



AAI Working Paper #09-06

**CARTELS & ANTITRUST PORTRAYED:**  
Private International Cartels from 1990 to 2008

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# Introduction

- The **purpose** of the following charts is to illustrate the size and economic impacts of the modern international cartel movement and the enforcement responses of the world's antitrust authorities and national courts. These illustrations may serve heuristic purposes or show empirical regularities that suggest hypotheses worthy of testing in future research.
- The **data** employed encompass 516 private hard-core cartels that were subject to government or private legal actions (i.e., formal investigations, damages suits, fines, or consent decrees) between January 1990 and December 2008. Each cartel had participants with headquarters in two or more nations.
- All monetary data are expressed in nominal U.S. dollars using exchange rates during the cartel's life or on the day a legal action was announced.
- A special effort is made to create charts that illustrate **trends** in cartel dimensions and antitrust decisions.

# **CARTELS & ANTITRUST PORTRAYED: Numbers, Size , and Location:**

**PRIVATE INTERNATIONAL CARTELS,  
1990-2008**

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March 7, 2009

# Numbers of Cartels

- Between Jan. 1990 and Nov. 2008, there were **516** “formal official investigations” (raids, grand juries, class actions filed in court, indictments *et sim.*) of suspected international cartels.
- Incomplete information is available on about 20% of these 516 cartels, because no adverse government decisions nor private settlements are yet public.
- Investigations of 32 (6%) cartels were closed without sanctions because of insufficient evidence of a violation; these presumptive “non-cartels” are omitted from almost all the following slides.

# Numbers of Corporate Cartelists

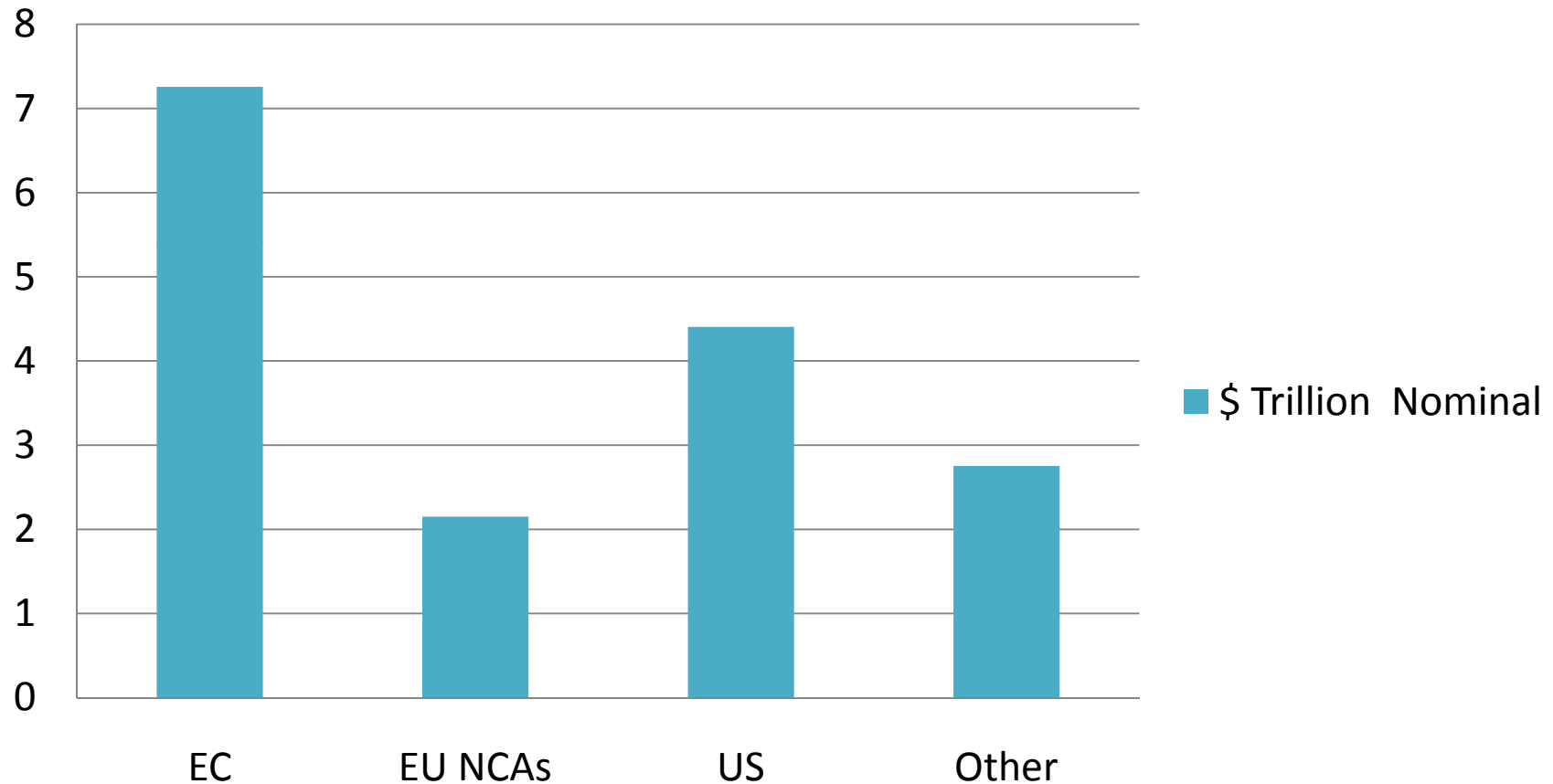
- At least 6000 companies alleged or proven members of International cartels
- About 2900 ultimate parent companies known by name and location\*
- About 3000 more companies implicated, but are anonymous
- About 2400 parents/groups have been fined\*

\* Some double counting of recidivists

# Numbers of Cartel Executives Fined or Imprisoned

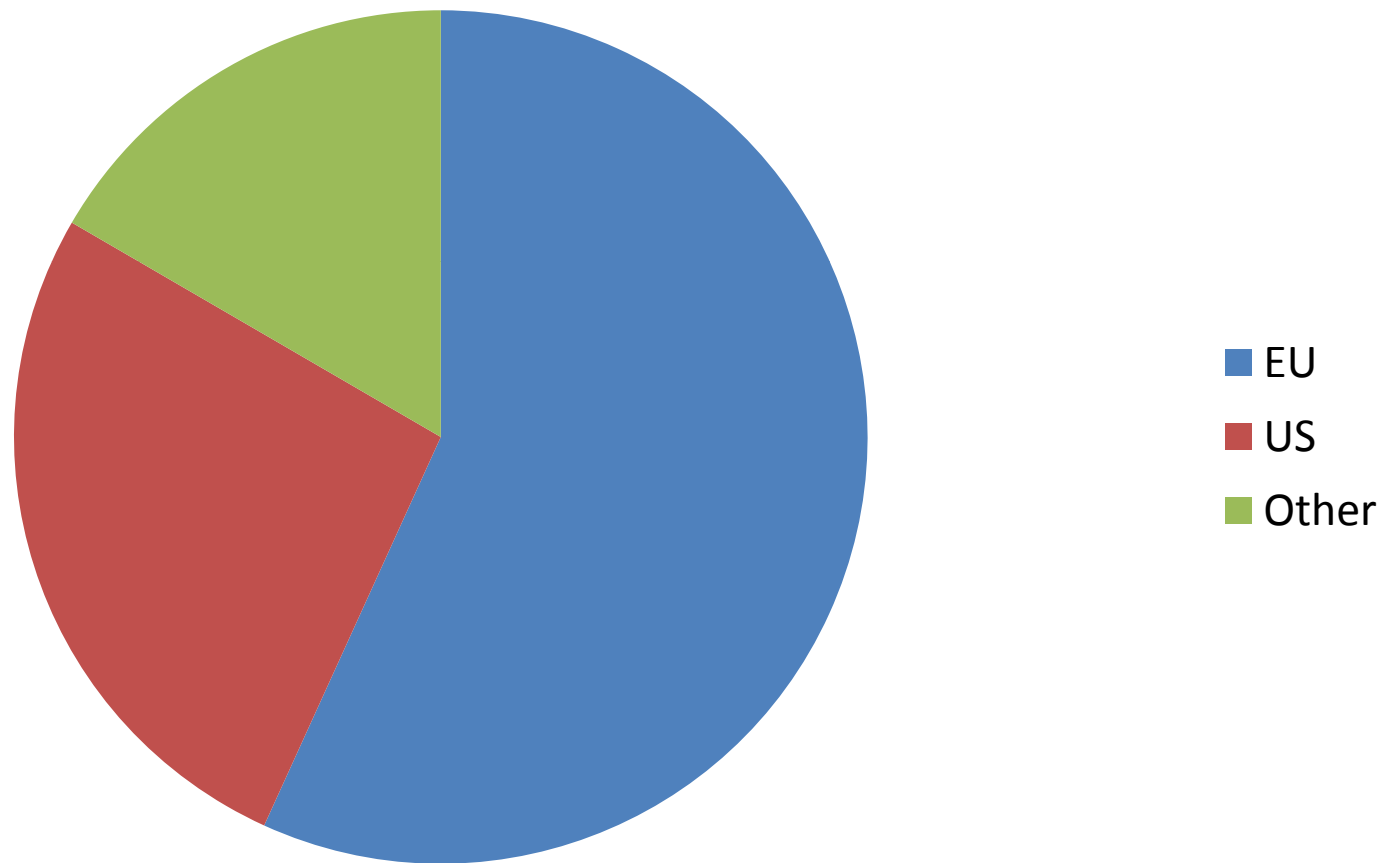
- At least **373** individual, named executives have been penalized
- **Hundreds** more were guilty but immunized
- **Thousands** more guilty but not prosecuted
- (More details in Part 5 below)

# Total Known Affected Sales by International Cartels Is **\$16 Trillion**



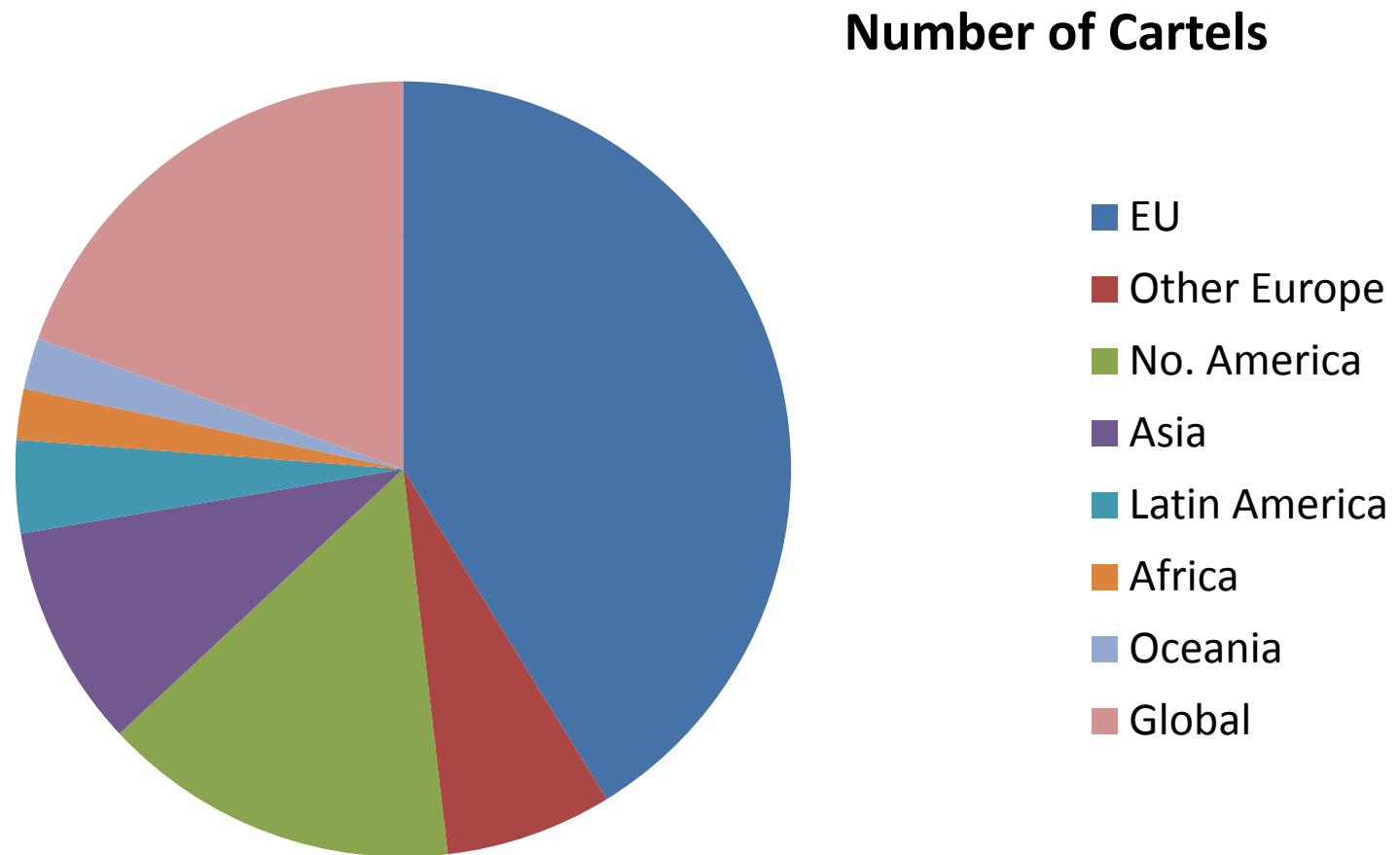
“EC” is cartels convicted by the Eur. Commission

# Most Affected Sales Is in the **European Union**

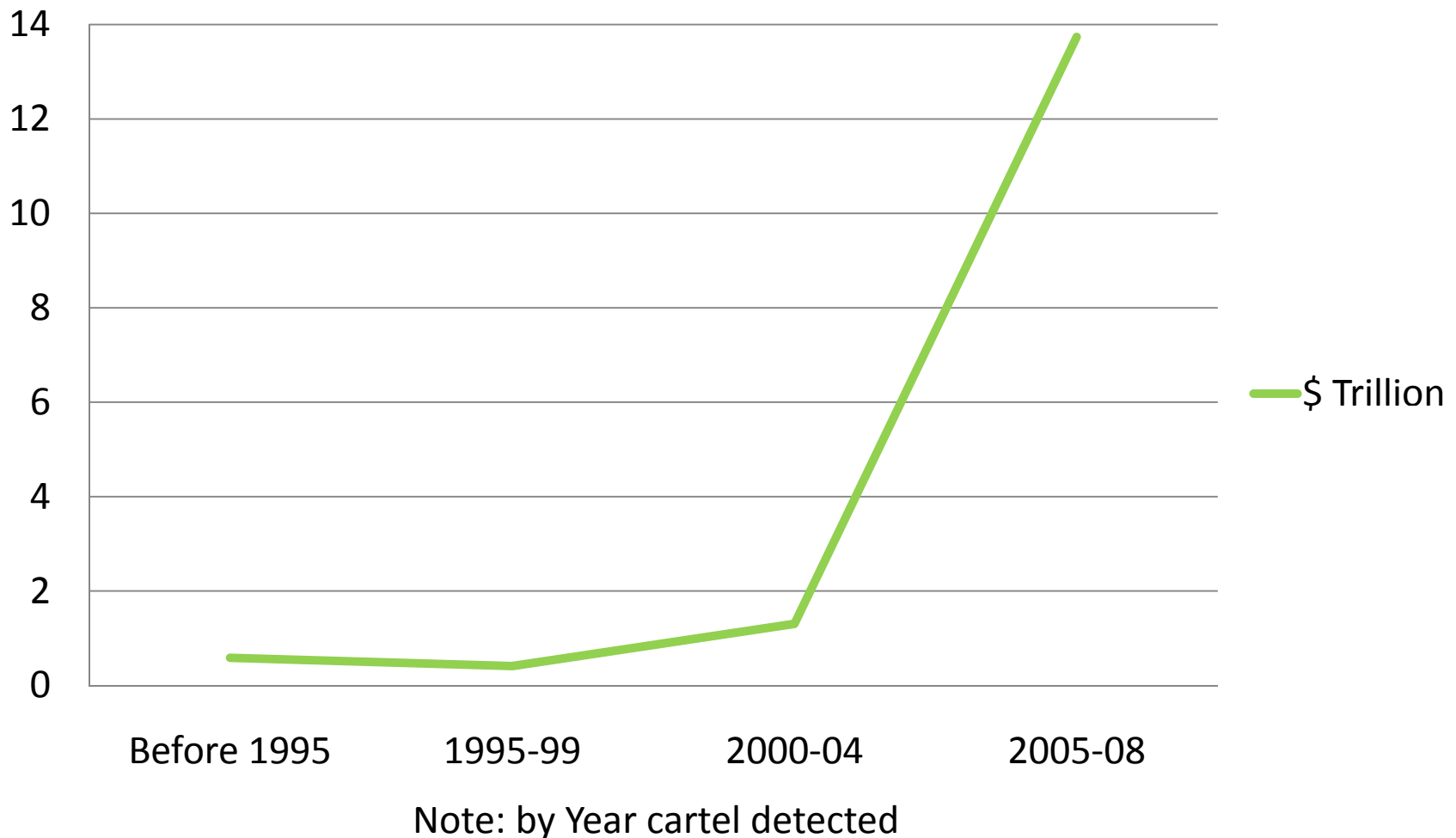




# Counting Global, More than Half of the Cartels Operated within Europe



# Huge Increases in Known **Affected Sales** by International Cartels Convicted by 2008

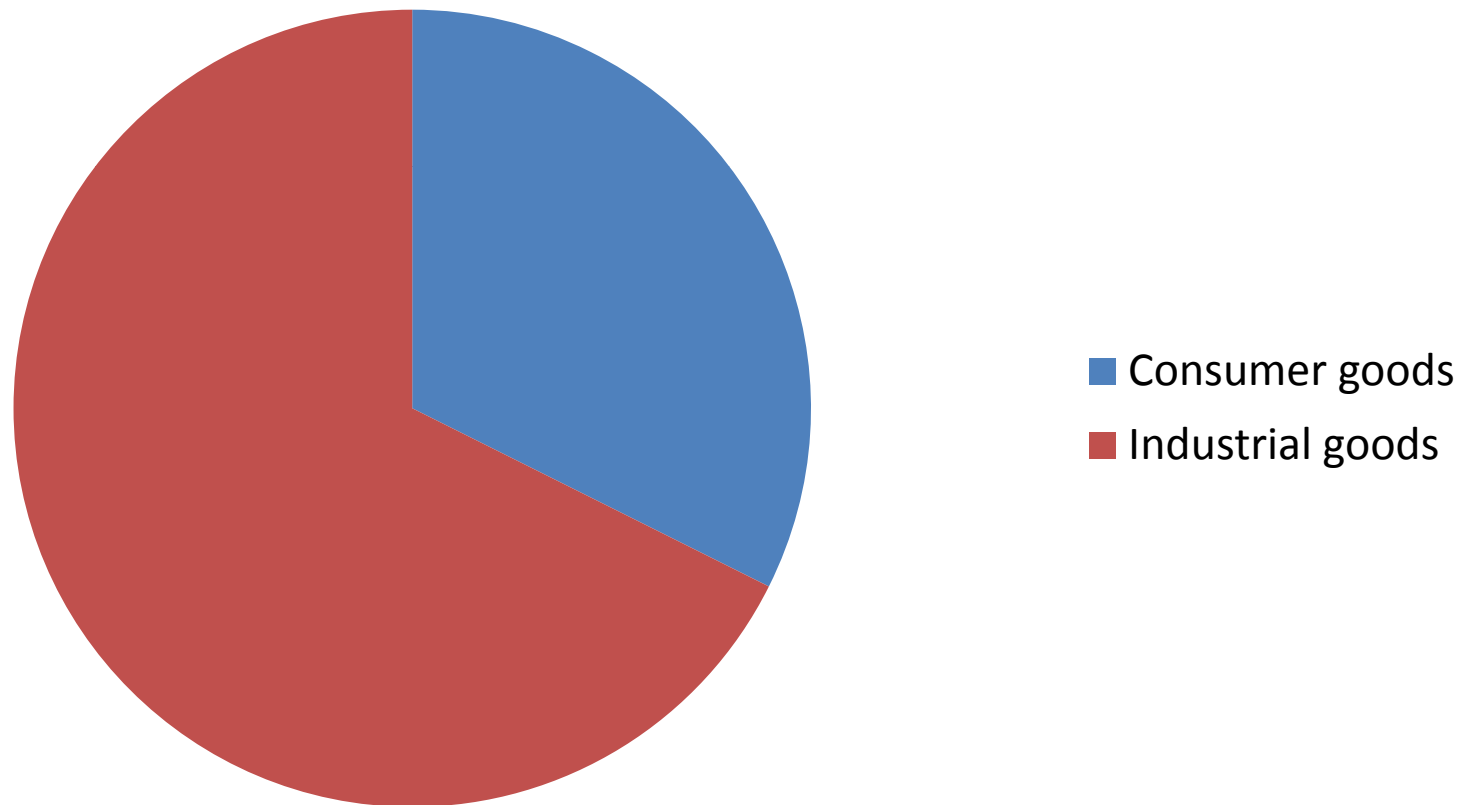


# Estimated Affected Sales of Some Recent (2005-08) International Cartels

Cartel Name and Type	Sales (\$ billion)
Airlines, passenger, fuel surcharge ,Global	1,164.0
Diamonds, rough gem quality, Global	303.2
Bank cards' fees, US	285.0
Airlines, cargo, fuel surcharge , Global	264.9
Insurance brokerage fees, US & UK	145.0
LCDs (Liquid Crystal Displays), TFP type, Global	131.0
Telecom, mobile services 2, Korea	96.0
Cleaning products, home and personal, EU	74.1
Tobacco products, UK	43.5

# Most International Cartels Sell **INDUSTRIAL GOODS**

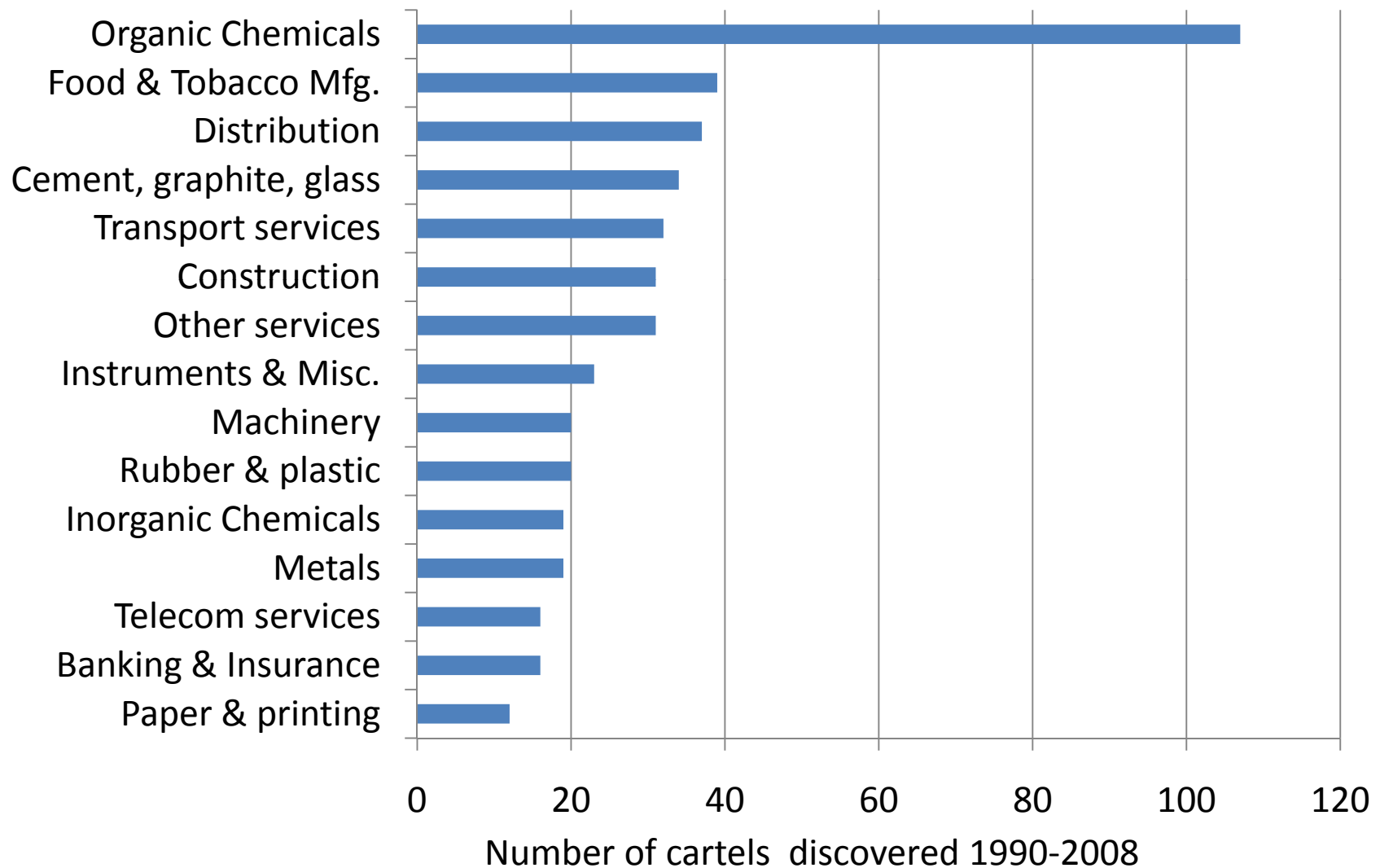
Number of Cartels



# MOST CARTELS SELL INDUSTRIAL GOODS

- 14 agricultural or mining raw materials
- 208 intermediate industrial materials
- 23 industrial capital goods
- 34 undifferentiated consumer goods
- 40 differentiated consumer goods
- 166 business or consumer services

# LEADING CARTEL INDUSTRIES



# CARTELS & ANTITRUST PORTRAYED: Detection

PRIVATE INTERNATIONAL CARTELS,  
1990-2008

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January 23, 2009

# Introduction

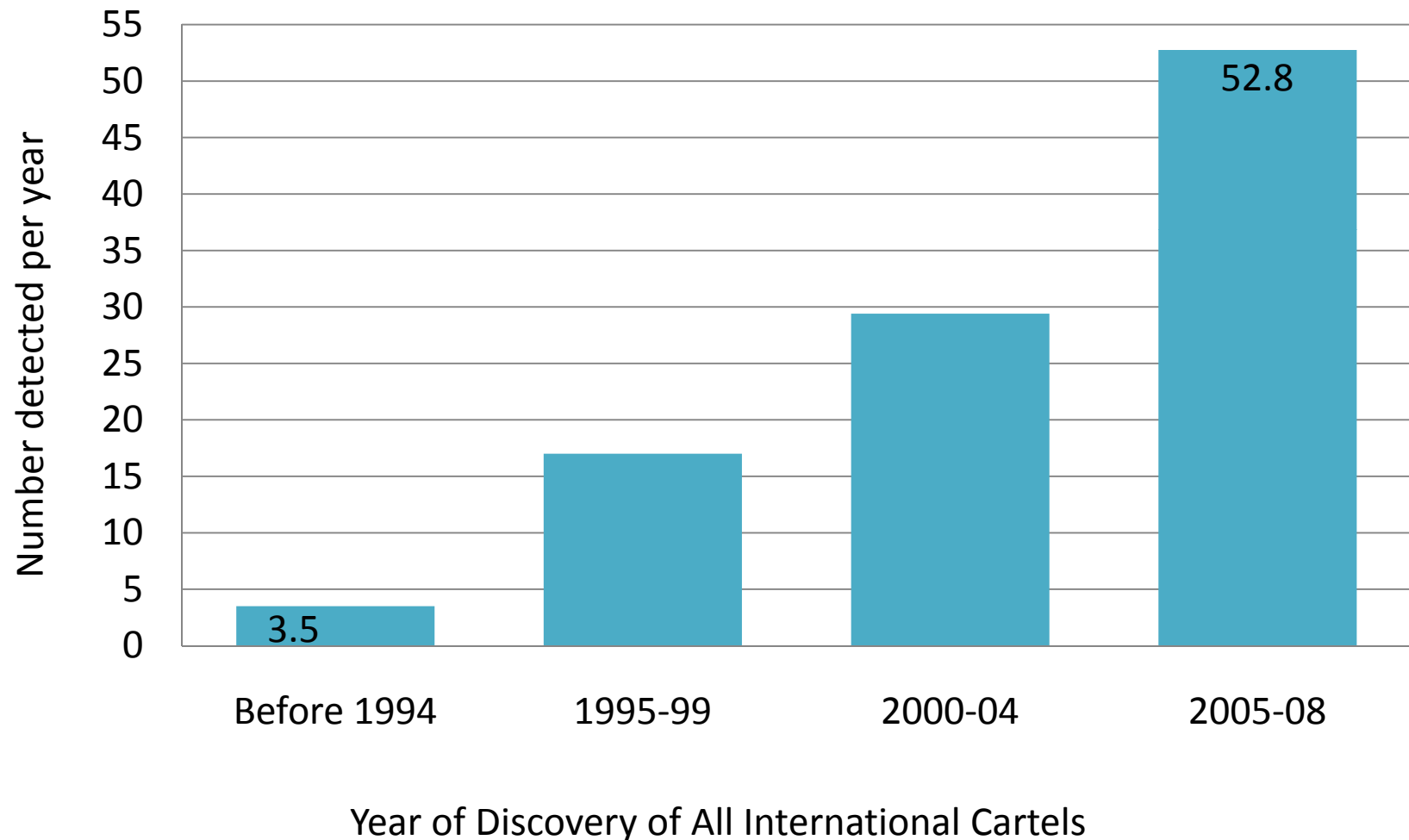
- The purpose of the following charts is to illustrate the size and economic impacts of the modern international cartel movement and the enforcement responses of the world's antitrust authorities and national courts.
- The data employed encompass 516 private hard-core cartels that were subject to government or private legal actions (i.e., formal investigations, damages suits, fines, or consent decrees) between January 1990 and December 2008. Each cartel had participants with headquarters in two or more nations.
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- A special effort is made to create charts that illustrate **trends** in cartel dimensions and antitrust decisions.



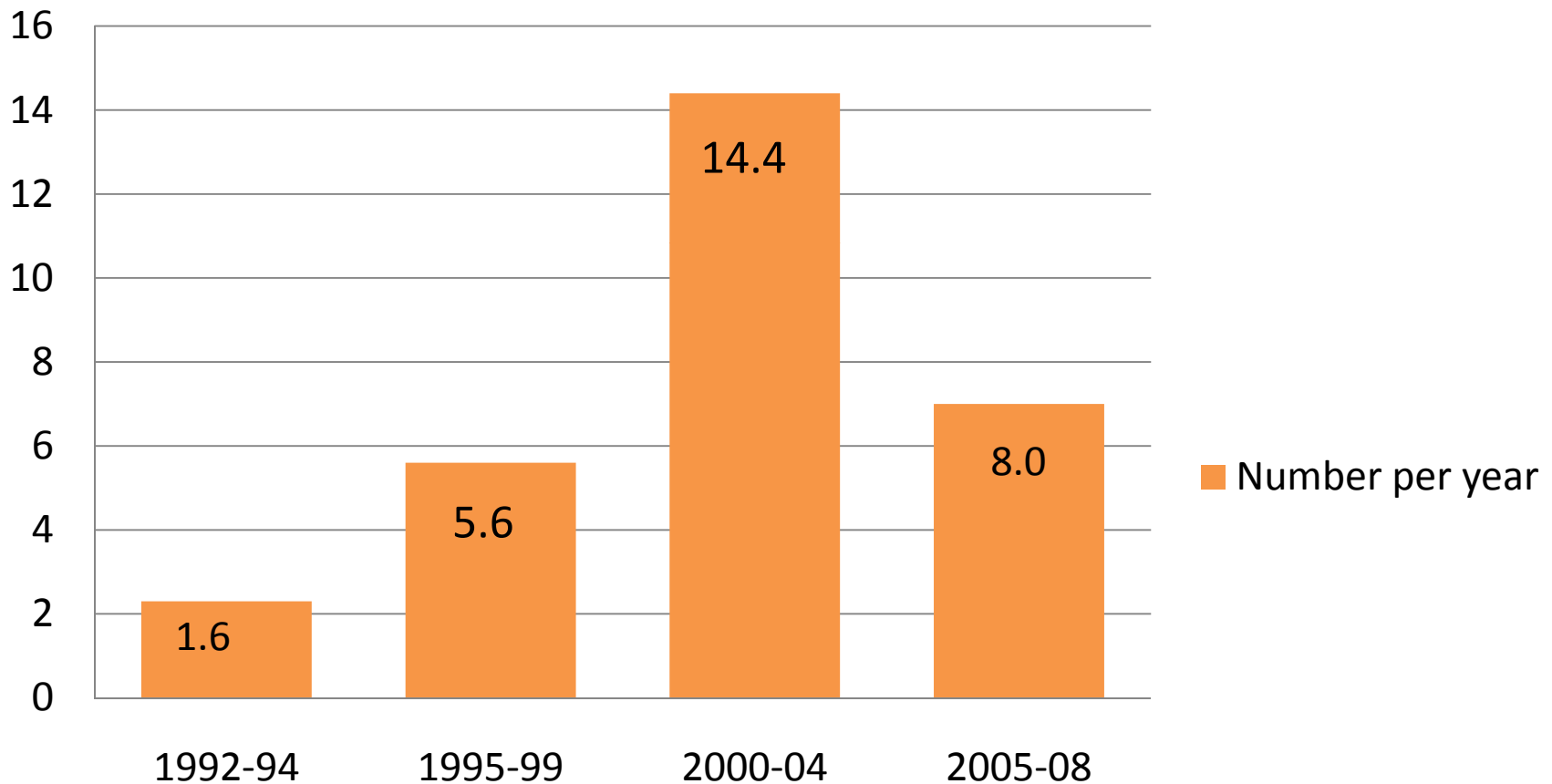
# International Cartels Are Now Being Assaulted on All Fronts

- Indictments in the US and Canada peaked in the late 1990s (the vitamins cartels play a major role), but are up elsewhere.
- The EC's cases are rising, but without settlements, it is small.
- The EU's National Competition Authorities (NCAs) are now the biggest prosecutors.
- Asia (mostly Korea) is becoming a cartel tiger.
- Of late, So. Africa and Brazil are active also.
- Although increased detection rates are probably due to more agencies and better policies, the total number of cartels (including hidden ones) could be rising or falling

# Rates of Discovery Are Fifteen Times Higher in 2005-08

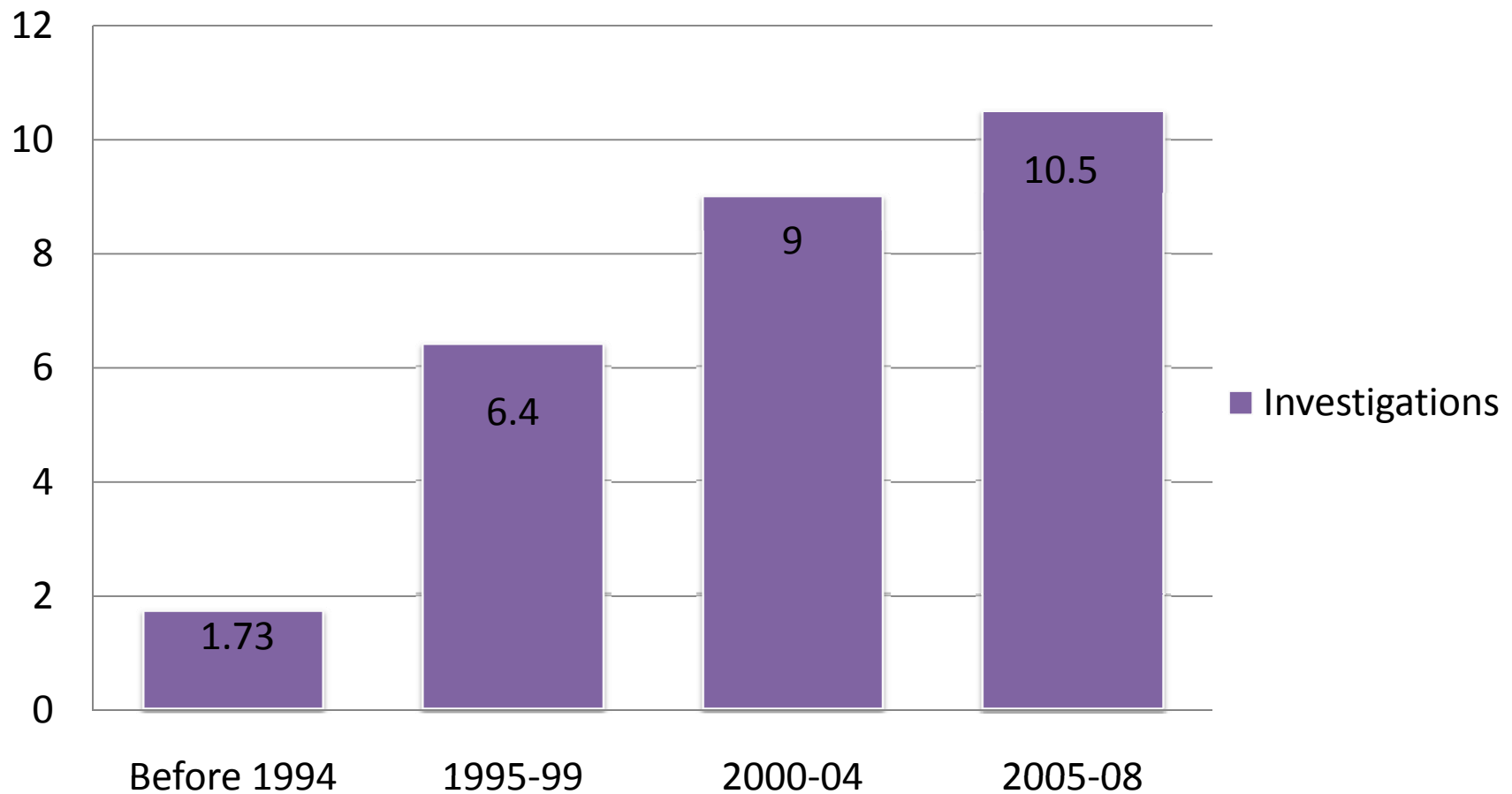


# Rates of Discovery of **Global** Cartels Peaked in 2000-2004



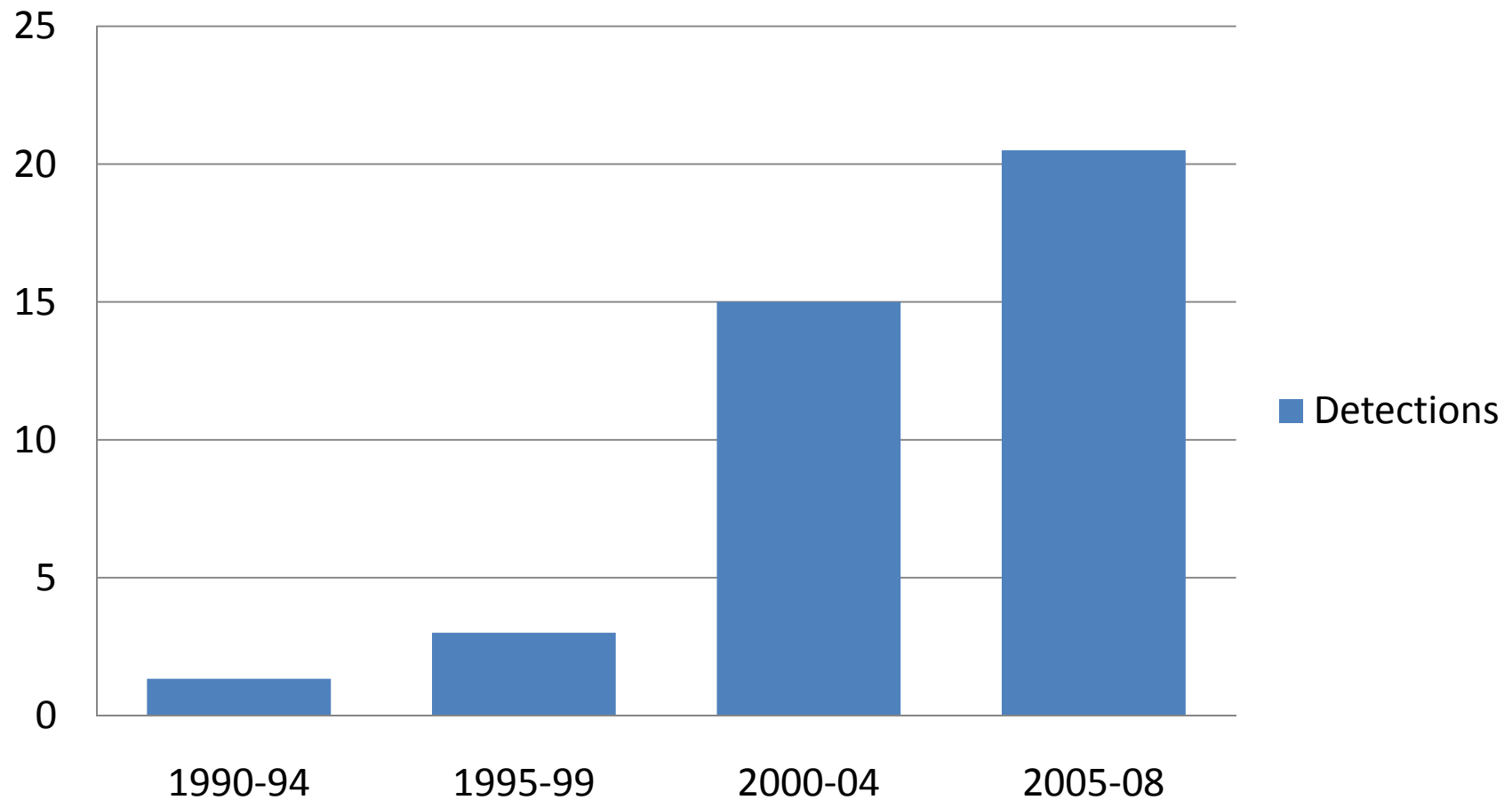
“Global” cartels affected prices in two or more continents

# Rates of Discovery by the **European Commission** Rise Steadily

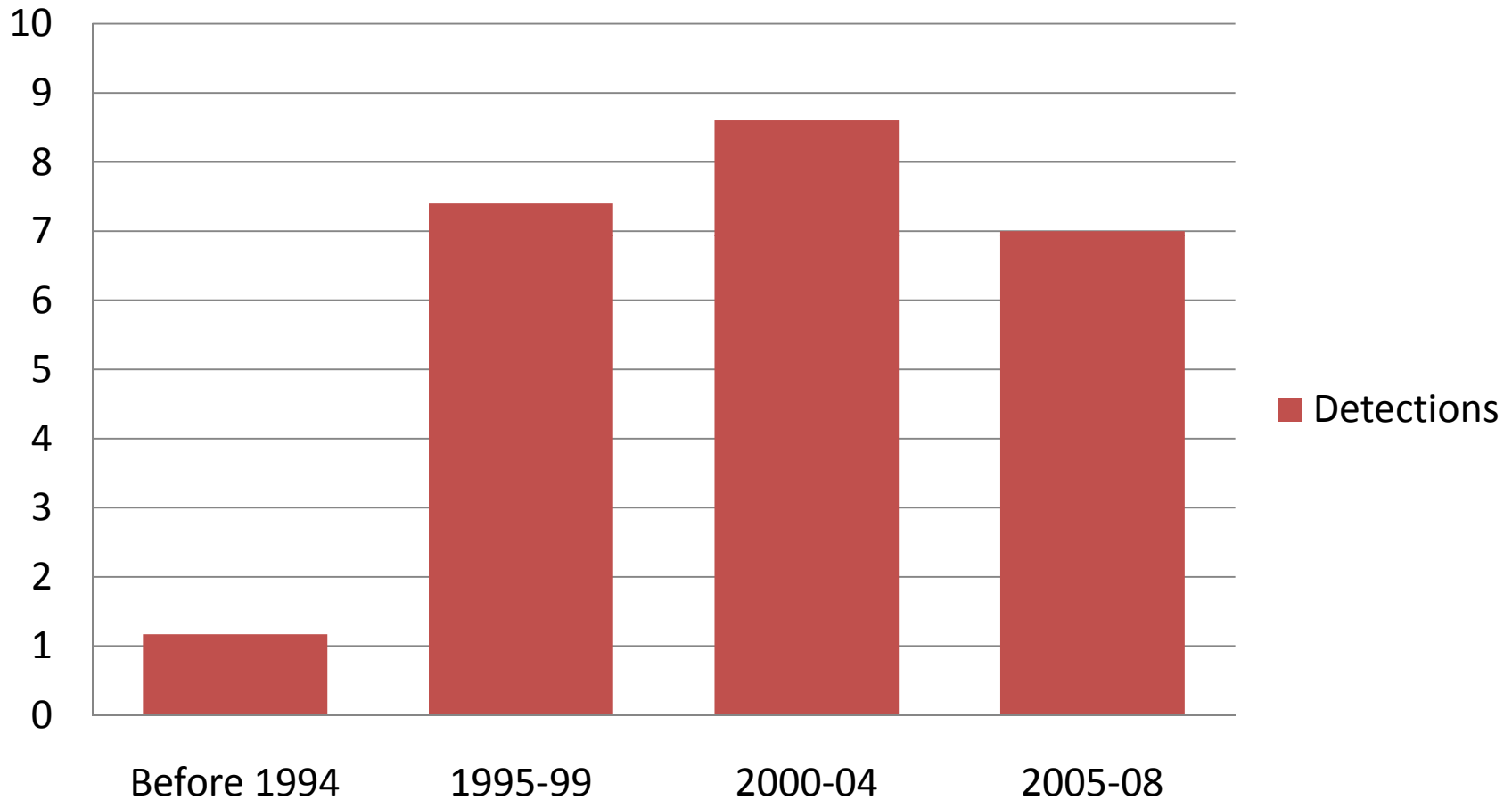


# Cartel Detections by the EU's NCAs

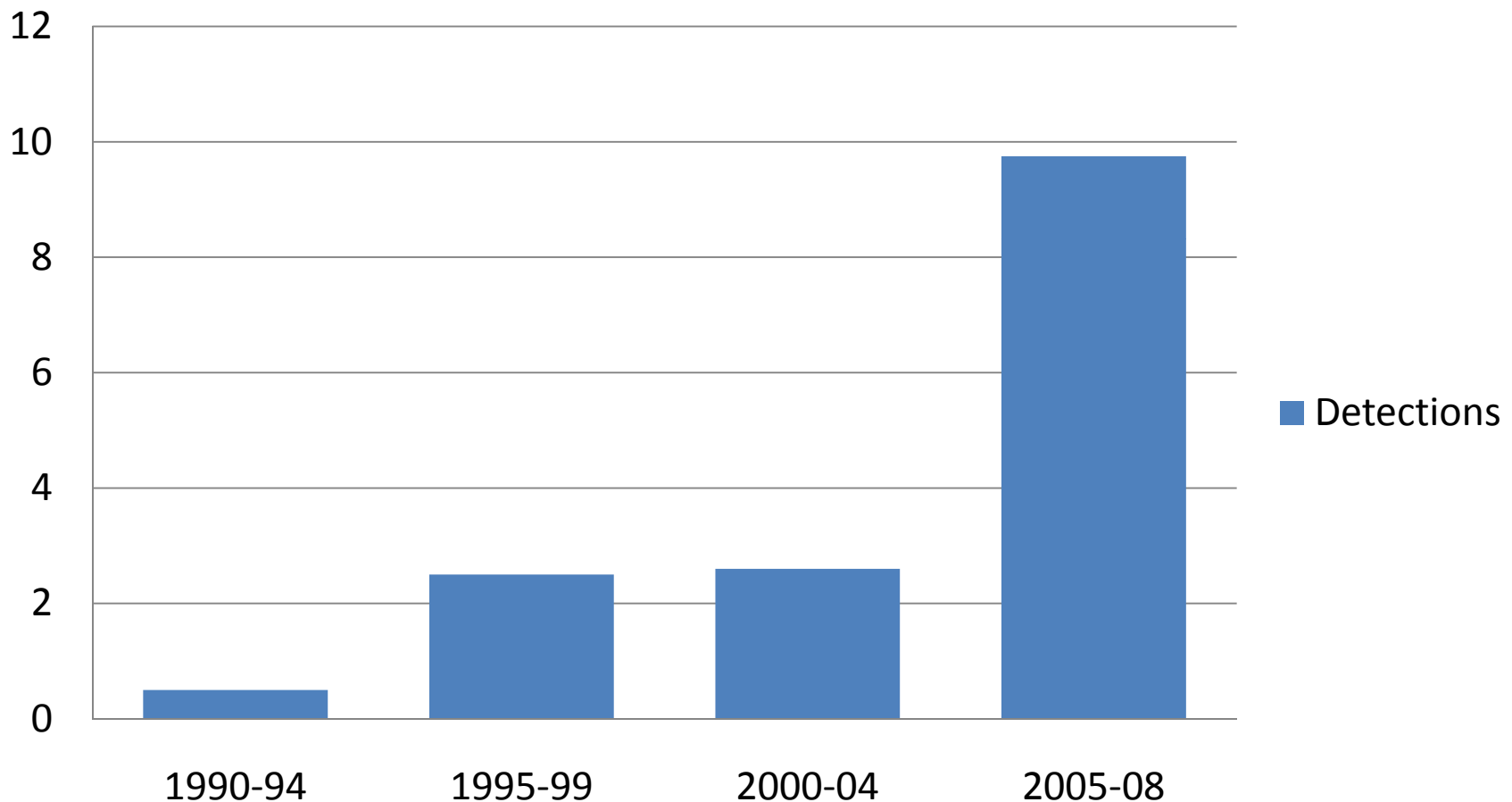
## Surpass All Others since 2000



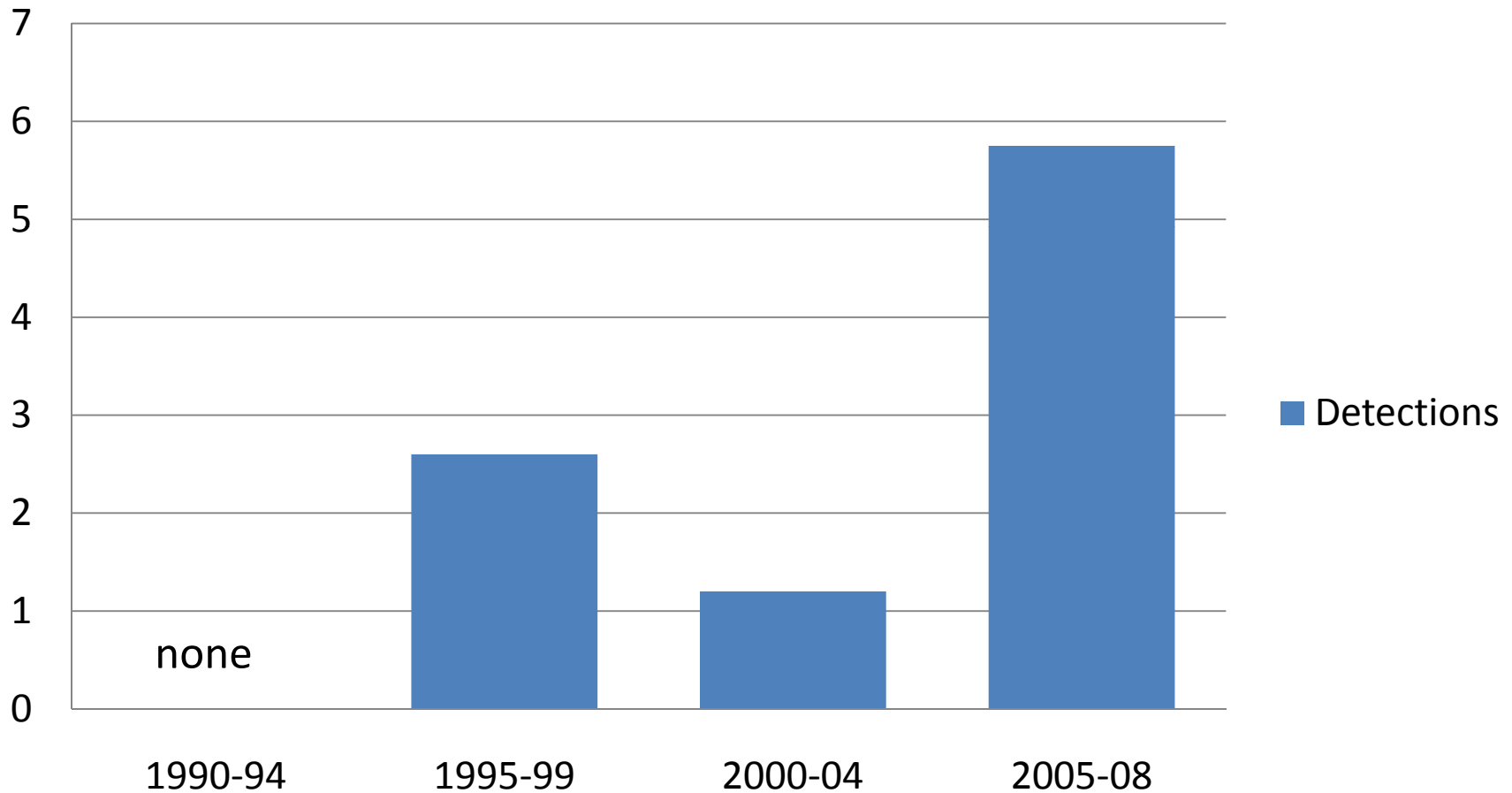
# Cartel Detections by the **US and Canada** Are Faltering



# Asian Anti-Cartel Enforcement (Especially Korea) Is Accelerating



# Cartel Detections in **Africa and Latin America** Are Modest but Significant

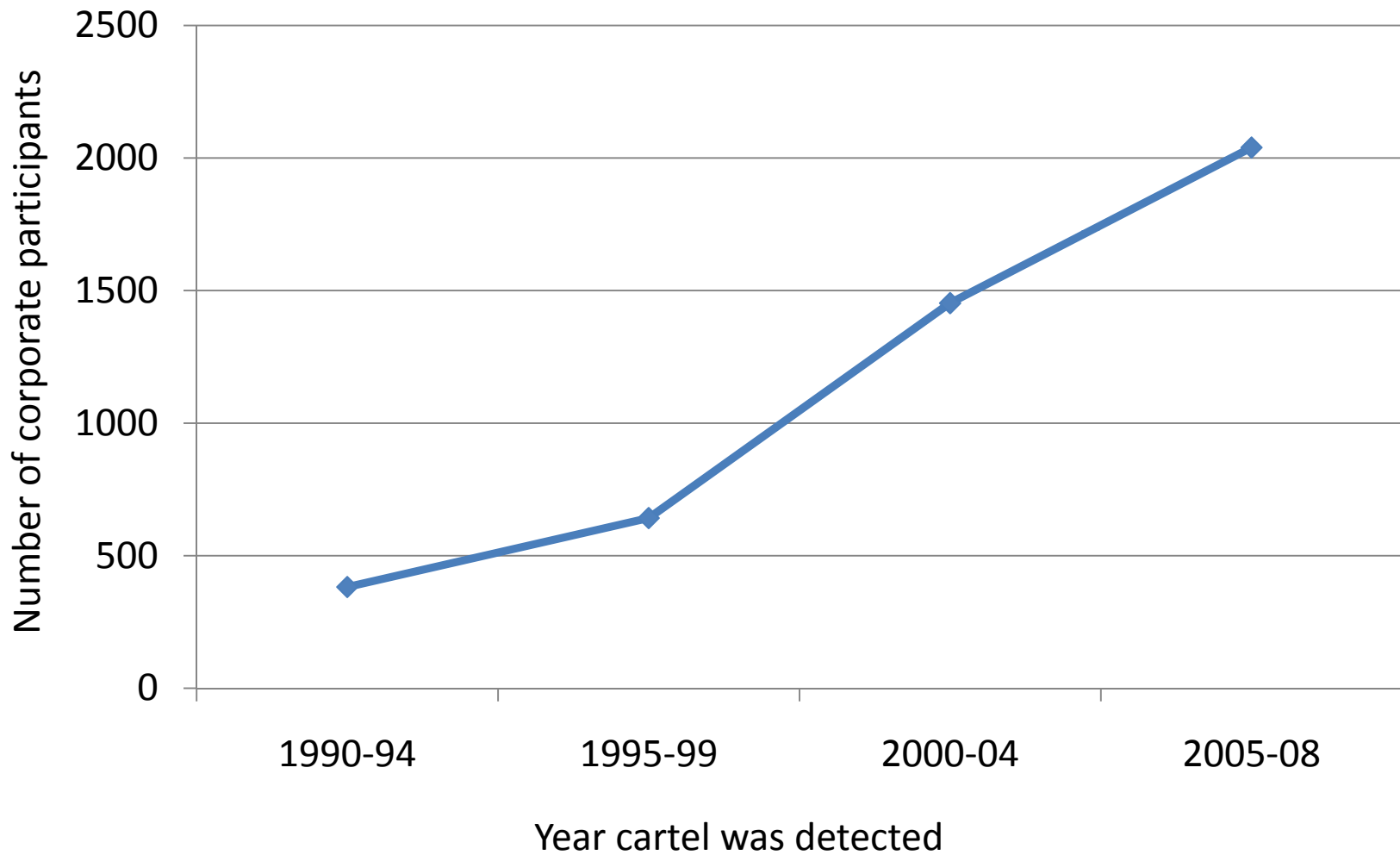




# Despite Heavier International Cartel Penalties, More Companies Are Becoming Cartelists

During 1990-2008, more than 2400 instances of corporate participation have been identified, and at least 1620 have been fined.

# Number of Corporate Cartelists Is Rising



# Sources

- John M. Connor. *Private International Cartels: Full Data*. [The PICs spreadsheet, first created about 1998, is continuously updated. As of December 2008, the combined “Full Data” spreadsheet was a file of 6.4MB and consisted of 4700 observations of 512 actual and suspected cartels and 4200 cartelists (companies and individual participants) with 1.1 million cells of data. There are also 13 back-up spreadsheets.]
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[<http://www.antitrustinstitute.org/recent2/567.pdf>]
- John M. Connor. *Cartel Amnesties Granted: Worldwide Whistleblowers SSRN Working Paper* (October 2008). [at SSRN: <http://ssrn.com/abstract=1285469>]

# **CARTELS & ANTITRUST PORTRAYED: Internal Structure:**

## **PRIVATE INTERNATIONAL CARTELS, 1990-2008**

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January 23, 2009

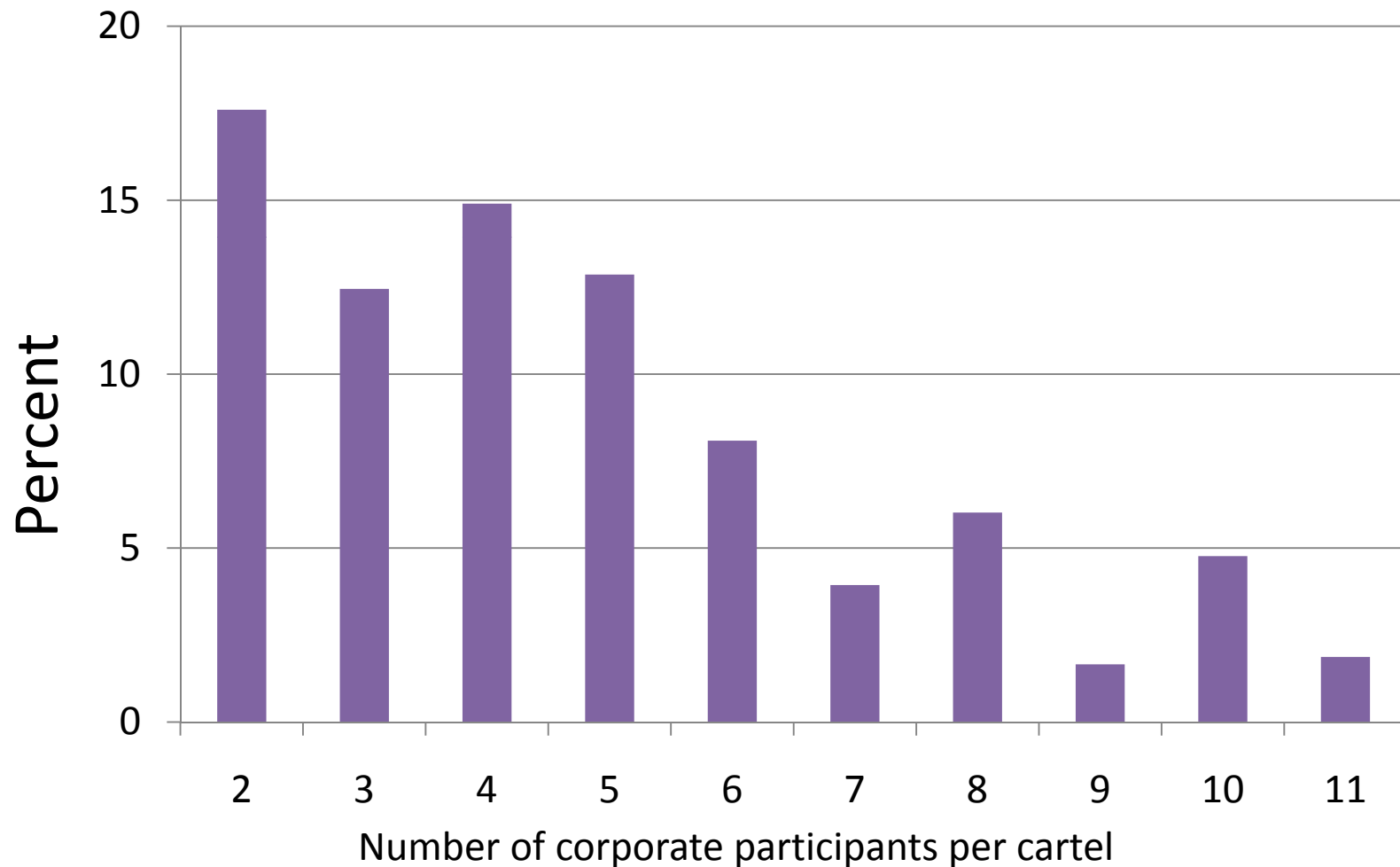
# Introduction

- The purpose of the following charts is to illustrate the size and economic impacts of the modern international cartel movement and the enforcement responses of the world's antitrust authorities and national courts.
- The data employed encompass 516 private hard-core cartels that were subject to government or private legal actions (i.e., formal investigations, damages suits, fines, or consent decrees) between January 1990 and December 2008. Each cartel had participants with headquarters in two or more nations.
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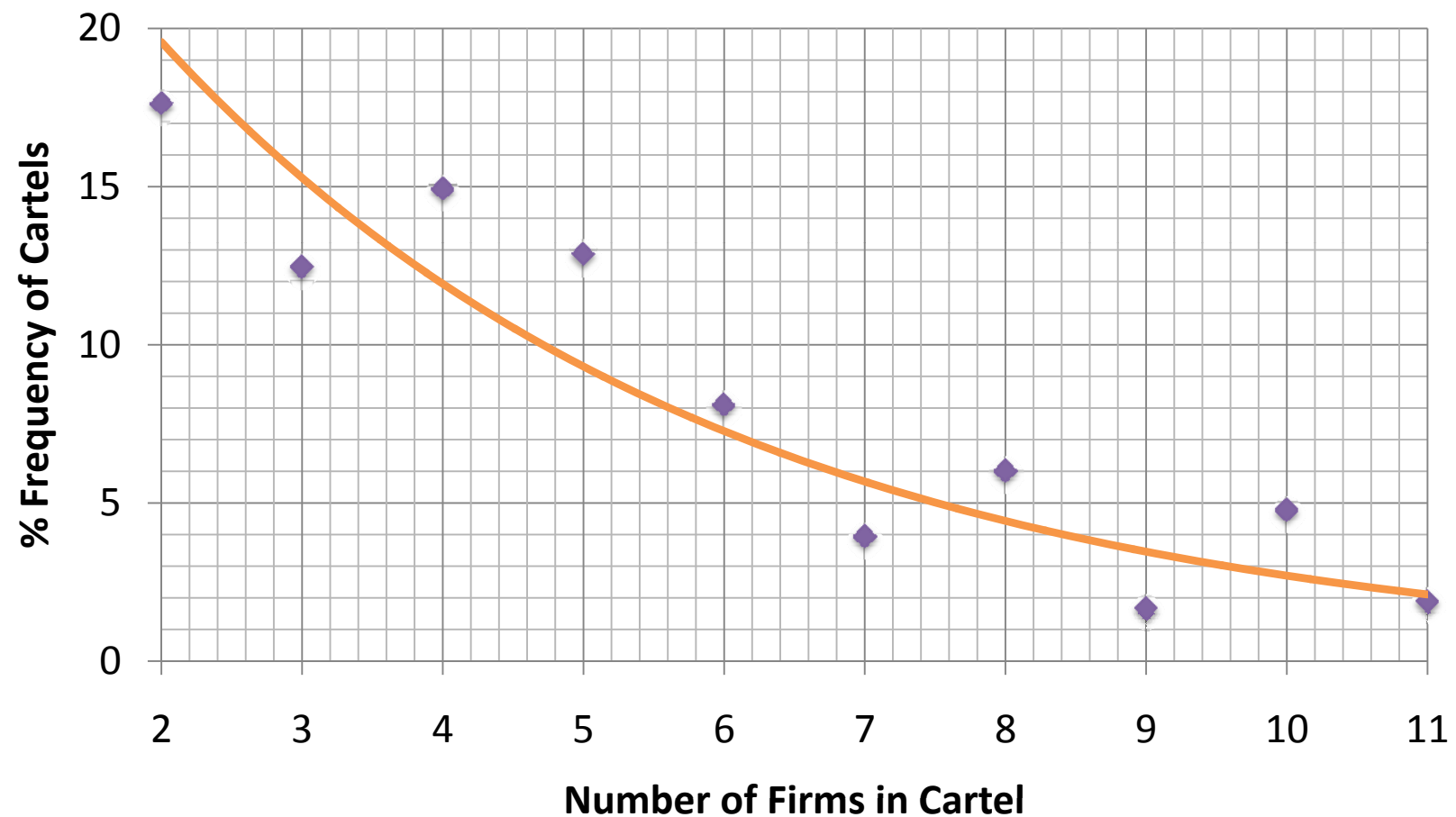
# Internal Structures of Cartels

- The great majority of cartels have fewer than ten members, but bid rigging cartels with few buyers and third-party involvement tend to support more firms
- The number of corporations is inversely related to the frequency of discovered international cartels
- Median duration is 57 months, mean 82 months
- Global cartels last 57% longer the average cartel
- Asian cartels are the most fragile (26 months)
- Duration is slowly declining in North America & Europe
- Duration trend of Global cartels is not falling

# Number of Companies in **All Cartels**, 1990-2008 Total



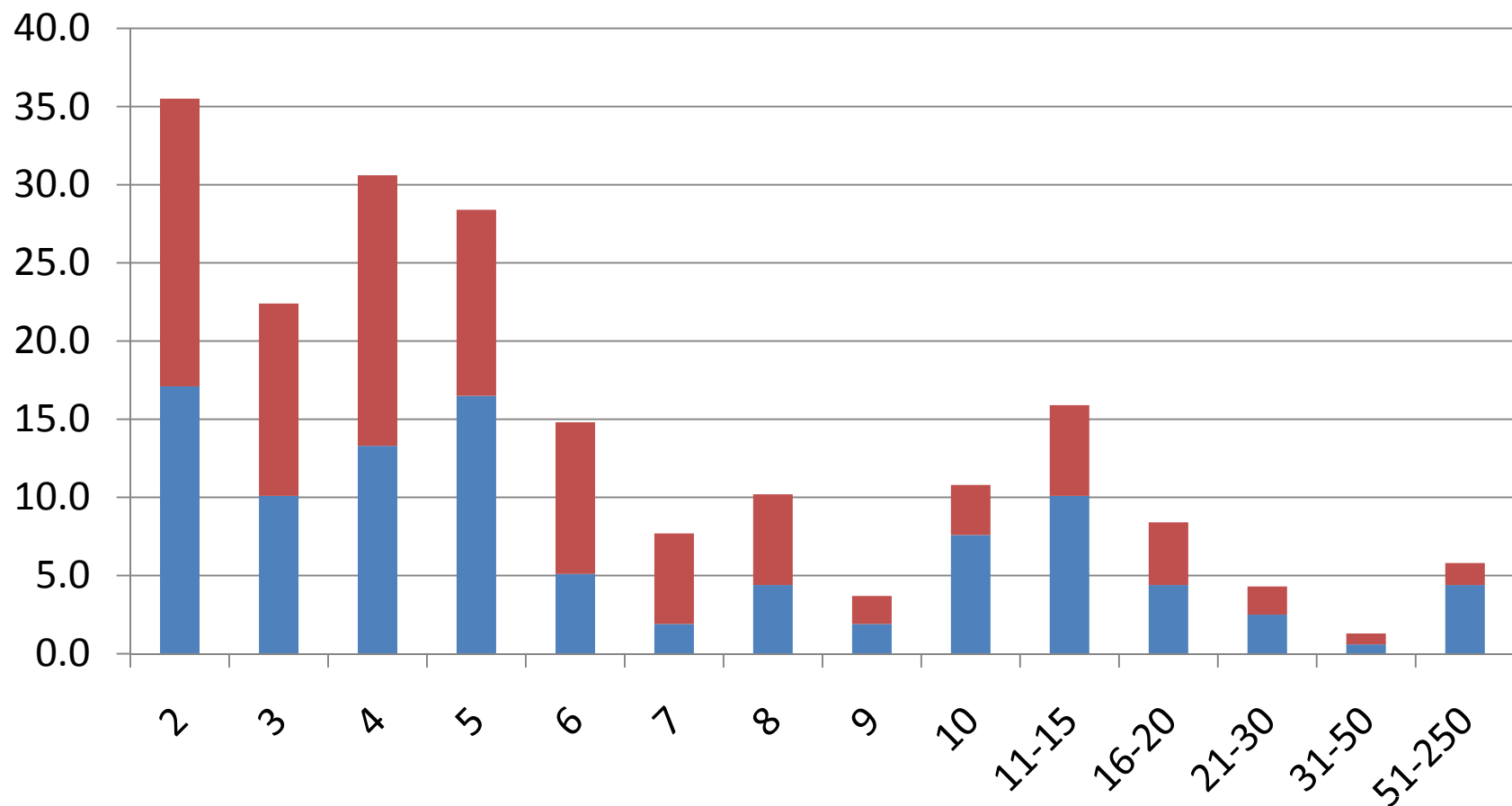
# Trend in **Frequency** of Cartels, by Number of Participants





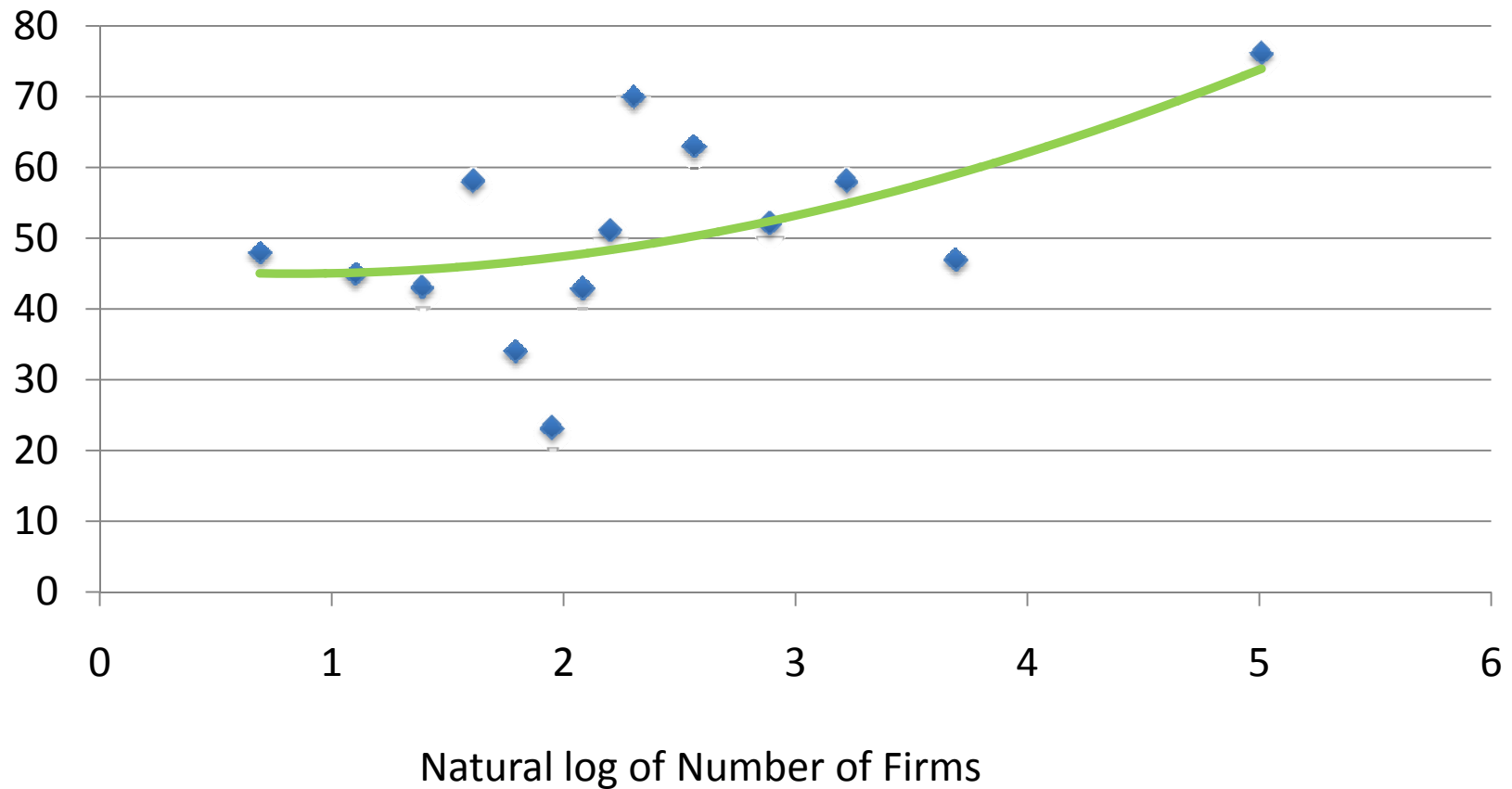
# Distribution of Firms per Cartel:

## **Classic Price-Fixing** vs. **Bid Rigging**

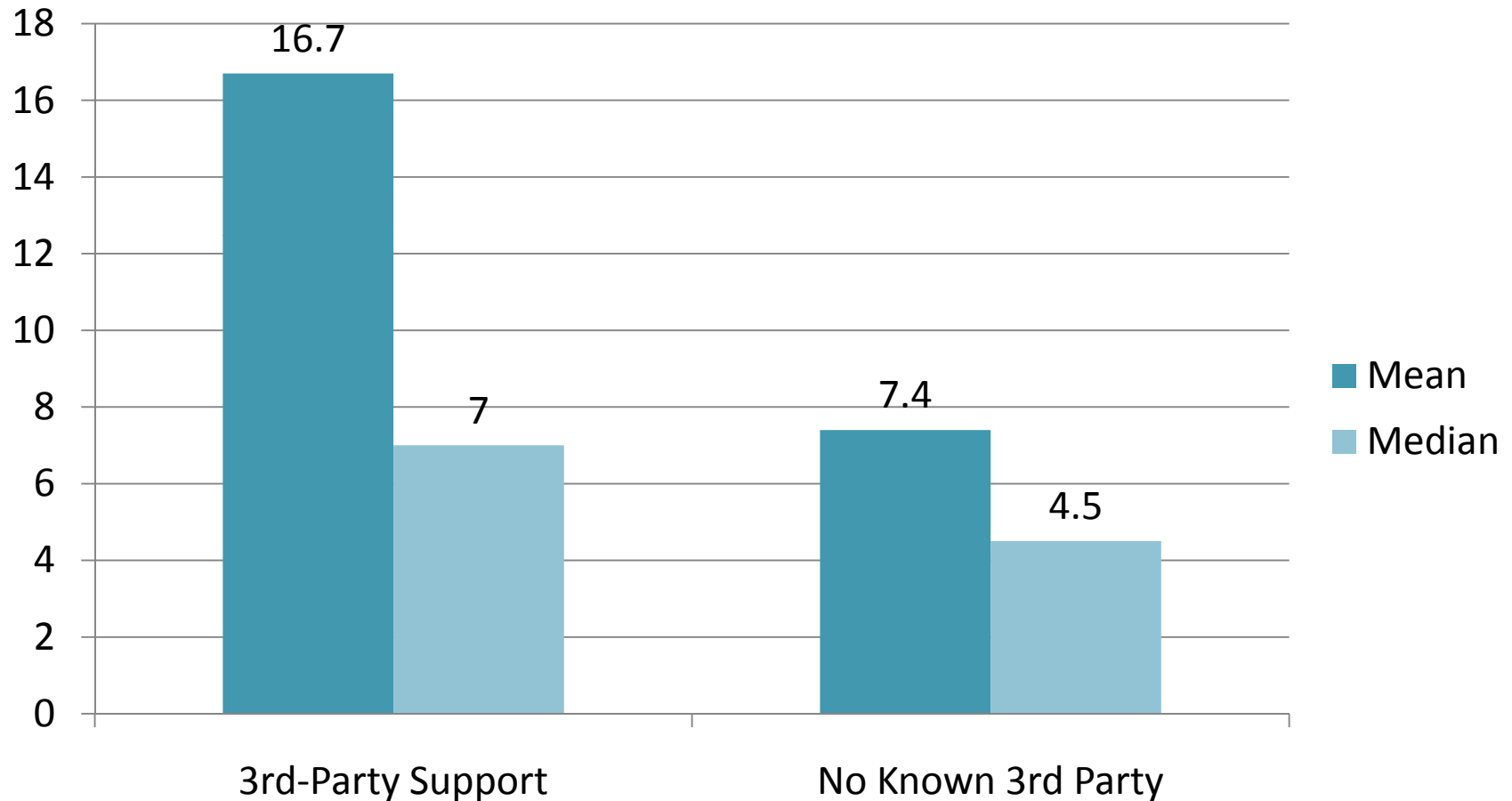


# Proportion of Cartels that Rigged Bids, by Number of Firms

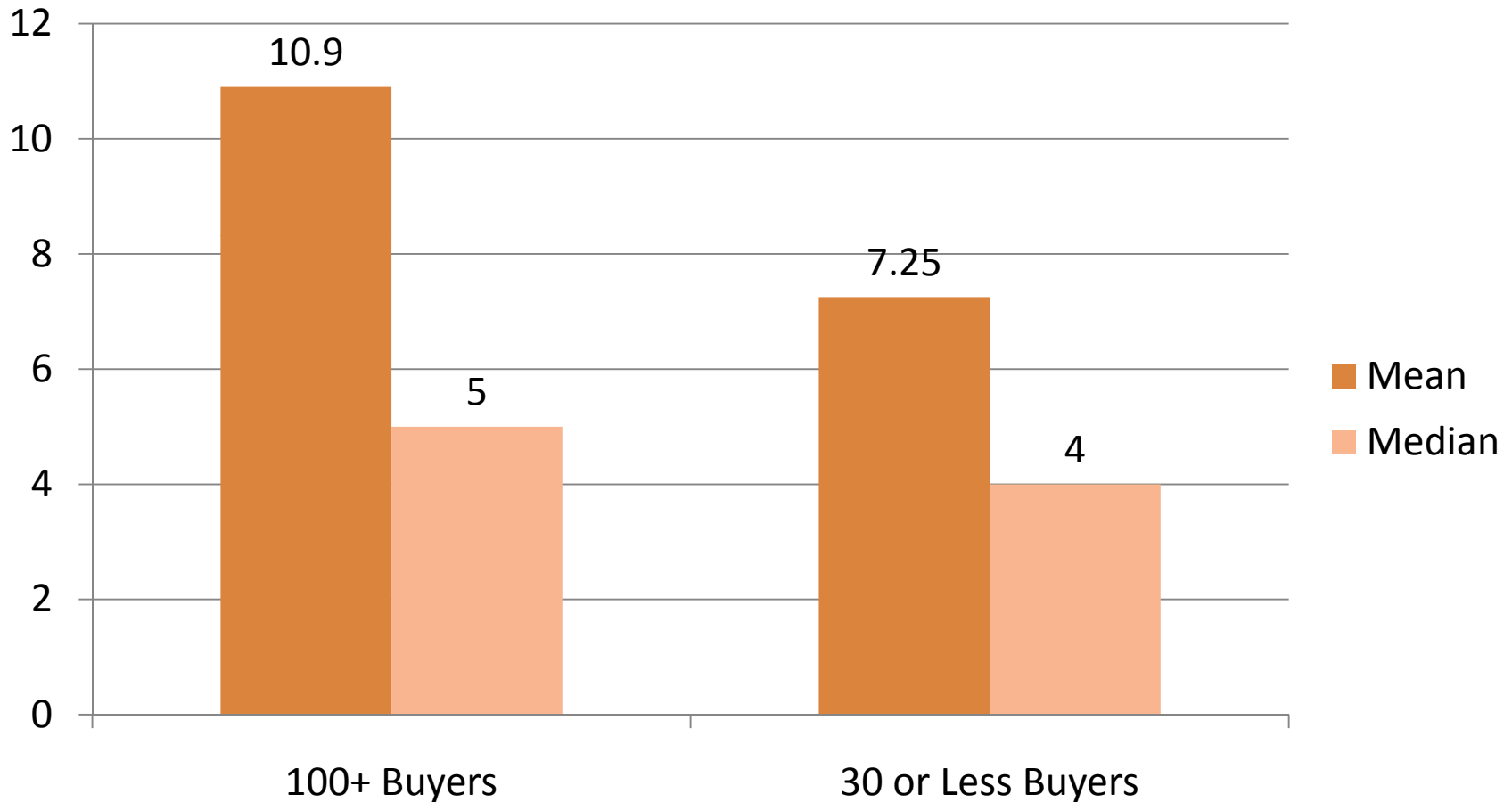
% Bid Rigging



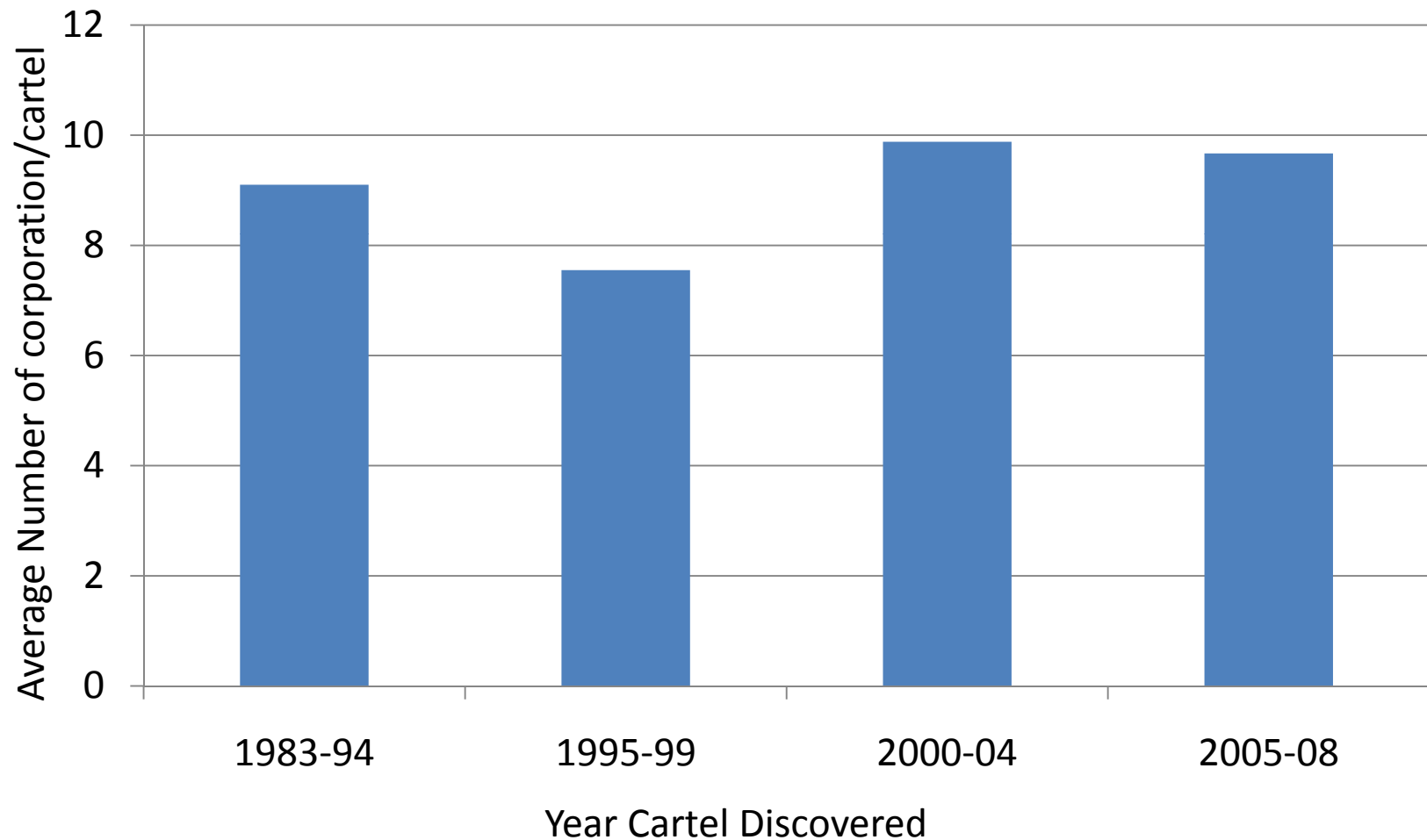
# Average Number of Firms per Cartel by Third-Party Involvement



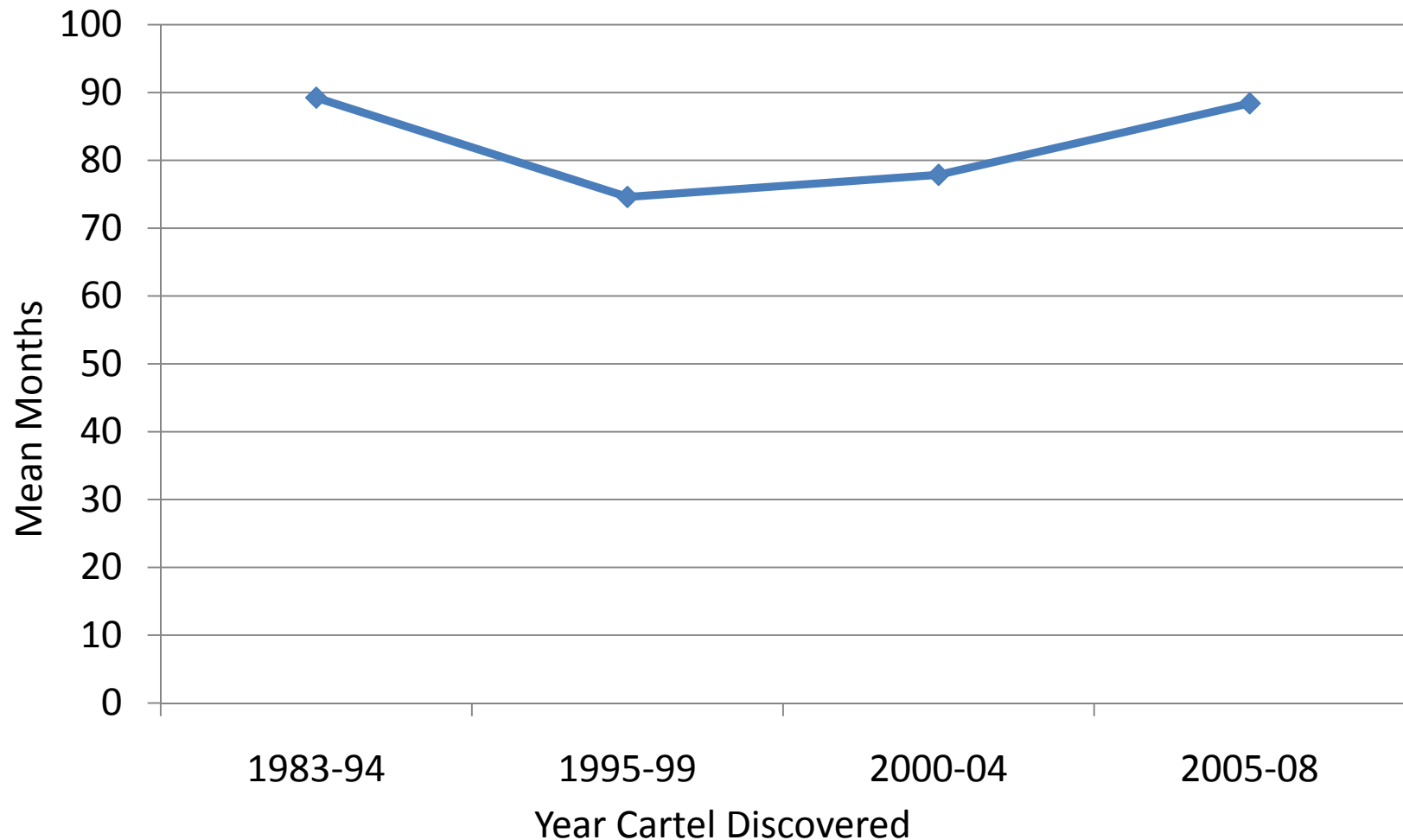
# Average Number of Firms per Cartel by Number of Buyers



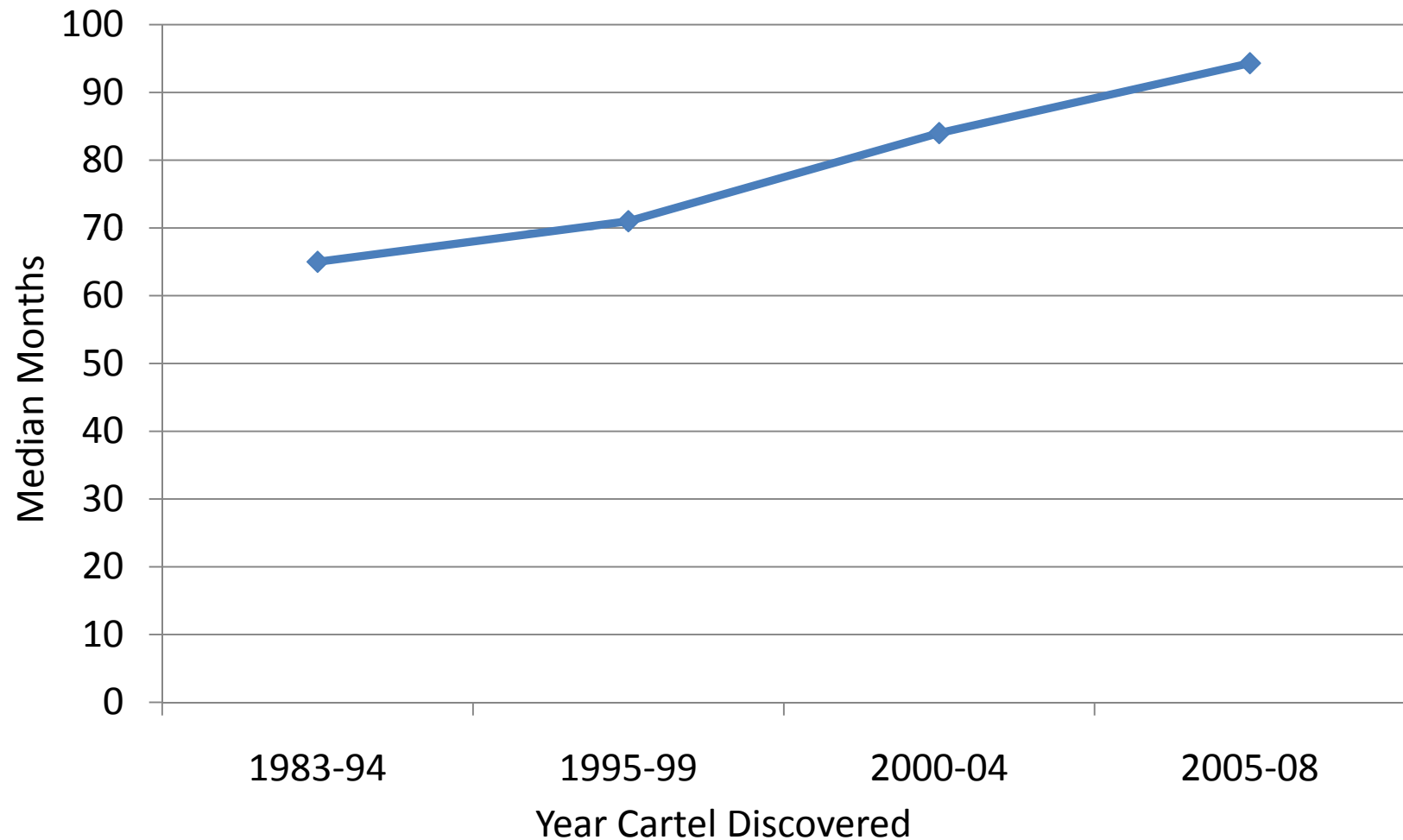
## Number of Companies per Cartel Steady over Time



## Duration of All International Cartels also Appears Steady over Time

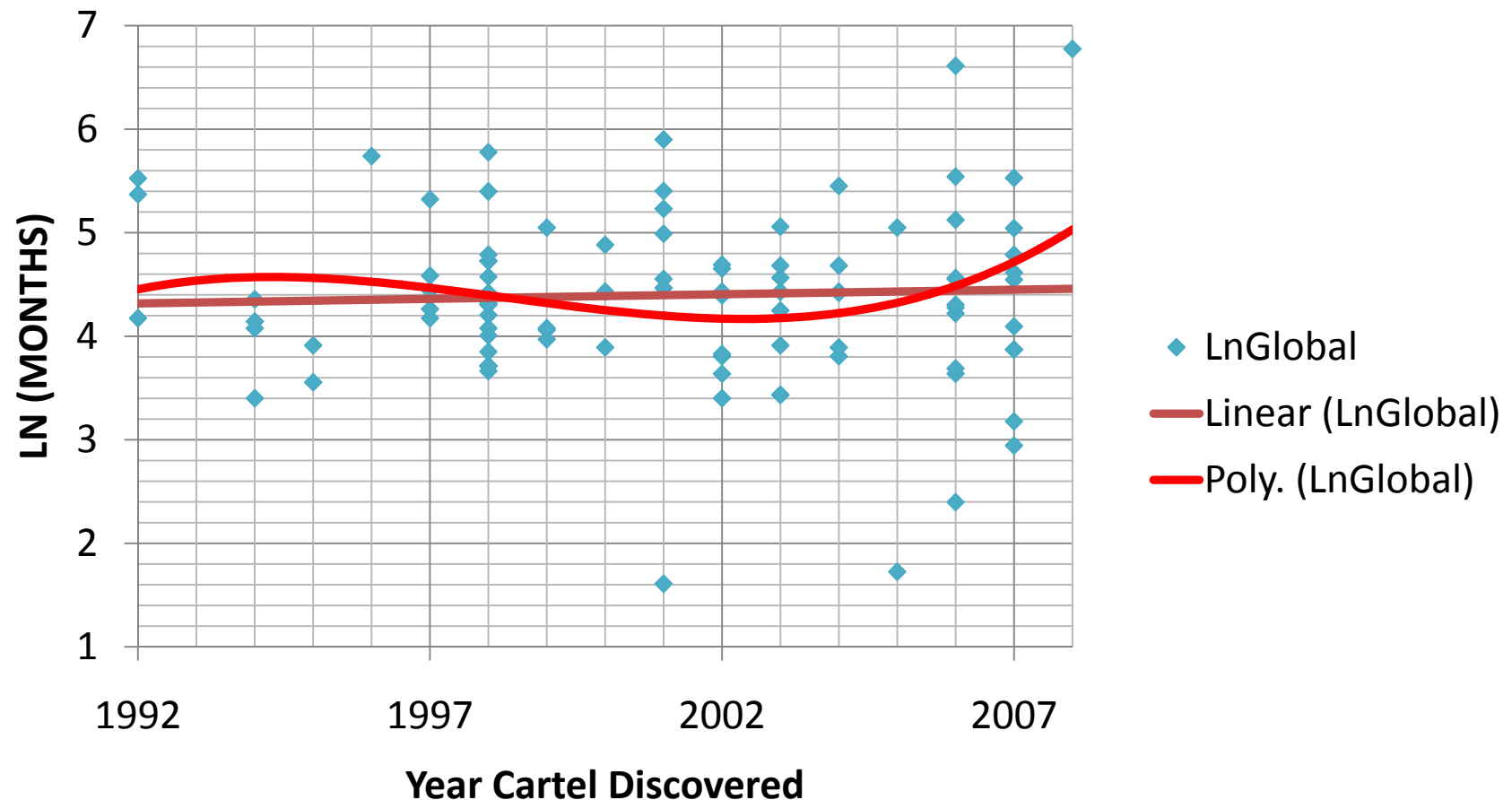


## Duration of Global-Scope International Cartels Is the Longest – and Rising



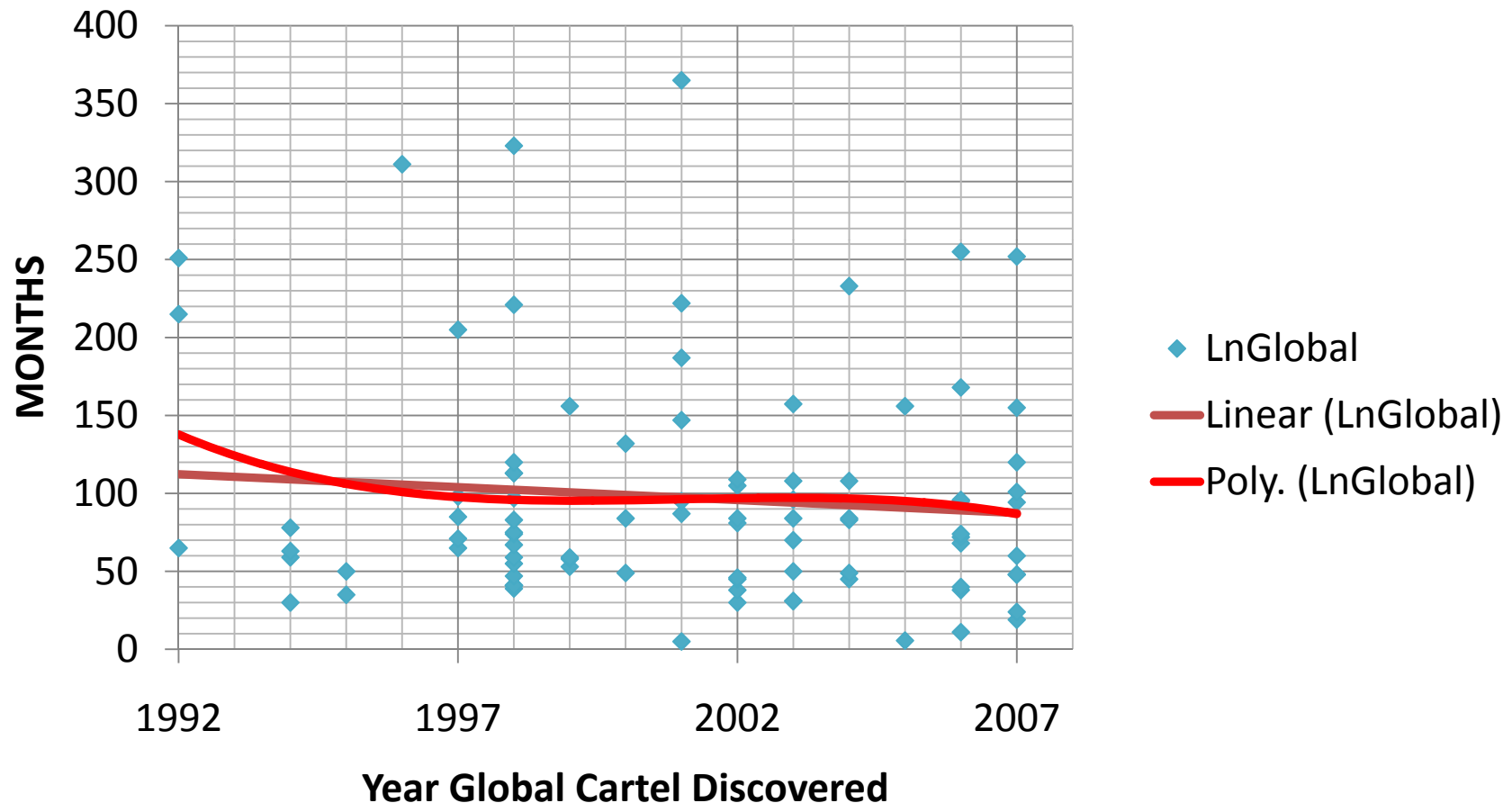
# Duration of Global Cartels

## Appears to Be Rising

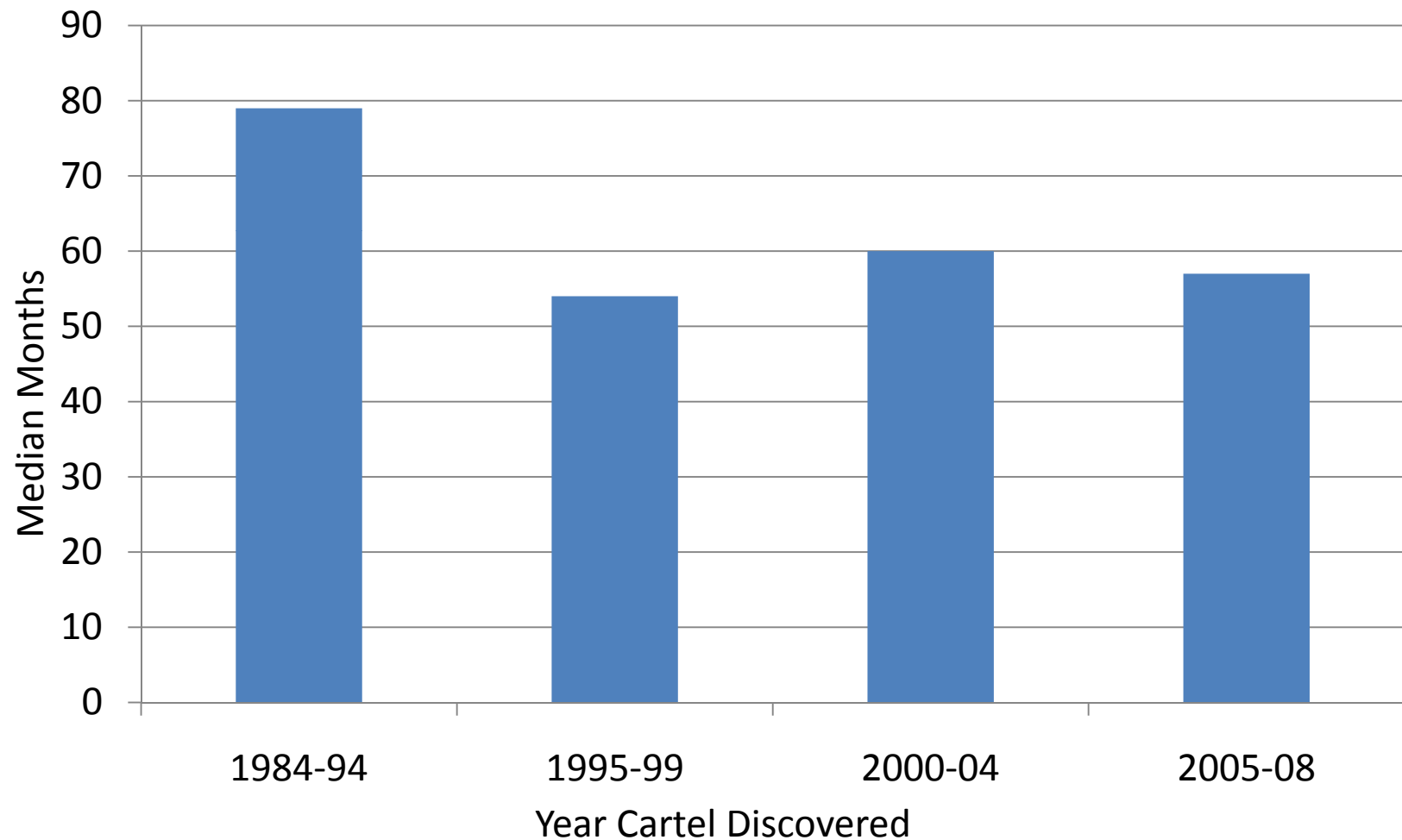




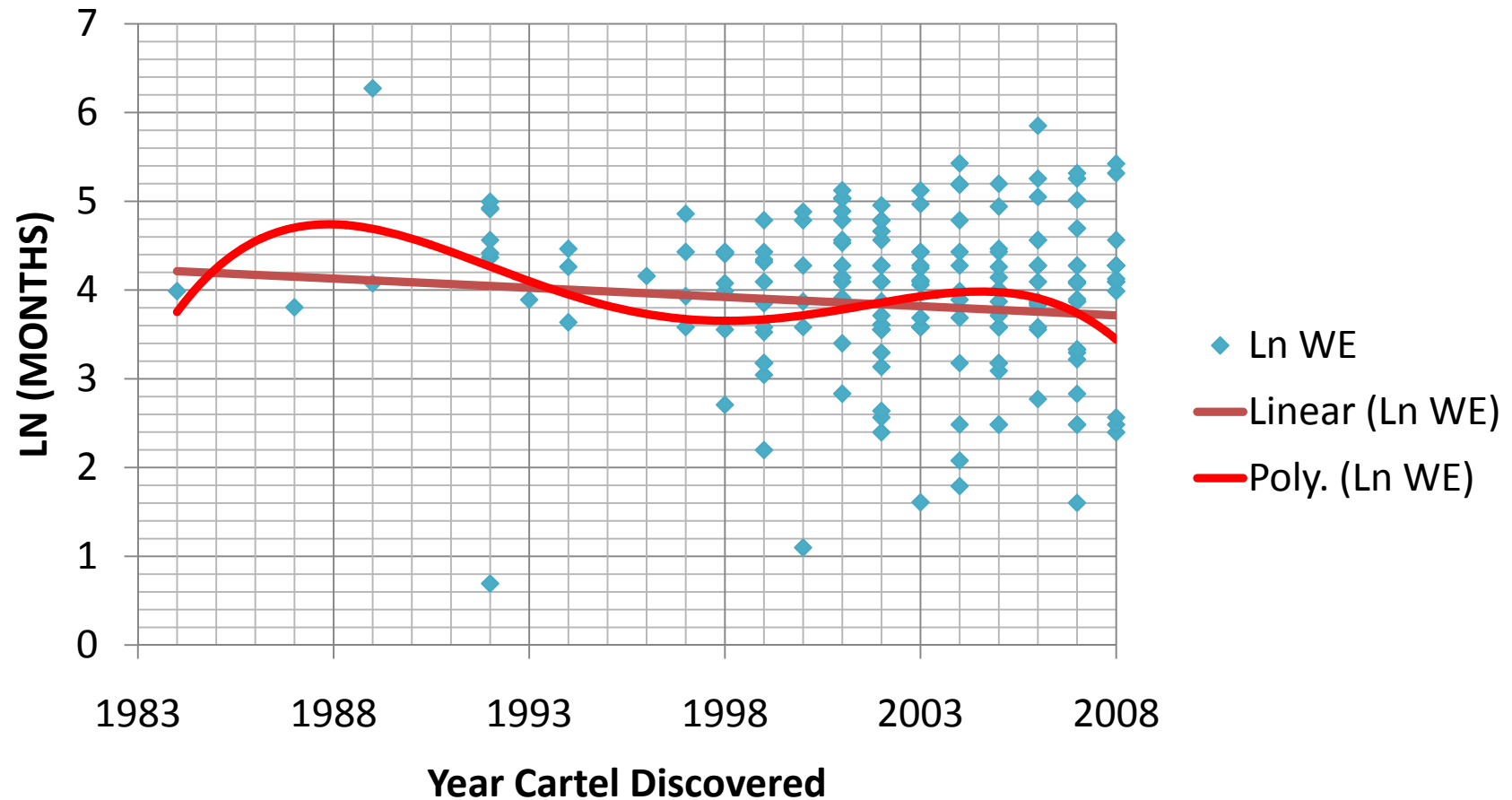
# However, **Duration Trend** Is Sensitive to Three Recent Very Durable Cartels



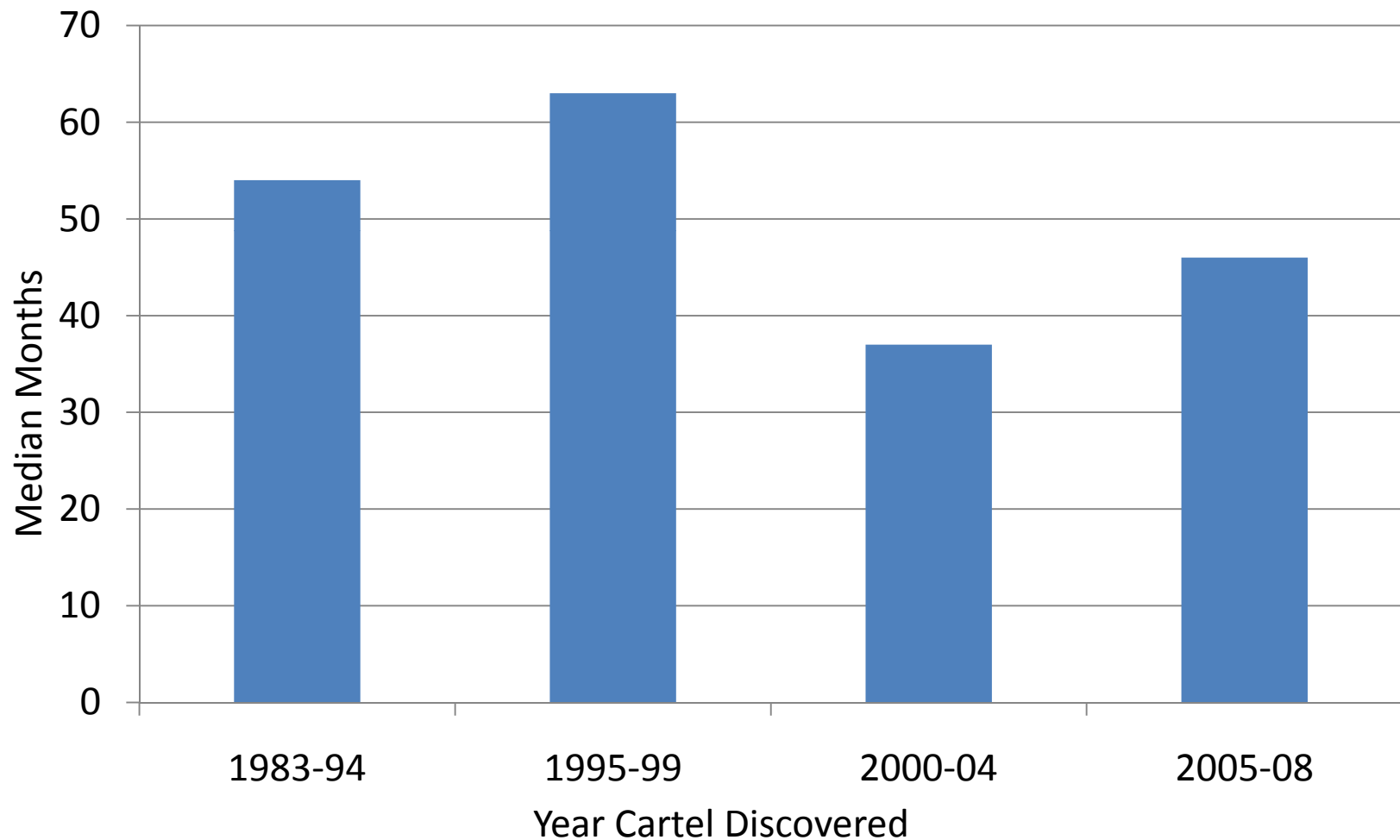
## Duration of Western European Cartels Is Relatively High



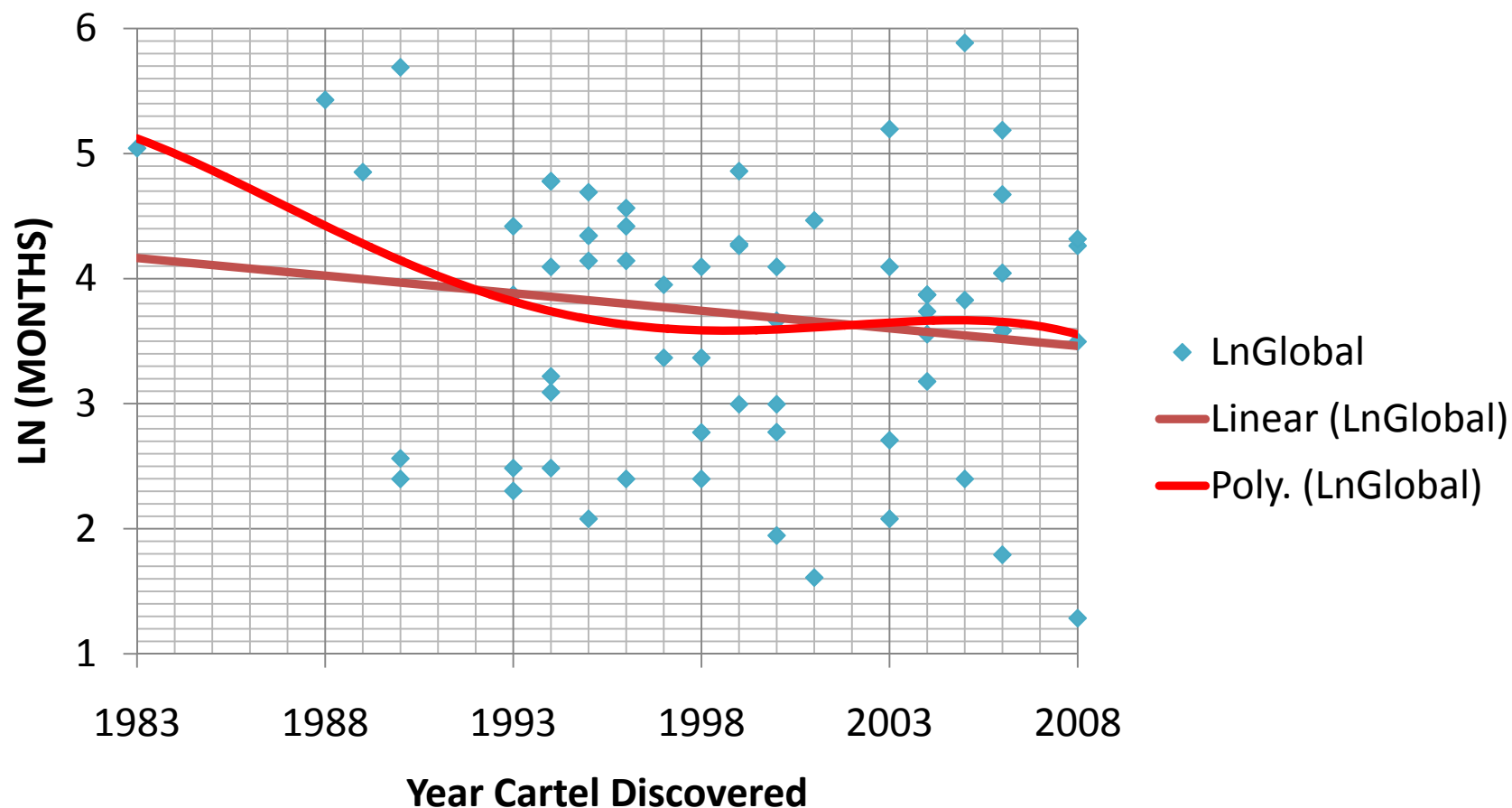
# Duration of Western European Cartels Is Declining



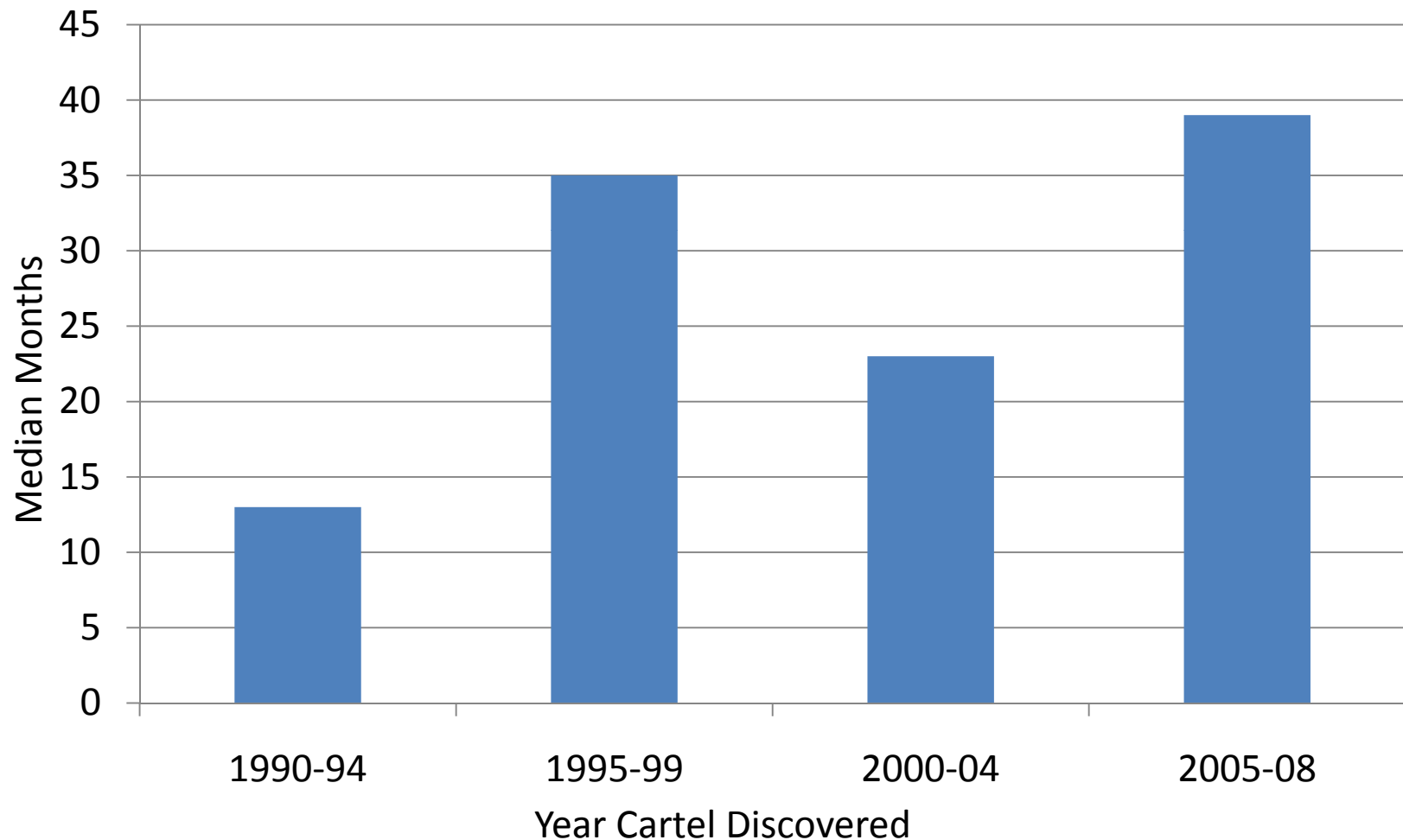
## Duration of North American Cartels Is Relatively Low



# Duration of North American Cartels Is Declining



## Duration of International Cartels in Asia Is Relatively Short



# Sources

- John M. Connor. *Private International Cartels: Full Data*. [The PICs spreadsheet, first created about 1998, is continuously updated. As of December 2008, the combined “Full Data” spreadsheet was a file of 6.4MB and consisted of 4700 observations of 512 actual and suspected cartels and 4200 cartelists (companies and individual participants) with 1.1 million cells of data. There are also 13 back-up spreadsheets.]
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# **CARTELS & ANTITRUST PORTRAYED: Corporate Penalties**

**PRIVATE INTERNATIONAL CARTELS,  
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January 23, 2009



# Introduction

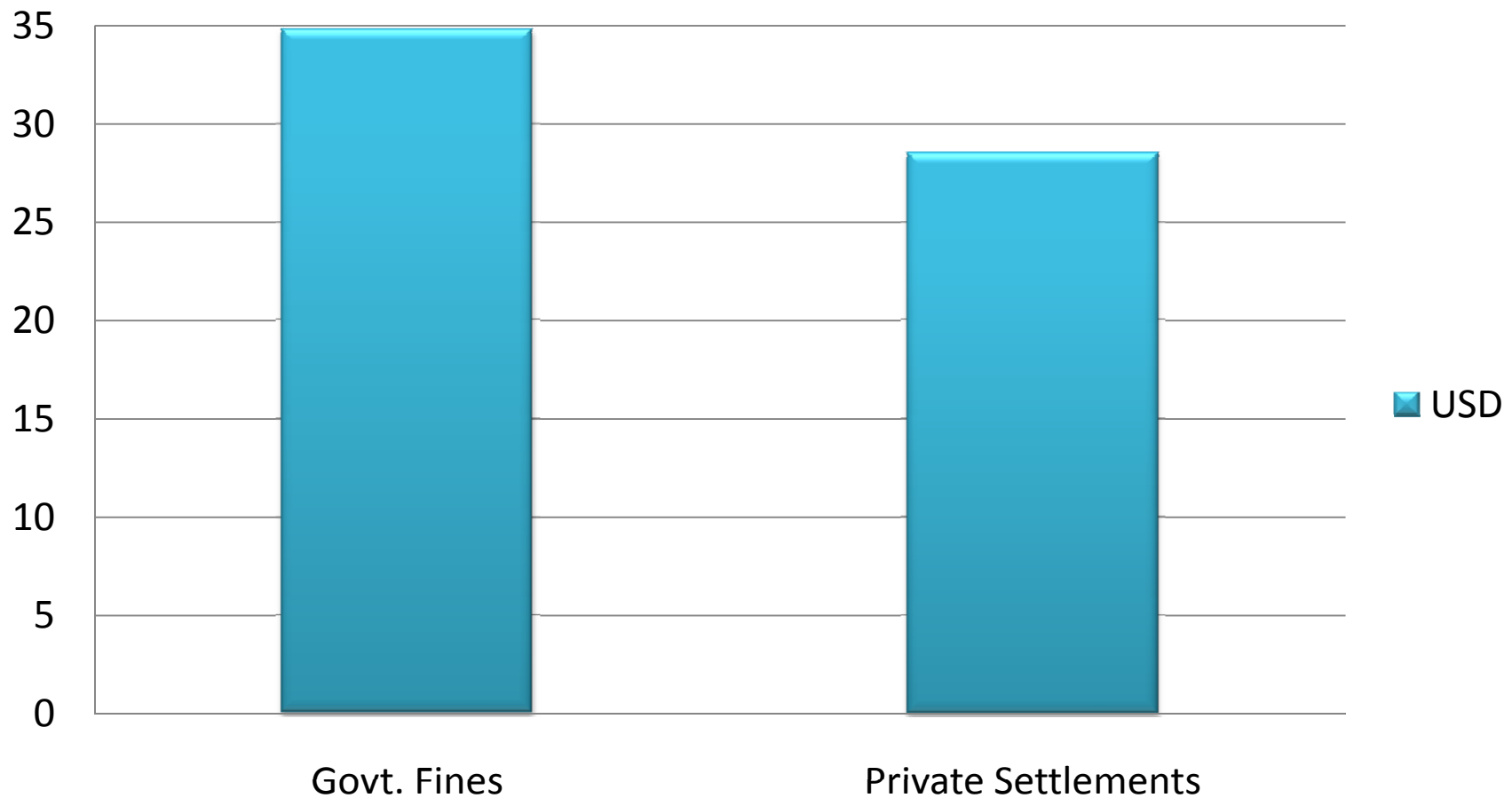
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# Corporate Penalties

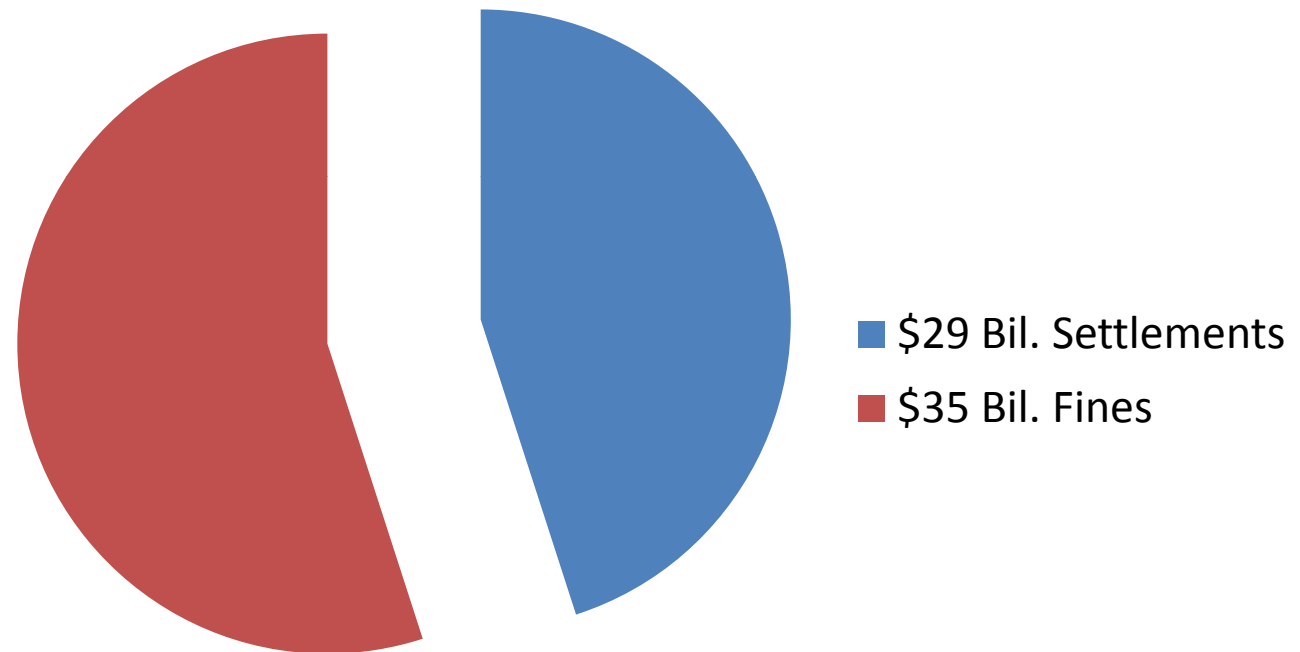
- Cartel fines and private settlements are about equal and exceed \$63 billion combined.
- The historical leader in fines – the DOJ – was overtaken by other authorities after 1999.
- EC fines exceeded the DOJ's after 1999
- Over 4300 companies investigated
- Over 1550 companies penalized, most paid by European firms

# Penalties on International Cartels

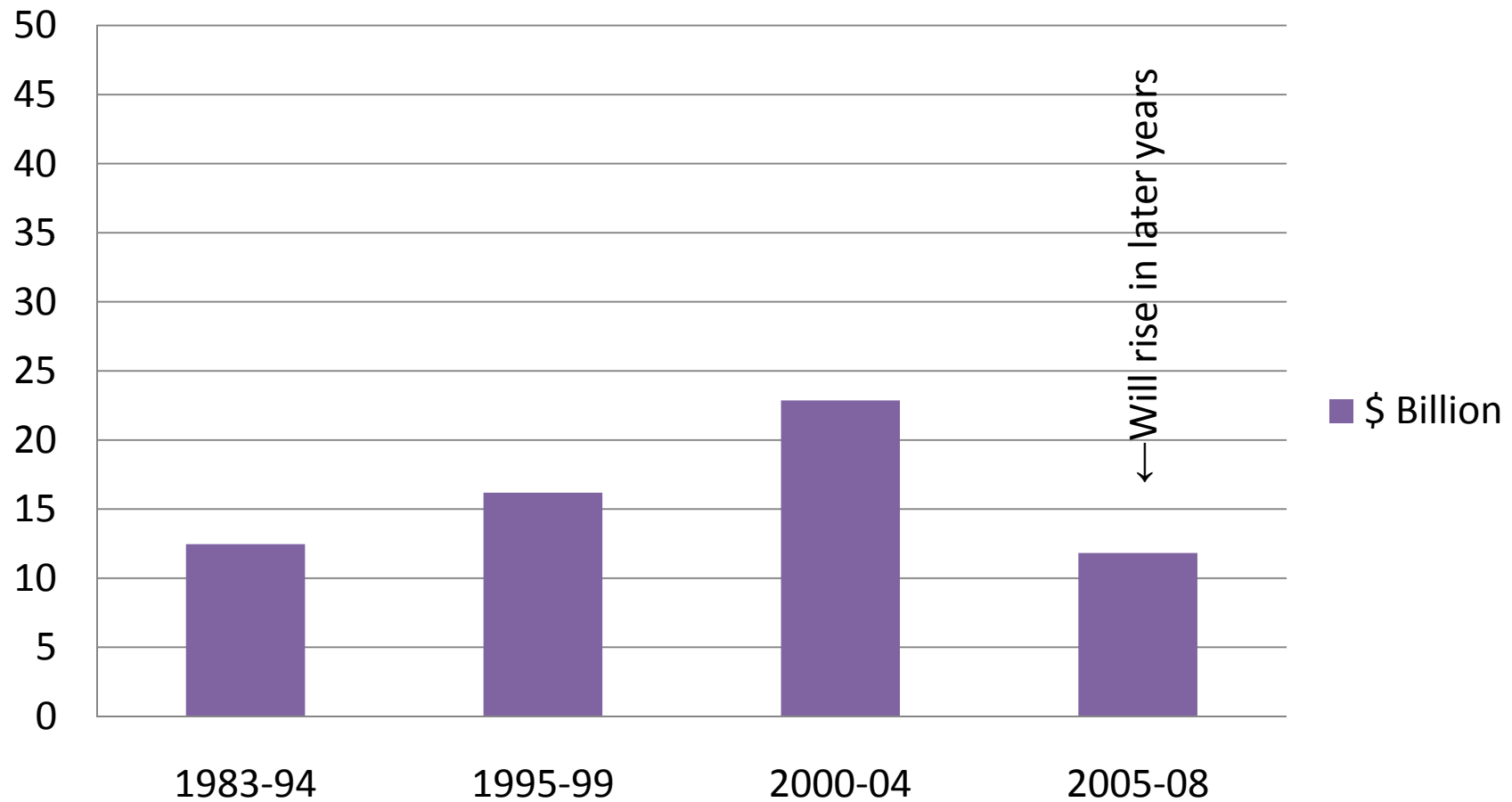
Total \$ 63.3 Billion (1990-2008)



# Penalties Are Split Between **Fines** and Private **Settlements**

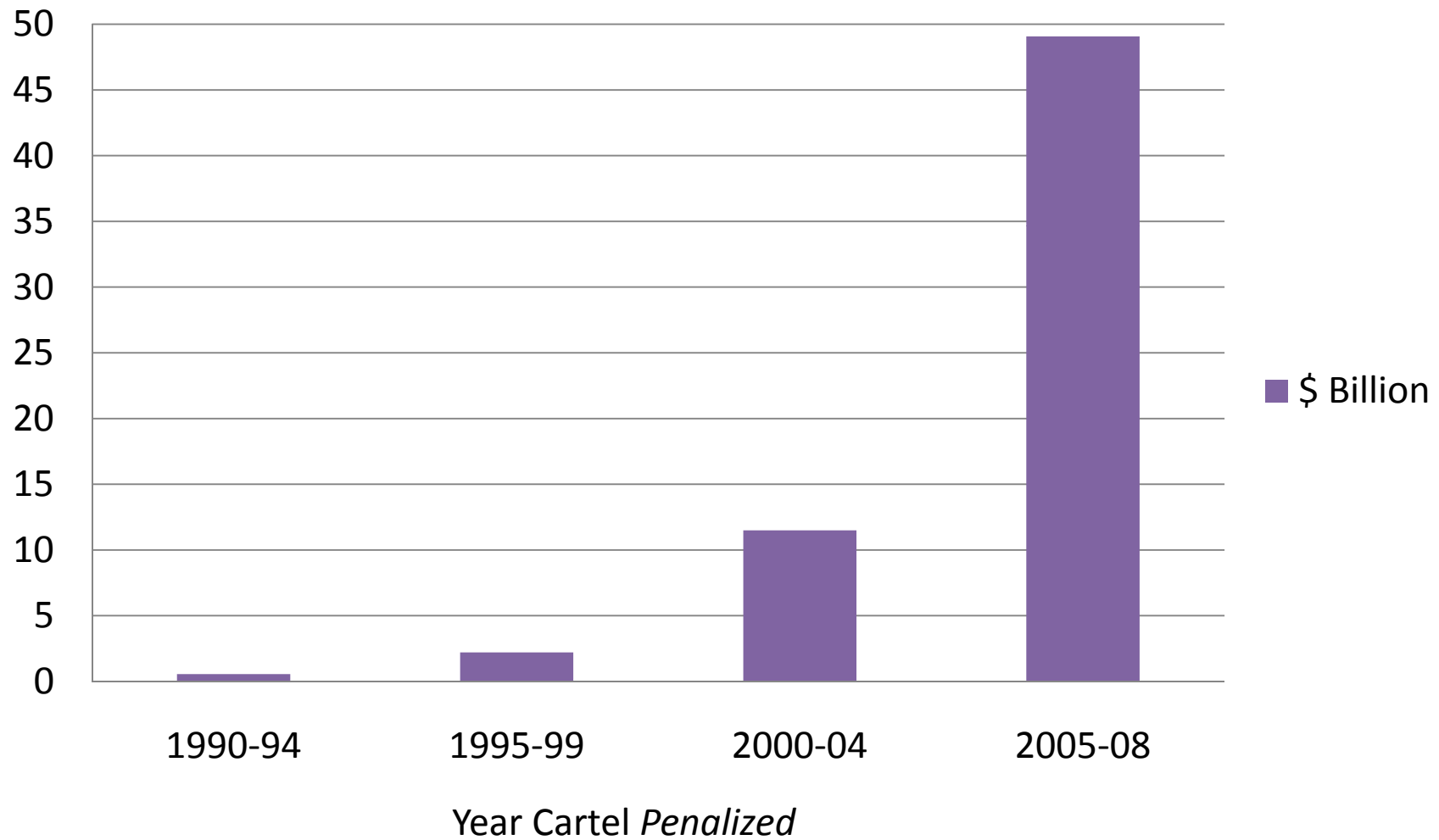


# Penalties, by Year of Discovery, Are Surging

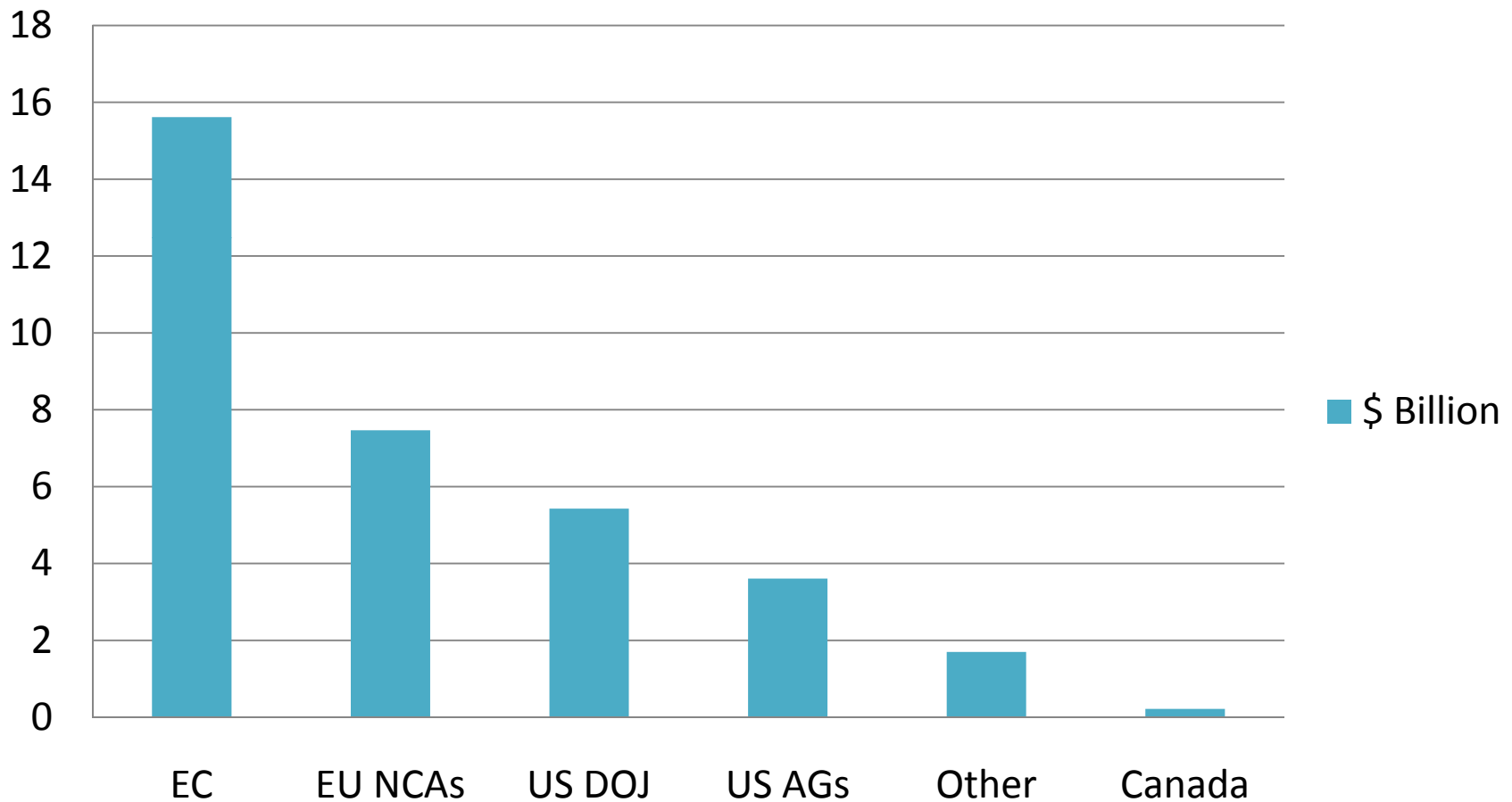


Year Cartel *Discovered* (Most 2005-08 cases undecided as of 12/2008).

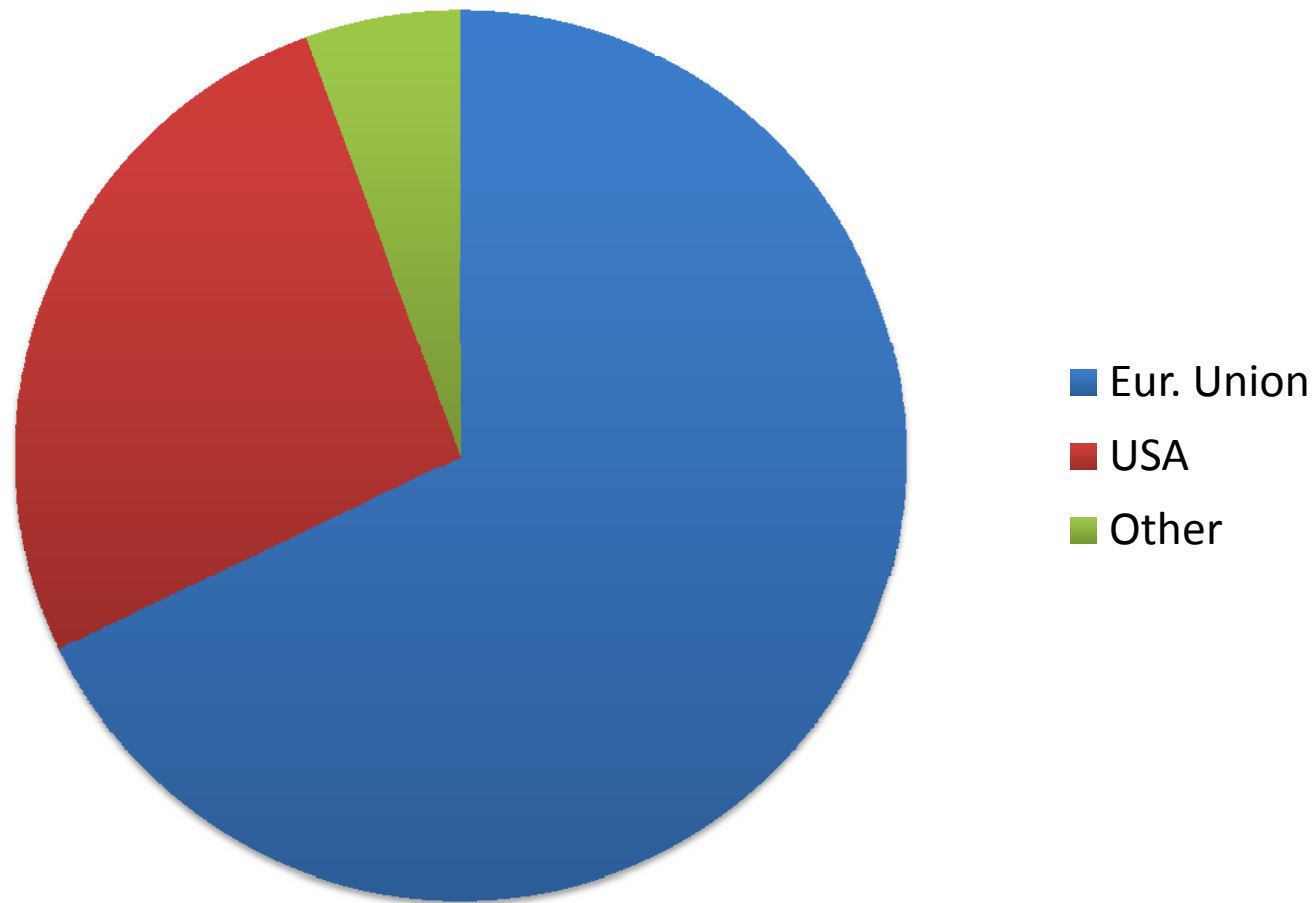
# Penalties, by Year Penalty Imposed, Are Surging



# Government Fines Imposed on International Cartels Total \$ 35 Billion

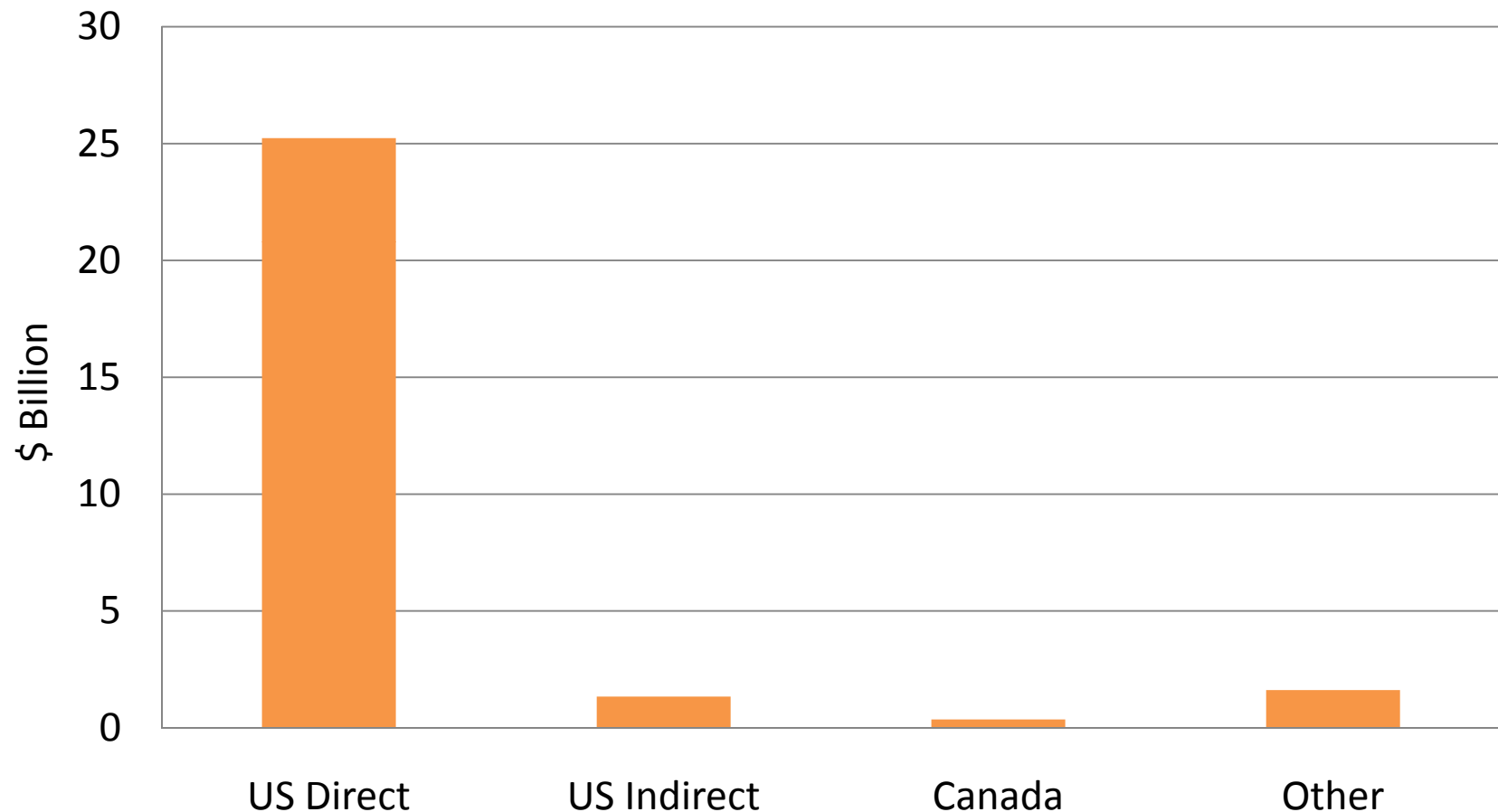


# Most Fines Are Imposed by EU and US Authorities

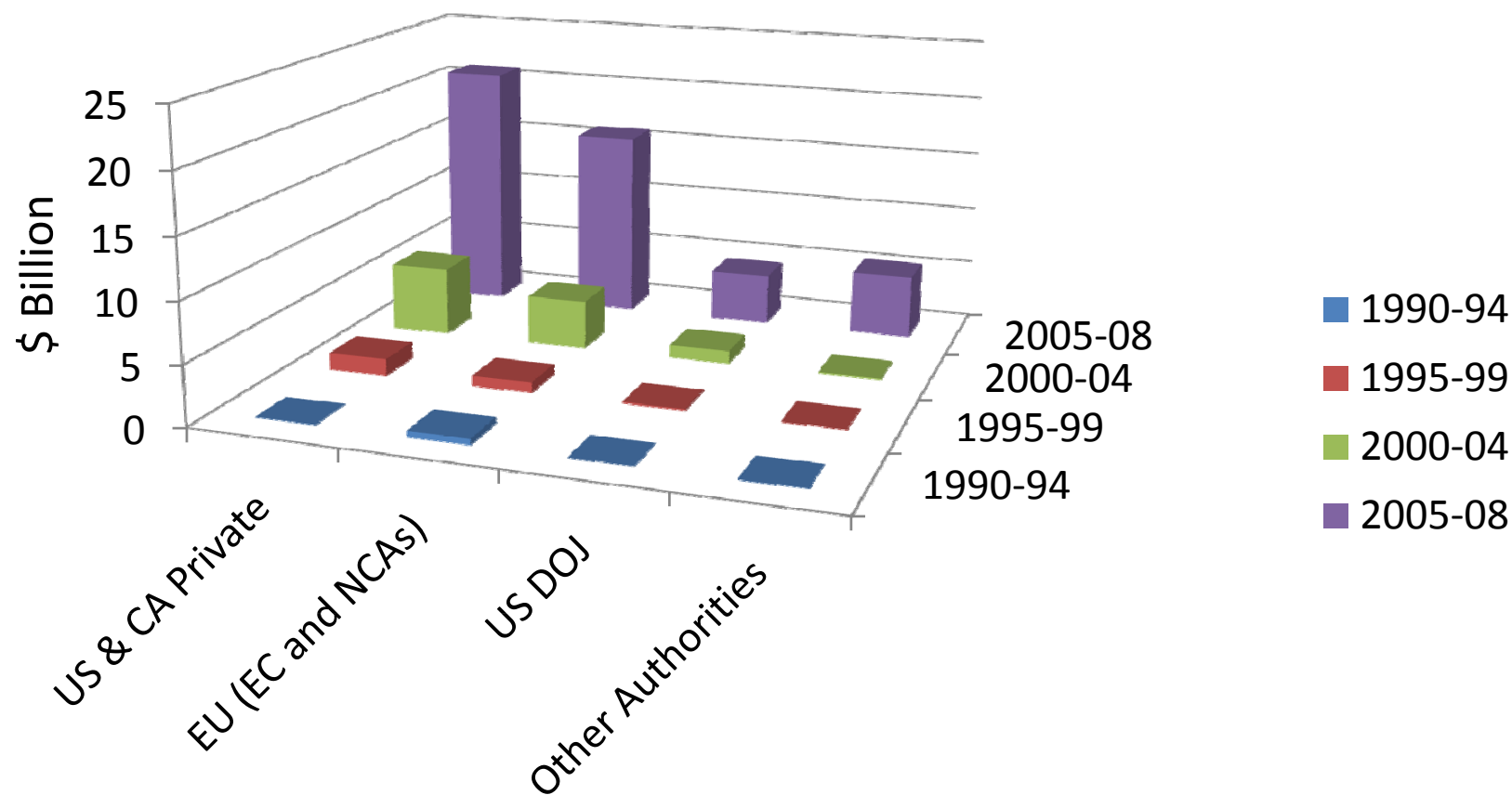




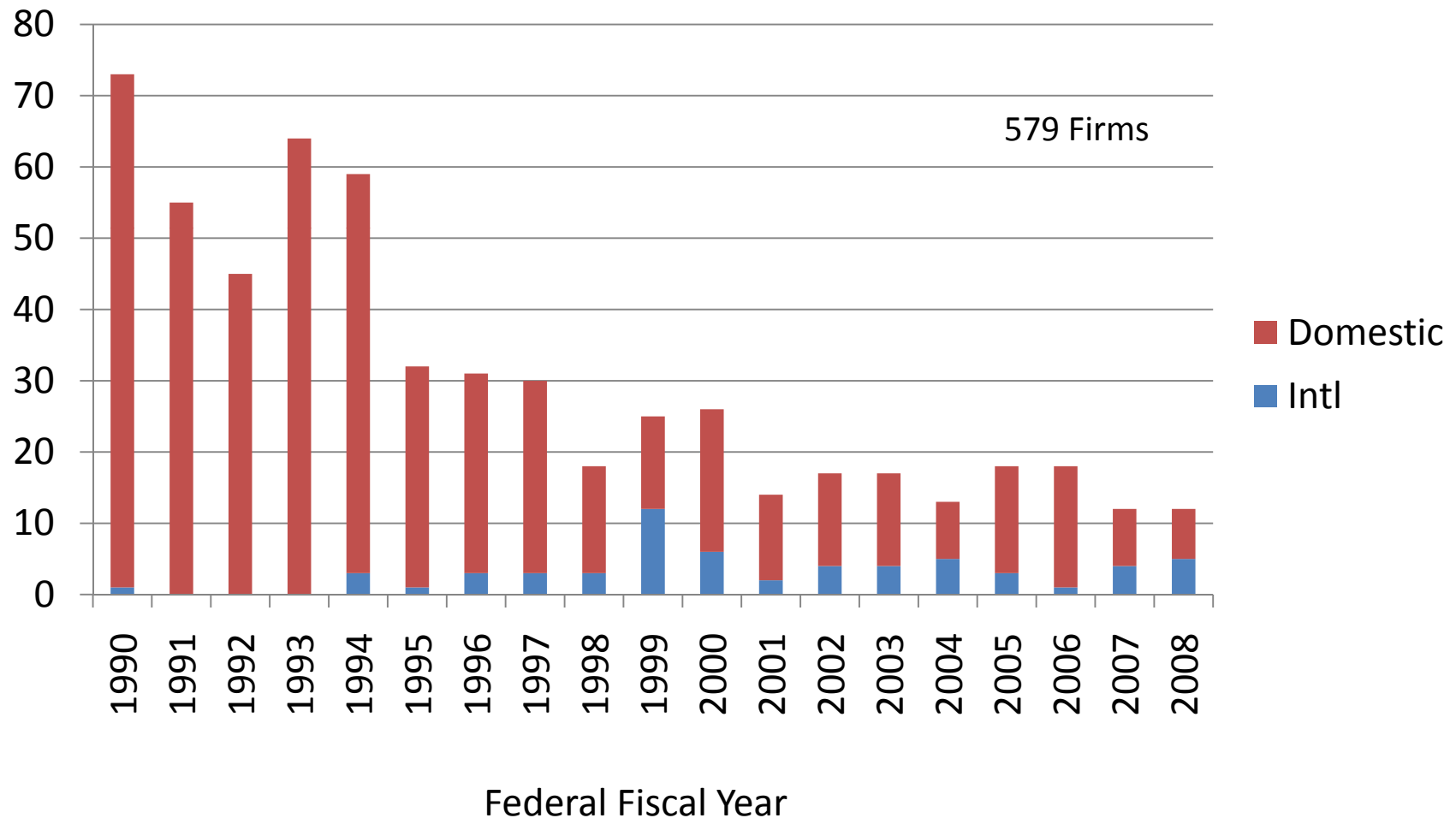
## Private Settlements Total \$29 Billion, Most with Direct Buyers in the US



# Penalties Are Rising in All Jurisdictions

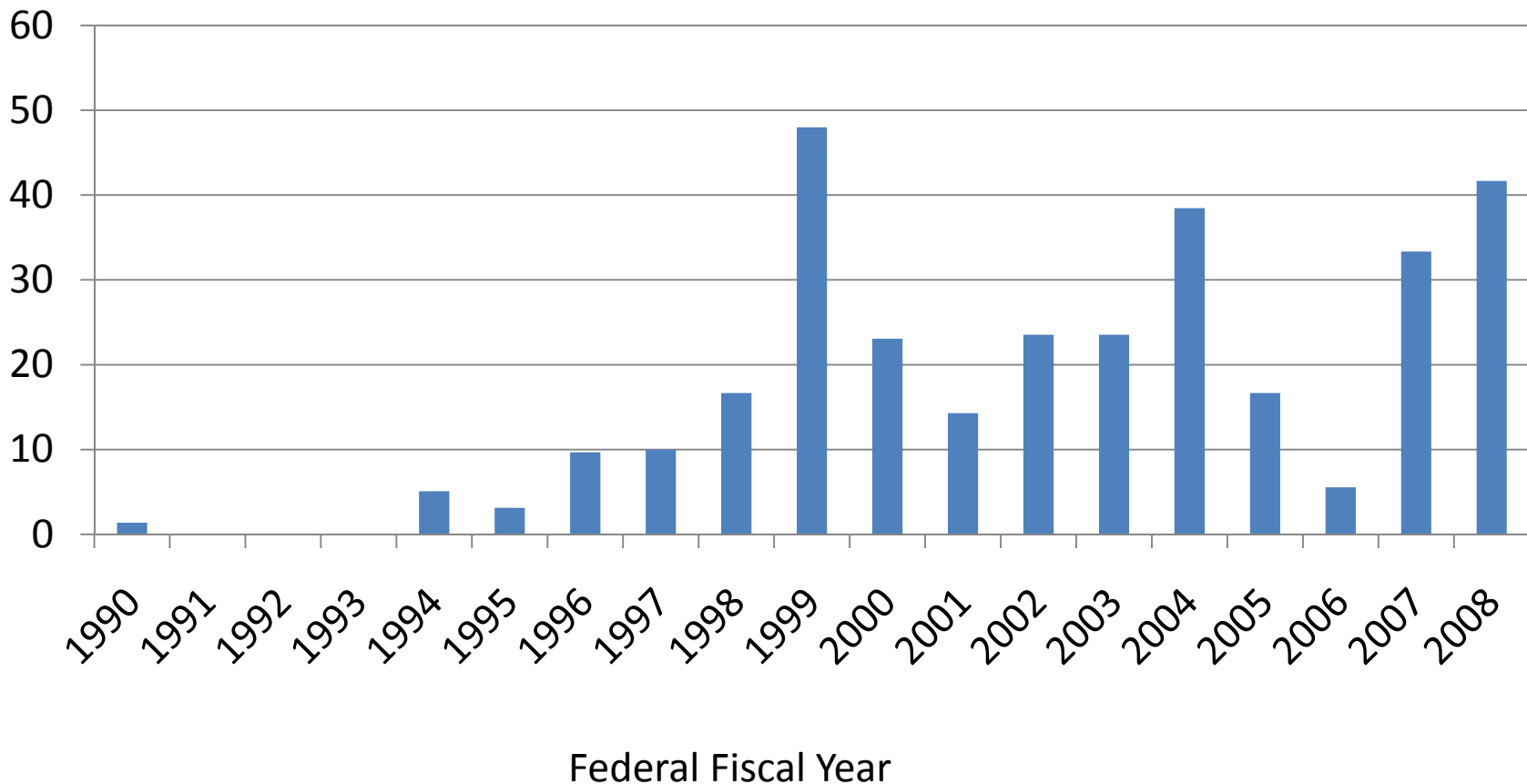


# Number of Corporations Fined, U.S. Dept. of Justice, 1990-2008



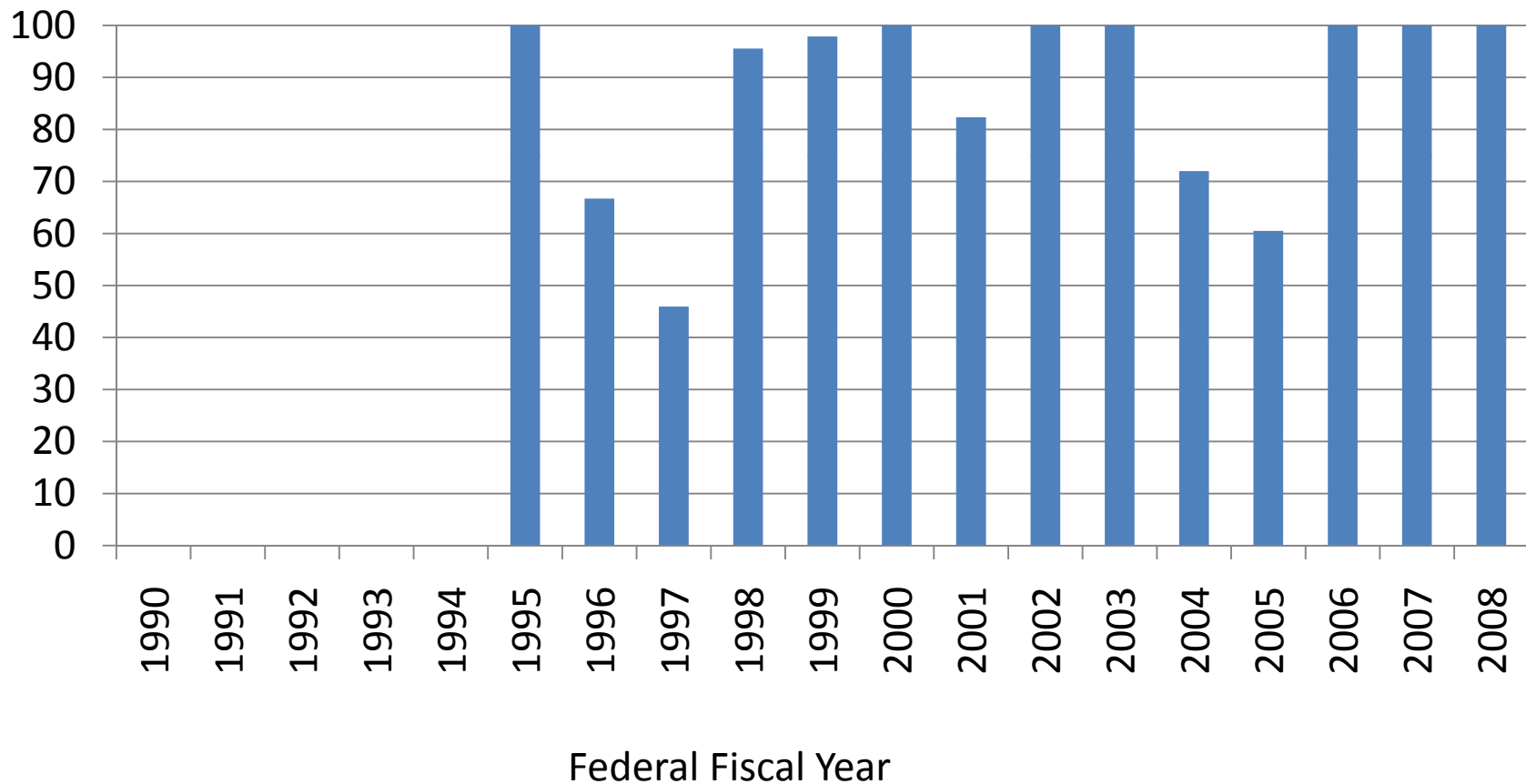
# Proportion of Fined Cartelists by DOJ that Are **Non-U.S.**

**% Non-US**

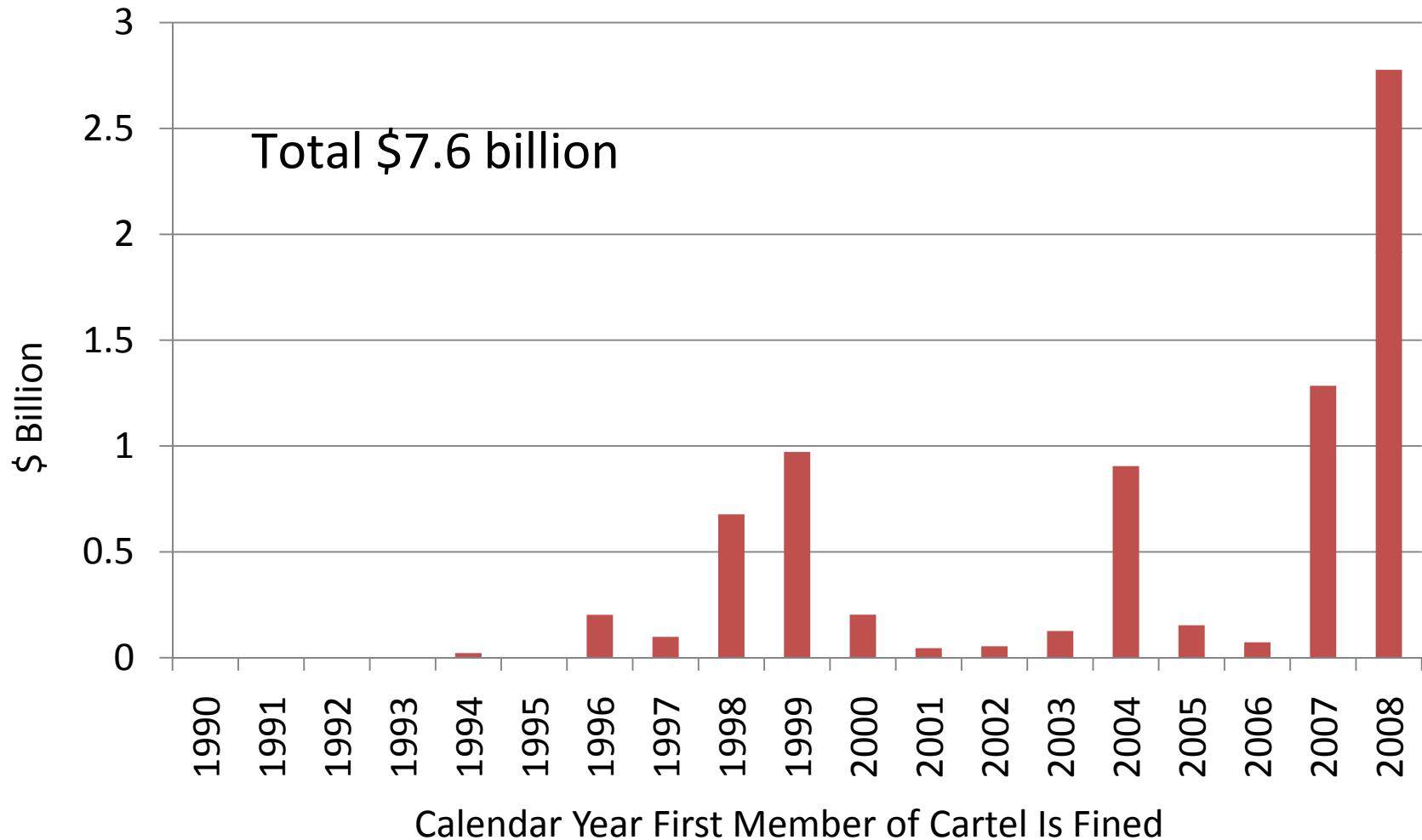


# Proportion of Large DOJ Corporate Fines that Are **Non-U.S.**

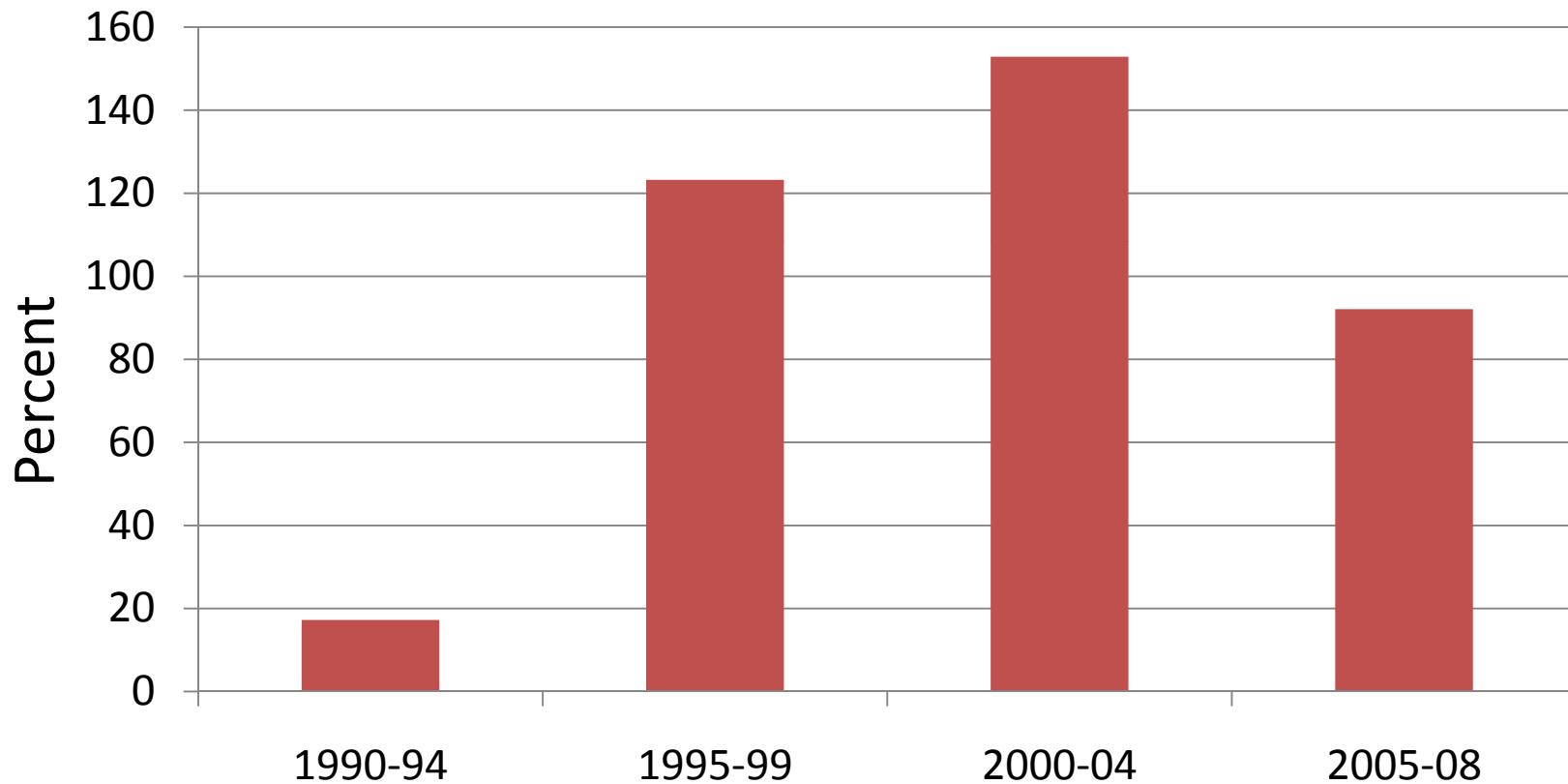
**% Non-US among \$10-million-plus fines**



# International Cartel Fines Collected, U.S. Dept. of Justice, 1990-2008

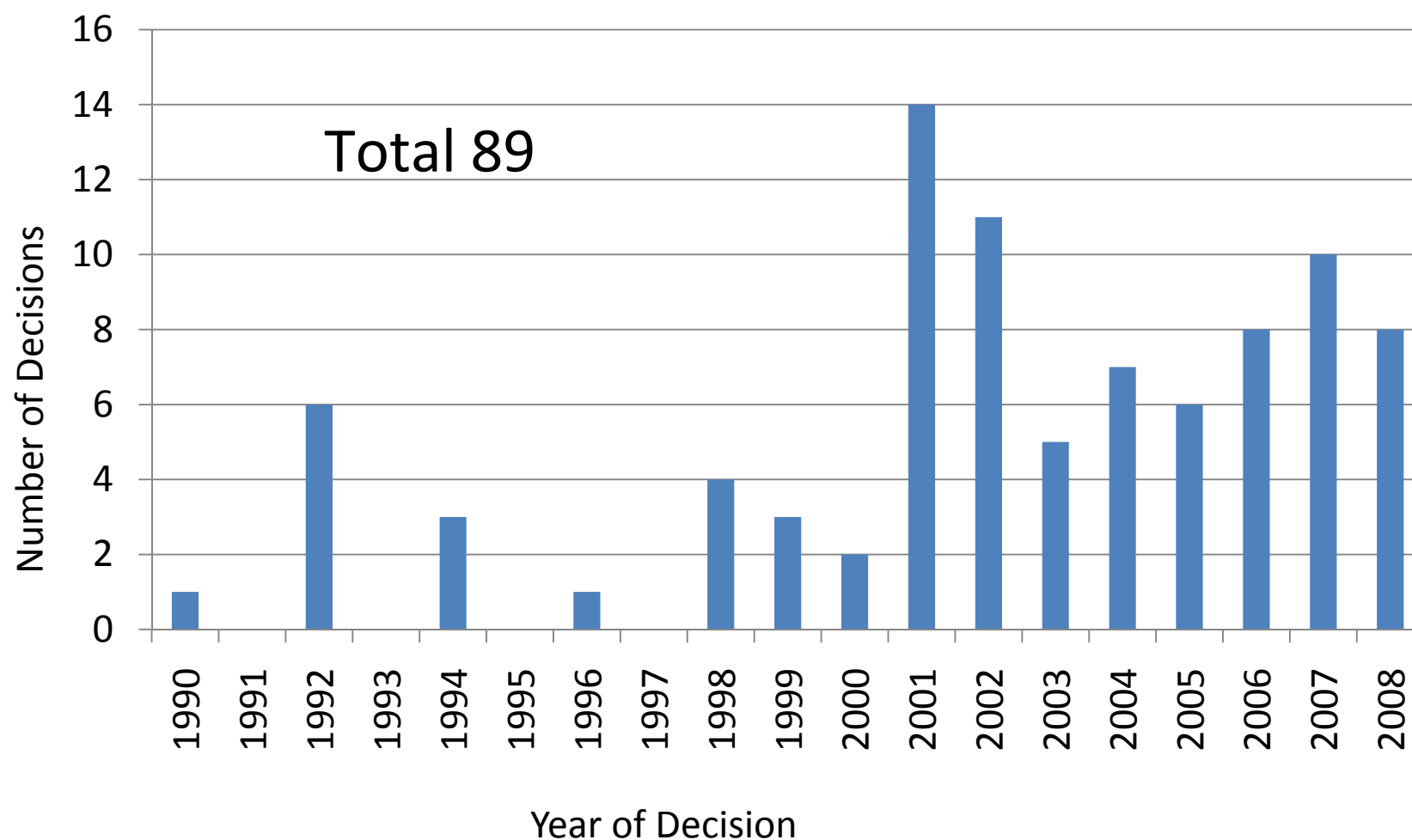


# International Cartel Fines/Total Collected, U.S. Dept. of Justice, 1990-2008



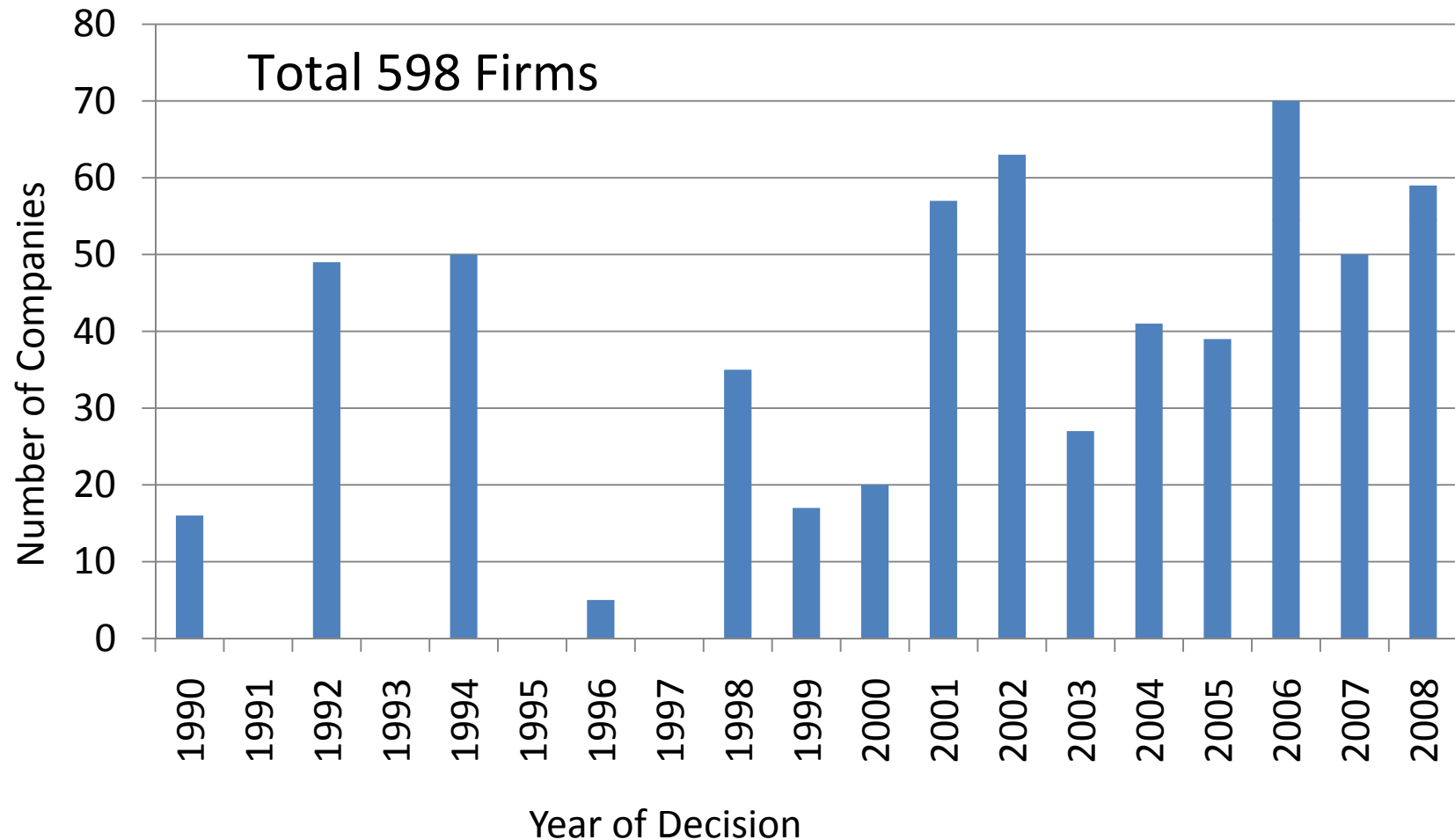
Fiscal years (DOJ) and calendar years (Intl.) do not match.

# Number of **Cartel Decisions with Fines**, European Commission, 1990-2008

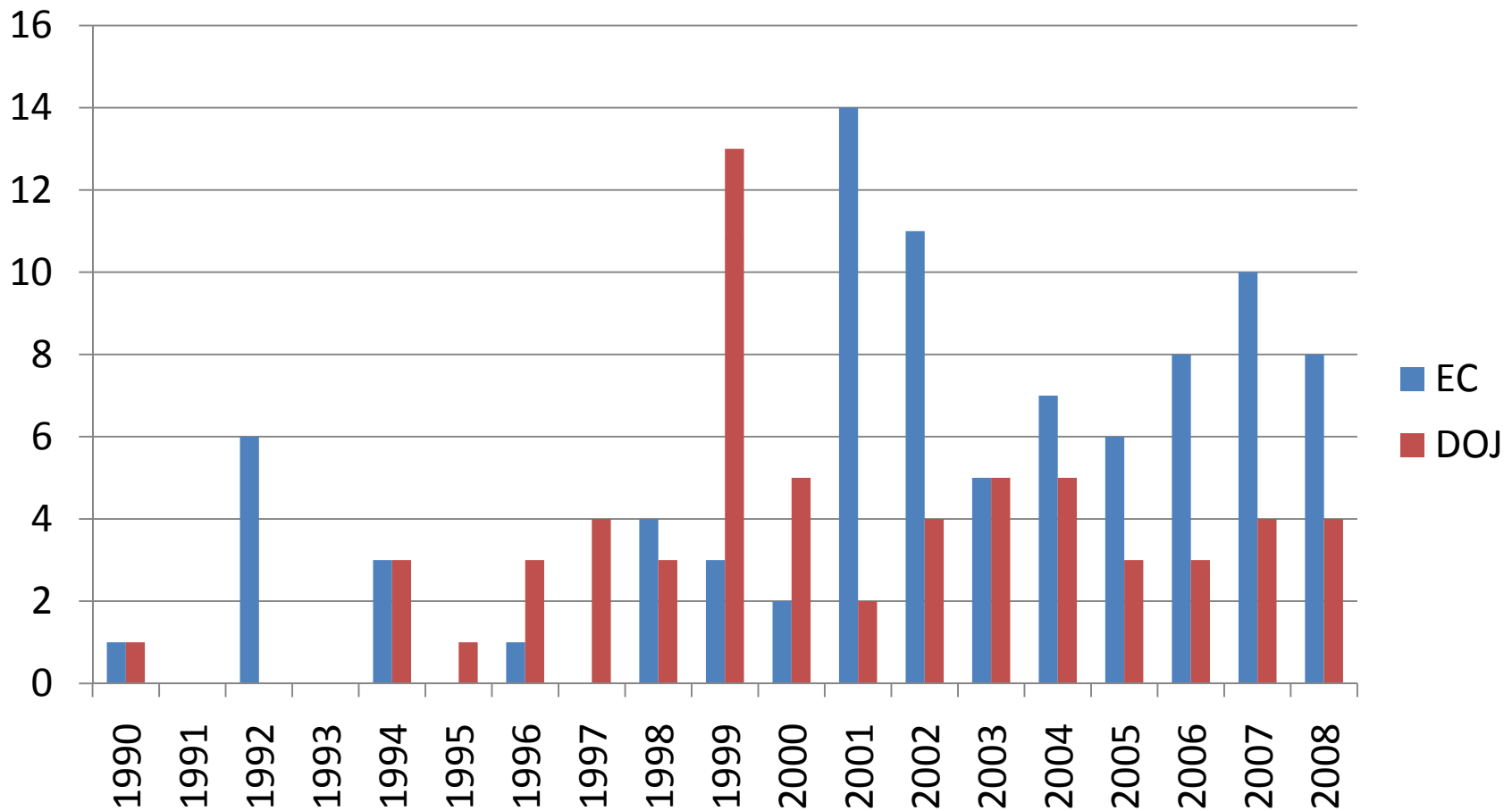




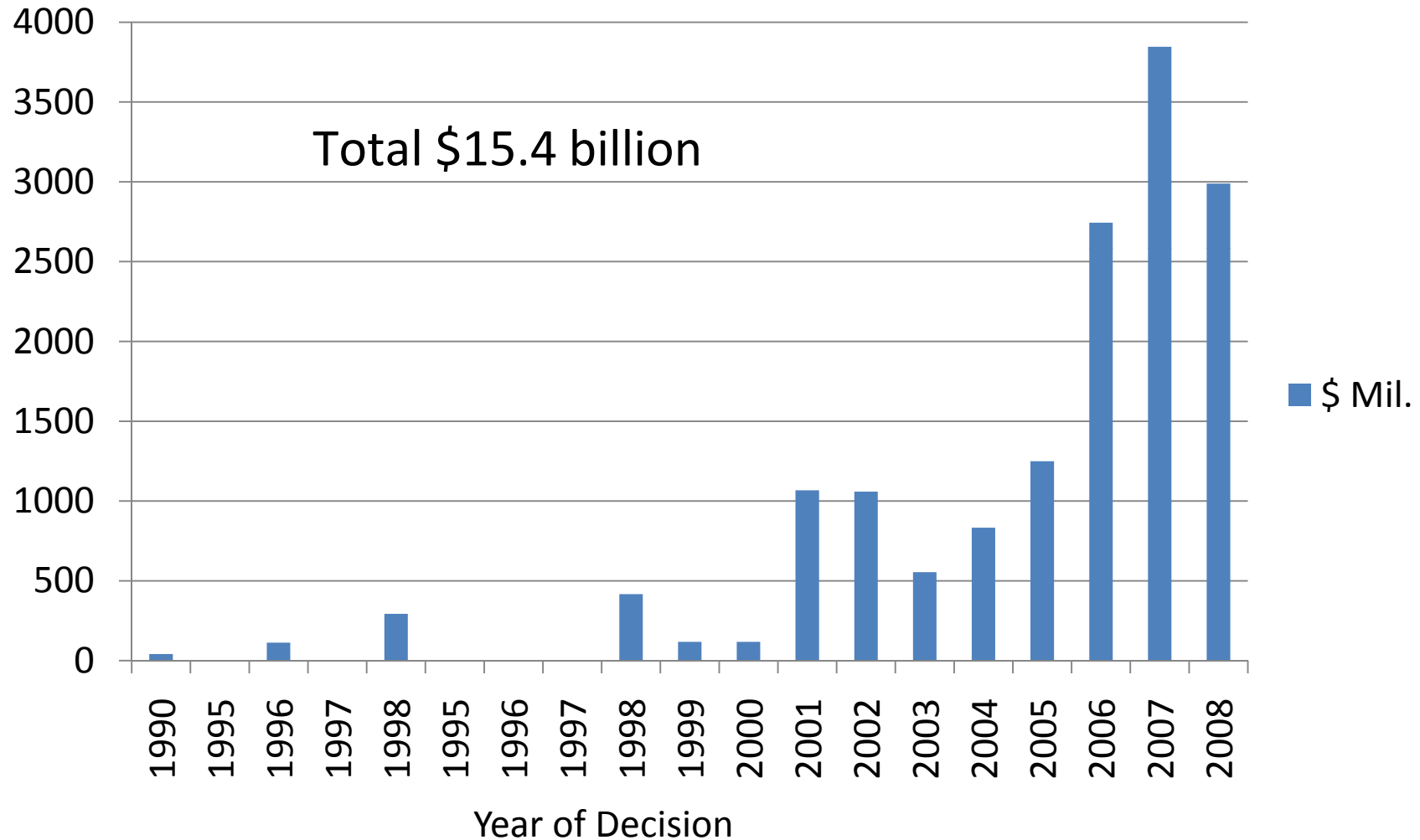
# Number of Companies in European Commission Decisions, 1990-2008



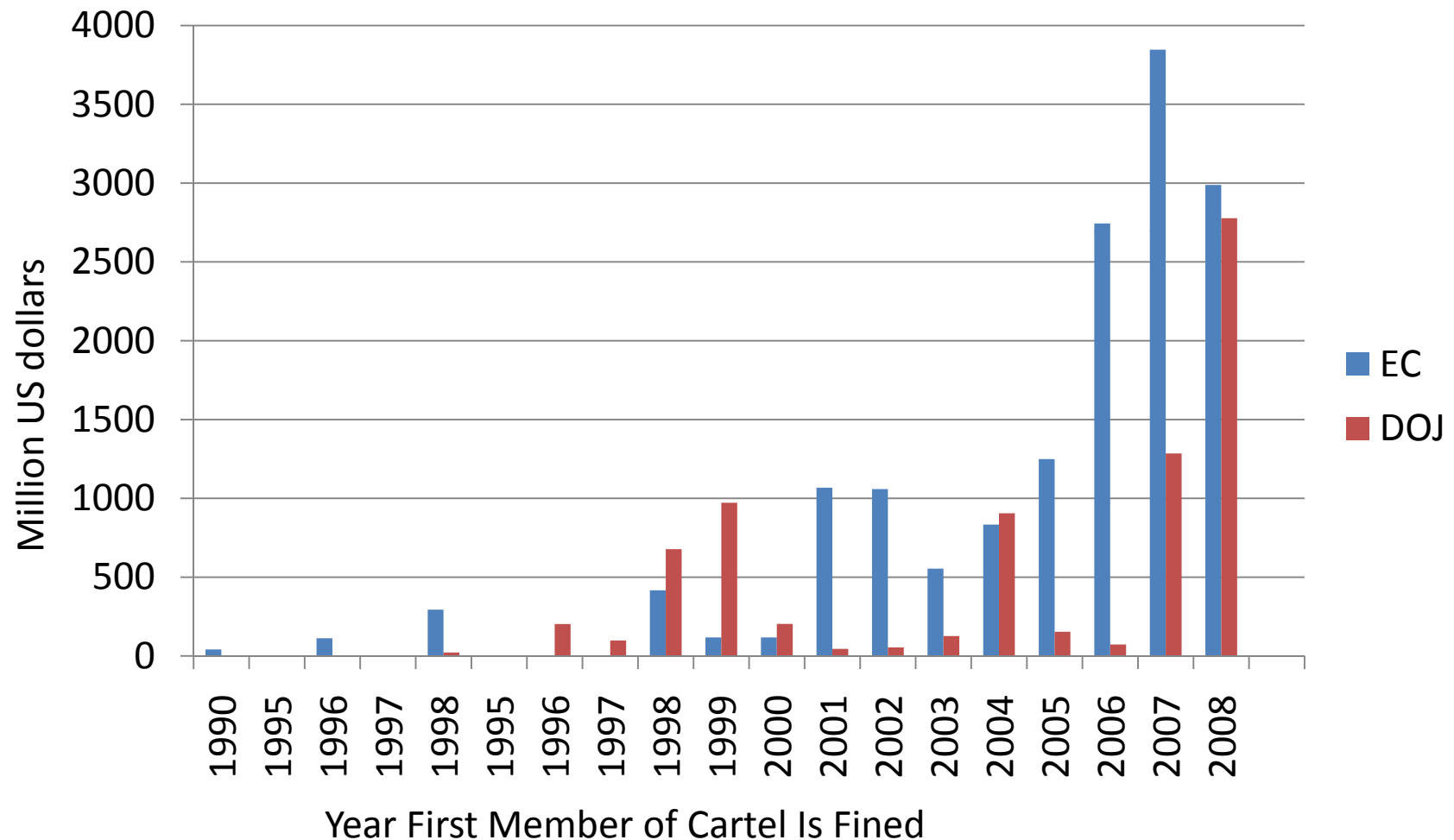
# Number of Adverse Decisions about Intl. Cartels, **EC** and **DOJ** Compared



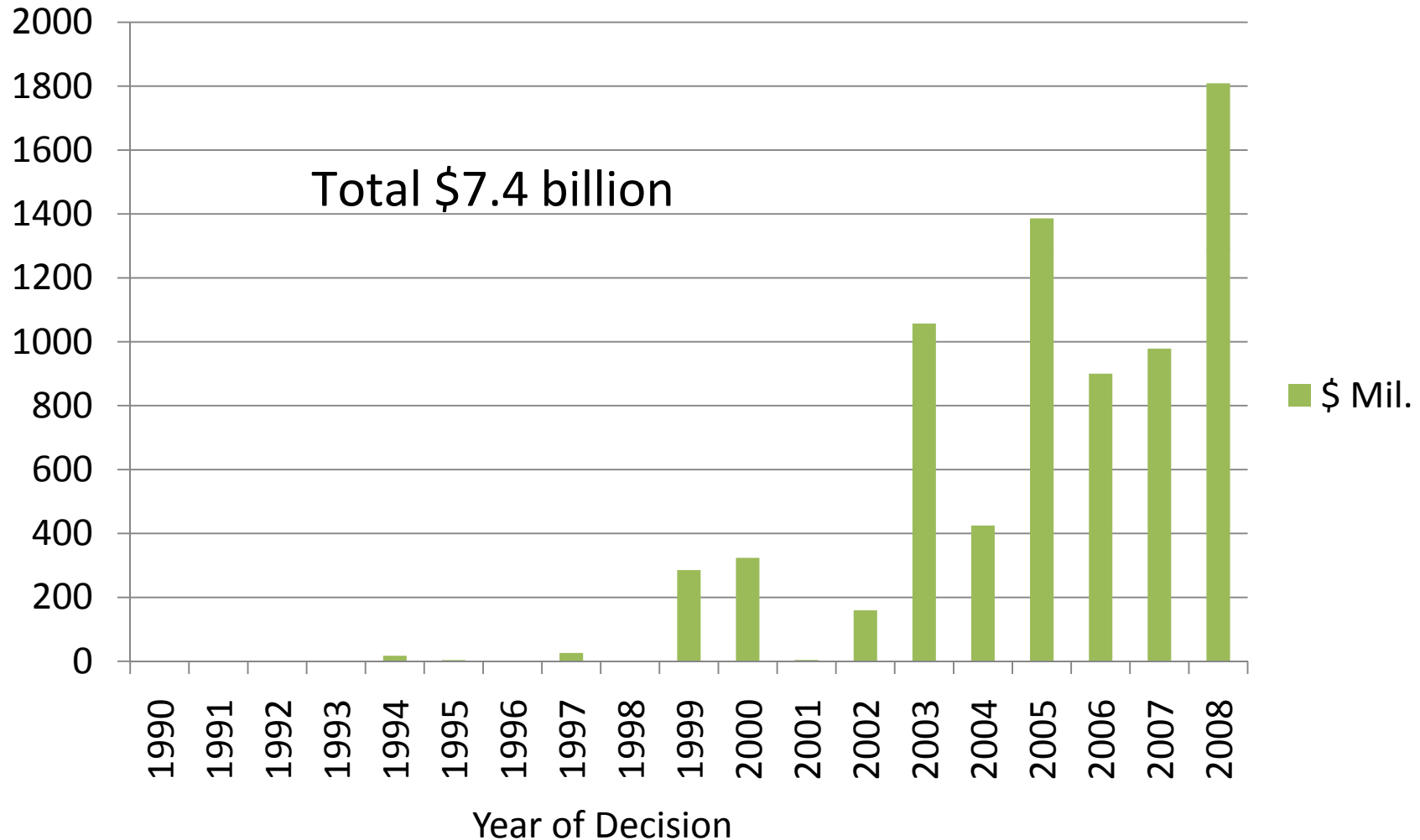
# Intl. Cartel **Fines** Collected, European Commission, 1990-2008



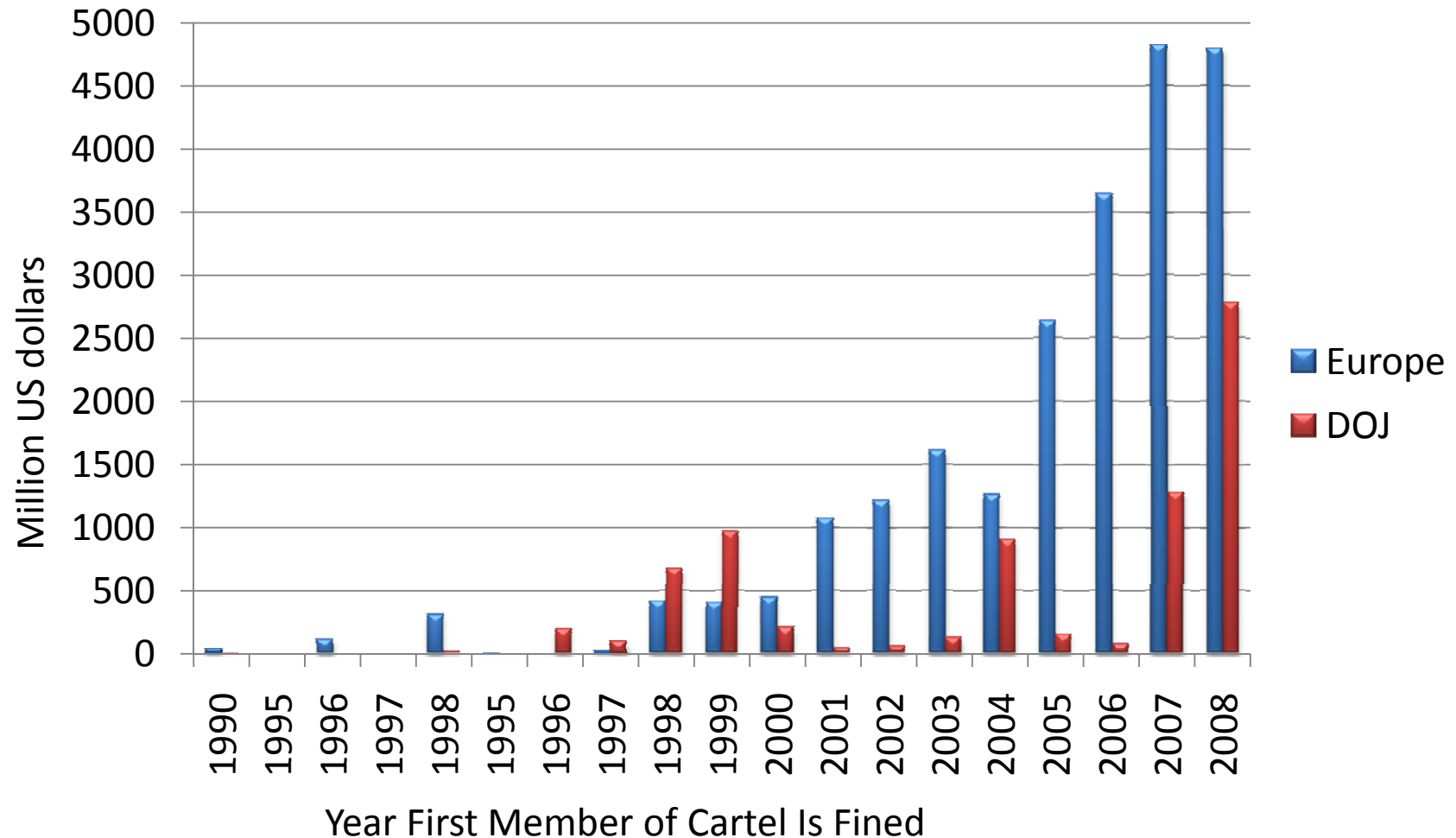
# International Cartel Fines Collected, EC and DOJ Compared, 1990-2008



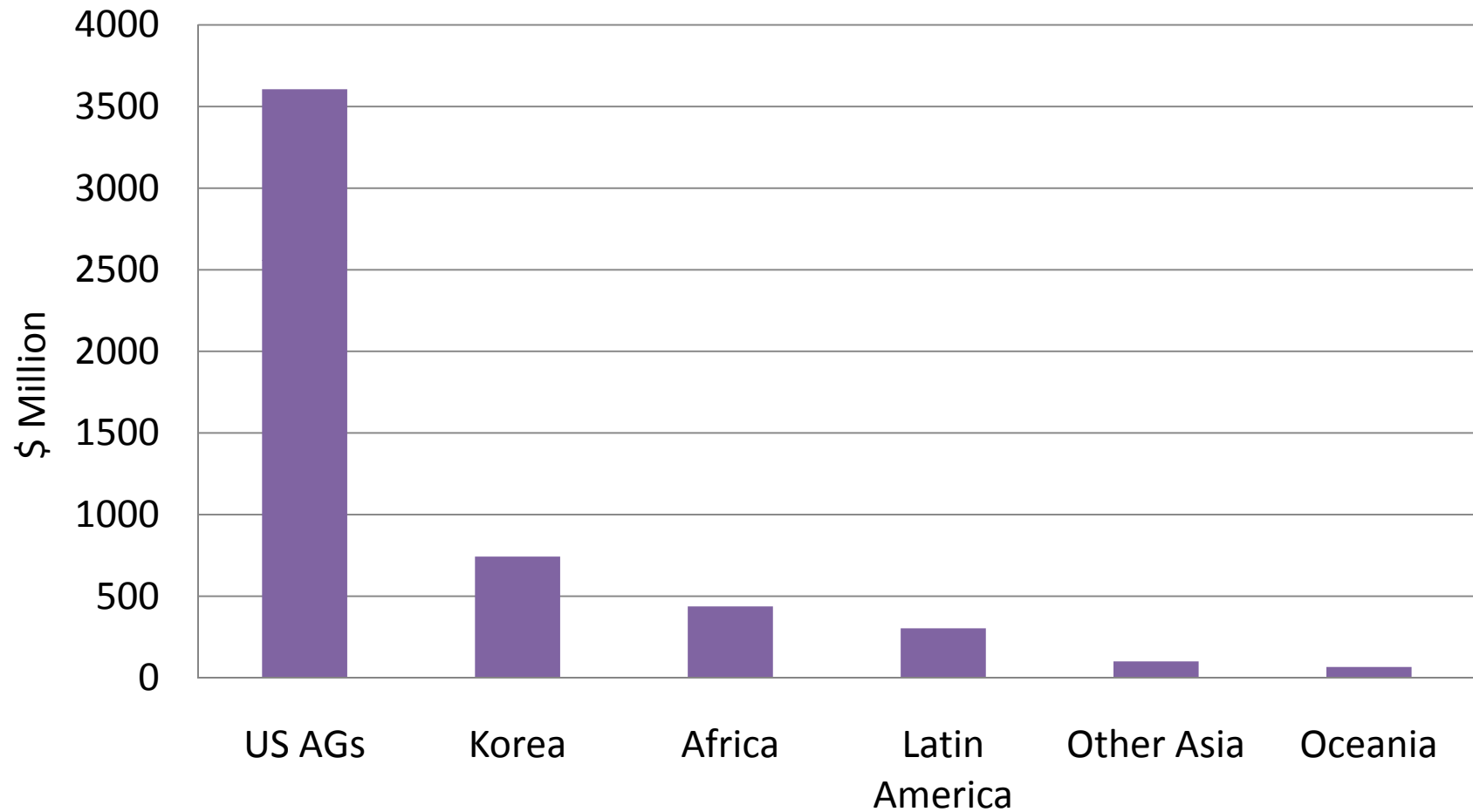
# Intl. Cartel Fines Collected by **NCA**s (EU's National Authorities) 1990-2008



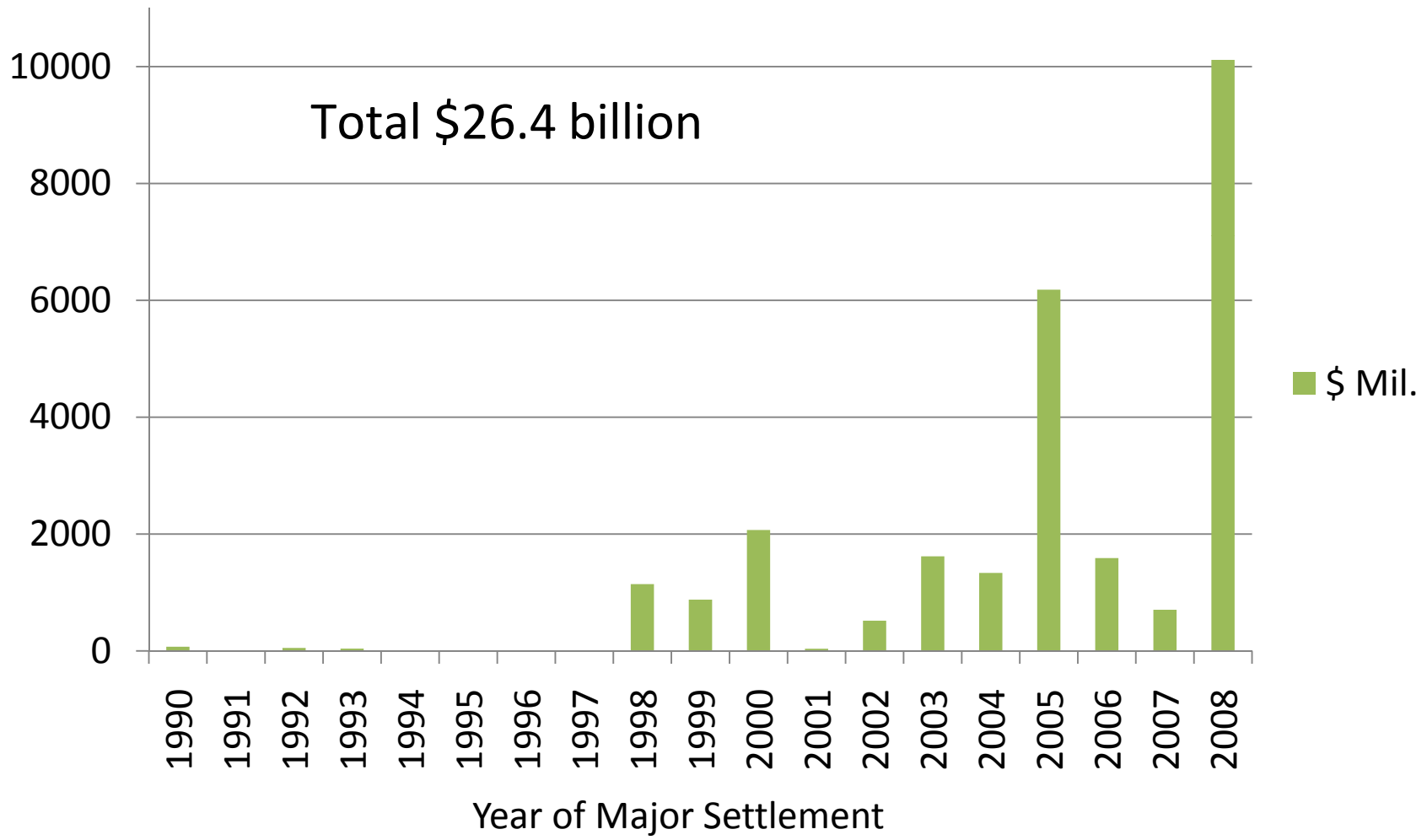
# All EU Intl. Cartel Fines Surpassed the DOJ's in Every Year after 1999



# Other Government Fines on International Cartels Exceed \$5 Billion

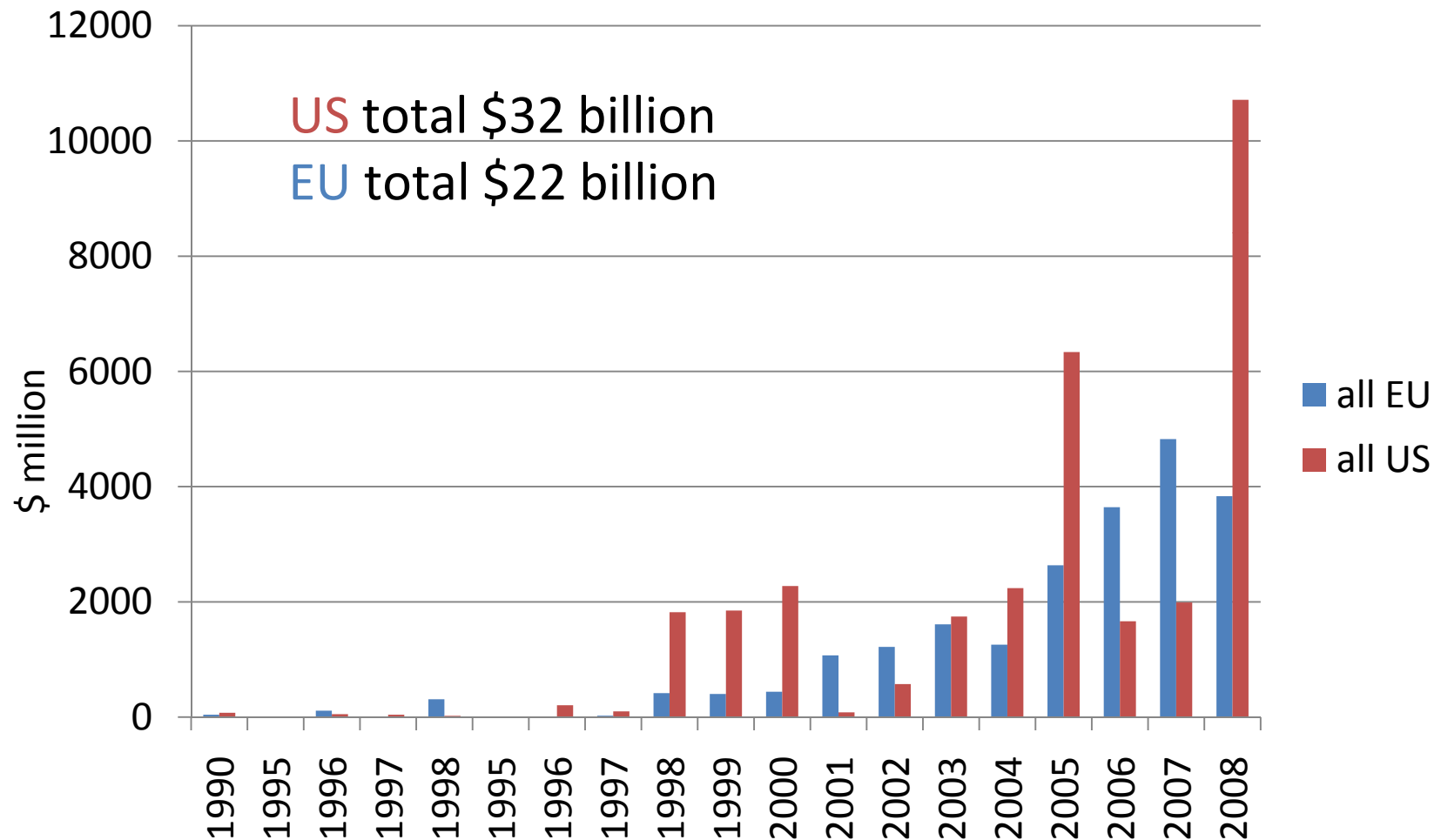


# International Cartel Settlements in the US

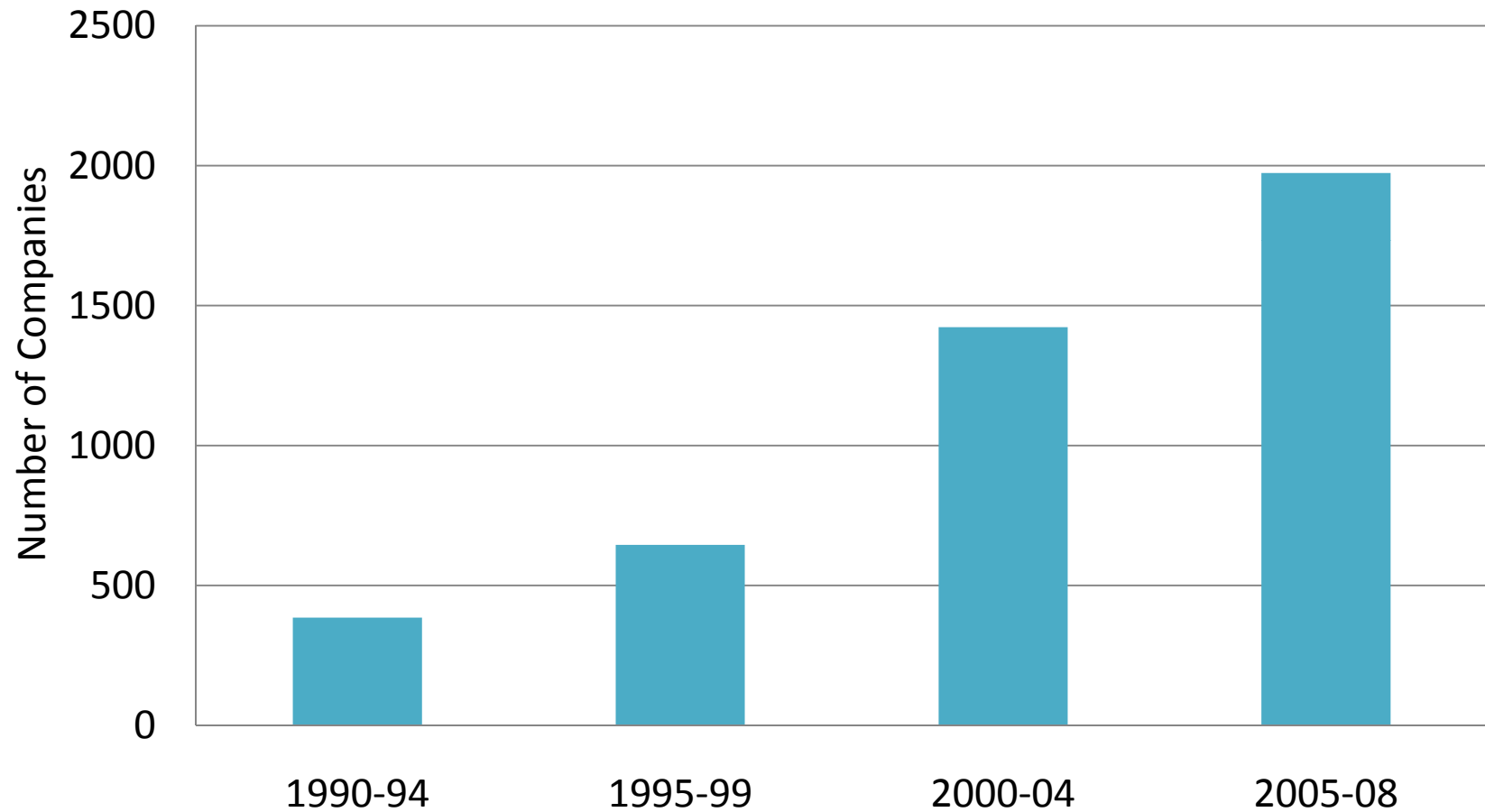




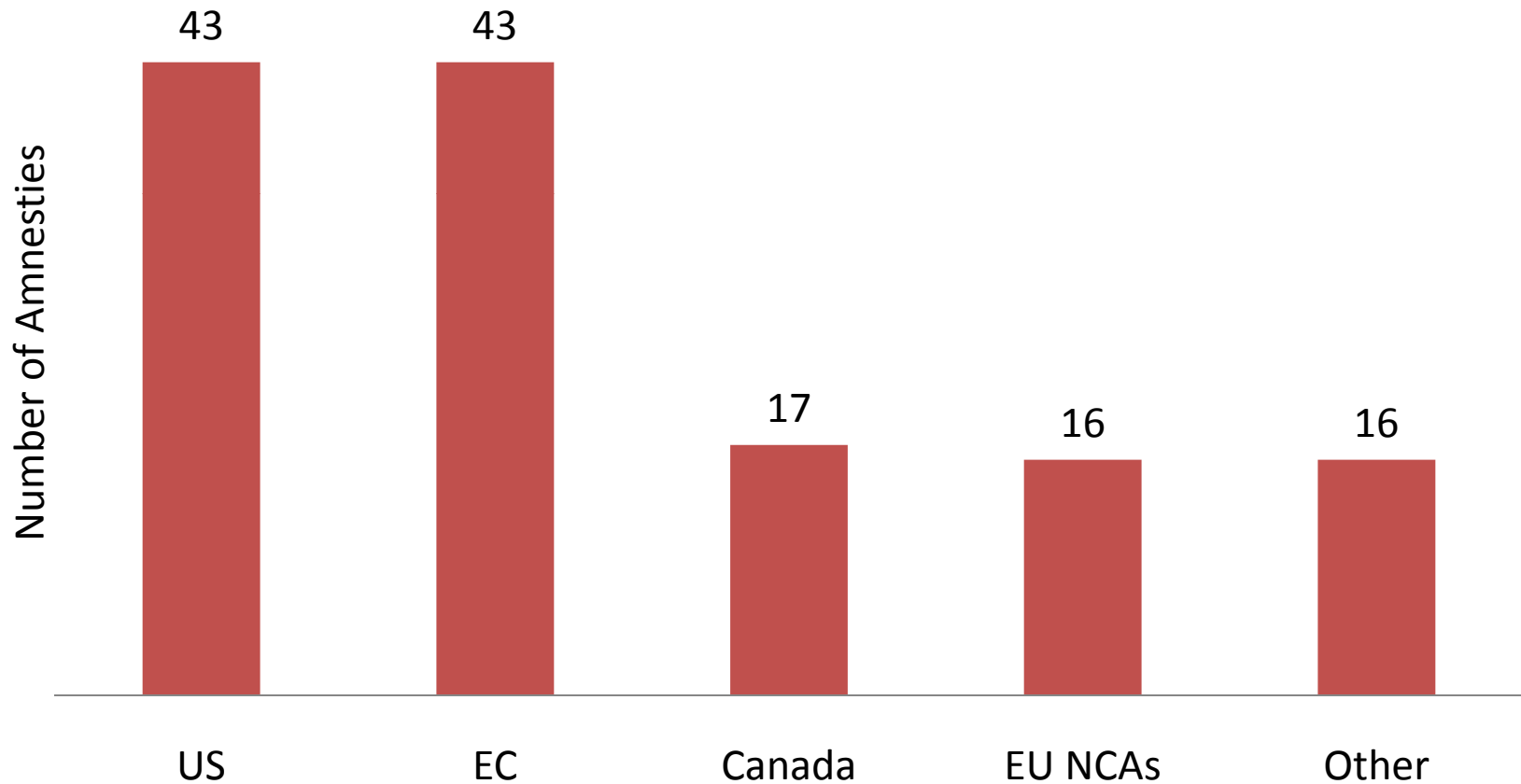
# In Total Cartel Penalties the **U.S.** is Ahead of the **EU** in Most Years



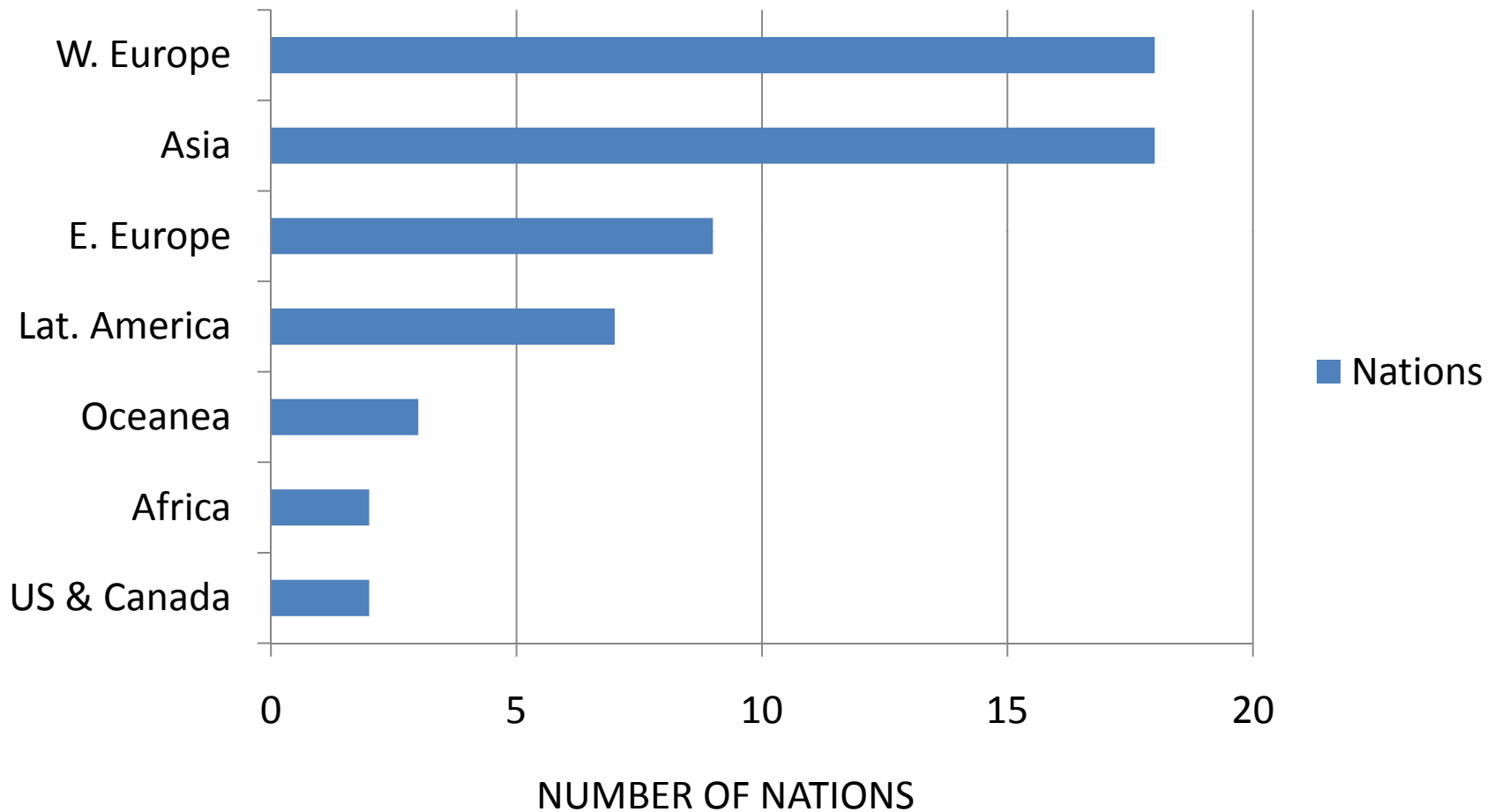
# Over 4300 **Companies** Investigated



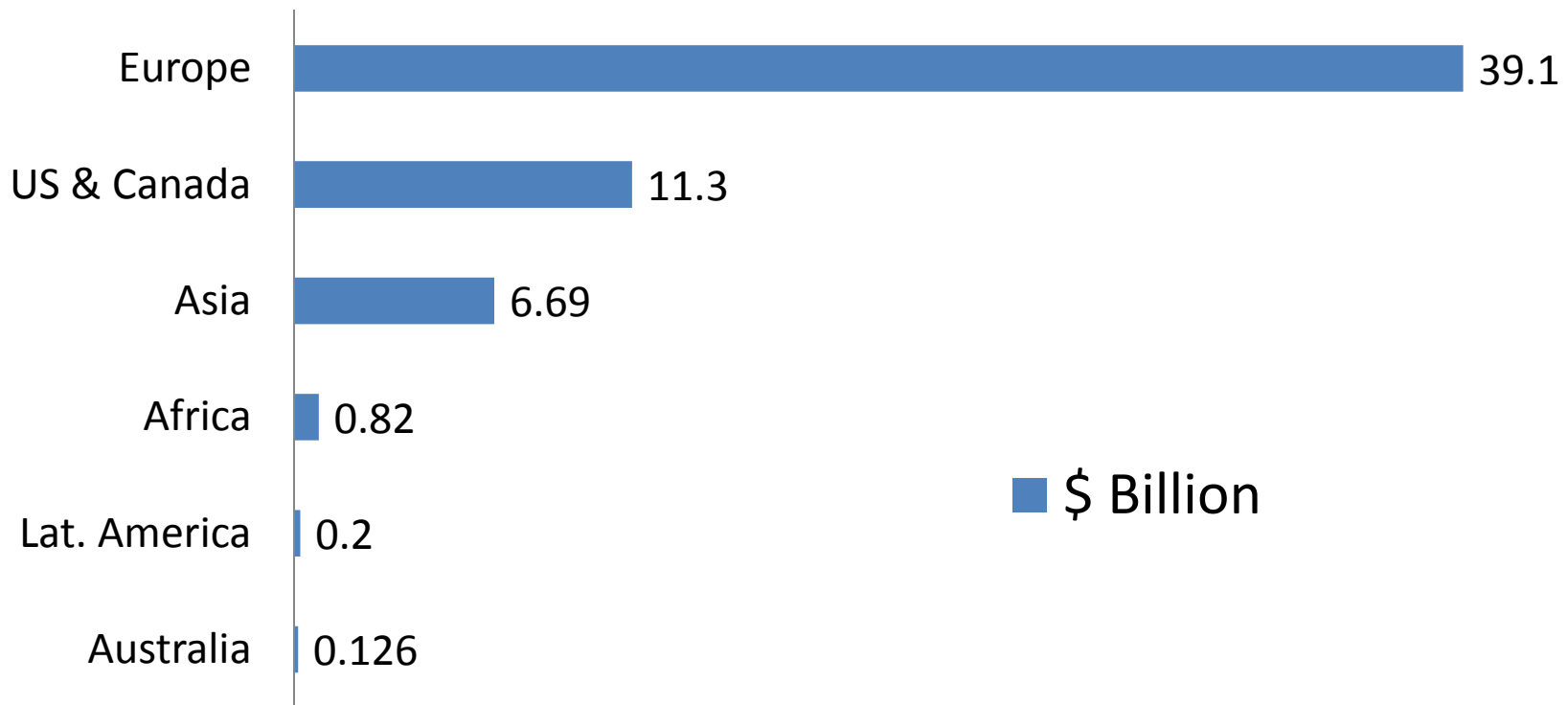
# At Least 135 **Corporate Amnesties** Granted for International Collusion



# Corporate Cartelists Are from 57 **Nations** All over the Globe

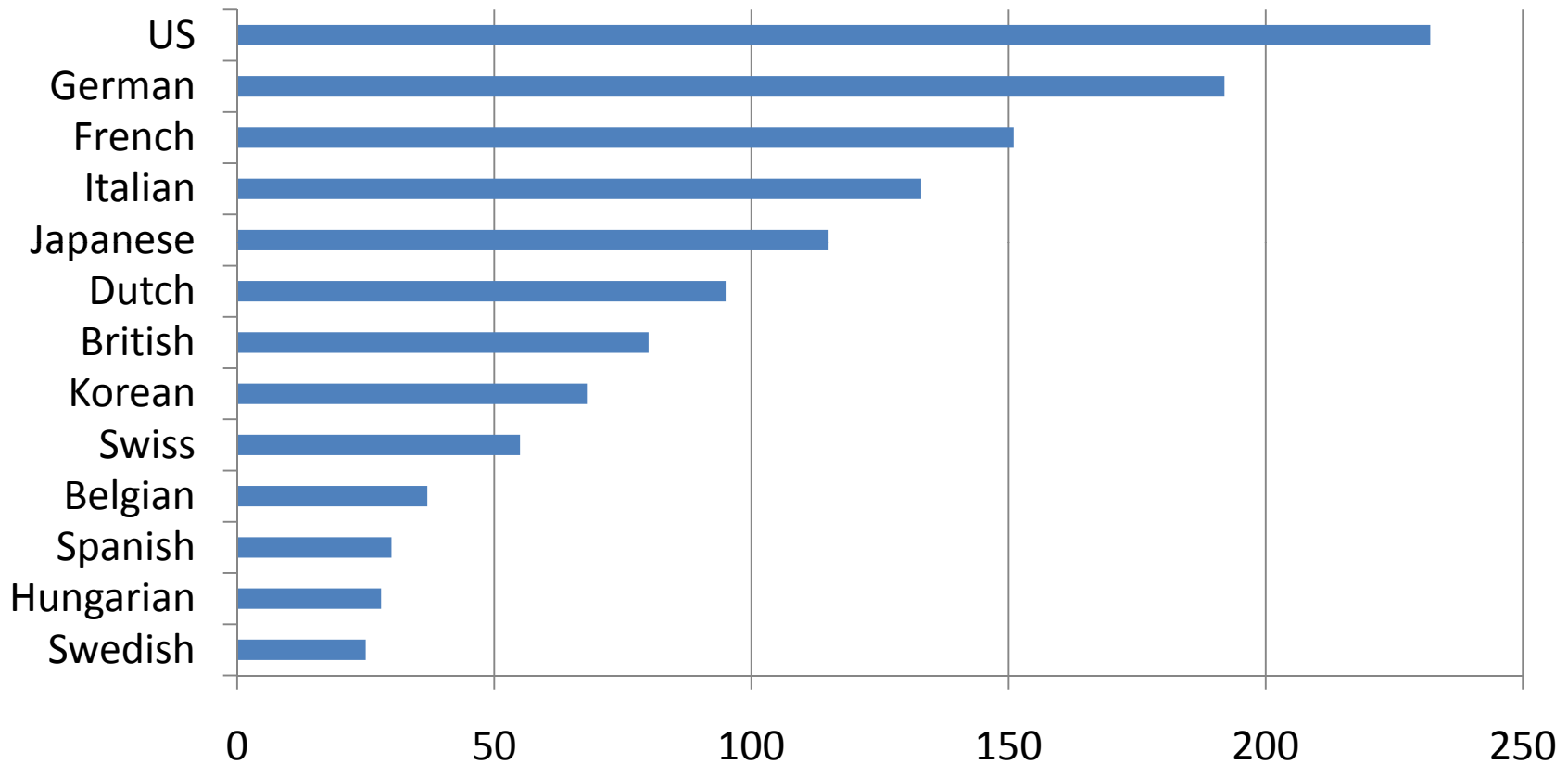


# Corporate Penalties Are Mostly Paid by European Companies



Note: European international cartelists account for 67% of the total.

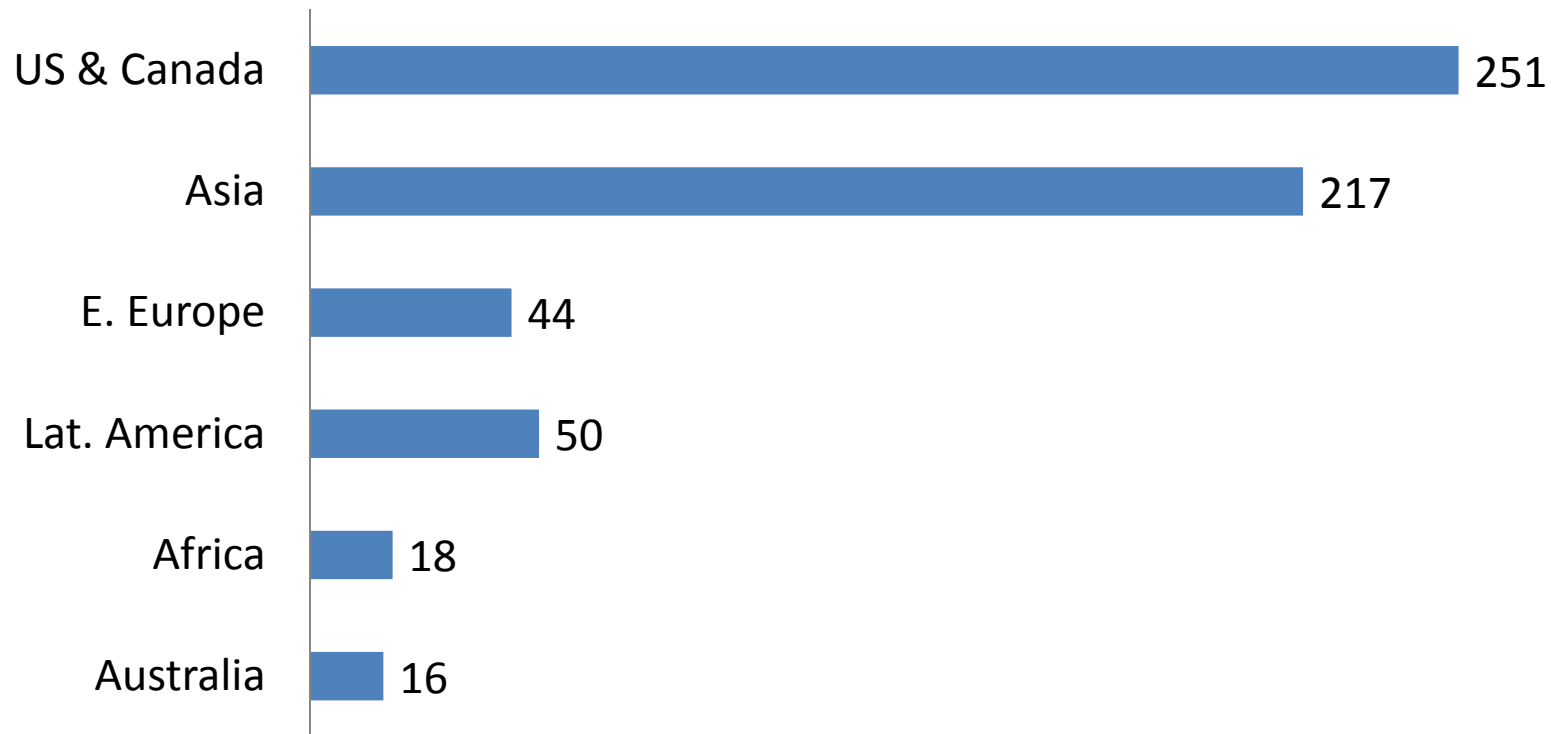
# Most Penalized Corporations Are Headquartered in Western Europe



NB : Western European cartelists account for 61.8% of the total of 1550.

# Corporate Headquarters of Non-European Penalized Firms

## Number of Companies



NB : Non-Western European cartelists account for 38.2% of the total of 1550.

# **CARTELS & ANTITRUST PORTRAYED: Individual Penalties**

**PRIVATE INTERNATIONAL CARTELS,  
1990-2008**

John M. Connor,  
Purdue University  
[jconnor@purdue.edu](mailto:jconnor@purdue.edu)

April 29, 2009



# Introduction

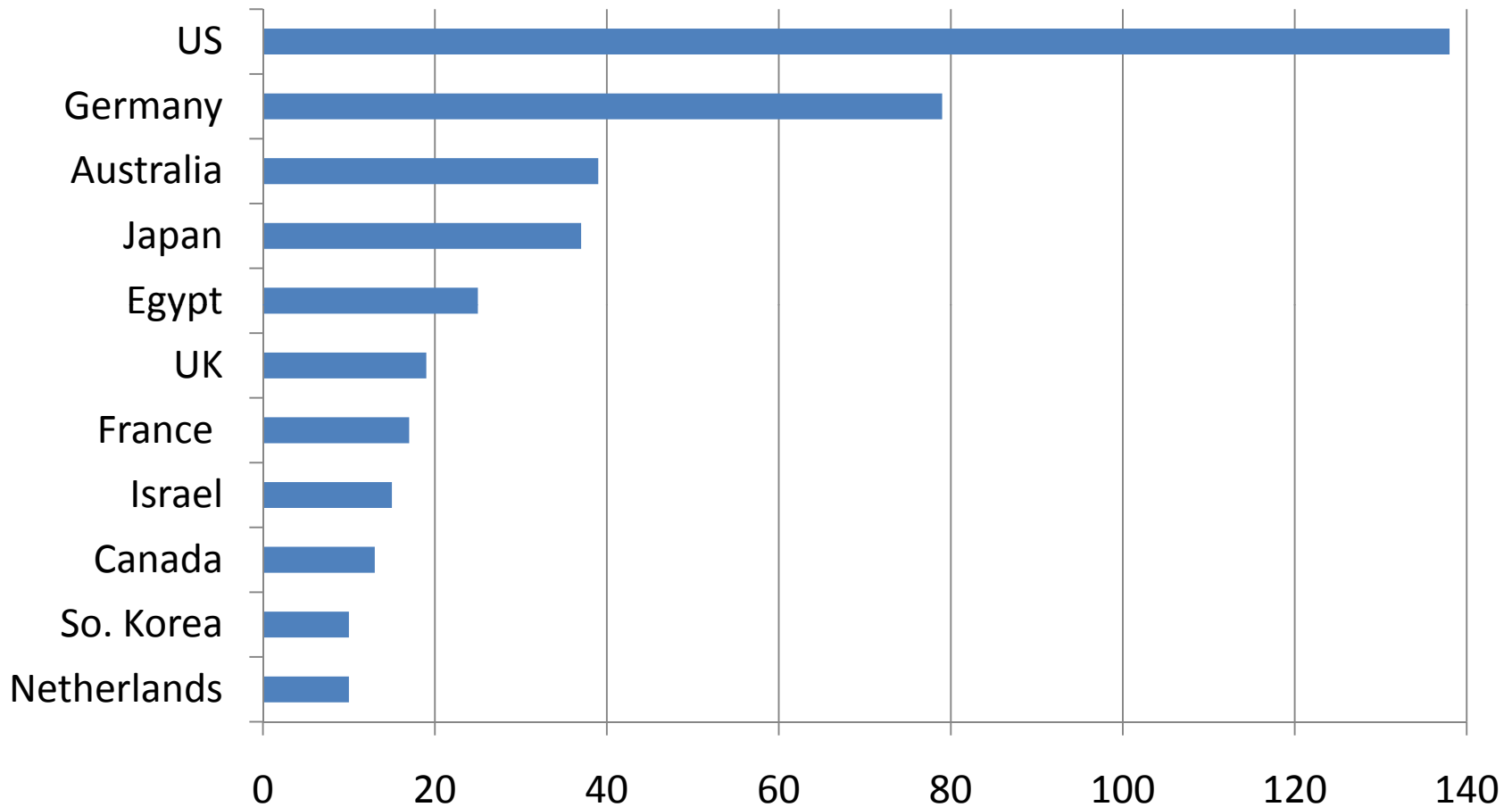
- The purpose of the following charts is to illustrate the size and economic impacts of the modern international cartel movement and the enforcement responses of the world's antitrust authorities and national courts.
- The data employed encompass 516 private hard-core cartels that were subject to government or private legal actions (i.e., formal investigations, damages suits, fines, or consent decrees) between January 1990 and December 2008. Each cartel had participants with headquarters in two or more nations.
- All monetary data are expressed in nominal U.S. dollars using exchange rates during the cartel's life or on the day a legal action was announced.
- A special effort is made to create charts that illustrate **trends** in cartel dimensions and antitrust decisions.

# Individual Cartel Sanctions

- Americans account for one-third of the executives sanctioned in world
- Numbers charged in U.S. generally falling
- The U.S. is almost unique in imprisoning cartel managers\* and sentences are becoming more common and more severe since mid 1990s
- Fugitives are a growing problem for the DOJ
- U.S. fines on executives are insignificant: Median is \$100,000

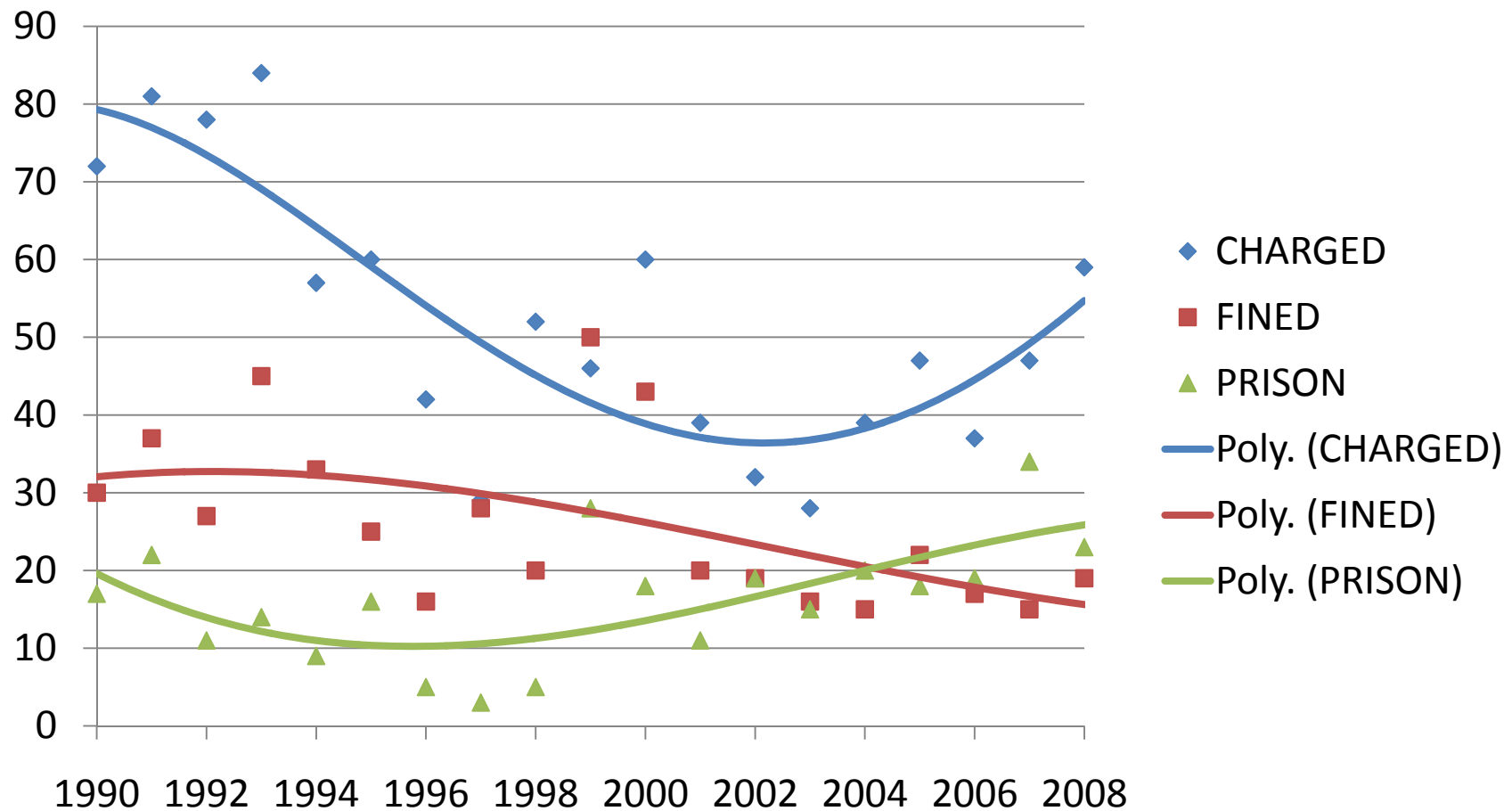
\* Israel is the only other jurisdiction of significance; Egypt sentenced several recently, but none yet serving

## Number of Executives Penalized Worldwide by Nationality, International Cartels Only



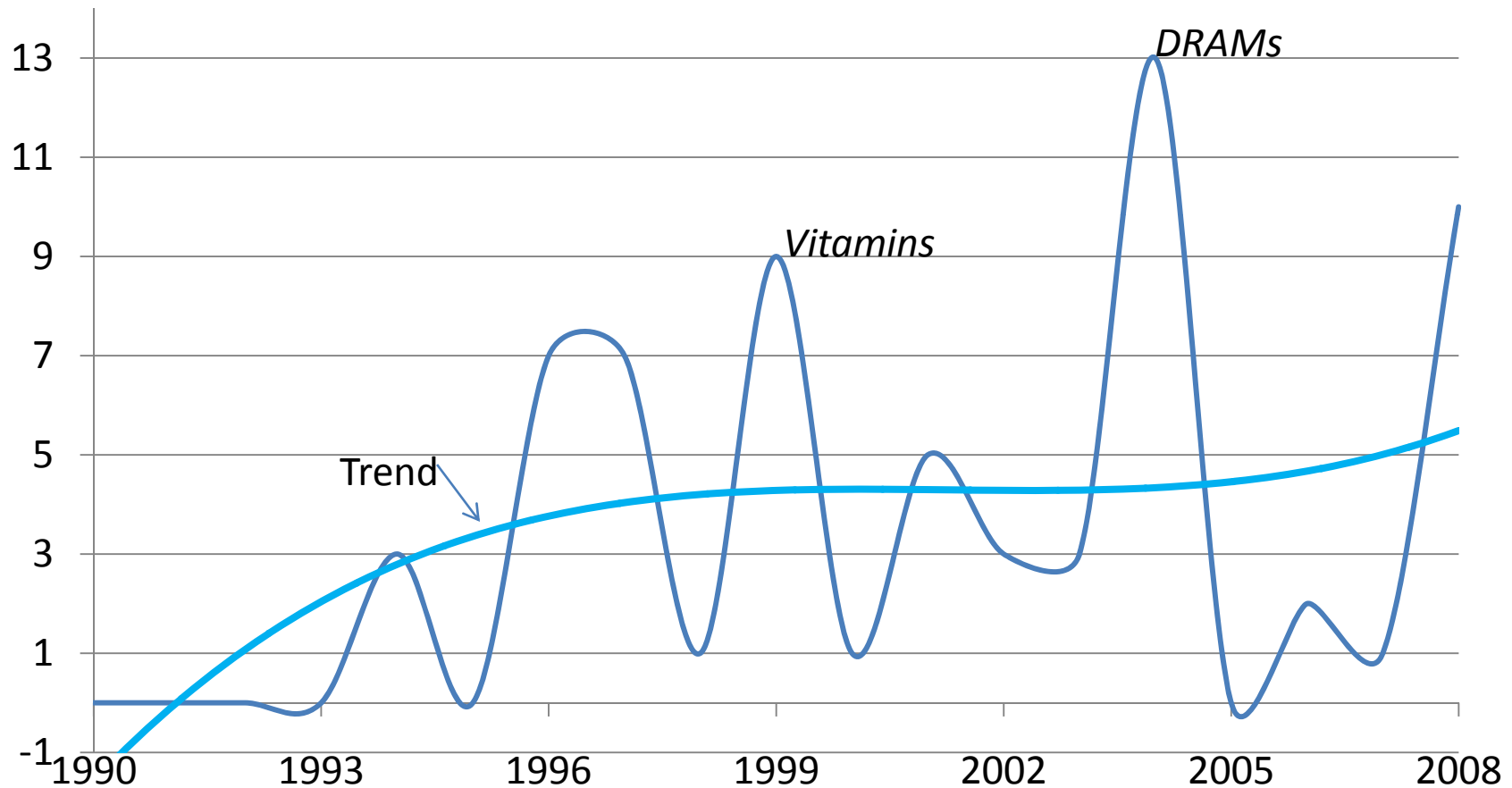
Note : Totals 435, including a few anonymous executives.

# Total Number of Executives Charged and Penalized by the DOJ per Year

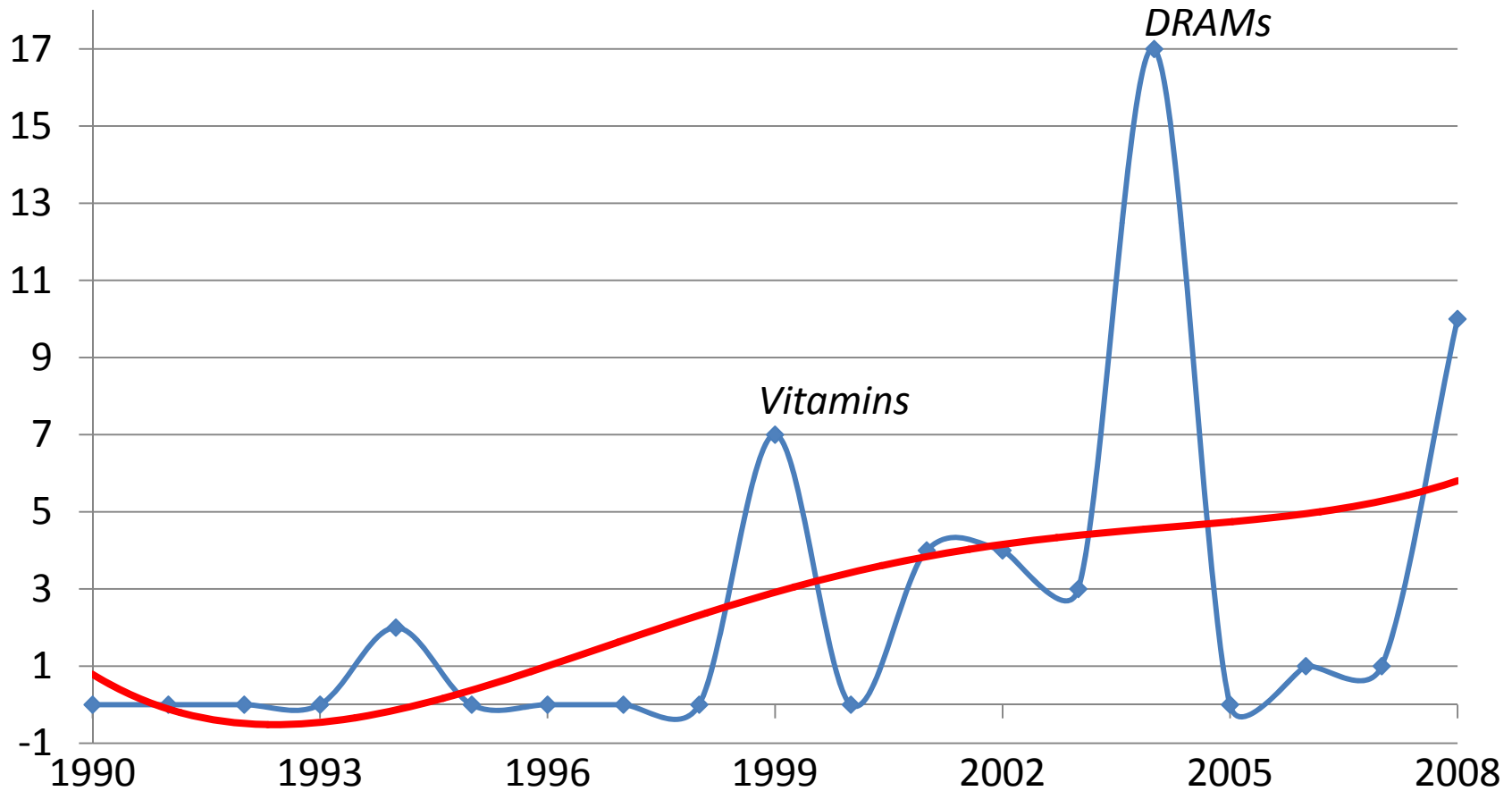


Of 989 executives charged, more than half sanctioned

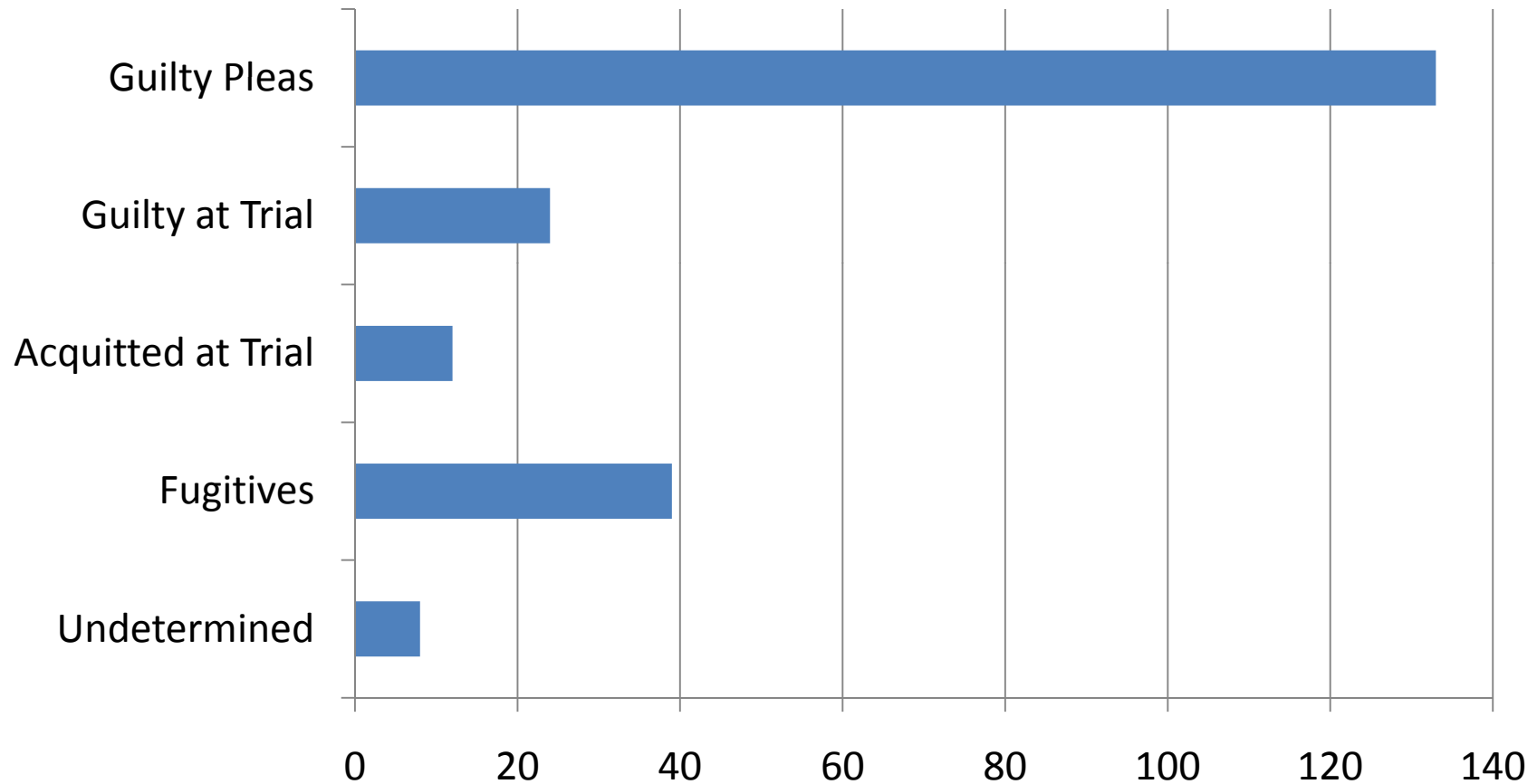
# Number of Non-US Executives **Fined** by the DOJ Is Quite Variable



# Number of Non-US Executives **Imprisoned** by the DOJ

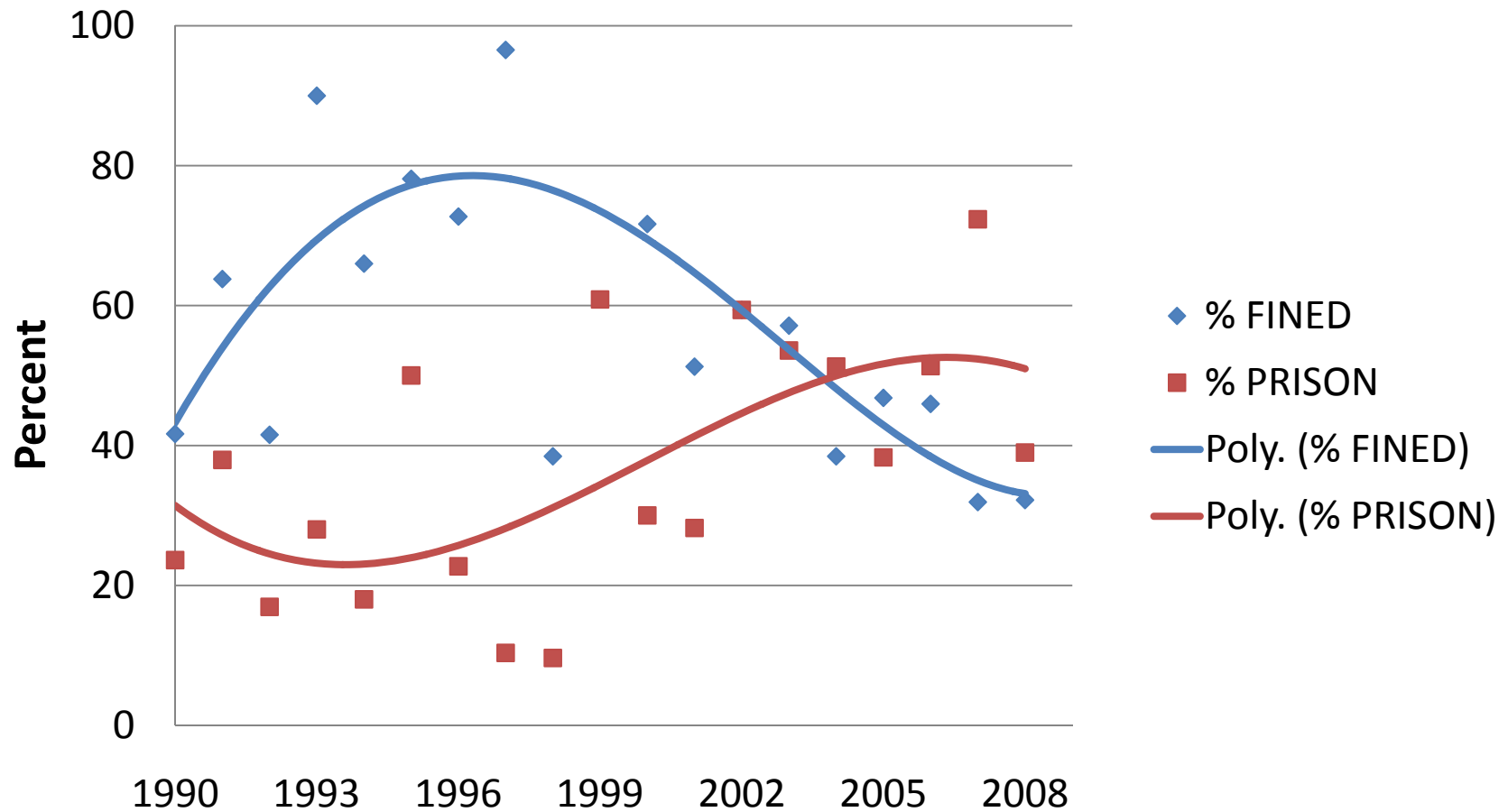


# Disposition of Executives Charged by the DOJ for International Price-Fixing



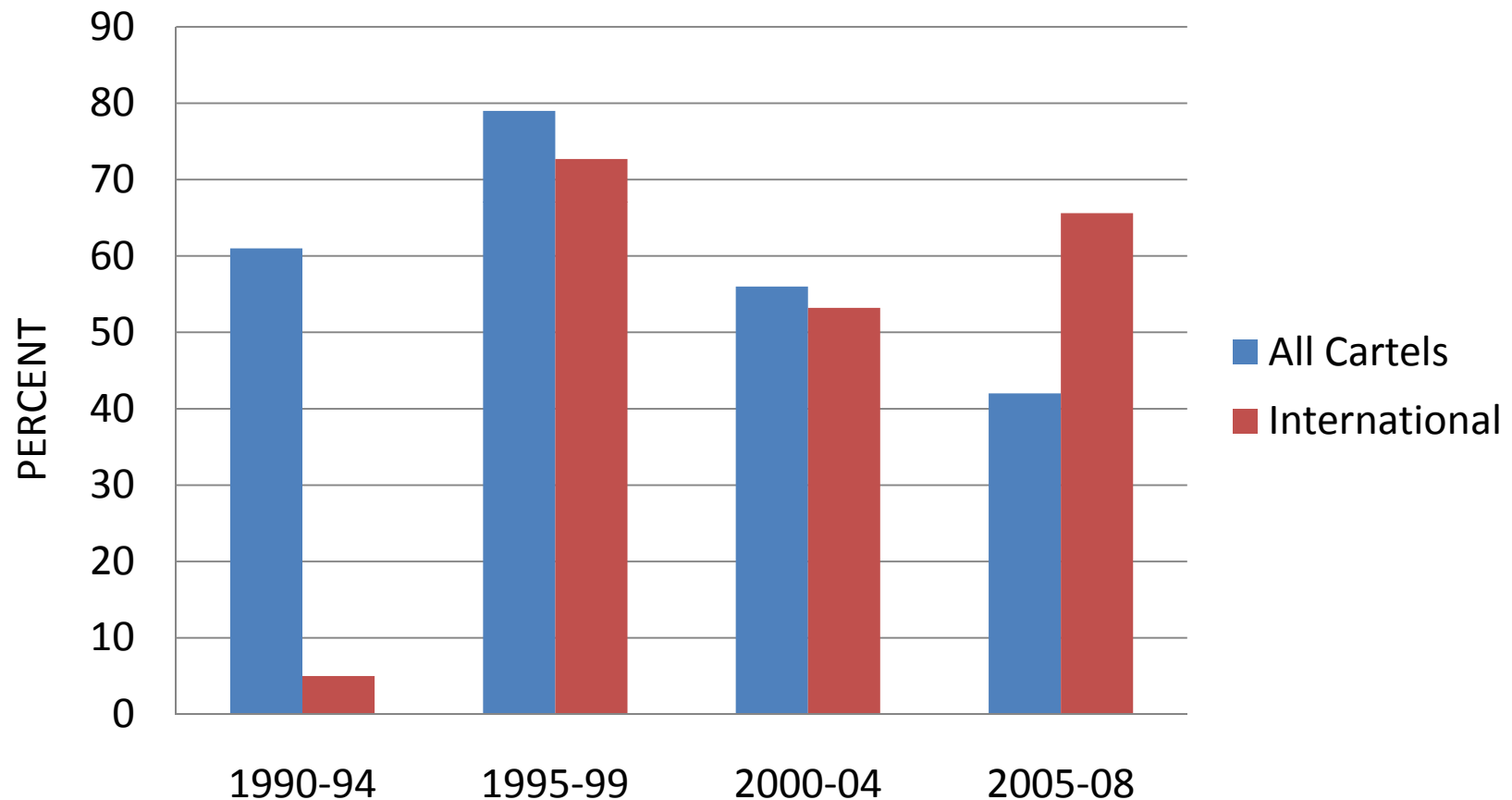
Note : Totals 216 executives from 1/1990 to 11/2008.

# Proportion of Charged Persons **Fined** or **Imprisoned** by DOJ

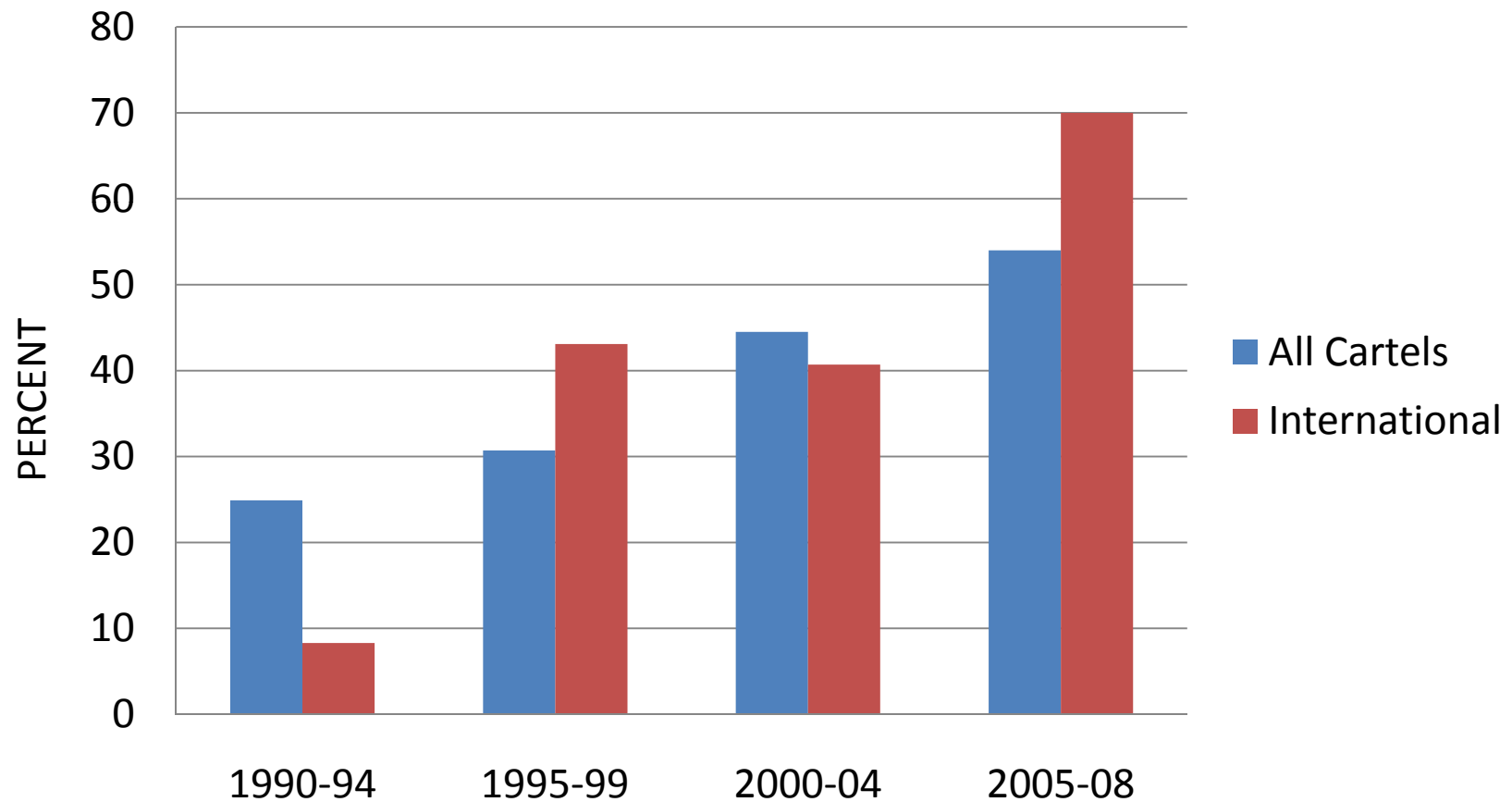




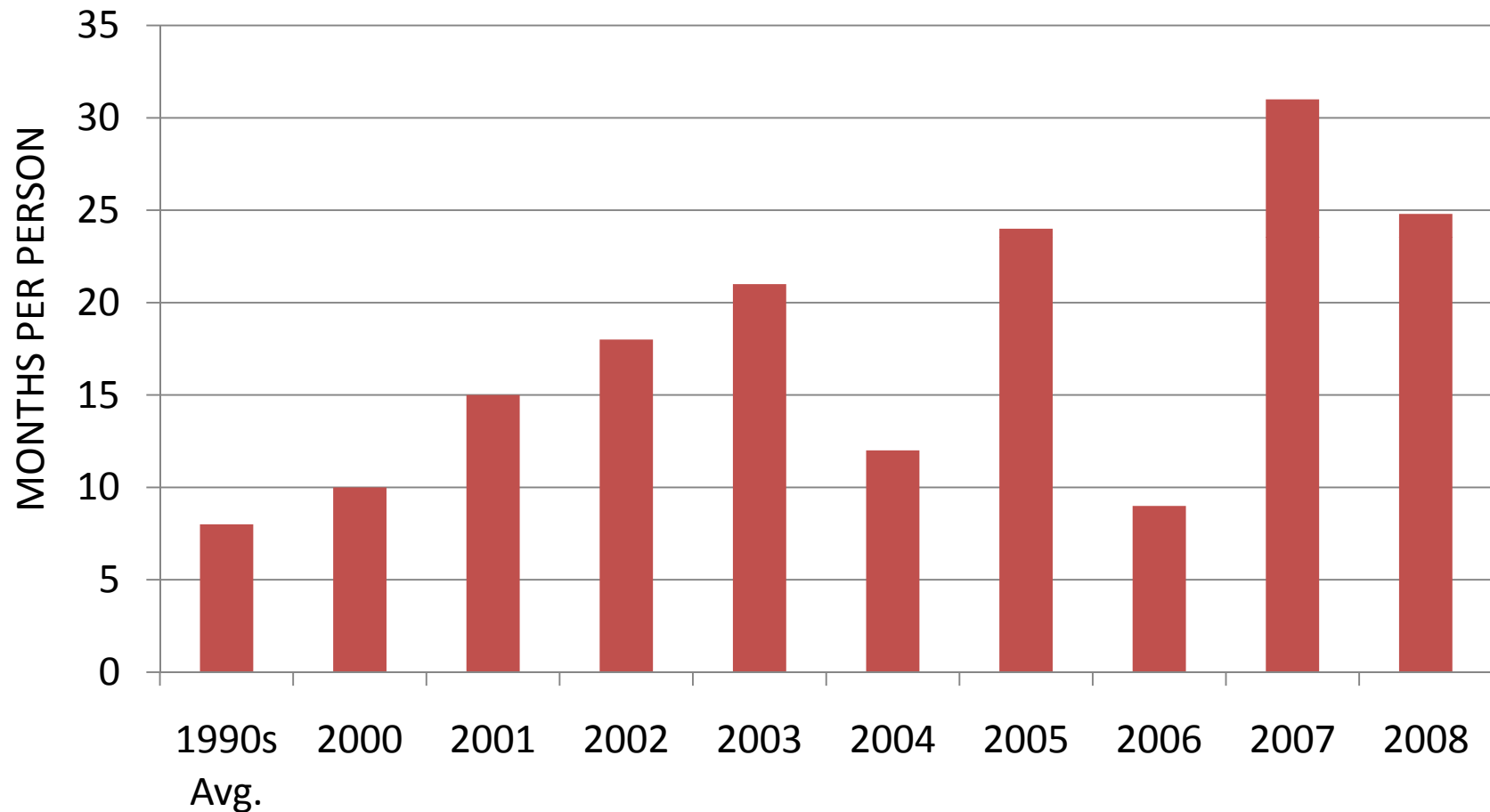
# Proportion of Charged Individual Price Fixers that Are **Fined** in US, 1990-2008



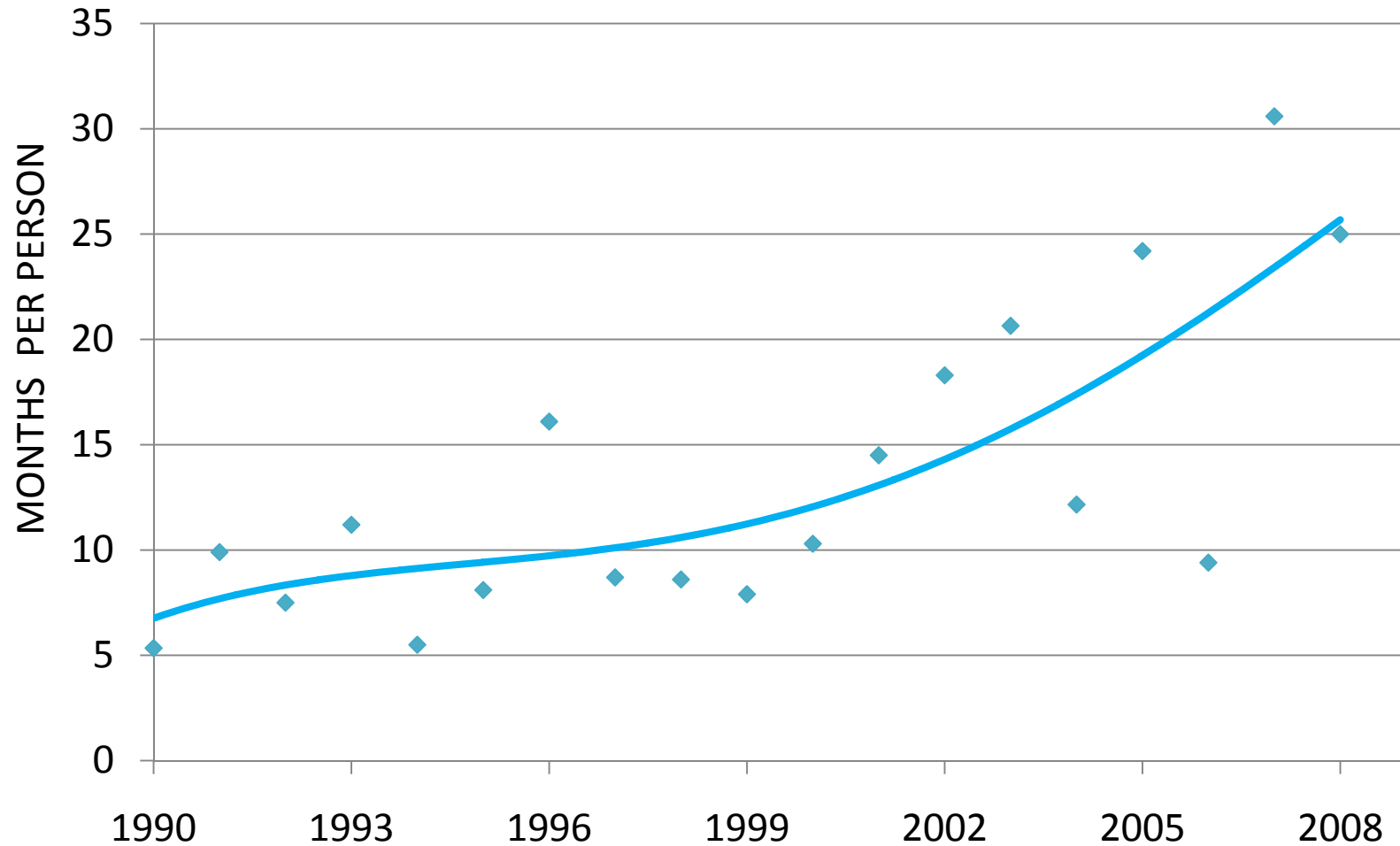
# Proportion of Charged Individual Price Fixers that Are **Imprisoned** in US, 1990-2008



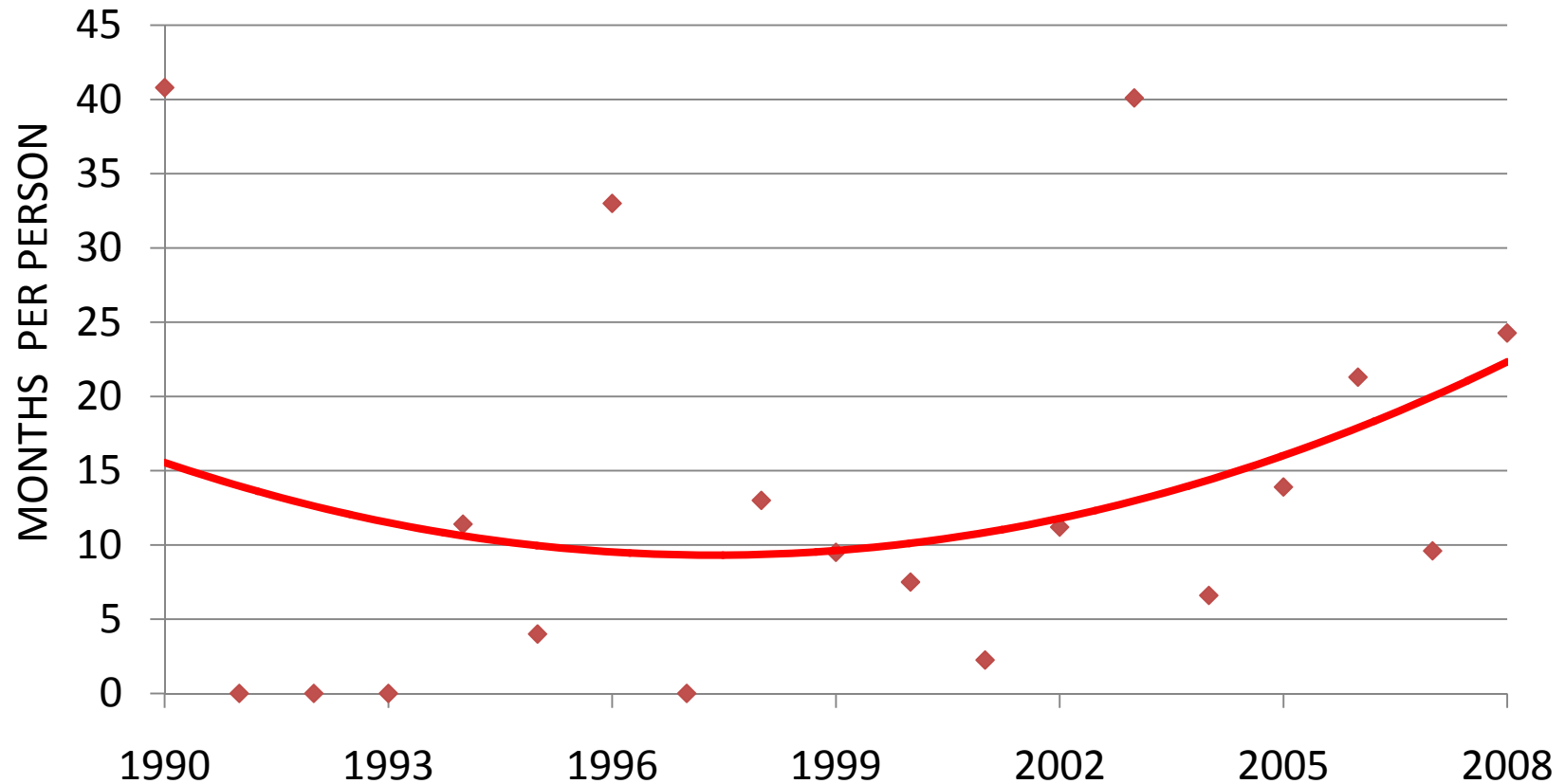
# Mean Length US **Prison Sentences**, All Price Fixers, 1990-2008



# Trend in Mean Length, US Prison Sentences for All Price Fixers

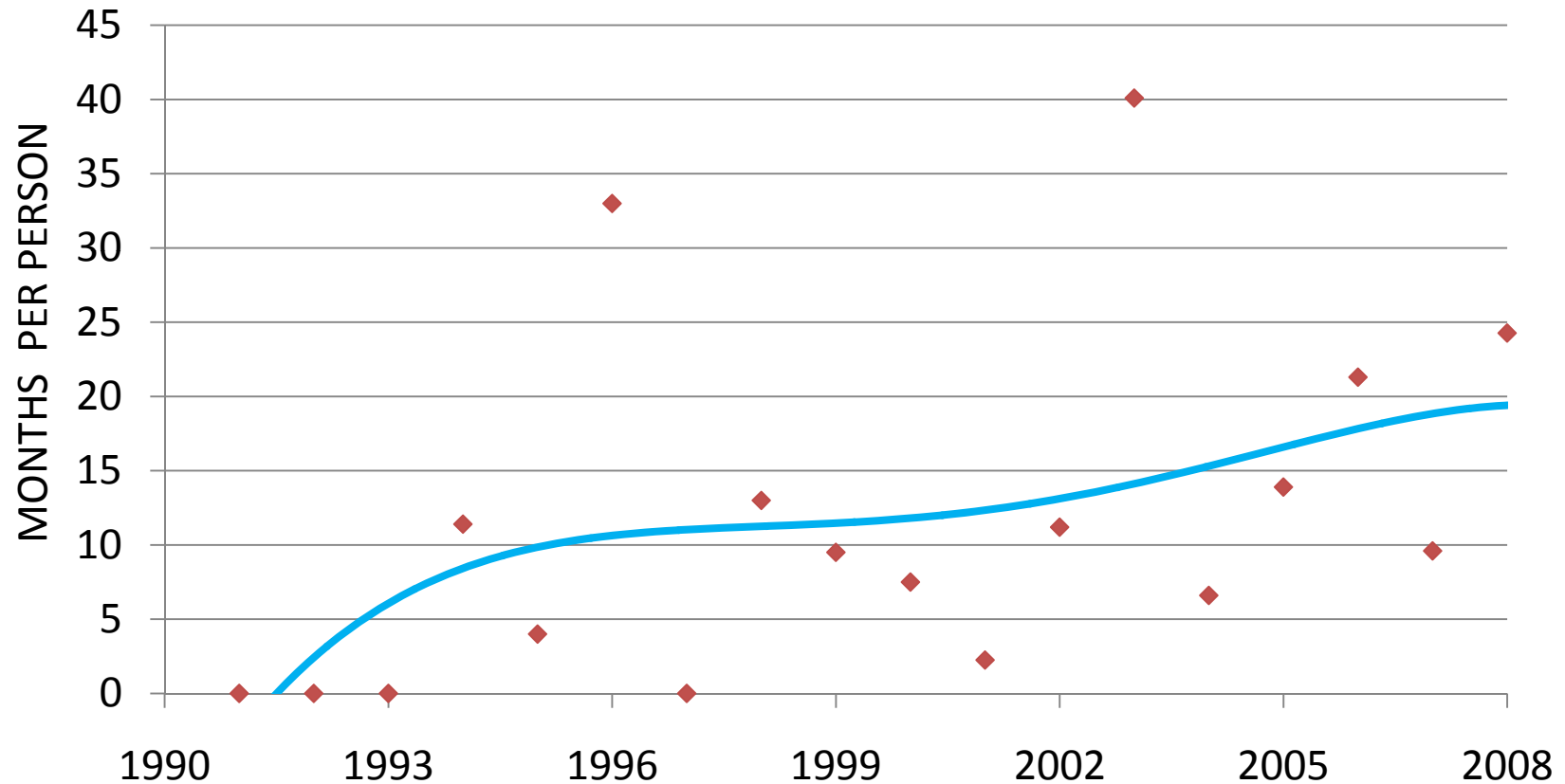


# Trend in Mean Length, US Prison Sentences for International Price Fixers



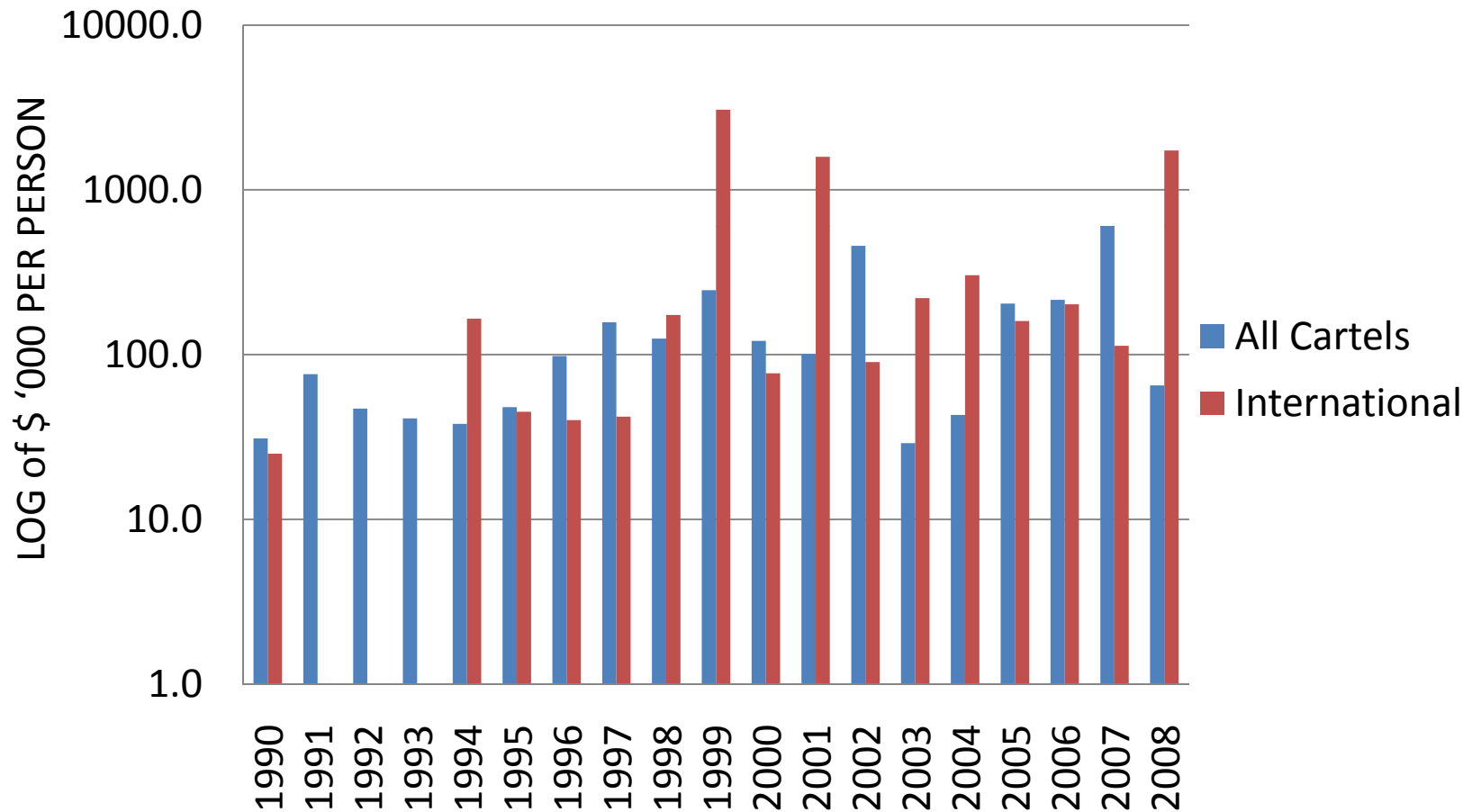
NB: The median of 108 executives is 9.6 months

# Trend in Mean Length, US Prison Sentences for International Price Fixers

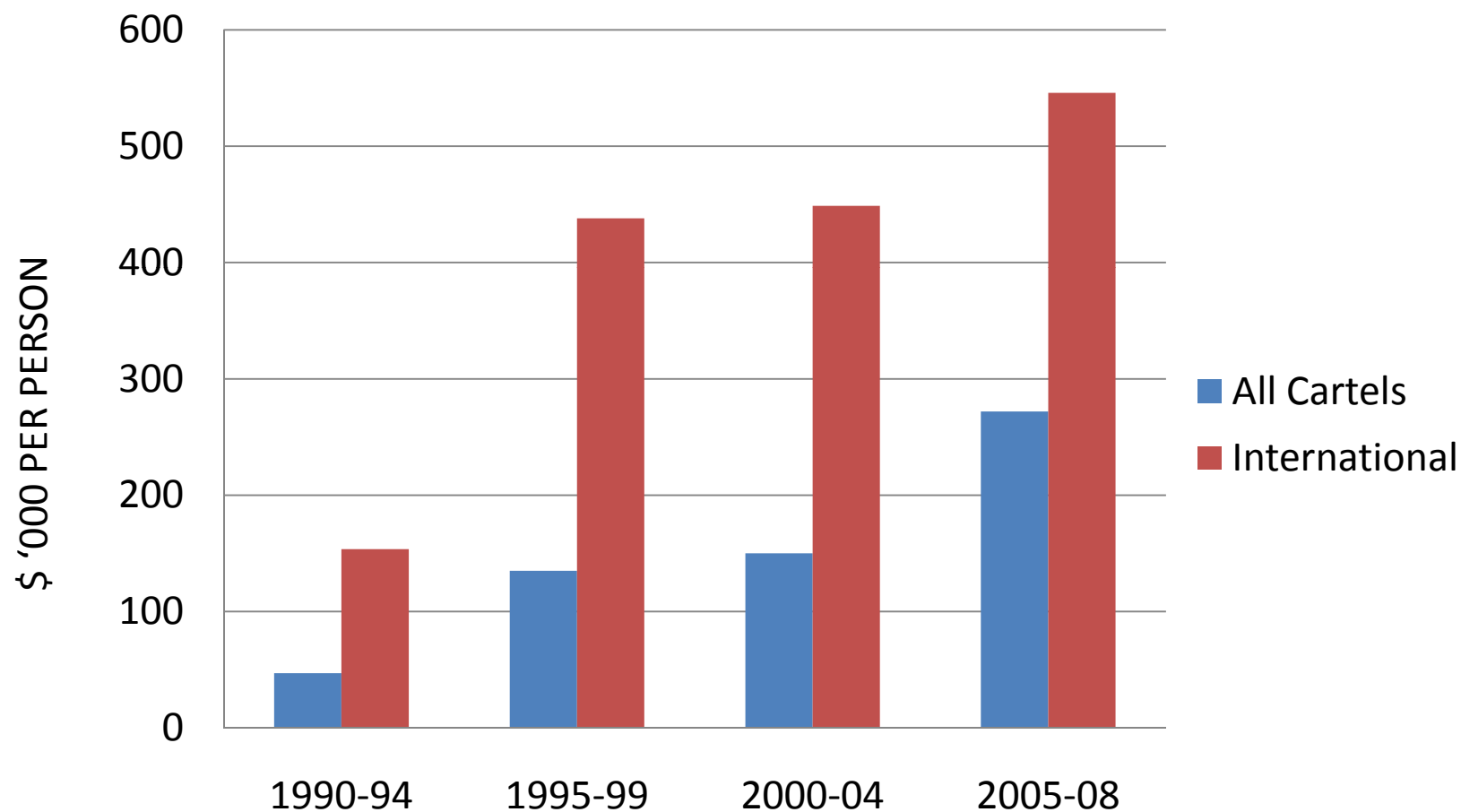


NB: Excludes "outlier" 1990

## Average US Fines/Person for All and Intl. Price Fixers, 1990-2008



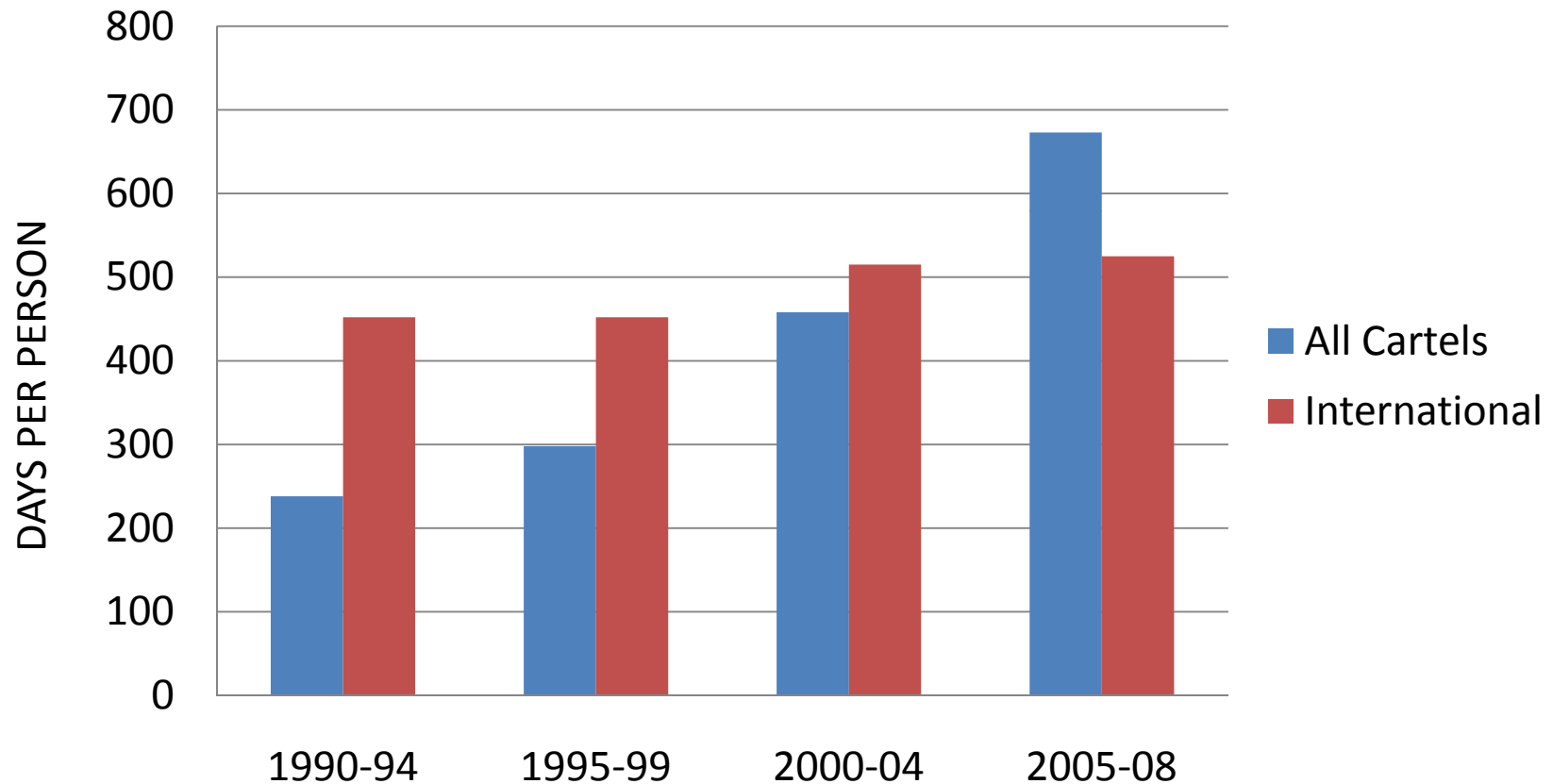
## Mean US Fines/Person Higher for **International** Price Fixers



Note: The median 1990-2008 international fine is \$100,000



# Mean US Prison Days/Person Higher for **International** Price Fixers in 1990-2004, but not in 2005-2008



# **CARTELS & ANTITRUST PORTRAYED: Market Effects**

**PRIVATE INTERNATIONAL CARTELS,  
1990-2008**

John M. Connor,  
Purdue University  
[jconnor@purdue.edu](mailto:jconnor@purdue.edu)  
January 23, 2009

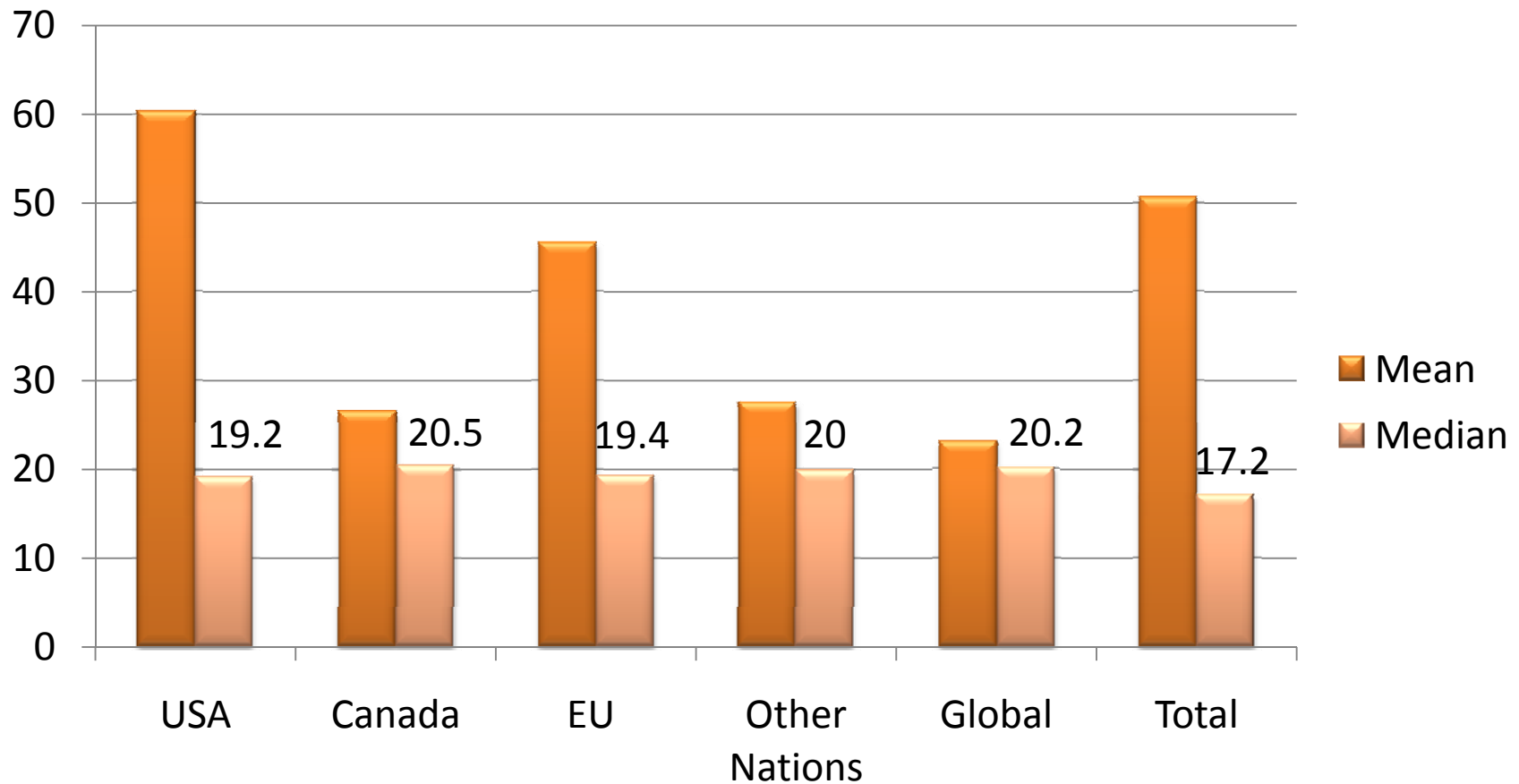
# Introduction

- The purpose of the following charts is to illustrate the size and economic impacts of the modern international cartel movement and the enforcement responses of the world's antitrust authorities and national courts.
- The data employed encompass 516 private hard-core cartels that were subject to government or private legal actions (i.e., formal investigations, damages suits, fines, or consent decrees) between January 1990 and December 2008. Each cartel had participants with headquarters in two or more nations.
- All monetary data are expressed in nominal U.S. dollars using exchange rates during the cartel's life or on the day a legal action was announced.
- A special effort is made to create charts that illustrate **trends** in cartel dimensions and antitrust decisions.

# Market Effects and Damages

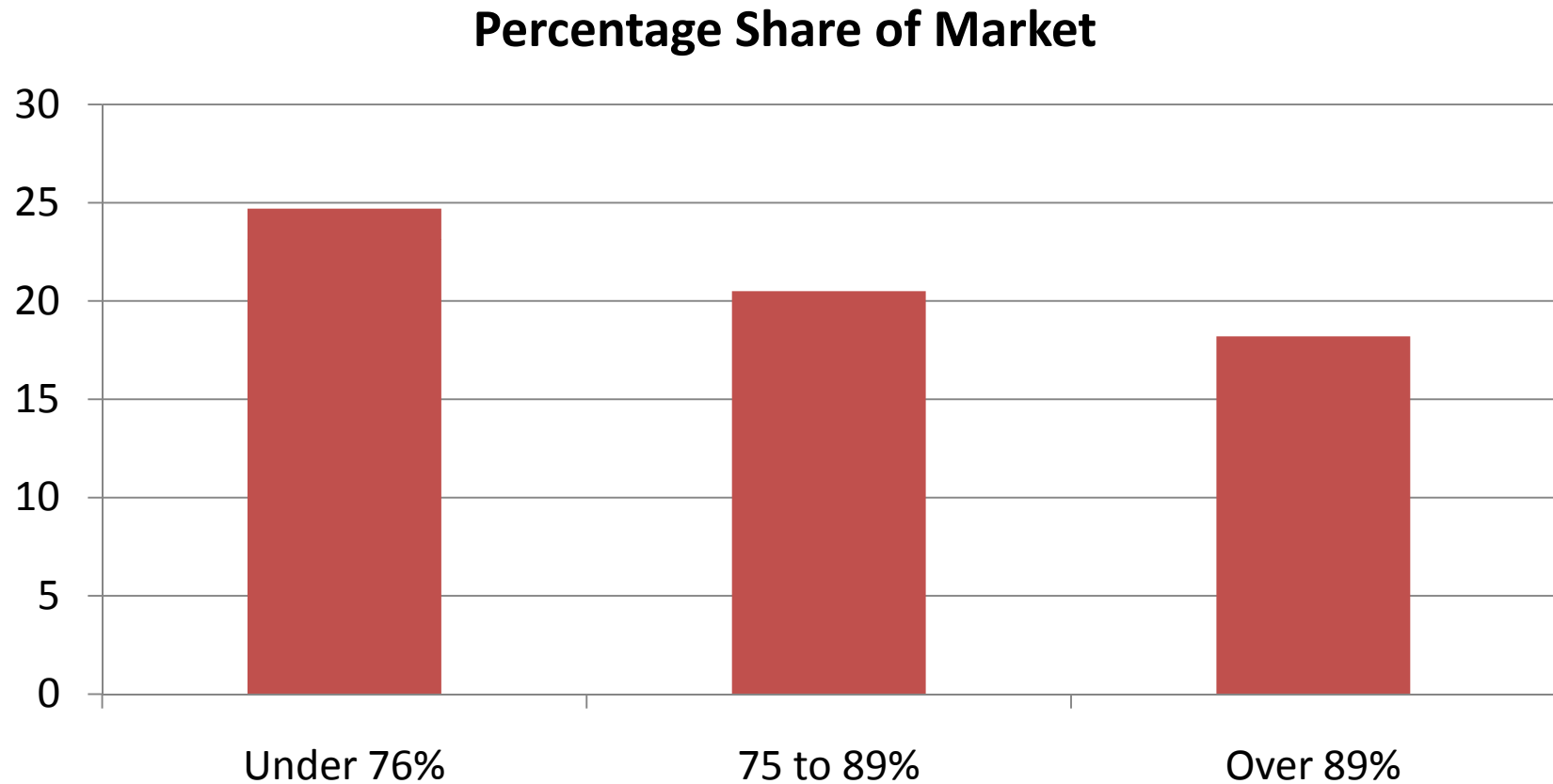
- Data on price effects are available for 177 cartels.
- Median overcharges vary from 17% to 21% of sales
- Median penalties are lower -- 2 to 12% of sales.
- Severity of fines for *localized* cartels is rising.
- Severity of *fines* for *global cartels* fell in the late 2000s, though severity of private *settlements* trended upward.

# Median Intensity of Damages Varies Little by Jurisdiction



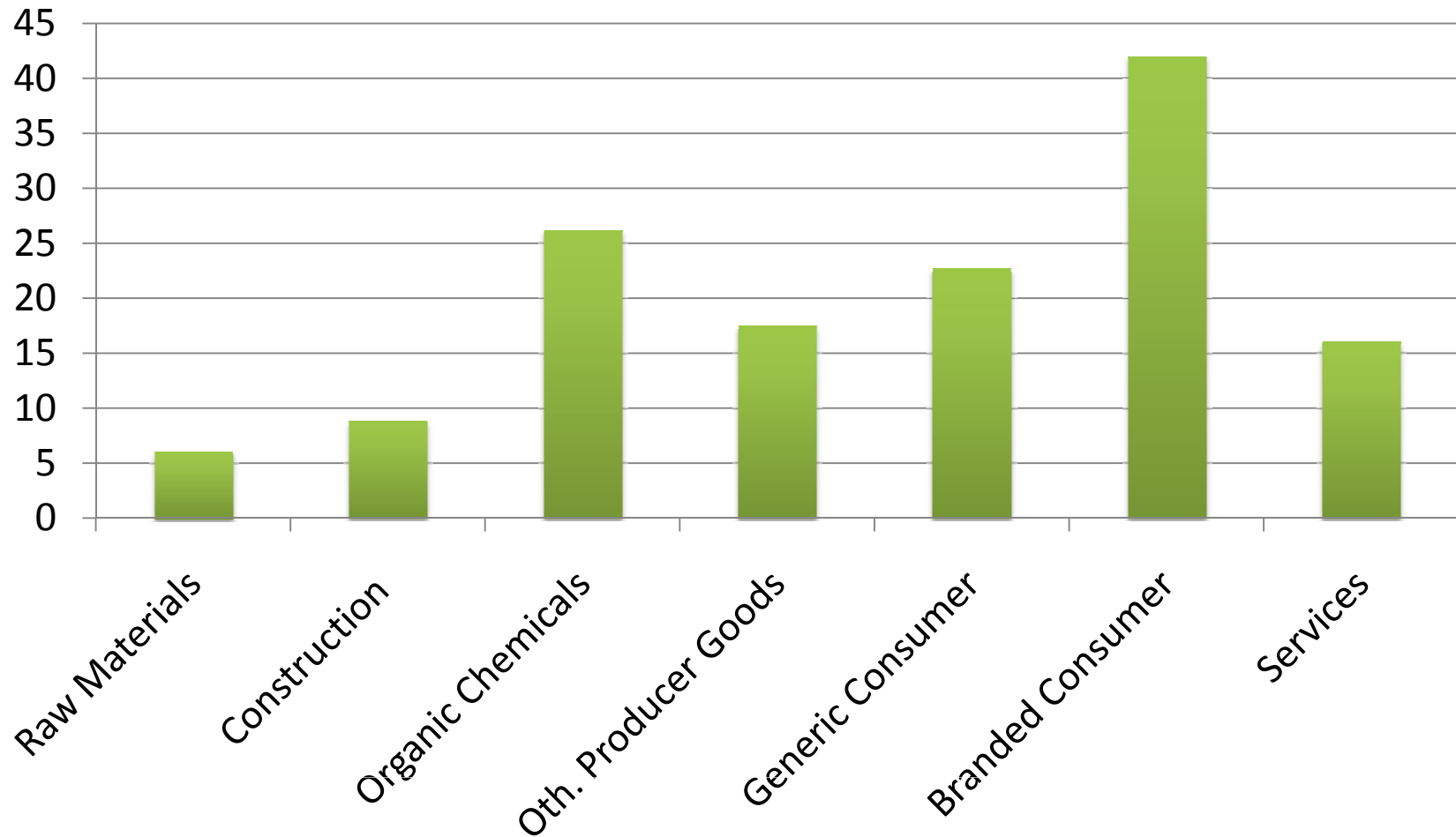
Note: Penalties are skewed, so the median is better than the mean.

# Median Percentage Overcharges Seem to Decline with Cartel Control



Note: Concentration data are often estimated

# Median Percentage Overcharges Varies by Industry Type



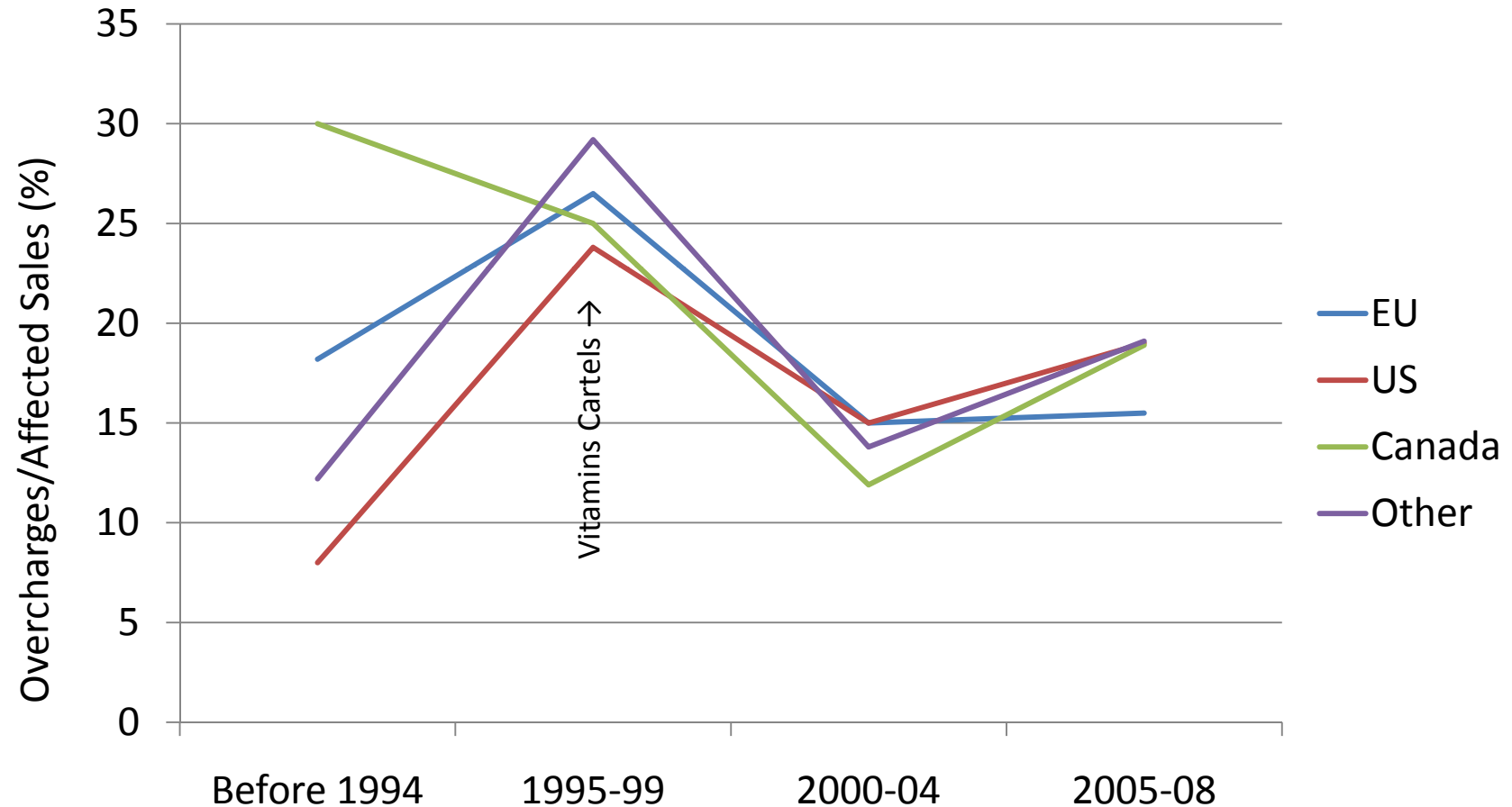
# Trend in Median Overcharges, All Cartels by Year Discovered



NB. Excludes zero overcharges. Peak period correspond to vitamins' penalties.

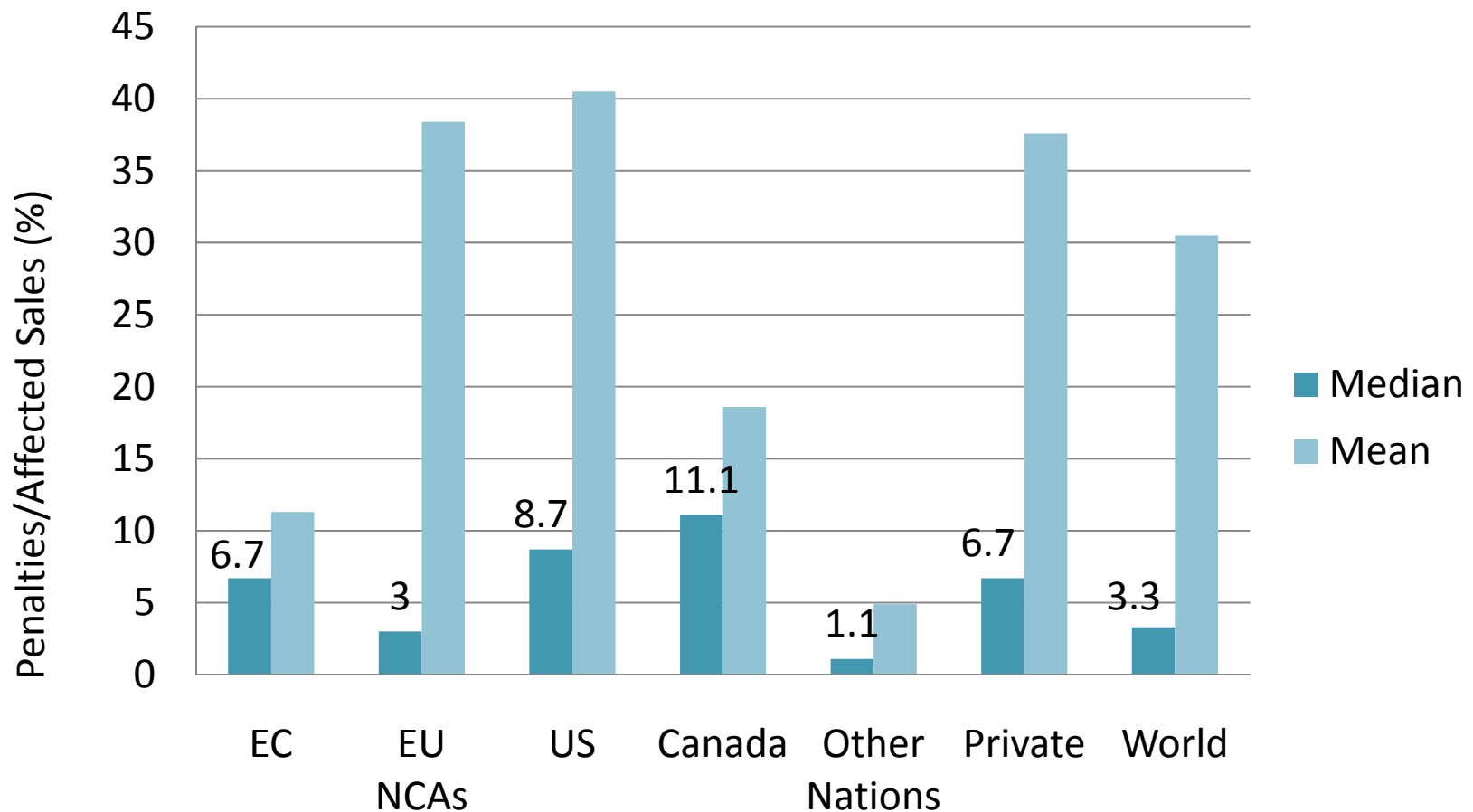


# Trends in Median Overcharges, by Jurisdiction, Year Discovered



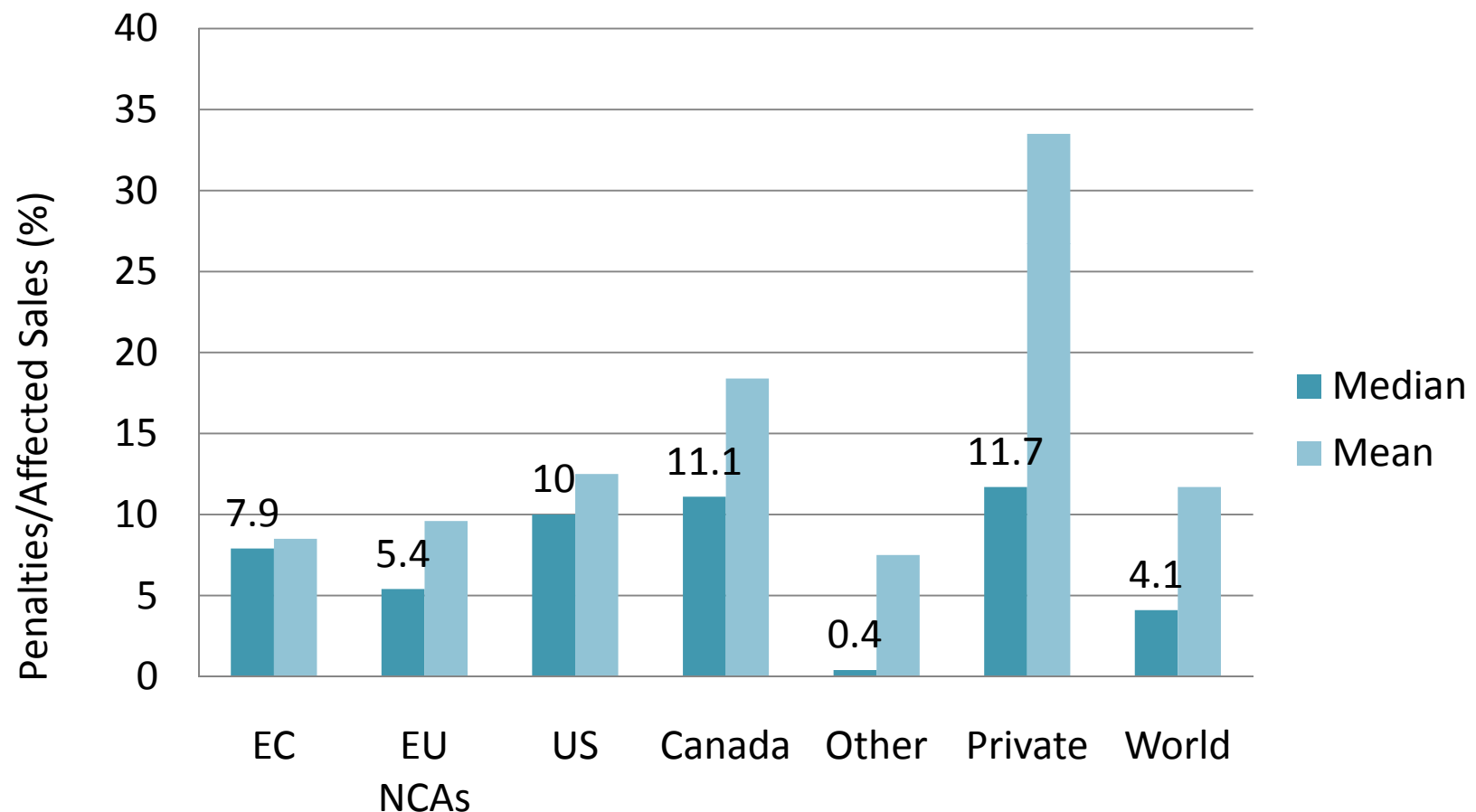
NB. Excludes zero overcharges. Peak period correspond to vitamins' penalties.

# Average Penalties on Intl. Cartels, Relative to Affected Sales, 1990-2008



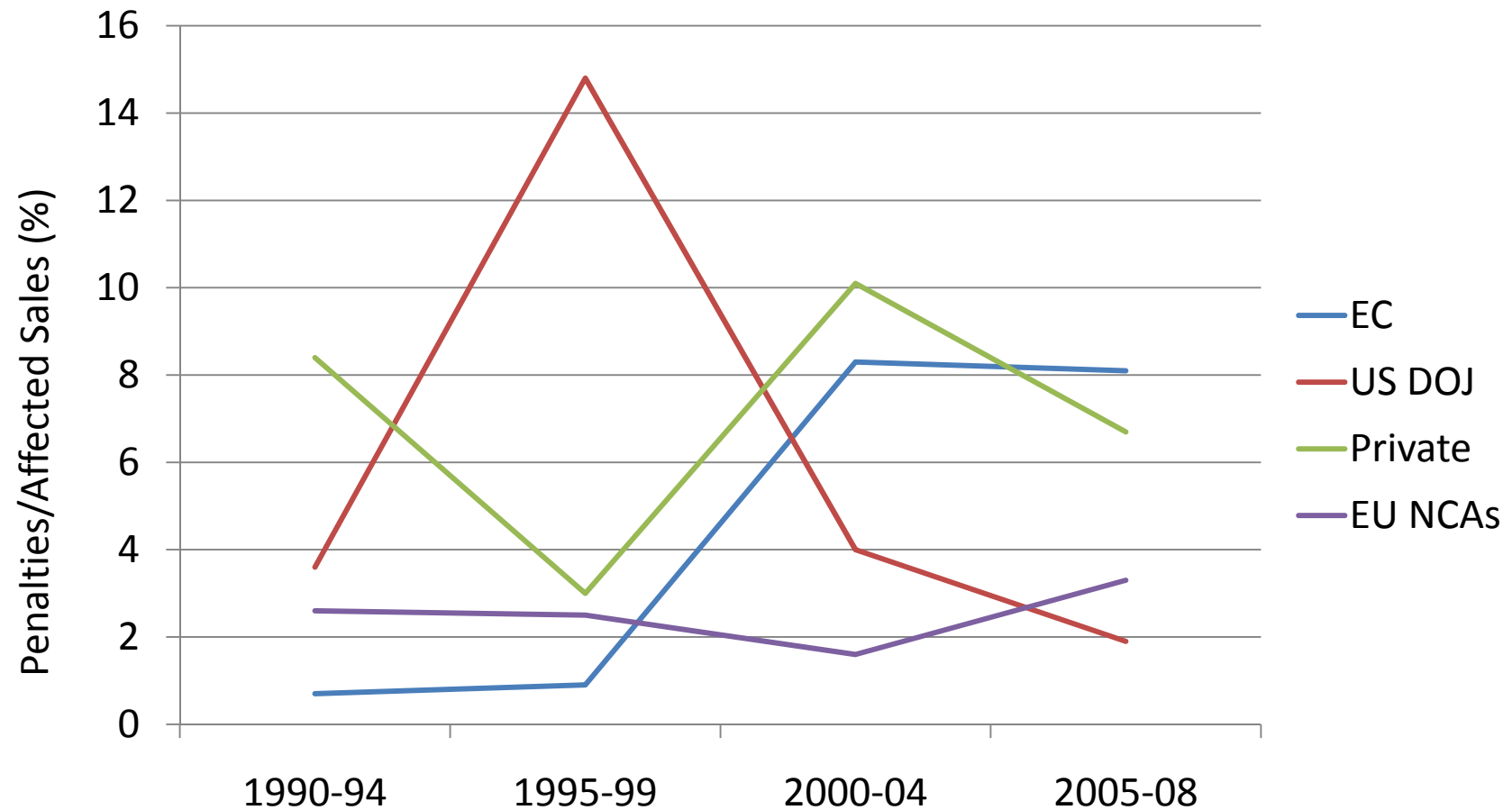
Note: Penalties are skewed, so the median is the more meaningful measure

# Median Penalties on Global Cartels Are Higher than Other Types



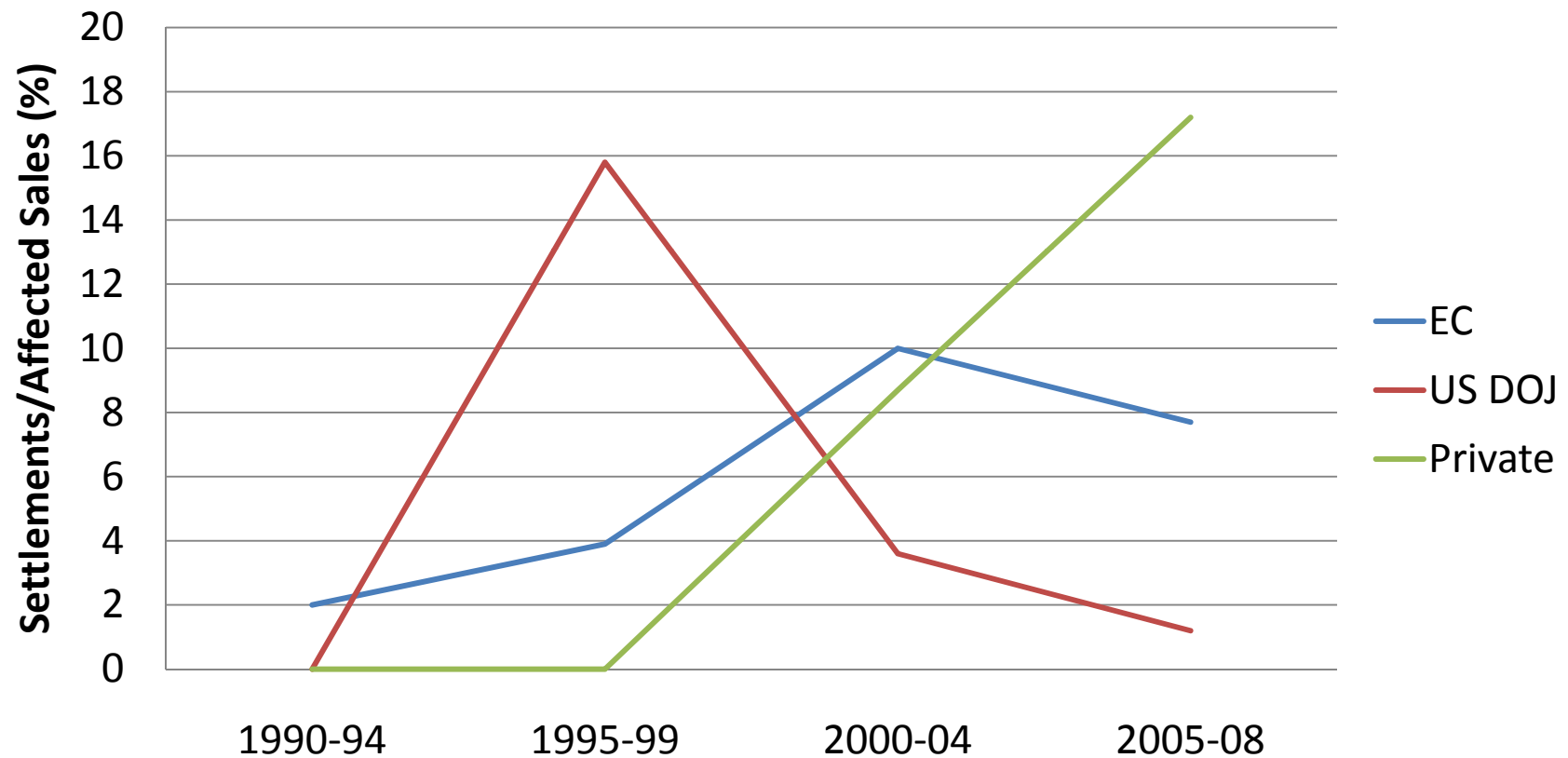
Note: Penalties are skewed, so the median is the more meaningful measure

# Trends in Severity of Median Penalties, By Jurisdiction, 1990-2008



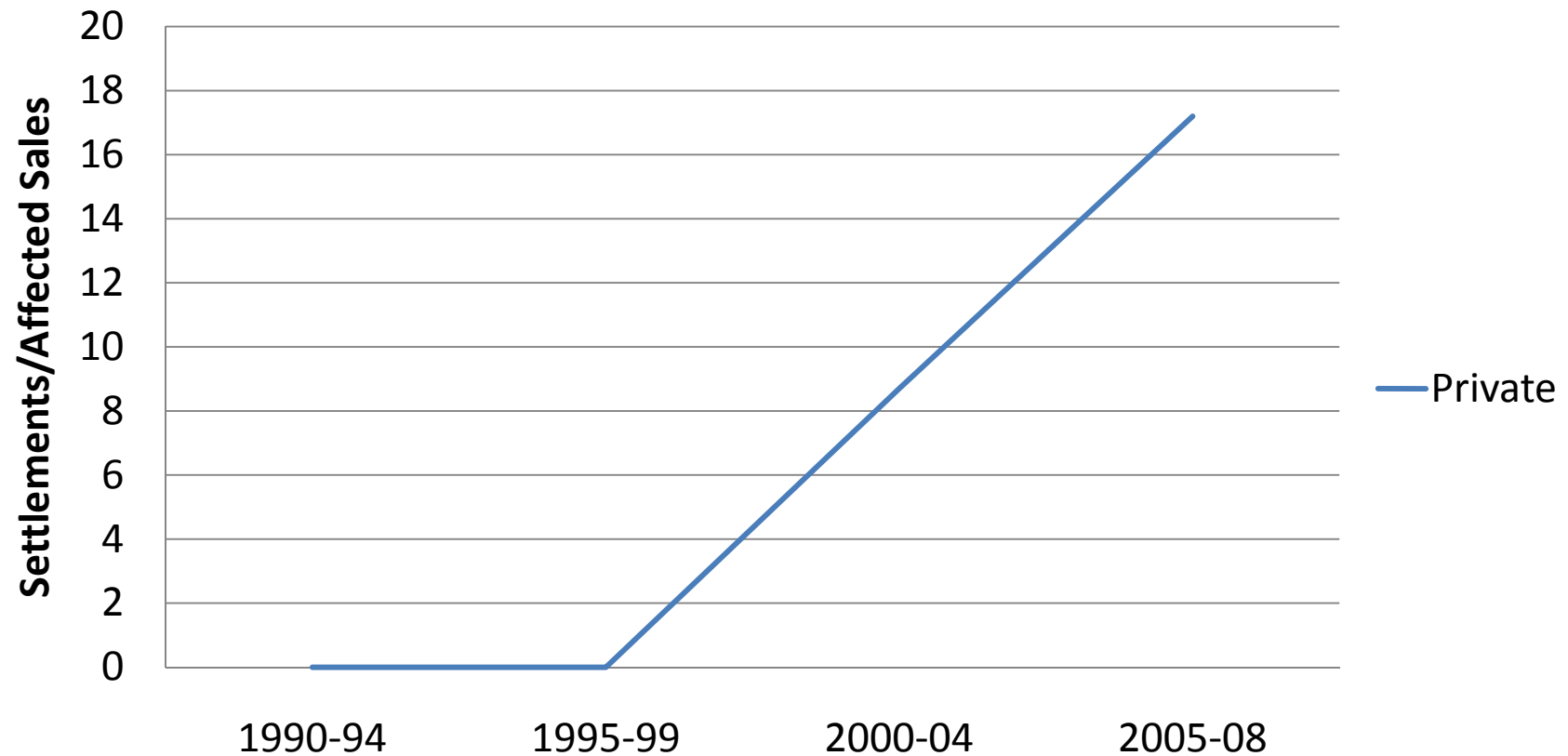
NB. Excludes zero dollar penalties. Peak periods correspond to vitamins' penalties.

# Trends in Severity of Median Penalties, Global Cartels



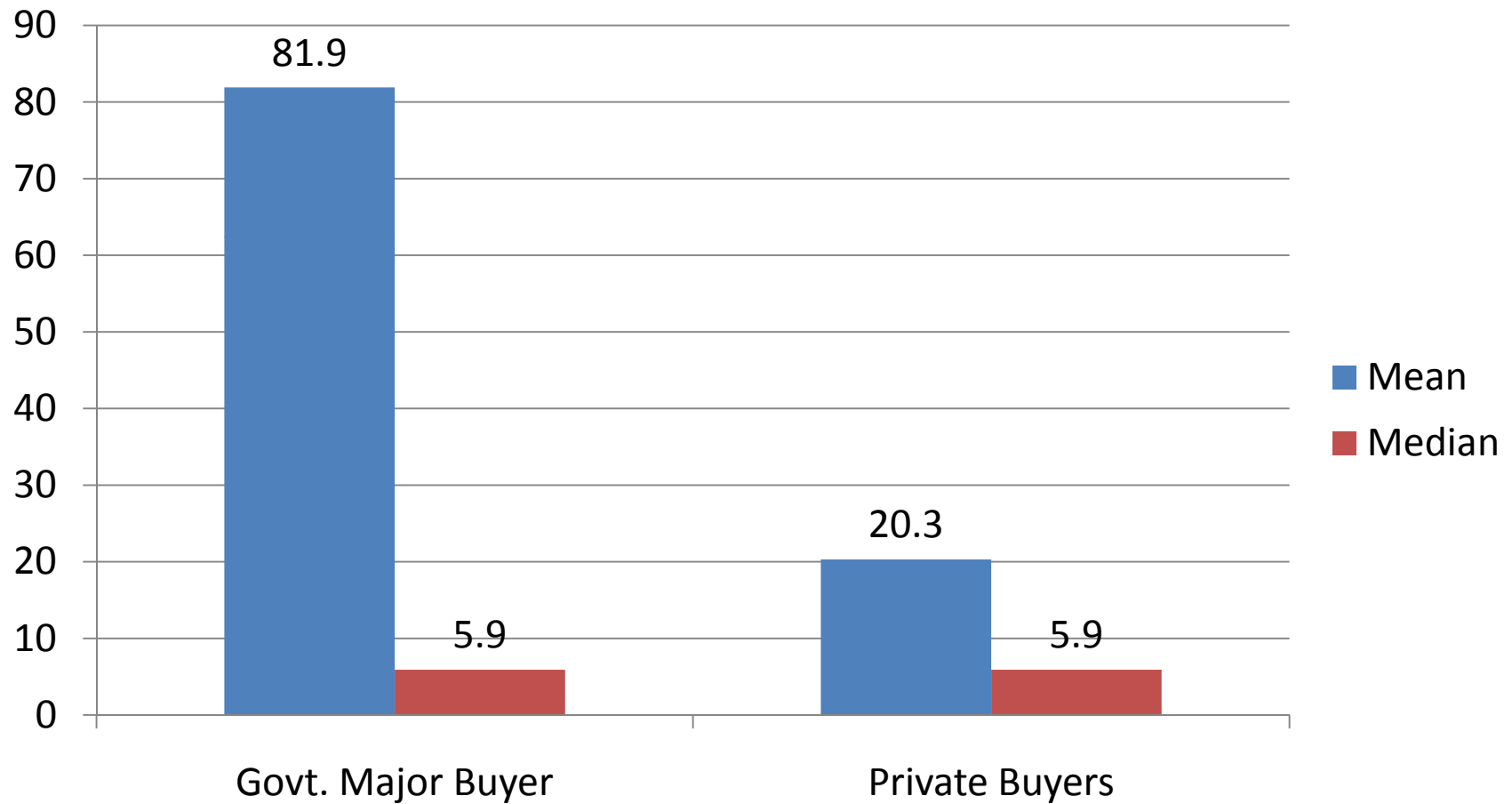
NB. Excludes zero dollar penalties

# Severity of Mean Private Settlements on Global Cartels is Rising

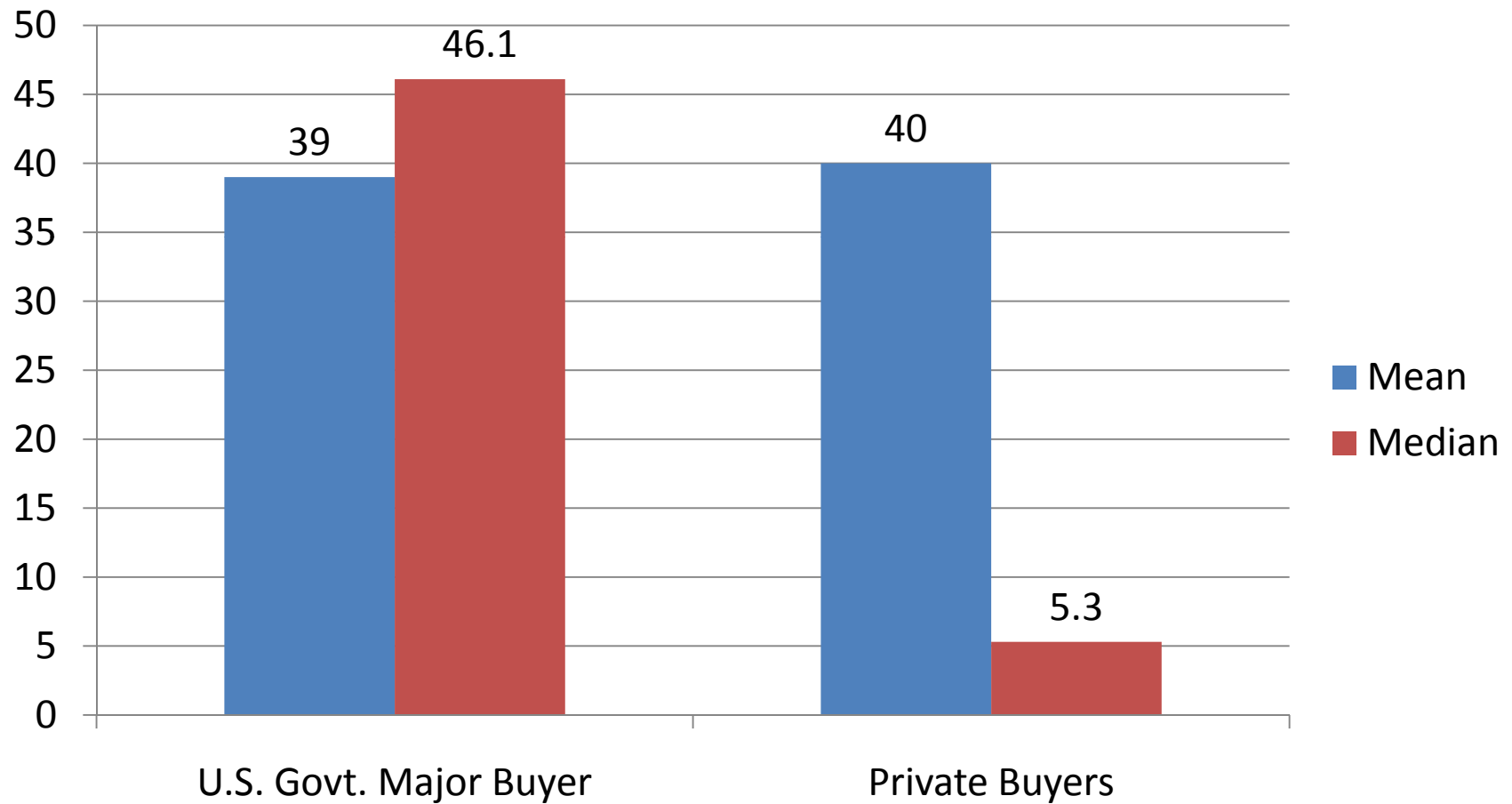


NB. Settlements tend to lag US fines on same cartels by 3 to 6 years

# Severity of Total Penalties by Type of Buyer

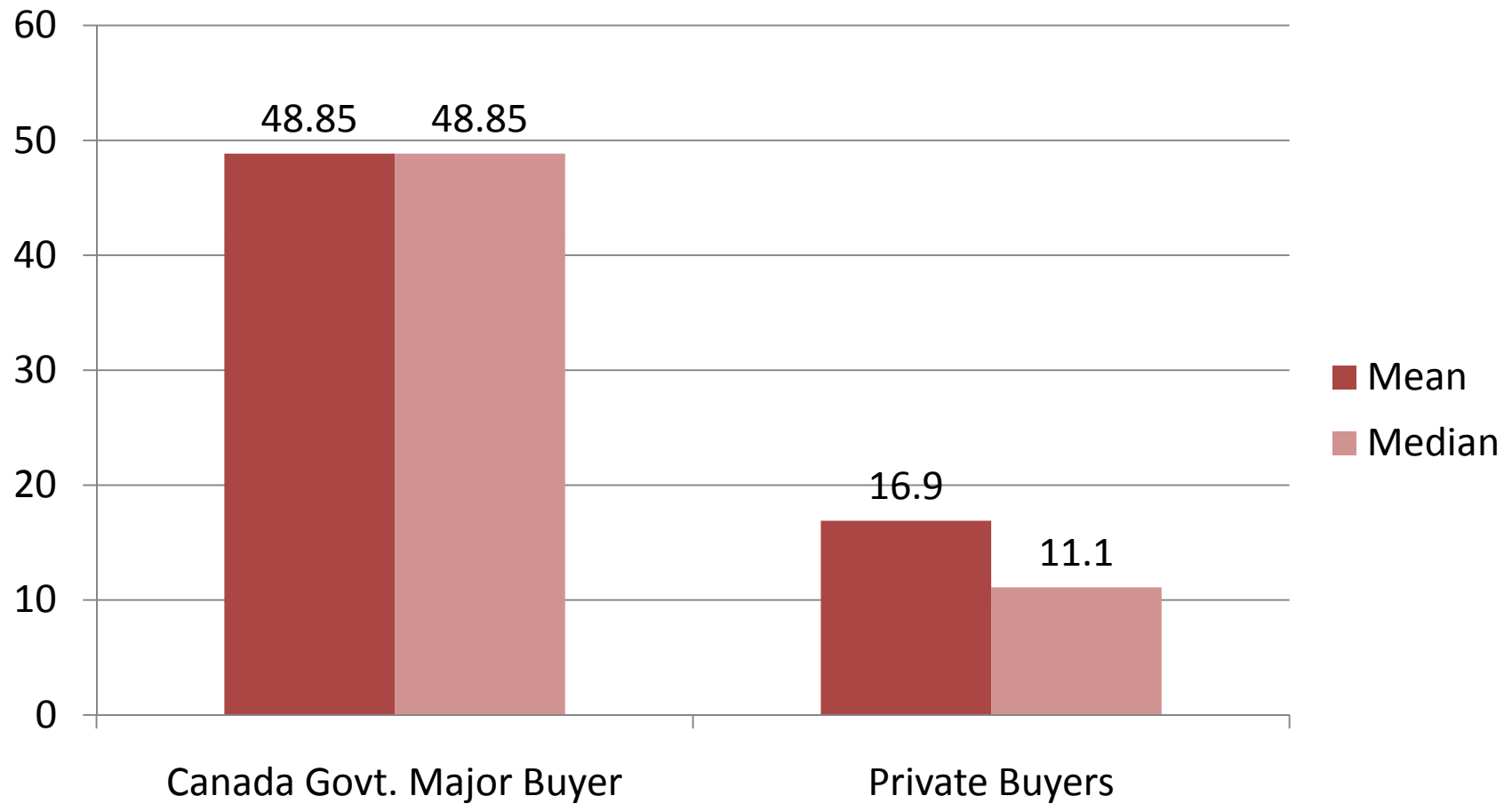


# Severity of U.S. Fines by Type of Buyer

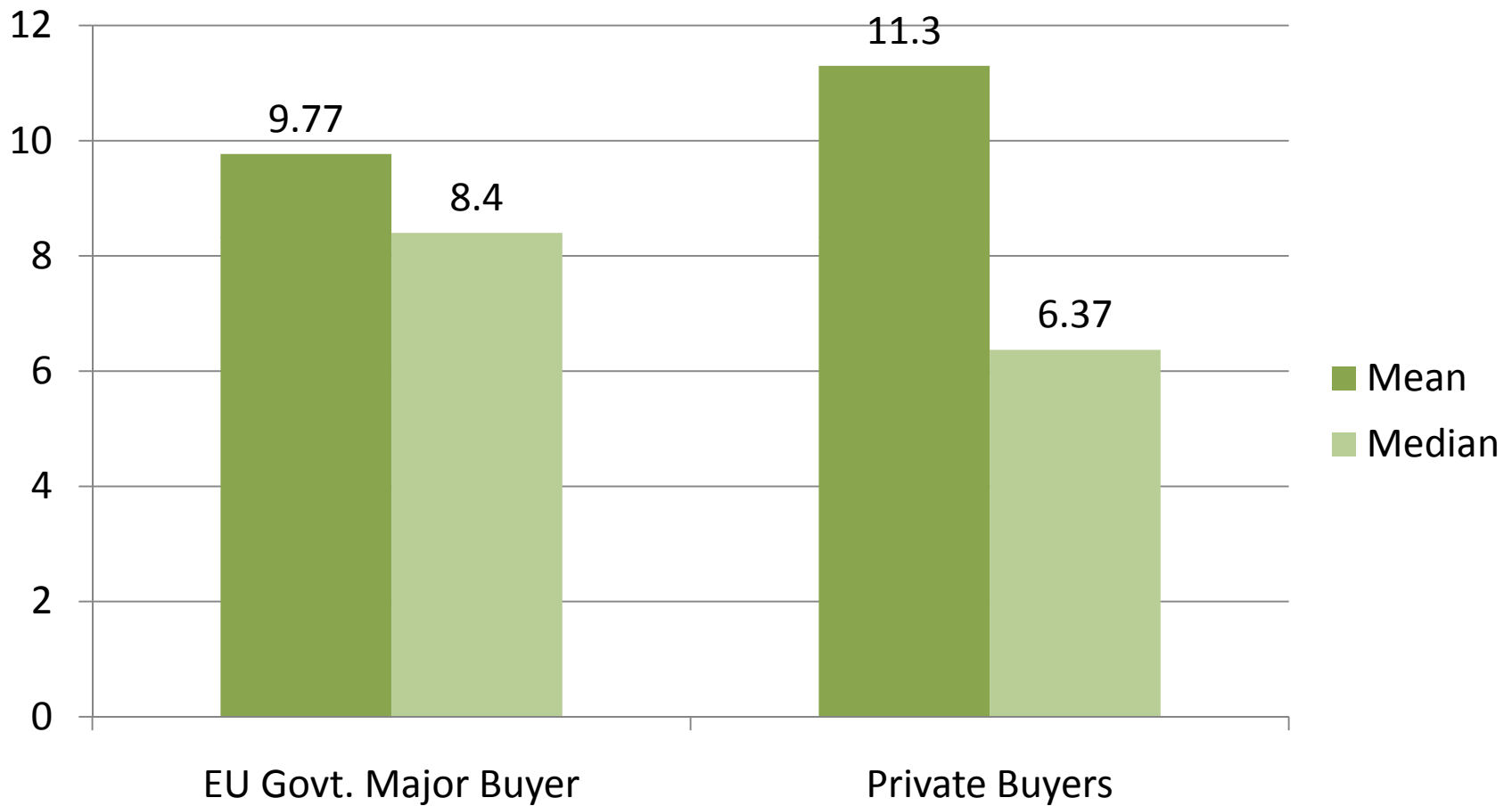




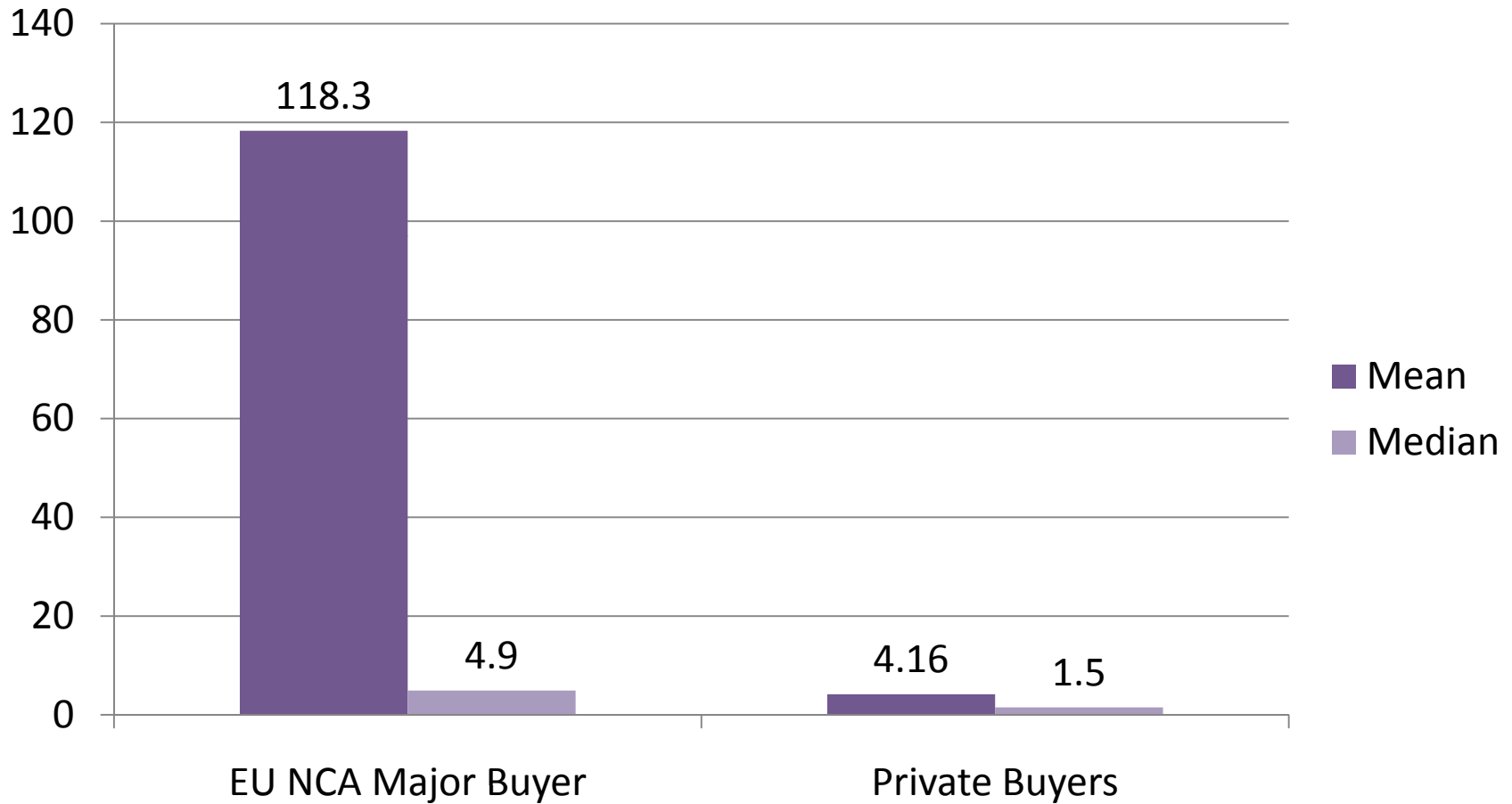
# Severity of Canadian Fines by Type of Buyer



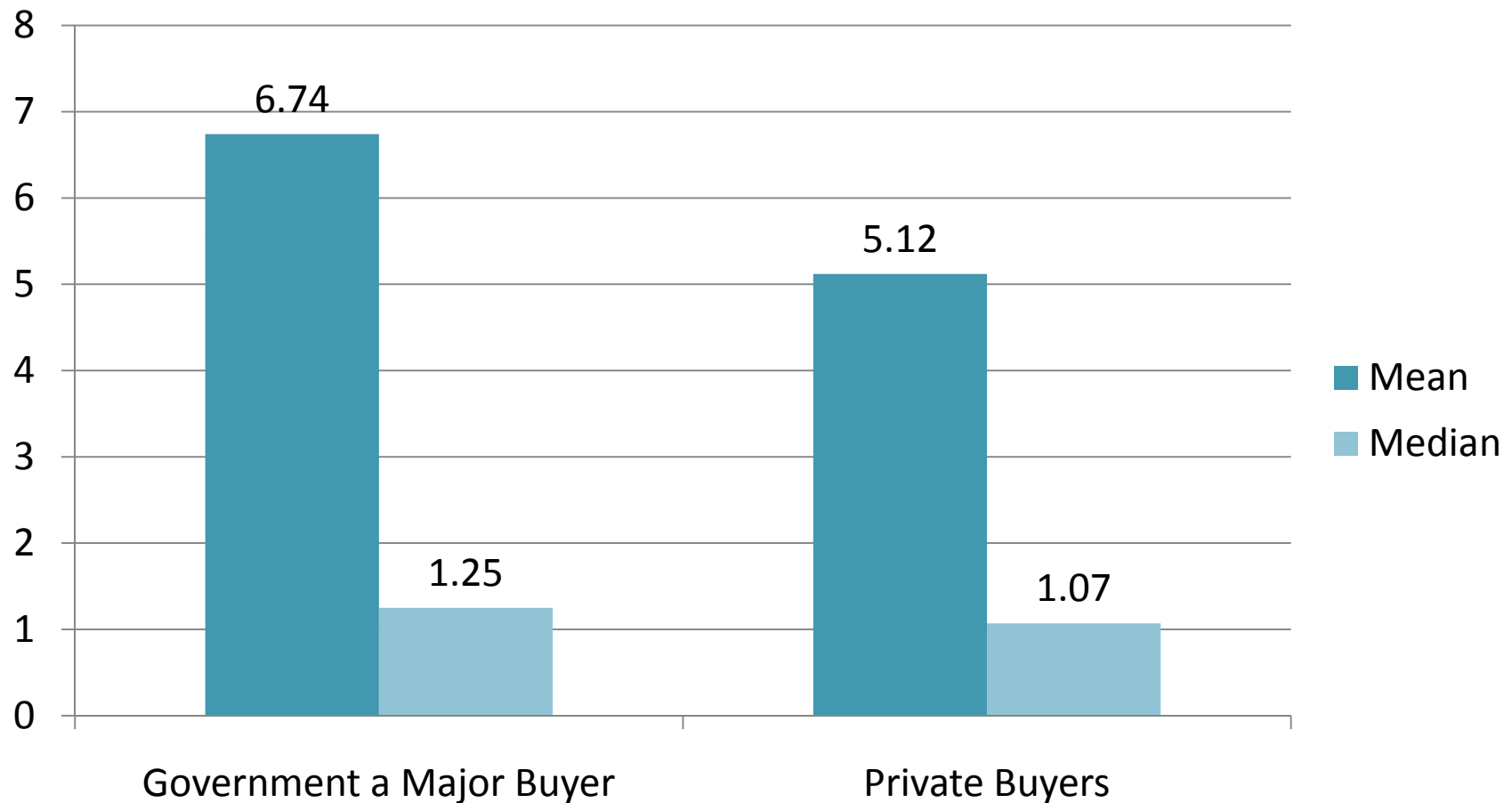
# Severity of EC Fines by Type of Buyer



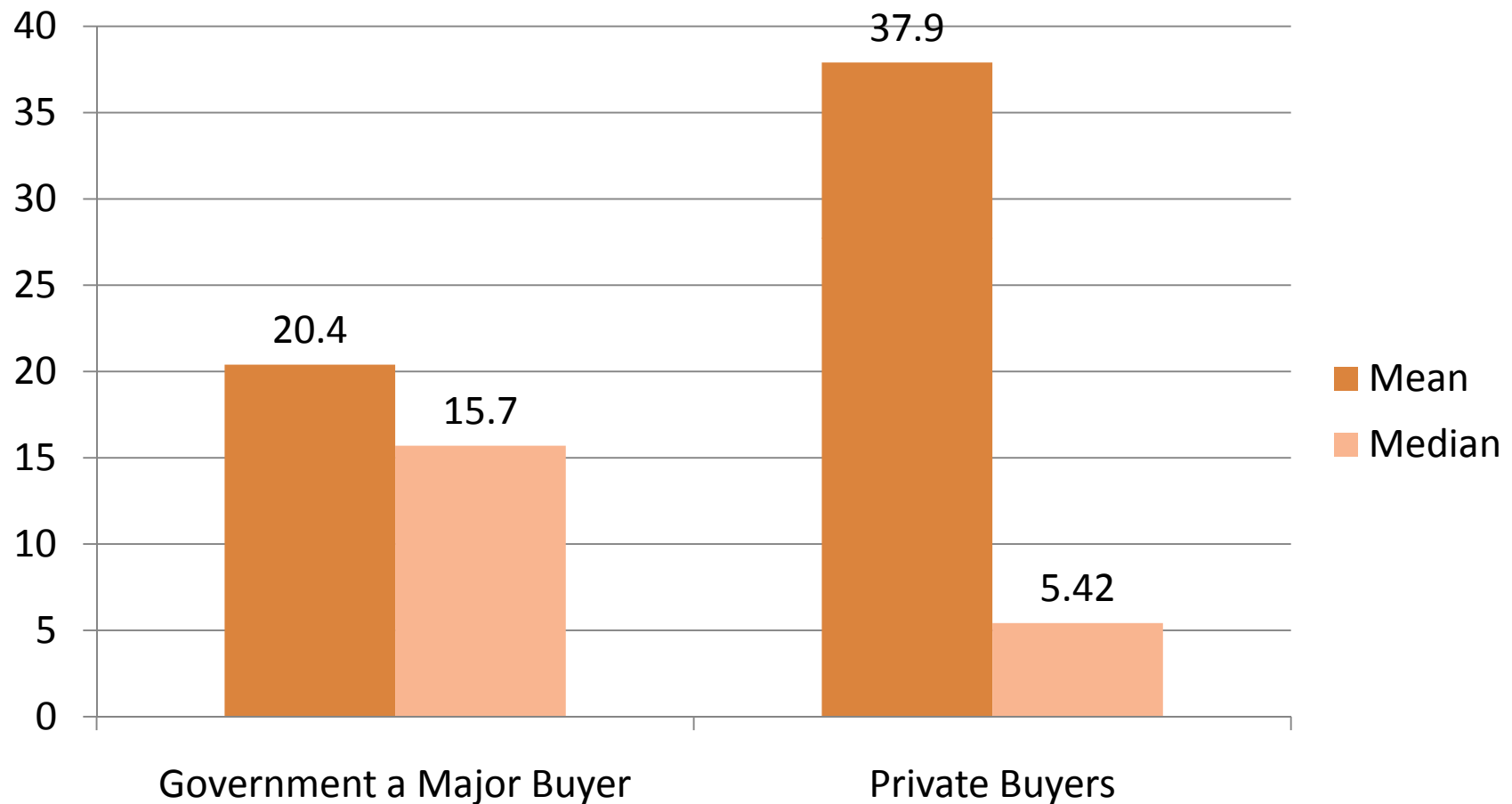
# Severity of EU NCA Fines by Type of Buyer



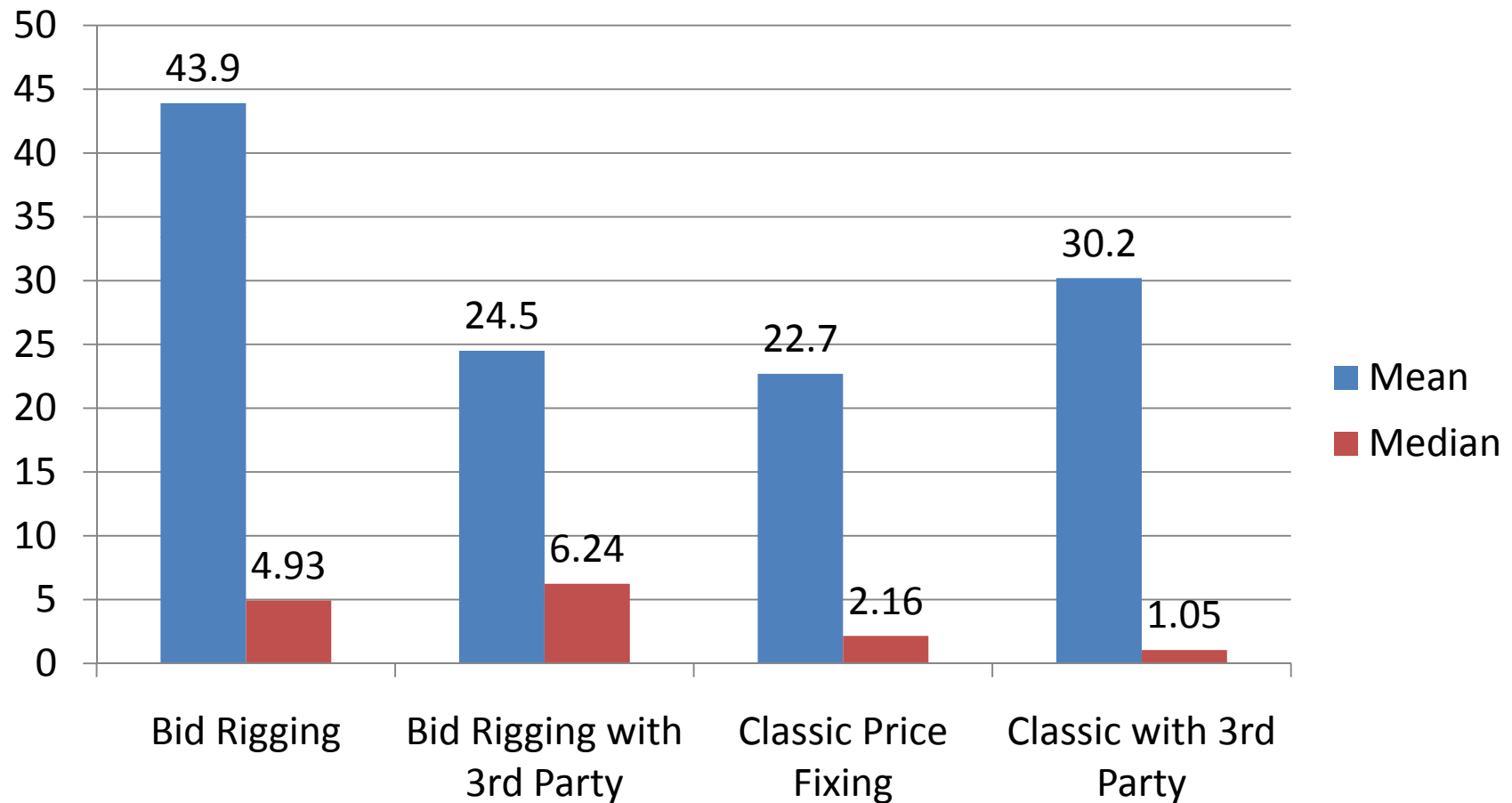
# Severity of Other Nations' Fines by Type of Buyer



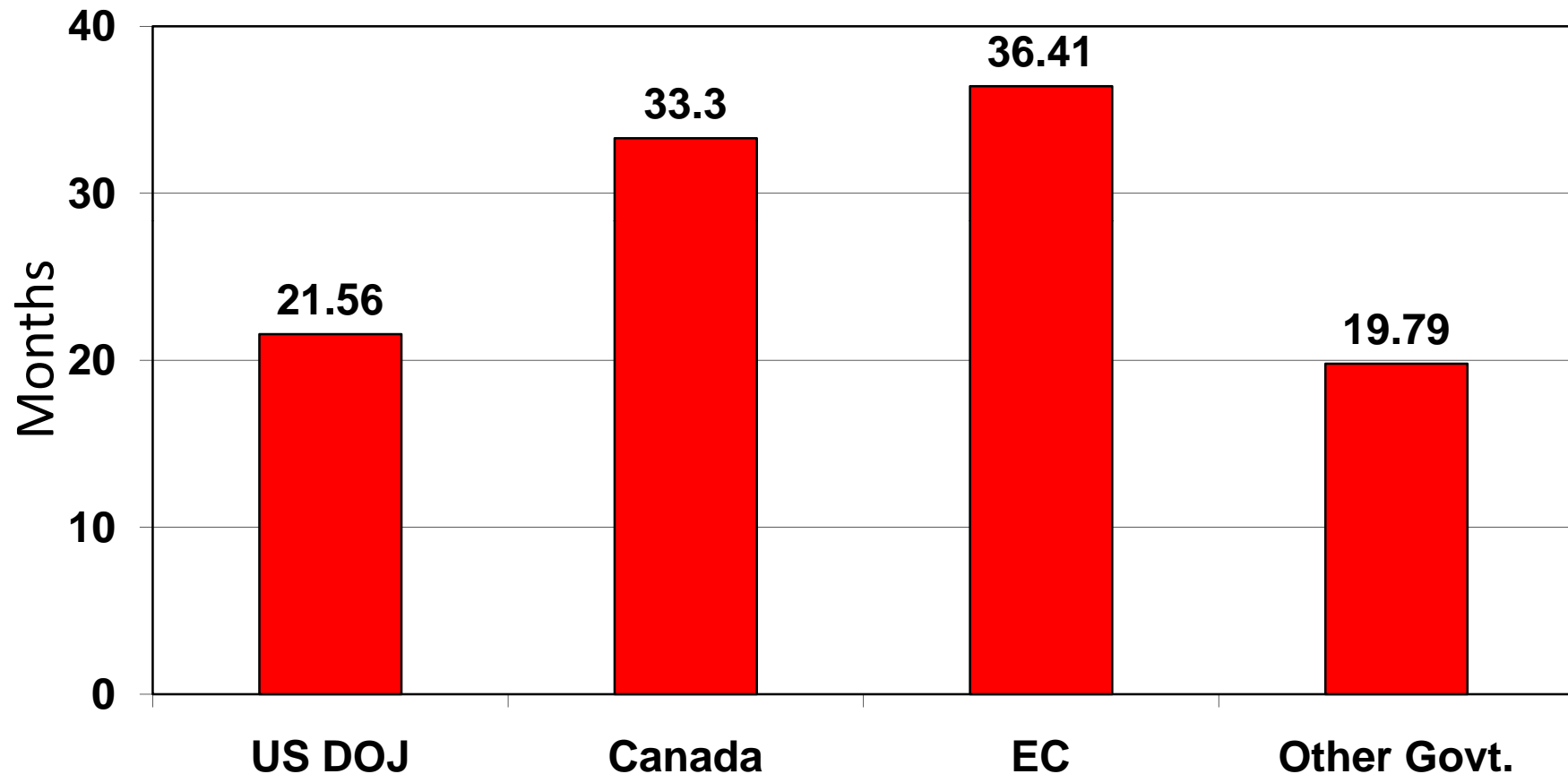
# Severity of Private Settlements by Type of Buyer



# Severity of Total Penalties by Type of Pricing Conduct

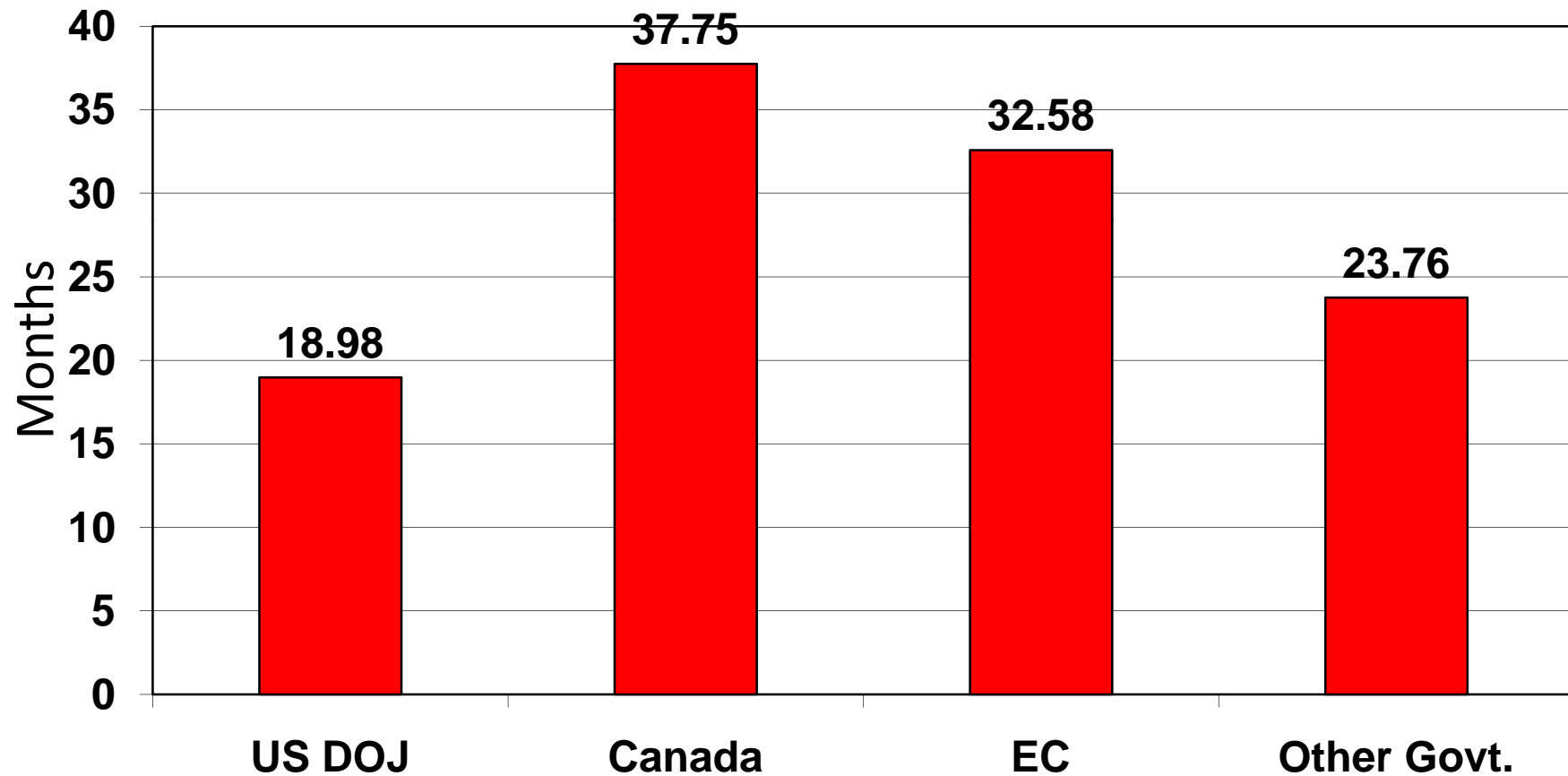


## **MEDIAN LENGTH** of Investigations of All International Cartels, 1990-2008



Excludes secret investigations

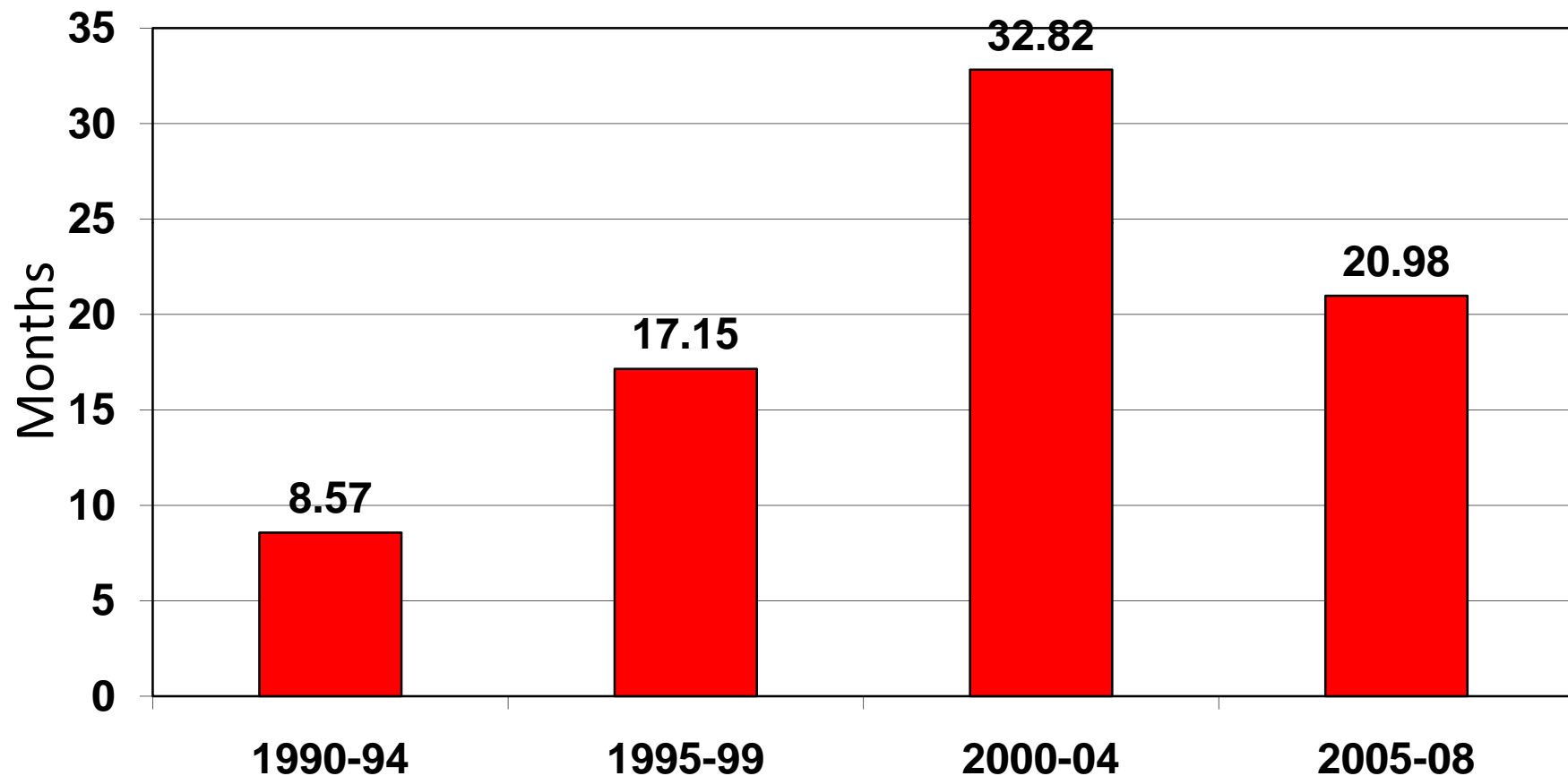
## **MEDIAN LENGTH** of Investigations of Global Cartels, 1990-2008



Excludes secret investigations

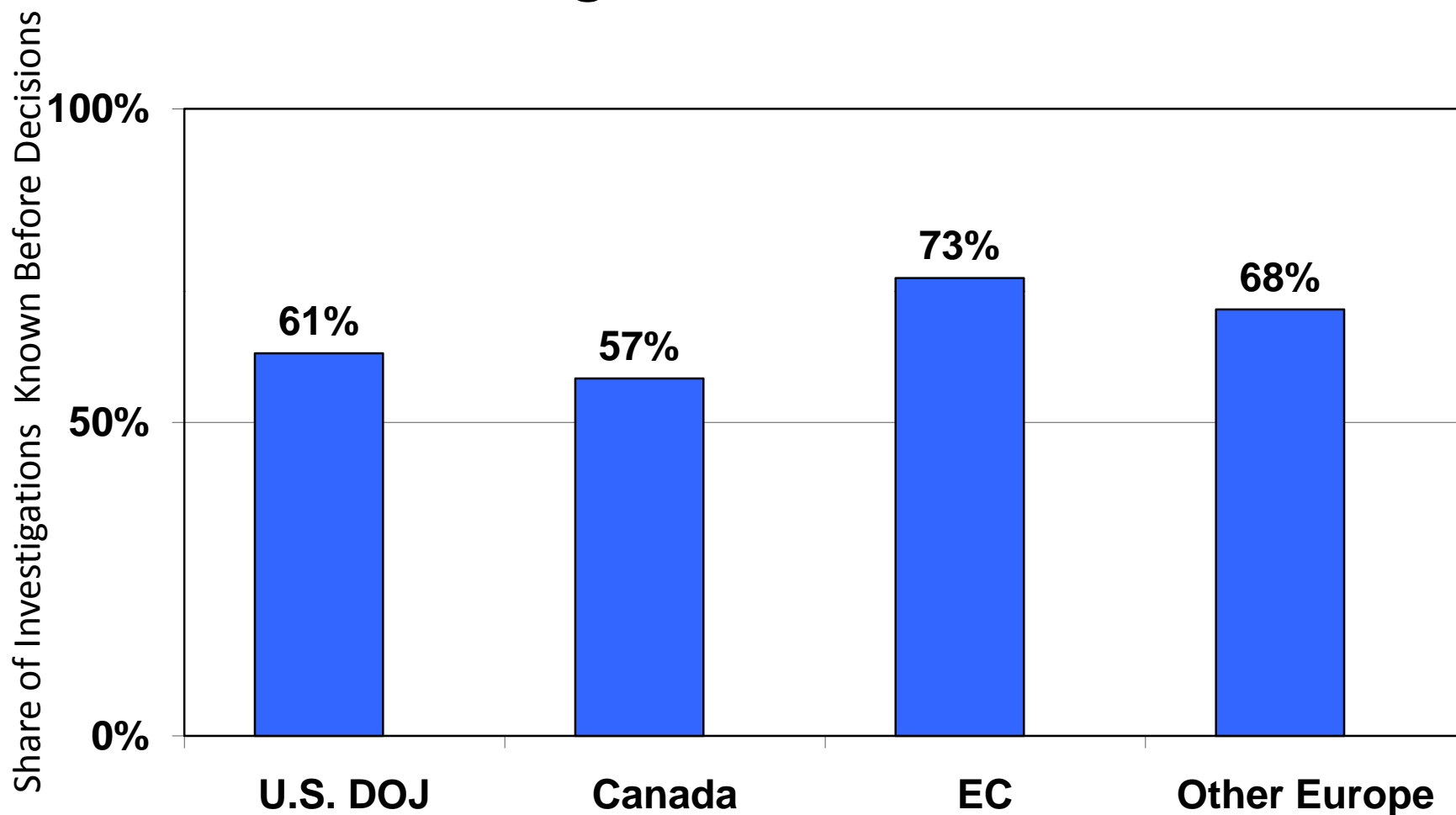


## **TREND in LENGTH** of Median Investigation, US DOJ, 1990-2008



Understates length because termination is year the first cartel was fined

## Transparency of International Cartel Investigations, 1990-2008



# Sources

- John M. Connor. *Private International Cartels: Full Data*. [The PICs spreadsheet, first created about 1998, is continuously updated. As of December 2008, the combined “Full Data” spreadsheet was a file of 6.4MB and consisted of 4700 observations of 512 actual and suspected cartels and 4200 cartelists (companies and individual participants) with 1.1 million cells of data. There are also 13 back-up spreadsheets.]
- John M. Connor. *DOJ Cartel Enforcement 1990-2007*. [A spreadsheet created late 2007 and completed in early 2008. Contains annual budgets, activities, and enforcement actions with respect to cartels.]
- John M. Connor and Gustav Helmers. *Statistics on Modern Private International Cartels: Working Paper 07-01*. Washington, DC: American Antitrust Institute (January 2007).  
[<http://www.antitrustinstitute.org/recent2/567.pdf>]
- John M. Connor. *Cartel Amnesties Granted: Worldwide Whistleblowers SSRN Working Paper* (October 2008). [at SSRN: <http://ssrn.com/abstract=1285469>]