



The Great Trade Collapse and Rebound: A State-by-State View

CENTRAL
to
AMERICA'S
ECONOMY™

Cletus C. Coughlin

Senior Vice President and Chief of Staff

Global Economic Forum

July 1, 2014

Outline

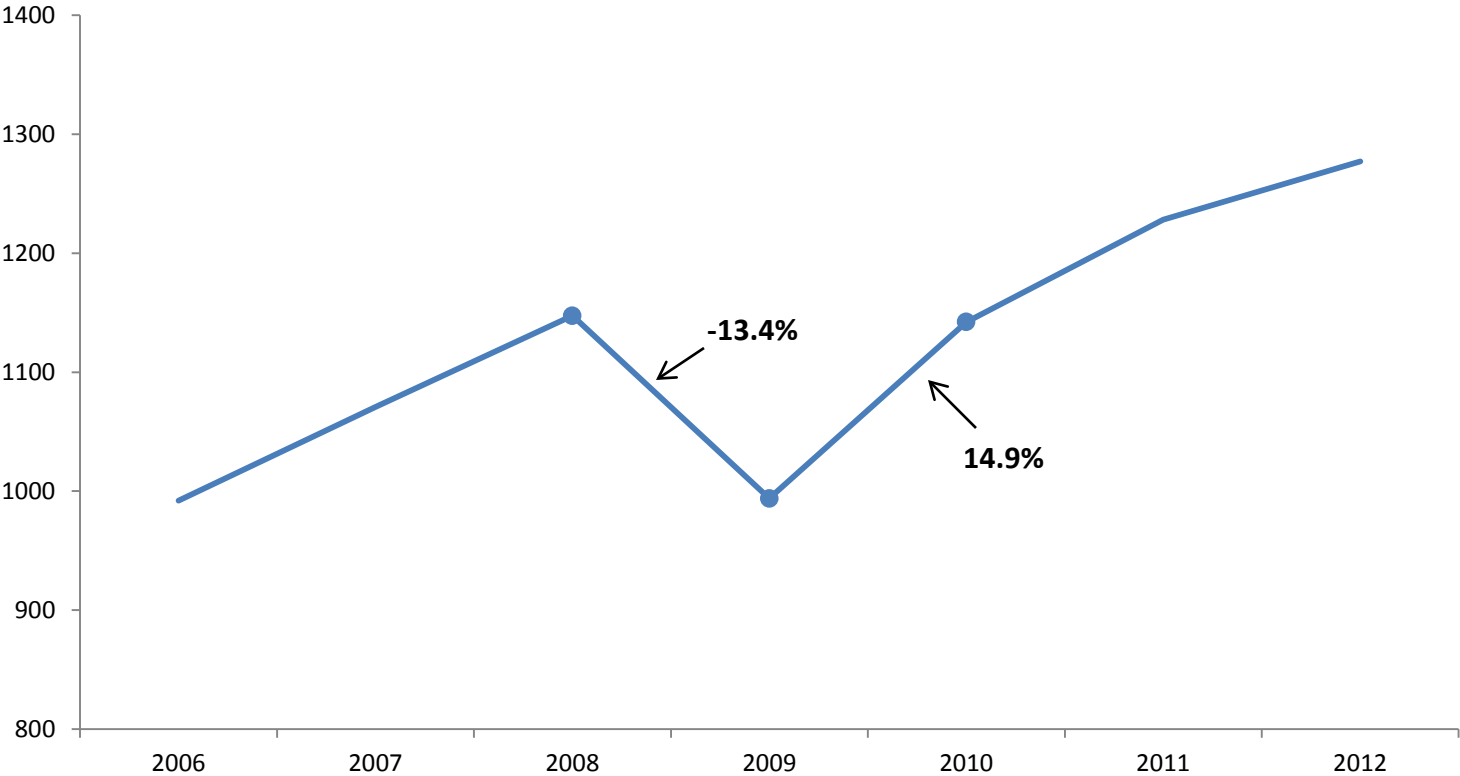
- Introduction
- Country-based Results
- Exporting Firms and Export Markets
- Trade Margins: Collapse and Rebound
- Additional Results: Time, Size, Geographic, and Demand Perspectives on the Collapse and Rebound
- Summary of Results

Introduction

- The Great Trade Collapse and Rebound – Figure 1
- Explanations for Collapse – Empirical Importance
 - Aggregate demand
 - Trade finance
 - Trade barriers
- Trade Margin Adjustments: Extensive vs. Intensive
- Concerns about Long-lasting Effects

Figure 1- U.S. Exports of Goods

USD Billions (\$2005 Chained, SA)



Note: The export data is Census-based rather than Balance of Payments-based.

Country-based Results

- Total vs. Known – Table 1
- Adjusting for price changes:
 - Trade Collapse – 2008/2009
 - Known exports: -13.6%
 - Extensive margin: -4.5%
 - Intensive margin: -9.6%
 - Trade Rebound – 2009/2010
 - Known exports: 15.1%
 - Extensive margin: 6.3%
 - Intensive margin: 8.3%
- Similar Prior Results
 - Great Trade Collapse: France, Japan, and Belgium
 - Prior to U.S. Trade Shocks: 2001 recession and 1997 Asian financial crisis

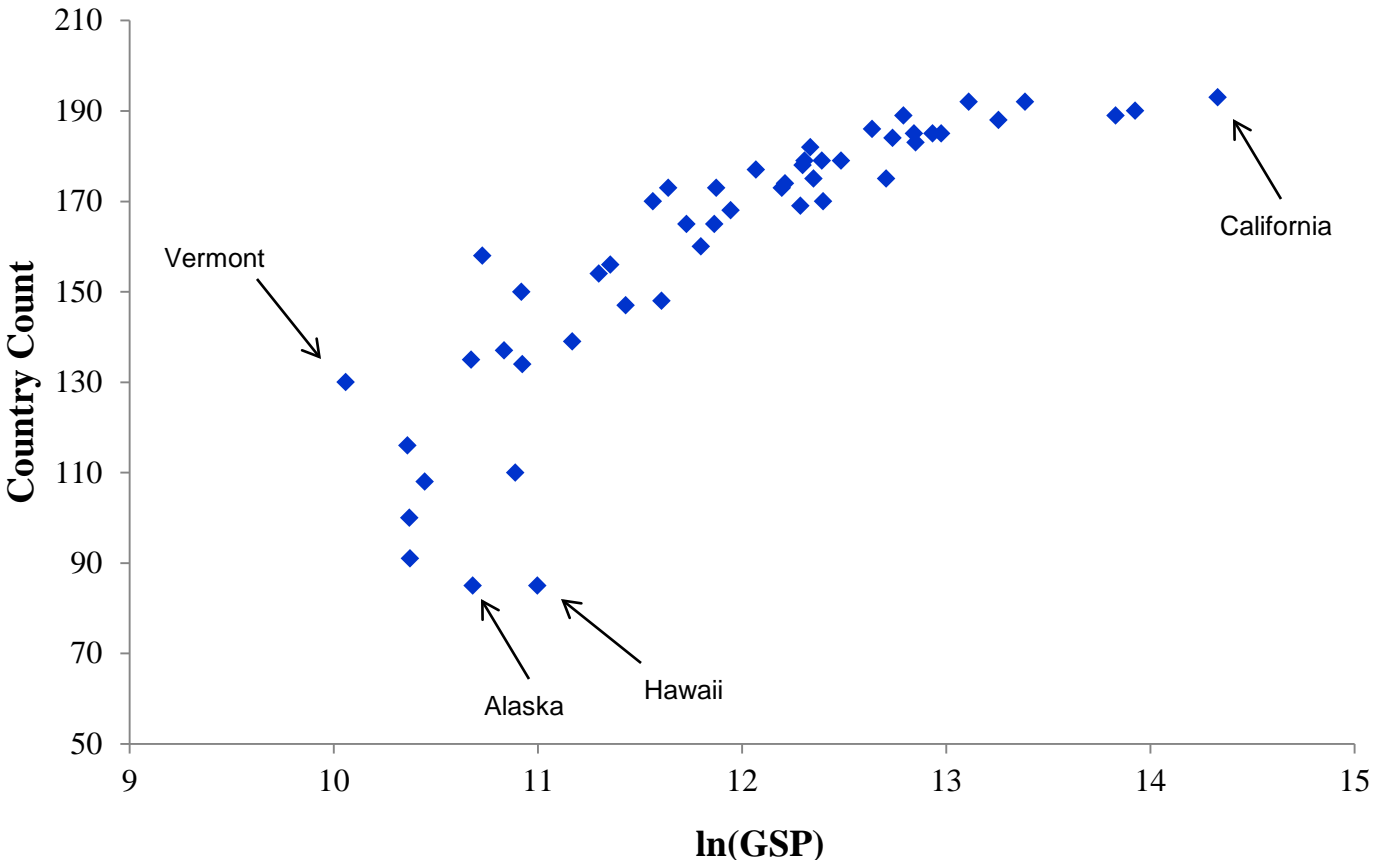
Table 1- Exports by Identified Companies

	2008	2009	2010
Total Exports	1,287.4	1,056.0	1,278.3
Known Value (Identified Exporters)	1,150.9	940.4	1,140.4
Known Value/Total Exports	89.4%	89.1%	89.2%
Number: Identified Exporters	289,711	276,643	293,988

Exporting Firms and Export Markets

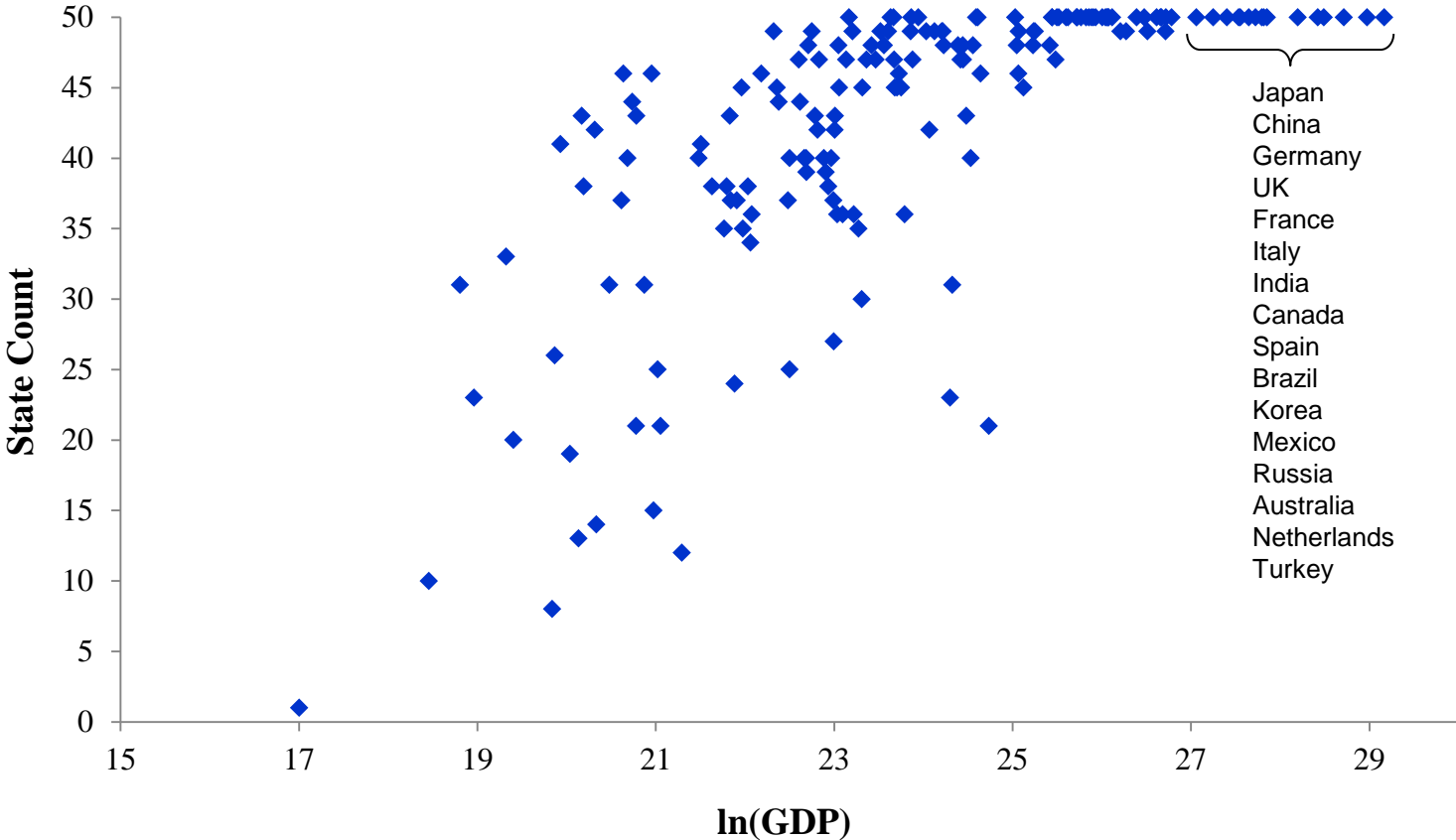
- Large firms dominate U.S. exports
- Large firms export to more foreign destinations
- Top 25/30 export markets account for bulk of U.S. exports
- States and Exports: Three Figures

Figure 2: Export Destinations and State Size



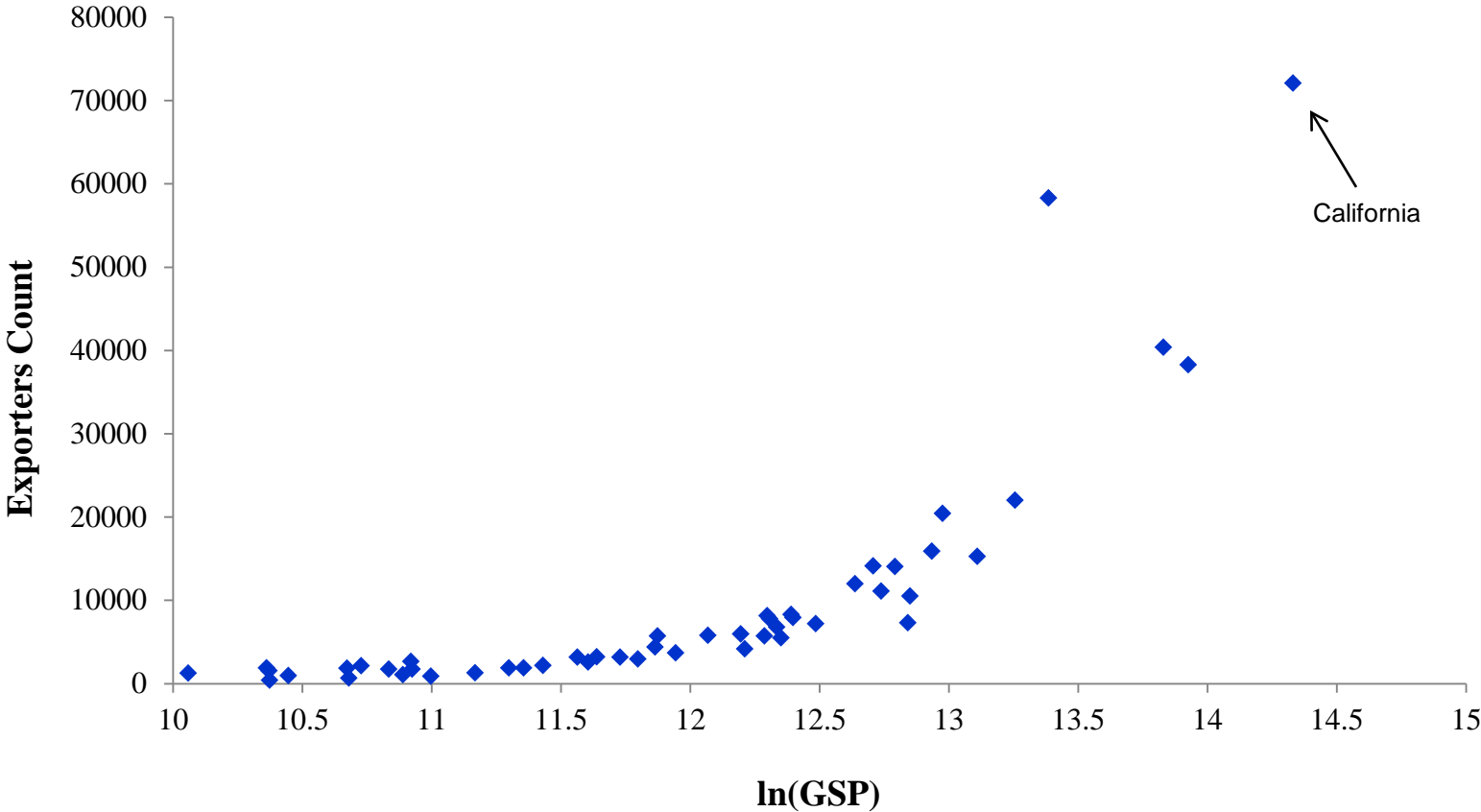
SOURCE: WISER and the Bureau of Economic Analysis

Figure 3: States and Export Destination Size



SOURCE: WISER and the World Bank

Figure 4: Exporters and State Size



SOURCE: WISER and the World Bank

Trade Margins: Collapse

- Known Exports: -13.6%
 - New Mexico: -53.7%
 - Alaska (3.2%) and Utah (6.5%): increased
- Extensive margin: declines in 46 states (declined in Alaska and Utah)
- Intensive margin: decline in 41 states
- Intensive margin declines exceed extensive margin: 33

Trade Margins: Collapse

Origin	Extensive Margin	Intensive Margin	% Change Exports
Alabama	-5.0	-14.4	-18.6
Alaska	-10.2	14.9	3.2
Arizona	-3.7	-22.3	-25.2
Arkansas	-8.0	5.8	-2.6
California	-3.0	-8.8	-11.5
Colorado	-5.6	-15.3	-20.0
Connecticut	-6.1	5.5	-0.9
Delaware	10.2	-14.0	-5.3
Florida	0.0	-8.4	-8.4
Georgia	-4.0	-4.9	-8.7
Hawaii	-4.3	-10.7	-14.5
Idaho	-10.8	-3.4	-13.8
Illinois	-5.2	-13.8	-18.3
Indiana	-5.5	-2.9	-8.2
Iowa	-8.6	-13.4	-20.8
Kansas	-2.3	-27.6	-29.2
Kentucky	-5.3	3.1	-2.3
Louisiana	0.3	-18.6	-18.3
Maine	-8.2	-16.2	-23.0
Maryland	2.4	-16.1	-14.1
Massachusetts	-4.4	-7.8	-11.9
Michigan	-6.7	-17.2	-22.8
Minnesota	-5.2	-9.8	-14.5
Mississippi	-4.3	-10.3	-14.2
Missouri	-6.6	-16.0	-21.5

Origin	Extensive Margin	Intensive Margin	% Change Exports
Montana	-17.4	-1.6	-18.7
Nebraska	-7.1	1.5	-5.7
Nevada	-5.7	5.4	-0.7
New Hampshire	-7.3	-5.3	-12.2
New Jersey	-4.4	-13.4	-17.2
New Mexico	-4.3	-51.6	-53.7
New York	-5.6	-14.4	-19.2
North Carolina	-2.7	-5.9	-8.4
North Dakota	-14.6	1.7	-13.1
Ohio	-5.5	-17.9	-22.4
Oklahoma	-5.4	-2.4	-7.7
Oregon	-7.0	-11.2	-17.4
Pennsylvania	-5.5	-7.7	-12.8
Rhode Island	1.6	-23.0	-21.8
South Carolina	-6.5	-4.7	-10.9
South Dakota	-16.0	-25.7	-37.6
Tennessee	-4.5	-1.3	-5.7
Texas	-1.4	-9.2	-10.5
Utah	-2.2	8.9	6.5
Vermont	-9.3	2.5	-7.1
Virginia	-7.2	-7.3	-13.9
Washington	-4.9	-14.2	-18.4
West Virginia	-3.8	-10.2	-13.5
Wisconsin	-3.9	-9.9	-13.4
Wyoming	-8.3	-1.8	-10.0

Trade Margins: Collapse

Origin	Extensive Margin	Intensive Margin	% Change Exports
Alabama	-5.0	-14.4	-18.6
Alaska	-10.2	14.9	3.2
Arizona	-3.7	-22.3	-25.2
Arkansas	-8.0	5.8	-2.6
California	-3.0	-8.8	-11.5
Colorado	-5.6	-15.3	-20.0
Connecticut	-6.1	5.5	-0.9
Delaware	10.2	-14.0	-5.3
Florida	0.0	-8.4	-8.4
Georgia	-4.0	-4.9	-8.7
Hawaii	-4.3	-10.7	-14.5
Idaho	-10.8	-3.4	-13.8
Illinois	-5.2	-13.8	-18.3
Indiana	-5.5	-2.9	-8.2
Iowa	-8.6	-13.4	-20.8
Kansas	-2.3	-27.6	-29.2
Kentucky	-5.3	3.1	-2.3
Louisiana	0.3	-18.6	-18.3
Maine	-8.2	-16.2	-23.0
Maryland	2.4	-16.1	-14.1
Massachusetts	-4.4	-7.8	-11.9
Michigan	-6.7	-17.2	-22.8
Minnesota	-5.2	-9.8	-14.5
Mississippi	-4.3	-10.3	-14.2
Missouri	-6.6	-16.0	-21.5

Origin	Extensive Margin	Intensive Margin	% Change Exports
Montana	-17.4	-1.6	-18.7
Nebraska	-7.1	1.5	-5.7
Nevada	-5.7	5.4	-0.7
New Hampshire	-7.3	-5.3	-12.2
New Jersey	-4.4	-13.4	-17.2
New Mexico	-4.3	-51.6	-53.7
New York	-5.6	-14.4	-19.2
North Carolina	-2.7	-5.9	-8.4
North Dakota	-14.6	1.7	-13.1
Ohio	-5.5	-17.9	-22.4
Oklahoma	-5.4	-2.4	-7.7
Oregon	-7.0	-11.2	-17.4
Pennsylvania	-5.5	-7.7	-12.8
Rhode Island	1.6	-23.0	-21.8
South Carolina	-6.5	-4.7	-10.9
South Dakota	-16.0	-25.7	-37.6
Tennessee	-4.5	-1.3	-5.7
Texas	-1.4	-9.2	-10.5
Utah	-2.2	8.9	6.5
Vermont	-9.3	2.5	-7.1
Virginia	-7.2	-7.3	-13.9
Washington	-4.9	-14.2	-18.4
West Virginia	-3.8	-10.2	-13.5
Wisconsin	-3.9	-9.9	-13.4
Wyoming	-8.3	-1.8	-10.0

Trade Margins: Collapse

Origin	Extensive Margin	Intensive Margin	% Change Exports
Alabama	-5.0	-14.4	-18.6
Alaska	-10.2	14.9	3.2
Arizona	-3.7	-22.3	-25.2
Arkansas	-8.0	5.8	-2.6
California	-3.0	-8.8	-11.5
Colorado	-5.6	-15.3	-20.0
Connecticut	-6.1	5.5	-0.9
Delaware	10.2	-14.0	-5.3
Florida	0.0	-8.4	-8.4
Georgia	-4.0	-4.9	-8.7
Hawaii	-4.3	-10.7	-14.5
Idaho	-10.8	-3.4	-13.8
Illinois	-5.2	-13.8	-18.3
Indiana	-5.5	-2.9	-8.2
Iowa	-8.6	-13.4	-20.8
Kansas	-2.3	-27.6	-29.2
Kentucky	-5.3	3.1	-2.3
Louisiana	0.3	-18.6	-18.3
Maine	-8.2	-16.2	-23.0
Maryland	2.4	-16.1	-14.1
Massachusetts	-4.4	-7.8	-11.9
Michigan	-6.7	-17.2	-22.8
Minnesota	-5.2	-9.8	-14.5
Mississippi	-4.3	-10.3	-14.2
Missouri	-6.6	-16.0	-21.5

Origin	Extensive Margin	Intensive Margin	% Change Exports
Montana	-17.4	-1.6	-18.7
Nebraska	-7.1	1.5	-5.7
Nevada	-5.7	5.4	-0.7
New Hampshire	-7.3	-5.3	-12.2
New Jersey	-4.4	-13.4	-17.2
New Mexico	-4.3	-51.6	-53.7
New York	-5.6	-14.4	-19.2
North Carolina	-2.7	-5.9	-8.4
North Dakota	-14.6	1.7	-13.1
Ohio	-5.5	-17.9	-22.4
Oklahoma	-5.4	-2.4	-7.7
Oregon	-7.0	-11.2	-17.4
Pennsylvania	-5.5	-7.7	-12.8
Rhode Island	1.6	-23.0	-21.8
South Carolina	-6.5	-4.7	-10.9
South Dakota	-16.0	-25.7	-37.6
Tennessee	-4.5	-1.3	-5.7
Texas	-1.4	-9.2	-10.5
Utah	-2.2	8.9	6.5
Vermont	-9.3	2.5	-7.1
Virginia	-7.2	-7.3	-13.9
Washington	-4.9	-14.2	-18.4
West Virginia	-3.8	-10.2	-13.5
Wisconsin	-3.9	-9.9	-13.4
Wyoming	-8.3	-1.8	-10.0

Trade Margins: Rebound

- Known Exports: 15.1%
 - Maine and New Hampshire: > 36%
 - Arkansas, Nevada, and Washington: declines
- Extensive margin: increases in all states
- Intensive margin: increases in 39
- Intensive margin exceeded extensive margin: 29

Trade Margins: Rebound

Origin	Extensive Margin	Intensive Margin	% Change Exports
Alabama	1.3	23.8	25.5
Alaska	12.4	5.8	18.9
Arizona	10.8	-3.5	6.9
Arkansas	12.1	-20.4	-10.8
California	6.1	7.1	13.7
Colorado	9.3	0.5	9.9
Connecticut	6.2	1.7	7.9
Delaware	12.7	-6.0	6.0
Florida	5.5	6.8	12.6
Georgia	5.3	9.5	15.3
Hawaii	9.3	1.3	10.7
Idaho	13.7	10.8	26.0
Illinois	5.2	9.4	15.2
Indiana	5.5	12.9	19.1
Iowa	10.6	3.2	14.1
Kansas	6.9	-1.6	5.2
Kentucky	6.9	-1.4	5.4
Louisiana	5.2	13.2	19.1
Maine	5.9	30.9	38.7
Maryland	14.1	-7.6	5.4
Massachusetts	6.4	-0.3	6.1
Michigan	5.4	24.1	30.8
Minnesota	7.2	7.7	15.5
Mississippi	7.5	22.2	31.4
Missouri	6.4	22.2	30.0

Origin	Extensive Margin	Intensive Margin	% Change Exports
Montana	16.4	7.8	25.4
Nebraska	7.0	7.4	15.0
Nevada	8.0	-10.0	-2.7
New Hampshire	10.7	23.6	36.8
New Jersey	1.8	9.0	10.9
New Mexico	6.6	5.1	12.1
New York	5.9	7.9	14.2
North Carolina	8.0	1.1	9.2
North Dakota	17.2	-6.5	9.7
Ohio	5.4	14.6	20.9
Oklahoma	2.9	12.2	15.5
Oregon	7.2	3.4	10.9
Pennsylvania	5.8	10.9	17.4
Rhode Island	0.2	26.9	27.1
South Carolina	5.4	10.7	16.7
South Dakota	7.1	9.8	17.6
Tennessee	5.0	14.9	20.7
Texas	6.5	14.5	21.9
Utah	7.8	12.1	20.8
Vermont	4.3	24.0	29.3
Virginia	3.2	4.7	8.1
Washington	6.7	-7.8	-1.6
West Virginia	8.1	16.9	26.4
Wisconsin	4.1	7.8	12.2
Wyoming	11.7	-7.0	3.8

Trade Margins: Rebound

Origin	Extensive Margin	Intensive Margin	% Change Exports
Alabama	1.3	23.8	25.5
Alaska	12.4	5.8	18.9
Arizona	10.8	-3.5	6.9
Arkansas	12.1	-20.4	-10.8
California	6.1	7.1	13.7
Colorado	9.3	0.5	9.9
Connecticut	6.2	1.7	7.9
Delaware	12.7	-6.0	6.0
Florida	5.5	6.8	12.6
Georgia	5.3	9.5	15.3
Hawaii	9.3	1.3	10.7
Idaho	13.7	10.8	26.0
Illinois	5.2	9.4	15.2
Indiana	5.5	12.9	19.1
Iowa	10.6	3.2	14.1
Kansas	6.9	-1.6	5.2
Kentucky	6.9	-1.4	5.4
Louisiana	5.2	13.2	19.1
Maine	5.9	30.9	38.7
Maryland	14.1	-7.6	5.4
Massachusetts	6.4	-0.3	6.1
Michigan	5.4	24.1	30.8
Minnesota	7.2	7.7	15.5
Mississippi	7.5	22.2	31.4
Missouri	6.4	22.2	30.0

Origin	Extensive Margin	Intensive Margin	% Change Exports
Montana	16.4	7.8	25.4
Nebraska	7.0	7.4	15.0
Nevada	8.0	-10.0	-2.7
New Hampshire	10.7	23.6	36.8
New Jersey	1.8	9.0	10.9
New Mexico	6.6	5.1	12.1
New York	5.9	7.9	14.2
North Carolina	8.0	1.1	9.2
North Dakota	17.2	-6.5	9.7
Ohio	5.4	14.6	20.9
Oklahoma	2.9	12.2	15.5
Oregon	7.2	3.4	10.9
Pennsylvania	5.8	10.9	17.4
Rhode Island	0.2	26.9	27.1
South Carolina	5.4	10.7	16.7
South Dakota	7.1	9.8	17.6
Tennessee	5.0	14.9	20.7
Texas	6.5	14.5	21.9
Utah	7.8	12.1	20.8
Vermont	4.3	24.0	29.3
Virginia	3.2	4.7	8.1
Washington	6.7	-7.8	-1.6
West Virginia	8.1	16.9	26.4
Wisconsin	4.1	7.8	12.2
Wyoming	11.7	-7.0	3.8

Trade Margins: Rebound

Origin	Extensive Margin	Intensive Margin	% Change Exports
Alabama	1.3	23.8	25.5
Alaska	12.4	5.8	18.9
Arizona	10.8	-3.5	6.9
Arkansas	12.1	-20.4	-10.8
California	6.1	7.1	13.7
Colorado	9.3	0.5	9.9
Connecticut	6.2	1.7	7.9
Delaware	12.7	-6.0	6.0
Florida	5.5	6.8	12.6
Georgia	5.3	9.5	15.3
Hawaii	9.3	1.3	10.7
Idaho	13.7	10.8	26.0
Illinois	5.2	9.4	15.2
Indiana	5.5	12.9	19.1
Iowa	10.6	3.2	14.1
Kansas	6.9	-1.6	5.2
Kentucky	6.9	-1.4	5.4
Louisiana	5.2	13.2	19.1
Maine	5.9	30.9	38.7
Maryland	14.1	-7.6	5.4
Massachusetts	6.4	-0.3	6.1
Michigan	5.4	24.1	30.8
Minnesota	7.2	7.7	15.5
Mississippi	7.5	22.2	31.4
Missouri	6.4	22.2	30.0

Origin	Extensive Margin	Intensive Margin	% Change Exports
Montana	16.4	7.8	25.4
Nebraska	7.0	7.4	15.0
Nevada	8.0	-10.0	-2.7
New Hampshire	10.7	23.6	36.8
New Jersey	1.8	9.0	10.9
New Mexico	6.6	5.1	12.1
New York	5.9	7.9	14.2
North Carolina	8.0	1.1	9.2
North Dakota	17.2	-6.5	9.7
Ohio	5.4	14.6	20.9
Oklahoma	2.9	12.2	15.5
Oregon	7.2	3.4	10.9
Pennsylvania	5.8	10.9	17.4
Rhode Island	0.2	26.9	27.1
South Carolina	5.4	10.7	16.7
South Dakota	7.1	9.8	17.6
Tennessee	5.0	14.9	20.7
Texas	6.5	14.5	21.9
Utah	7.8	12.1	20.8
Vermont	4.3	24.0	29.3
Virginia	3.2	4.7	8.1
Washington	6.7	-7.8	-1.6
West Virginia	8.1	16.9	26.4
Wisconsin	4.1	7.8	12.2
Wyoming	11.7	-7.0	3.8

Additional Results: Time

- Do states with relatively larger trade collapses have relatively larger rebounds?
 - No statistically significant association
- Is there a statistically significant association of the intensive margins over time?
 - No
- Is there a statistically significant association of the extensive margins over time?
 - Yes – larger declines associated with larger rebounds

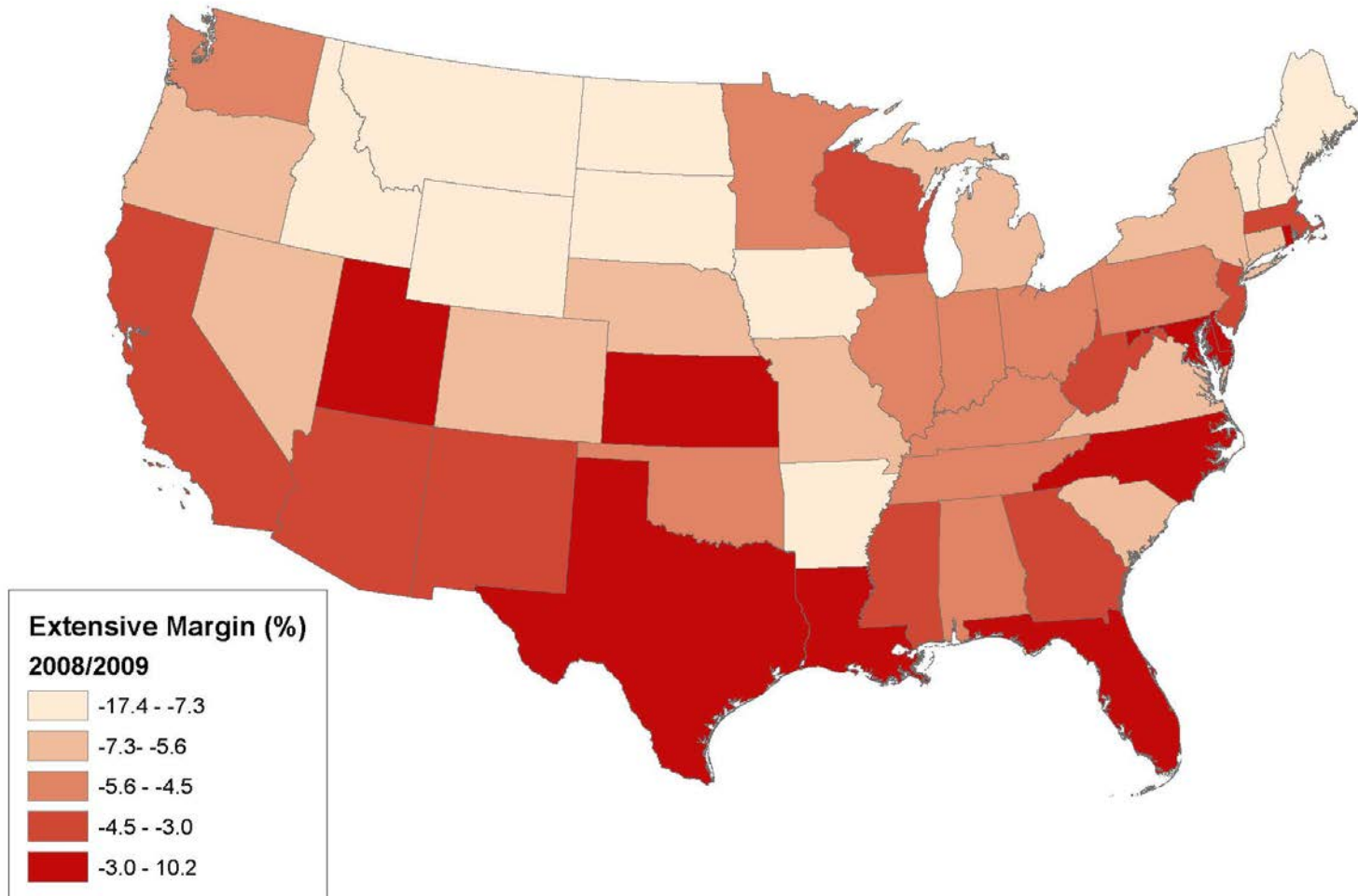
Additional Results: Size

- State size is not significantly associated with export percentage changes in either period
- State size and intensive margin: no statistically significant association in either period
- State size and extensive margin:
 - Collapse: larger states, smaller declines
 - Rebound: larger states, smaller increases

Additional Results: Geography

- Intensive margin: no statistically significant association for either collapse or rebound
- Extensive margin: statistically significant association for both collapse and rebound – figures 7 and 8
- Exports: no statistically significant association for either collapse or rebound

Figure 7: Extensive Margin 2008/2009



Additional Results: Demand

- State exports depend on foreign incomes
- Expect state export changes to depend on foreign income changes
- Using a trade-weighted growth of foreign incomes, no statistically significant association was found
- Intensive margin: no statistically significant association
- Extensive margin: statistically significant association for collapse, but not for rebound

Summary

- Collapse and Rebound: Intensive margin adjusted more than extensive margin
- Consistent with other studies
- Consistent with modern international trade theory that emphasize productivity differences across firms and the importance of additional costs to engage in trade
- U.S. export sector weather Great Trade Collapse stemming from the global recession and financial crisis quite well – domination of U.S. exports by large firms contributes to resiliency of U.S. export sector