

# LEVELING THE CARBON PLAYING FIELD

## INTERNATIONAL COMPETITION AND US CLIMATE POLICY DESIGN

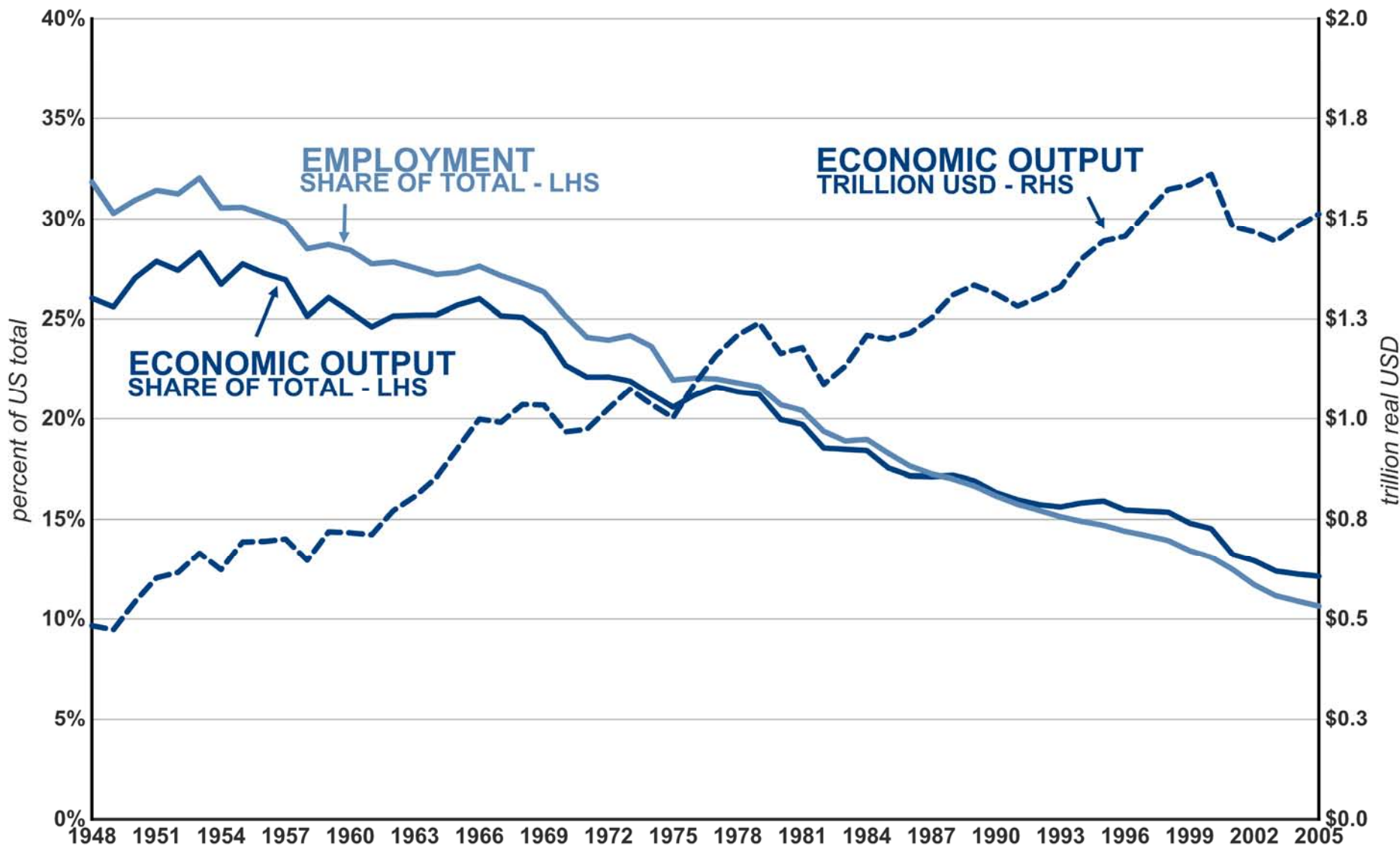
Peterson Institute for International Economics

May 21, 2008



# US Manufacturing under Pressure

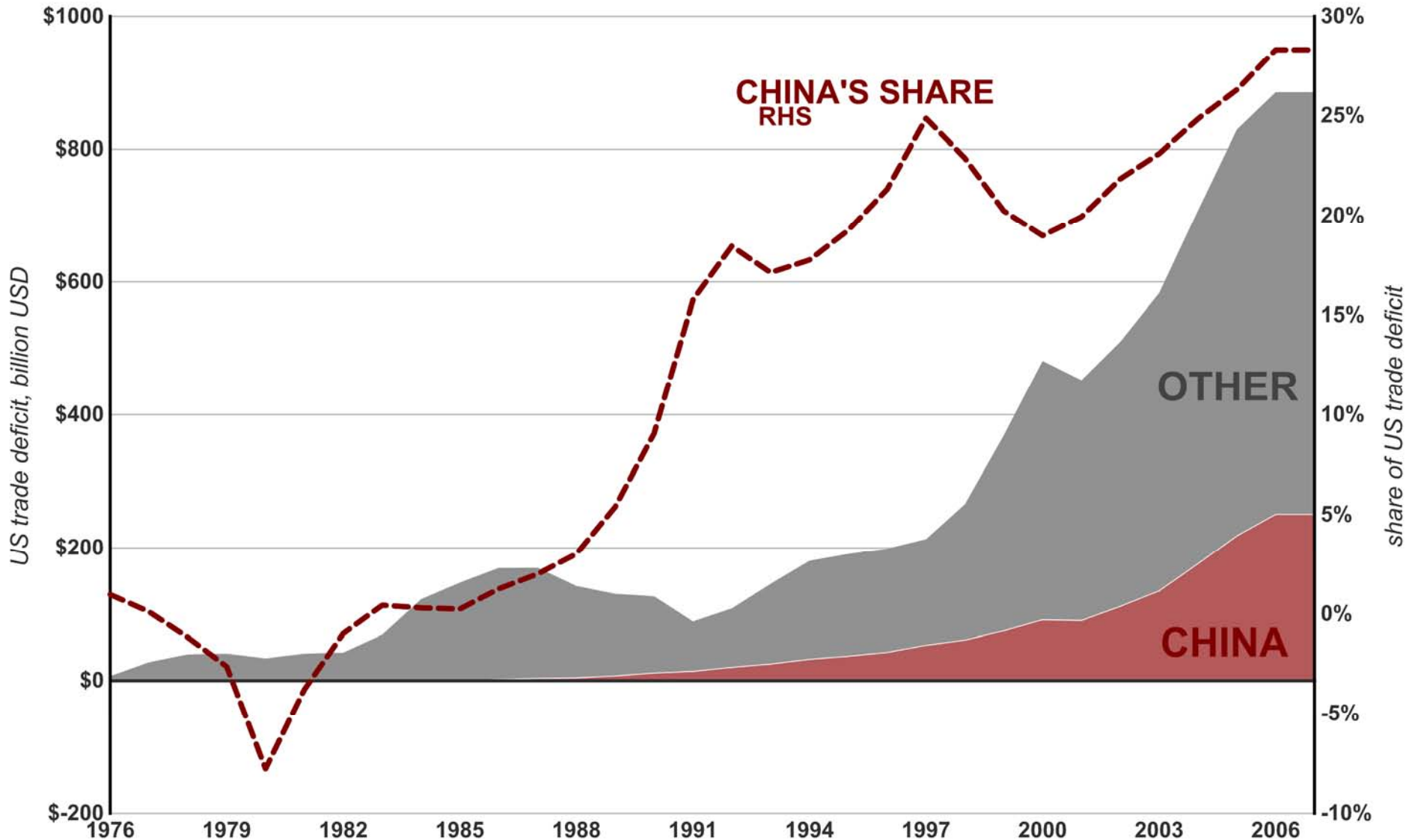
Economic output and employment from manufacturing sector



Source: BEA and BLS. Employment refers to all non-farm labor.

# China Looms Large in Trade Debate

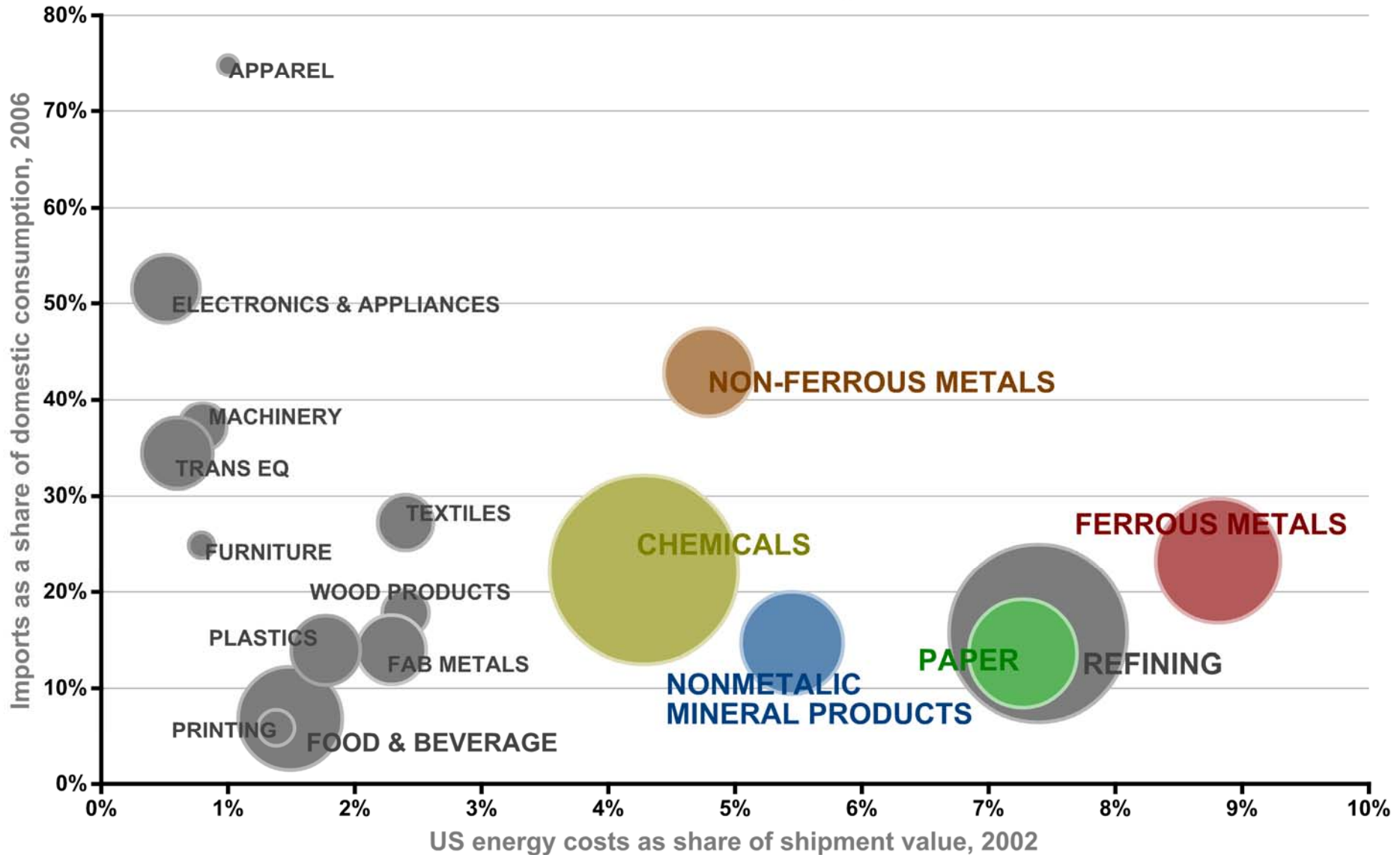
US trade deficit and China's share



Source: UN Comtrade

# Industry Exposure to Climate Costs

Carbon-intensity and trade exposure



Source: BEA, EIA and CSA estimates. Circle size indicates 2002 US CO2 emissions

# US Imports by Origin

## 2005

Rank	Steel		Aluminum		Chemicals		Paper		Cement	
	Source	Share	Source	Share	Source	Share	Source	Share	Source	Share
1	Canada	18.56%	Canada	51.02%	Trinidad	41.58%	Canada	66.89%	Canada	16.06%
2	EU	17.25%	Russia	17.08%	Canada	19.30%	EU	16.82%	China	14.04%
3	Mexico	13.08%	EU	6.24%	Ukraine	7.34%	China	3.53%	EU	13.87%
4	Brazil	8.24%	OPEC	5.10%	OPEC	6.60%	Korea	2.24%	OPEC	9.97%
5	China	7.11%	Brazil	3.79%	EU	4.49%	Mexico	2.20%	Thailand	8.60%
6	Korea	5.67%	China	3.07%	Korea	4.36%	Brazil	1.84%	Greece	8.28%
7	Russia	5.12%	S. Africa	2.50%	Brazil	3.79%	Chile	1.50%	Korea	7.94%
8	Turkey	4.16%	Tajikistan	2.43%	Russia	3.19%	Japan	0.96%	Mexico	6.49%
9	Japan	4.12%	Argentina	1.54%	Eq. Guinea	2.76%	Norway	0.85%	Columbia	5.49%
10	India	2.70%	Australia	1.27%	Chile	1.52%	OPEC	0.71%	Peru	3.11%
<b>Annexl</b>	<b>54.42%</b>		<b>77.57%</b>		<b>34.46%</b>		<b>86.66%</b>		<b>34.61%</b>	

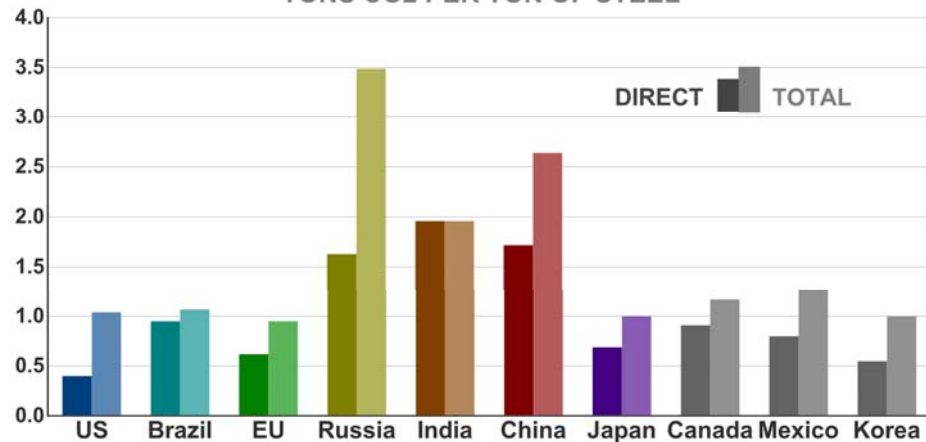
Source: UN Comtrade

SITC Codes of included products (version 2): Steel (672, 673, 674, 675, 676, 677, 678, 679), Chemicals (51111, 51112, 51113, 51122, 51123, 51124, 51211, 52218, 52323, 52213, 52251), Cement (6612), Aluminum (6841, 6842), Paper (641, 642)

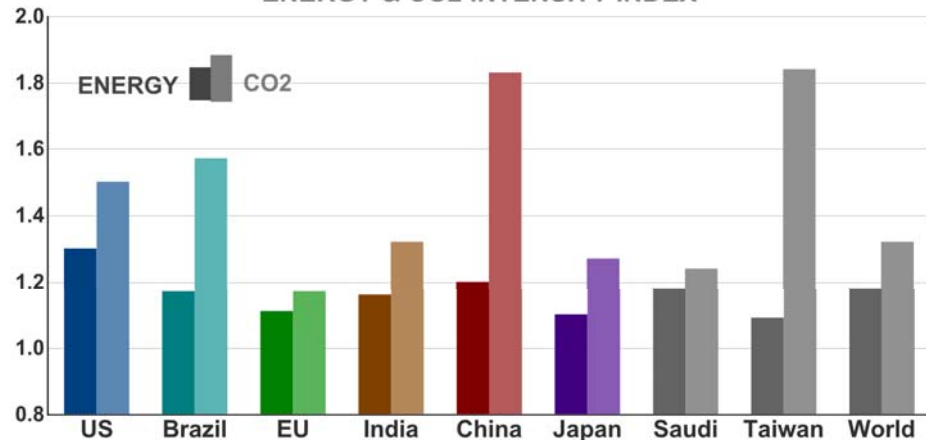
# Carbon-Intensity of Production

## 2005

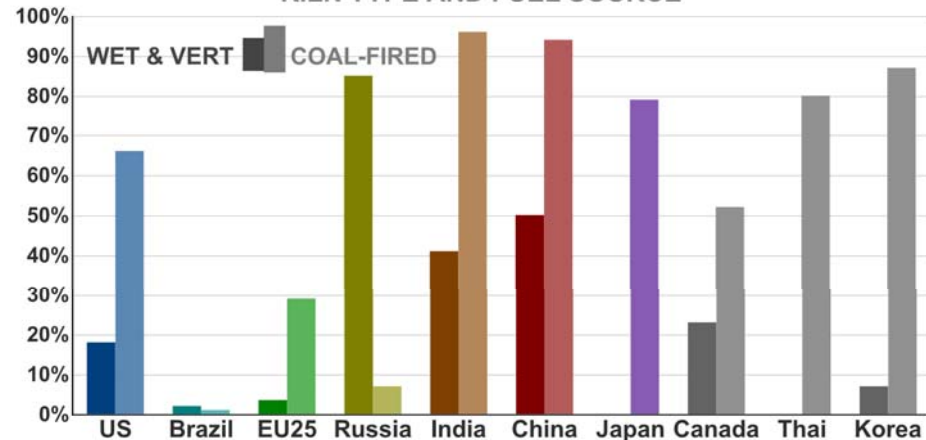
**STEEL**  
TONS CO2 PER TON OF STEEL



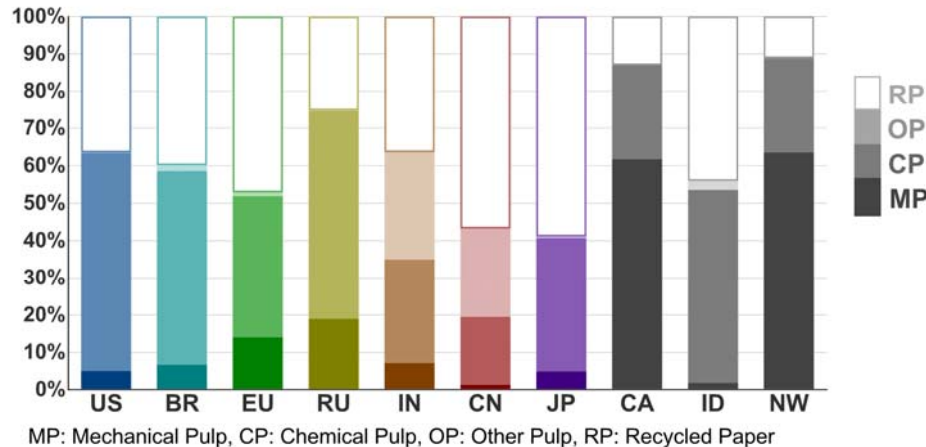
**CHEMICALS**  
ENERGY & CO2 INTENSITY INDEX



**CEMENT**  
KILN TYPE AND FUEL SOURCE

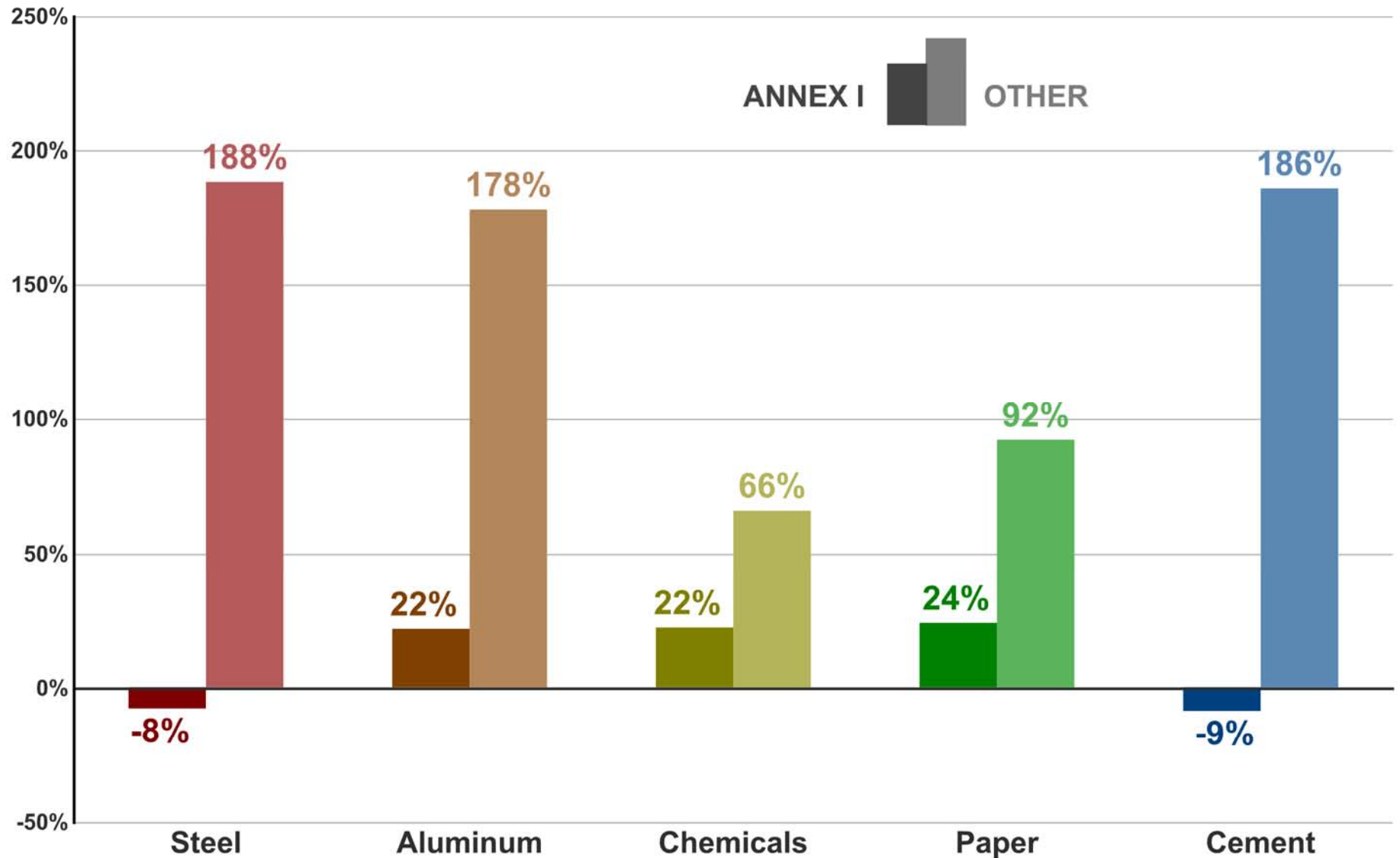


**PAPER**  
PAPER PRODUCTION FEEDSTOCK



# Demand Growth

1991-2005, Annex I Countries vs. Non-Annex I Countries

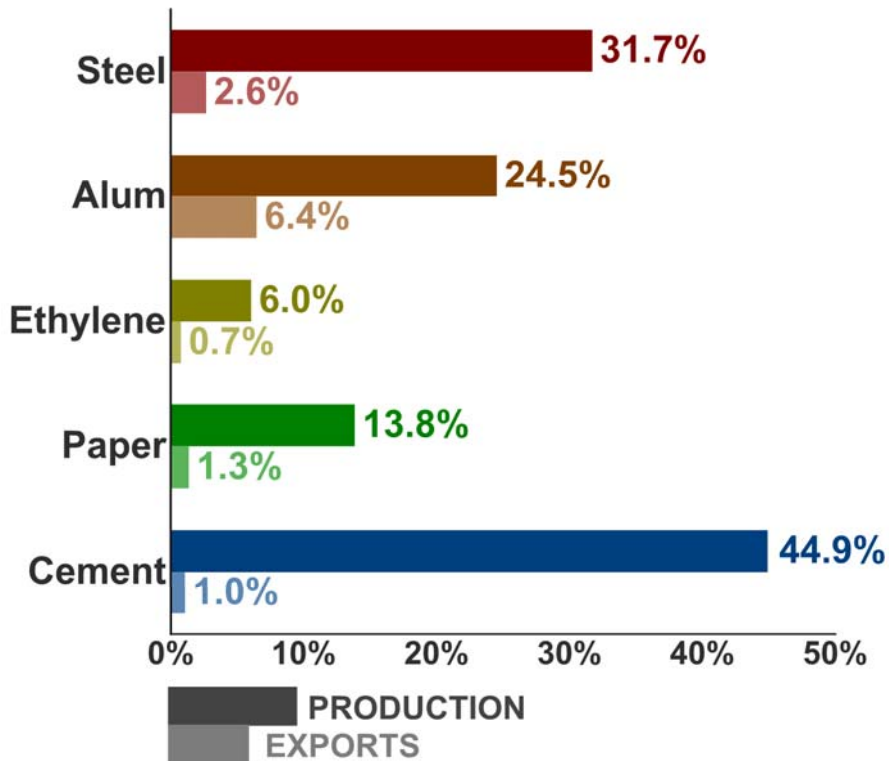


Source: UN Comtrade, IISI, USGS, Oil & Gas Journal, FAO

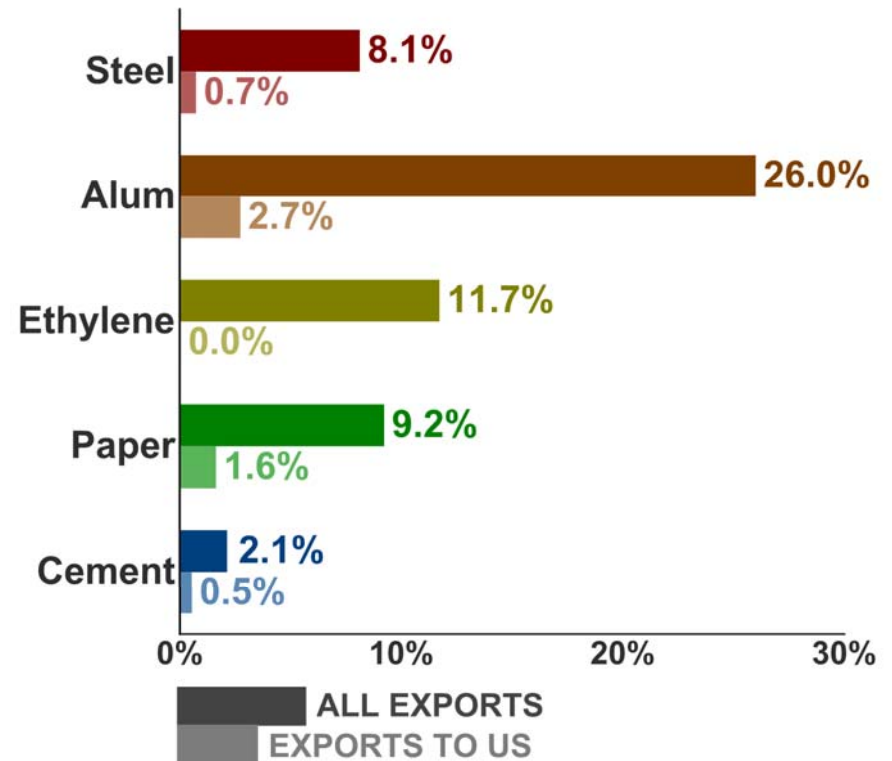
# The Extent of US Trade Leverage over China

China as a Share of Global Production and Exports as Share of Chinese Production

## CHINA AS SHARE OF GLOBAL PRODUCTION



## CHINESE EXPORTS AS SHARE OF PRODUCTION

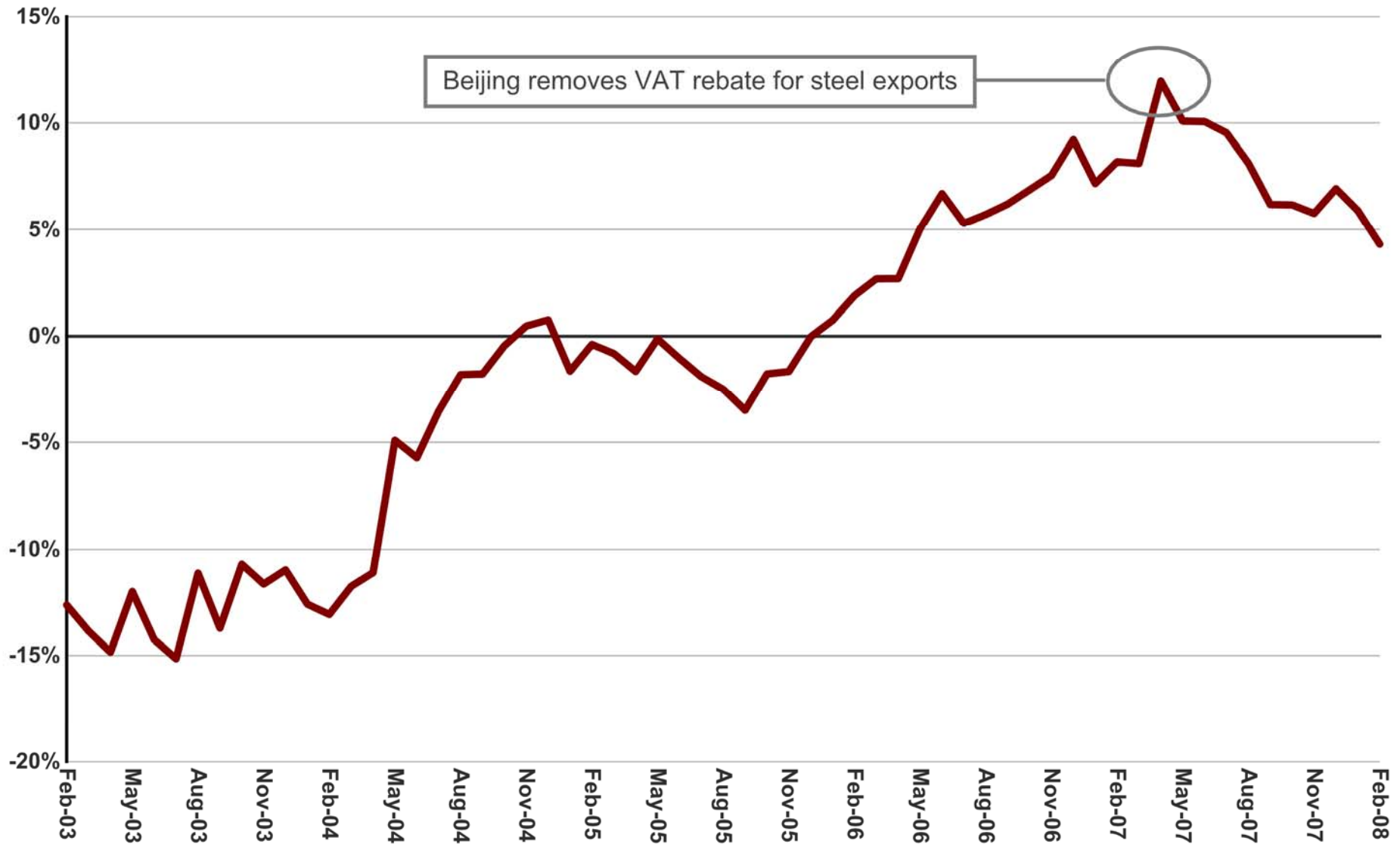


Source: UN Comtrade, IISI, IAI, FAOStat, OGJ, USGS and CSA estimates



# China's Steel Trade Balance

Net Exports as a Share of Domestic Production

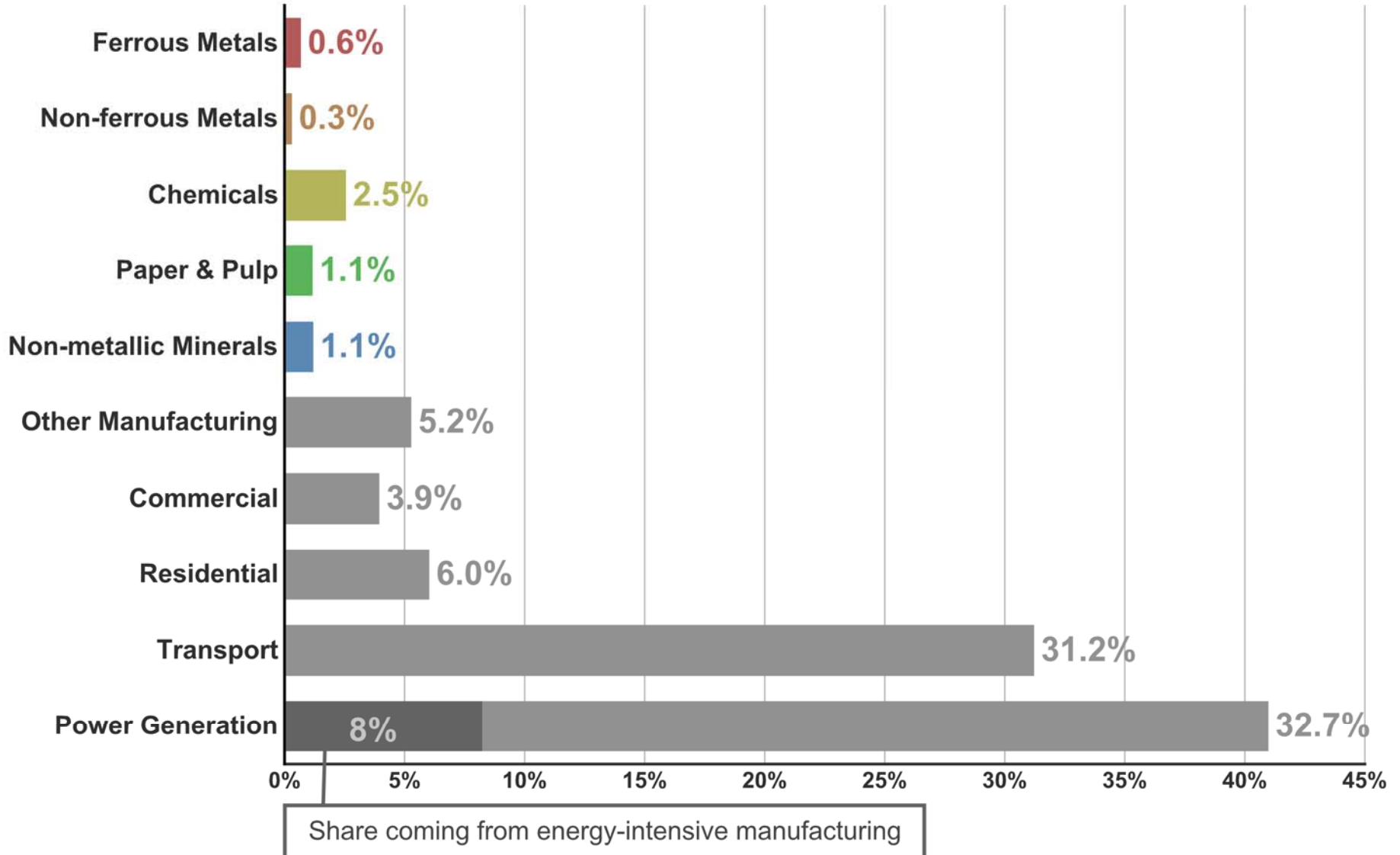


Beijing removes VAT rebate for steel exports

Source: China General Customs Administration and CEIC

# US Emissions by Source

Direct CO2 Emissions, 2005



Source: IEA

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