking into account inclusion of tariffs in total border effect

# Example NTM Estimation: Meat

- Meat: animal products, meat-cattle-sheep-goat, meat products

Explanatory	Coefficients	Std errors	
Ln(Prod)	0.855***	0.082	Ln of production
Ln(Consump)	0.411***	0.072	Ln of consumption
Ln(Dist)	-0.397***	0.068	Ln of distance
Commborder	1.150***	0.124	Commboder = 1 if share common border, 0 otherwise
Commlang	0.548***	0.150	Commlang = 1 if same official language, 0 otherwise
RTA	1.813***	0.178	RTA = 1 if i and j are members of possible TTIP
BdrUS_EU	-3.585***	0.344	BdrUS_EU = 1 if dependent variable measures exports from US to EU28
BdrEU_US	-2.100***	0.494	BdrEU_US = 1 if dependent variable measures exports from EU to US
Constant	-6.002***	1.032	<i>Note: Country Fixed effect coefficients are omitted in the presentation</i>

N	35634
R2	0.546
Pseudo log-likelihood	-89983
* p<0.05, ** p<0.01, *** p<0.001	

Example: Meat	Border coefficients	Elasticity of substitution	AVE of border	Tariff	AVE of NTMs
United States	-2.100	7.914	0.355	0.008	0.347
European Union 28	-3.585	7.914	0.679	0.181	0.499

Averages	Agri Tariffs	Agri AVE of NTMs	Non-Agri Tariffs	Non-Agri AVE of NTMs
United States	6.9	47.8	1.6	22.1
European Union 28	18.7	59.4	2.3	12.6

# Comparing Our NTMs Estimates with Other Estimates

Studies	Sectors	United States	European Union 28
Our estimates (2016) /a/	Agriculture	47.8	59.4
	Non-Agriculture	22.1	12.6
Disdier, et al. (2016) /a/	Agriculture	35.7	40.1
	Non-Agriculture	8.7	10.4
Arita, et al. (2015) /a/	Agriculture	55.7	41.0
	Non-Agriculture	n.a.	n.a.
Bureau, et al. (2014)	Agriculture	47.8	53.6
	Non-Agriculture		
	Products	11.4	13.4
	Services /b/	43.0	31.0
Berden, et al. (2009) & CEPR (2013) /a/	Agriculture	73.3	56.8
	Non-Agriculture		
	Goods	17.4	15.7
	Services	8.9	8.5
/a/ Simple average			
/b/ Median AVE of NTMs			
n.a. not reported in the cited paper			



# Trade Barrier Reduction Analysis

- AVE of NTMs added to tariffs in model calibration (GTAP 8)
- Pre-simulation 2007-2014
  - Actual GDP growth of countries/regions
  - Actual population growth of countries/regions
- Baseline: 2015-2024
  - Projected GDP growth of countries/regions
  - Projected population growth of countries/regions
- Scenarios: Reduction in U.S-EU28 trade barriers in 2015-2024
  - Reduction of 90% in tariffs (90-0)
  - Reduction of 90% in tariffs and 20% in NTMs (90-20, All Sectors)
  - Reduction of 90% in tariffs and 20% in NTMs in non-agriculture only (90-20, Non Agri. Only)
  - Reduction of 90% in tariffs and NTMs (90-90)

# Global CGE

- Countries/regions and commodities:

25 Countries/Regions		17 Commodities	
<b>EU28:</b>	<b>United States</b>	<b>Agriculture/Food:</b>	<b>Non-Agriculture:</b>
Austria		Cereals	Extraction
Belgium	<b>Others:</b>	Sugar	Textile, apparel
Luxembourg	Canada	Milk	Wood, paper
Denmark	Mexico	Meat	Petro., chem.
Finland	ASEAN	Other agri.	Metal
France	China	Other food	Motor transp.
Germany	Japan		Mach.&elect.
Ireland	South Korea		All other mfg,
Italy	Latin America		Utilities
Netherlands	Africa		Construction
Portugal	Rest of the world		Services
Spain			
Sweden			
United Kingdom			
Rest of EU28			

Impact on export volume in 2024, U.S. and EU28 (% change from baseline)  
 (90-0 Scenario)

	U.S		EU28	
	Agri	Non-Agri	Agri	Non-Agri
Total	0.44	0.23	0.10	0.04
To TTIP	12.23	2.05	0.16	0.06
U.S.			5.89	1.50
Within EU			-0.20	-0.13
To Non-TTIP	-0.41	-0.28	-0.03	-0.002

Impact on export volume in 2024, U.S. and EU28 (% change from baseline)  
 (90-20 Scenario, All Sectors)

	U.S		EU28	
	Agri	Non-Agri	Agri	Non-Agri
Total	1.45	0.78	0.26	0.19
To TTIP	34.90	5.52	0.52	0.52
U.S.			17.51	7.03
Within EU			-0.56	-0.31
To Non-TTIP	-1.03	-0.56	-0.34	-0.34

Impact on export volume in 2024, U.S. and EU28 (% change from baseline)  
 (90-20 Scenario, Non-Agriculture Only )

	U.S		EU28	
	Agri	Non-Agri	Agri	Non-Agri
Total	-0.07	0.79	-0.09	0.19
To TTIP	0.26	5.52	0.01	0.52
U.S.			-0.17	7.04
Within EU			0.02	-0.32
To Non-TTIP	-0.10	-0.55	-0.32	-0.33

## Welfare Effects, 2024

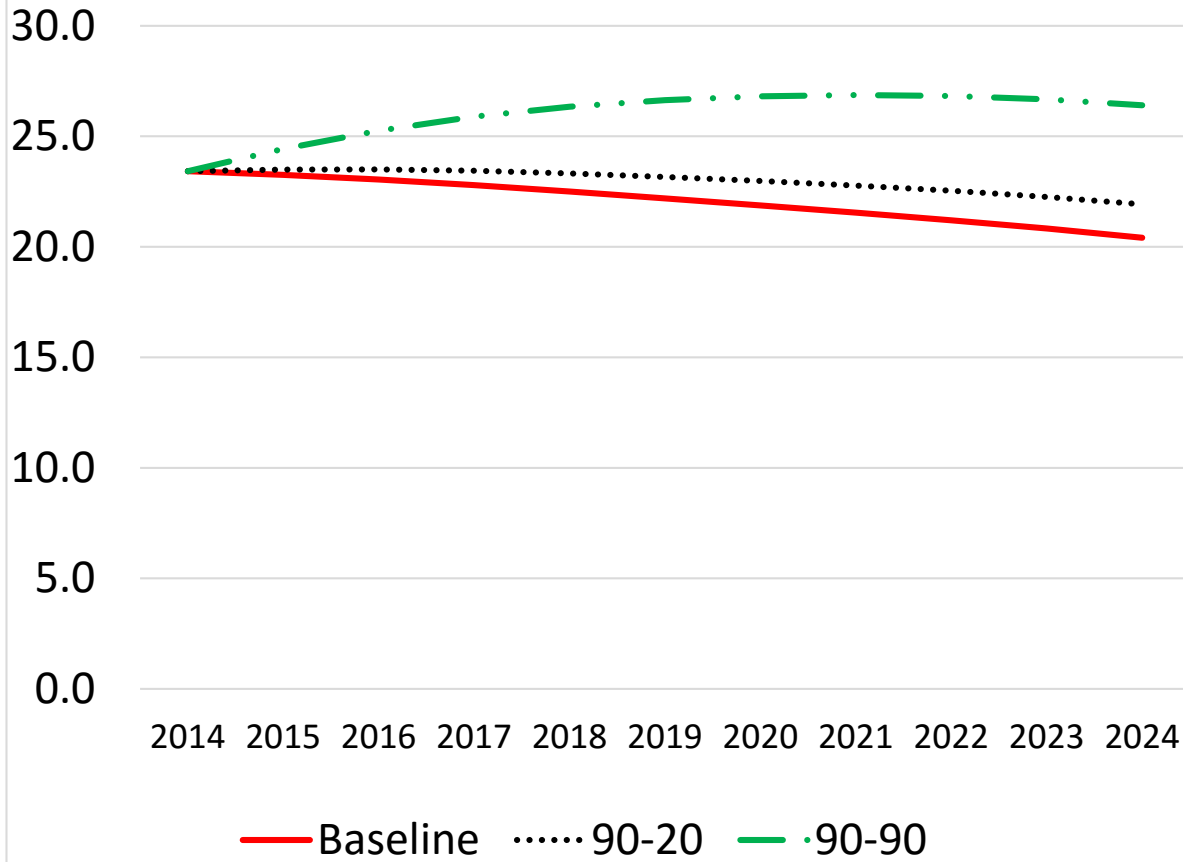
	90-0	90-20	90-20 (Non-Agri Only)	90-90
EV \$billion (2014 prices)				
United States	6.24	20.08	17.50	82.72
European Union 28	3.67	14.22	12.08	64.31
EV% GDP				
United States	0.03	0.10	0.09	0.41
European Union 28	0.02	0.07	0.06	0.31

Impact on export volume in 2024, U.S. and EU28 (% change from baseline)  
 (90-90 Scenario)

	U.S		EU28	
	Agri	Non-Agri	Agri	Non-Agri
Total	10.23	3.26	1.23	1.02
To TTIP	195.80	20.35	2.41	2.79
U.S.			78.51	32.00
Within EU			-2.91	-1.11
To Non-TTIP	-6.08	-1.70	-1.53	-1.85

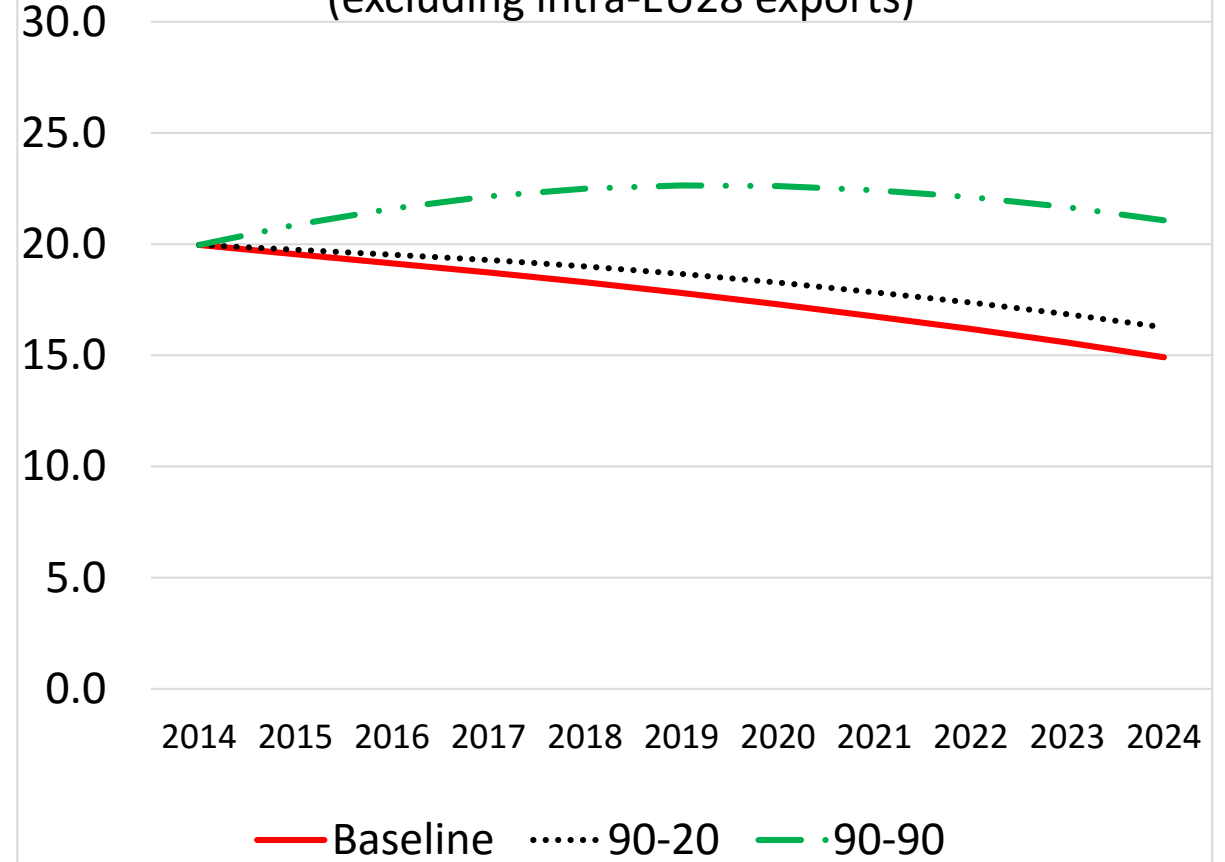
# Model Projected Bilateral Export Shares, U.S.-EU28 (%)

## EU28 as market for U.S. exports



## U.S. as market for EU28 exports

(excluding intra-EU28 exports)





## Comparison of Our Results to Related Studies

- **Disdier, A. C., C. Emlinger and J. Fourre. 2016.** “Interdependencies between Atlantic and Pacific agreements: Evidence from agri-food sectors.” *Economic Modeling* 55: 241-2253.
- **Beckman, J., S. Arita, L. Mitchell, and M. Burfisher. 2015.** “Agriculture in the Transatlantic Trade and Investment Partnership: Tariffs and Tariff-Rate Quotas, and Non-Tariff Measures”. Economic Research Report Number 198. USDA
- **Bureau, J. C., A. C. Disdier, C. Emlinger, J. Foure, G. Felbermayer, L. Fontagne, and S. Jean. 2014.** “Risk and Opportunities for the EU Agri-Food Sector in a Possible EU-US Trade Agreement”. Study prepared for the European Parliament, Directorate-General for Internal Policies, July.
- **Center for Economic and Policy Research (CEPR). 2013.** Reducing Transatlantic Barriers to Trade and Investment: An Economic Assessment Final Project Report, March 2013. Center for Economic Policy Research, London.

## Comparing Our Results with Related Studies (% change)

		Scenario			
	Sectors/Changes in	Tariff only /a/		Tariff + 20 NTMs /b/	
Studies	exports from baseline	U.S. to EU	EU to U.S.	U.S. to EU	EU to U.S.
Our results (2016)	Overall	2.28	1.68		
	Agriculture	12.23	5.89		
	Non-agriculture	2.05	1.50		
Disdier et al. (2016)	Agriculture	n.a.	n.a.		
Beckman et al. (2015)	Agriculture	39.53	3.77		
Bureau et al. (2014)	Overall	11.10	10.80		
	Agriculture	30.70	18.50		
	Non-agriculture				
	Industry	15.50	16.30		
	Services	-0.50	0.40		
CEPR (2013) /d/	Overall	12.36	6.57		
	Agriculture	29.96	10.79		
	Non-agriculture				
	Industry	18.42	9.94		
	Services	-0.25	0.31		

/a/ 90 percent reduction in our case while total elimination in others

/b/ 20 percent reduction in NTMs in our case, complete NTM elimination in selected agricultural products in Beckman et al. (2015), and 25 percent reduction in others

# Comparing Our Results with Related Studies (% change)

		Scenario			
	Sectors/Changes in	Tariff only /a/		Tariff + 20 NTMs /b/	
Studies	exports from baseline	U.S. to EU	EU to U.S.	U.S. to EU	EU to U.S.
Our results (2016)	Overall	2.28	1.68	6.20	7.50
	Agriculture	12.23	5.89	34.90	17.51
	Non-agriculture	2.05	1.50	5.52	7.03
Disdier et al. (2016)	Agriculture	n.a.	n.a.	159.00	55.50
Beckman et al. (2015)	Agriculture	39.53	3.77	69.20	9.47
Bureau et al. (2014)	Overall	11.10	10.80	36.60	37.30
	Agriculture	30.70	18.50	116.30	56.40
	Non-agriculture				
	Industry	15.50	16.30	41.20	41.80
	Services	-0.50	0.40	15.60	26.80
CEPR (2013) /d/	Overall	12.36	6.57	36.57	28.03
	Agriculture	29.96	10.79	49.32	36.94
	Non-agriculture				
	Industry	18.42	9.94	53.29	41.91
	Services	-0.25	0.31	4.33	3.64

/a/ 90 percent reduction in our case while total elimination in others

/b/ 20 percent reduction in NTMs in our case, complete NTM elimination in selected agricultural products in Beckman et al. (2015), and 25 percent reduction in others

# Summary/Conclusions

- Trade between the U.S. and EU28 remain strong, but bilateral export shares have declined, partly due to the rise of China as major trading economy
- Substantial trade barriers (particularly NTMs) between the U.S. and EU28 remain. We estimate higher AVE of NTMs for Agriculture than Non-Agri. for U.S. and EU with U.S. AVEs higher than EU for Agriculture but with reverse for Non-Agric.
- The analysis indicates that in 2024:
  - Elimination of tariffs between the economies will have small effects on the bilateral trade flows
  - Larger export effects from elimination of tariffs together with 20% reduction in AVE of NTMs are not enough to reverse the declining bilateral U.S.-EU28 export shares
  - U.S. gains (% change from baseline) larger for Agriculture tariff and NTM reductions and for Non-Agri. tariff cuts; EU gains larger for Non-Agri. AVE of NTM reductions
  - About 85% of the overall trade gains come from Non-Agri. despite larger percentage gains for Agri.
  - 90% reduction in tariffs and AVE of NTMs has export effects large enough to reverse the declining bilateral U.S.-EU28 export shares
- While our NTM estimates for the U.S and EU28 are generally in range comparable with other estimates, our impact assessment of the potential effects are smaller