



# Platinum Group Metals Yearbook 2019



CPM Group

Jeffrey M. Christian  
Rohit Savant

9 July 2019

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# *PGM Prices and Inventories*

# Platinum Prices

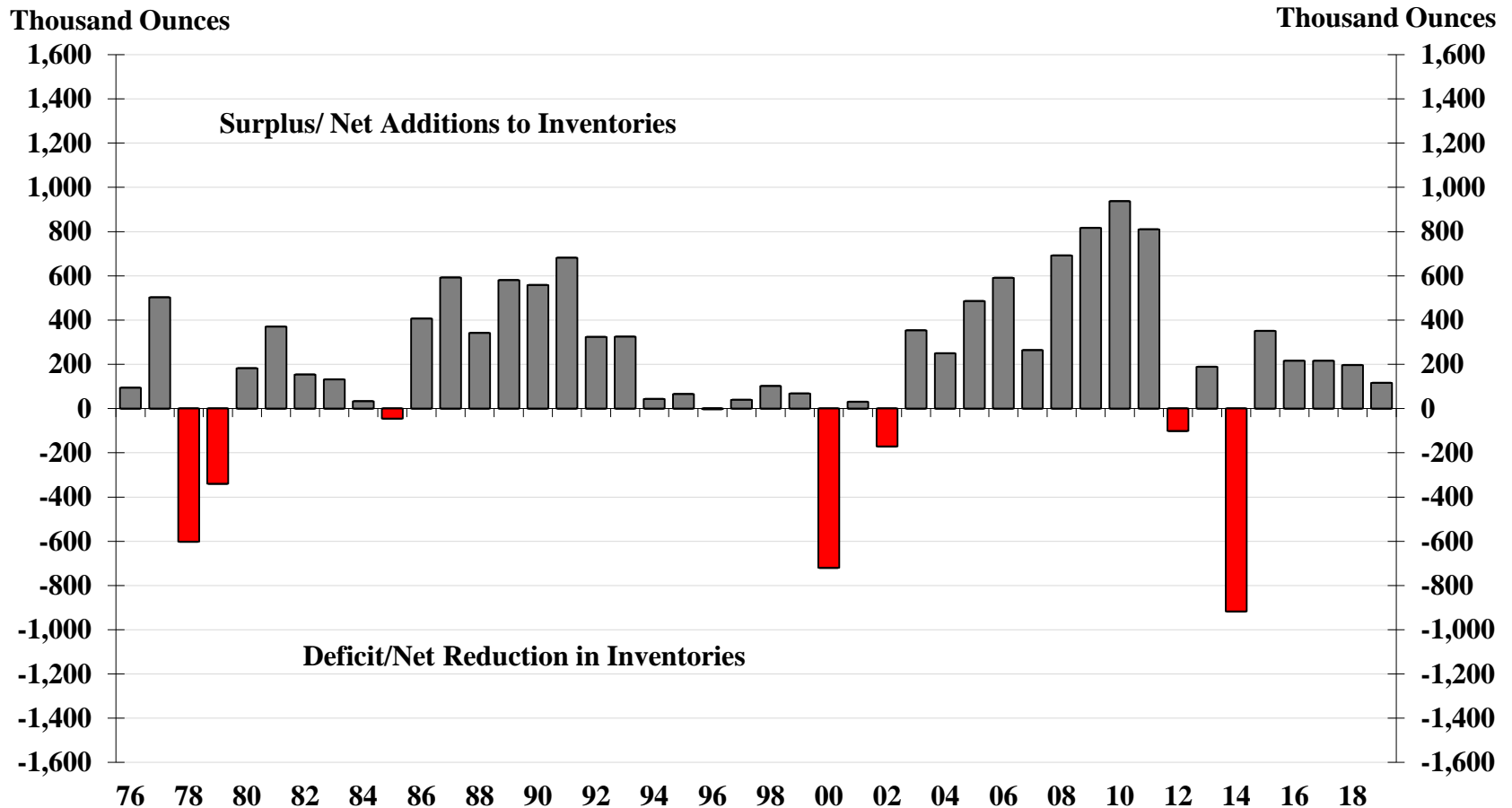
Platinum Prices: 1 January 2010 to 8 July 2019

\$ / Oz



# Platinum Market Remains In A Surplus

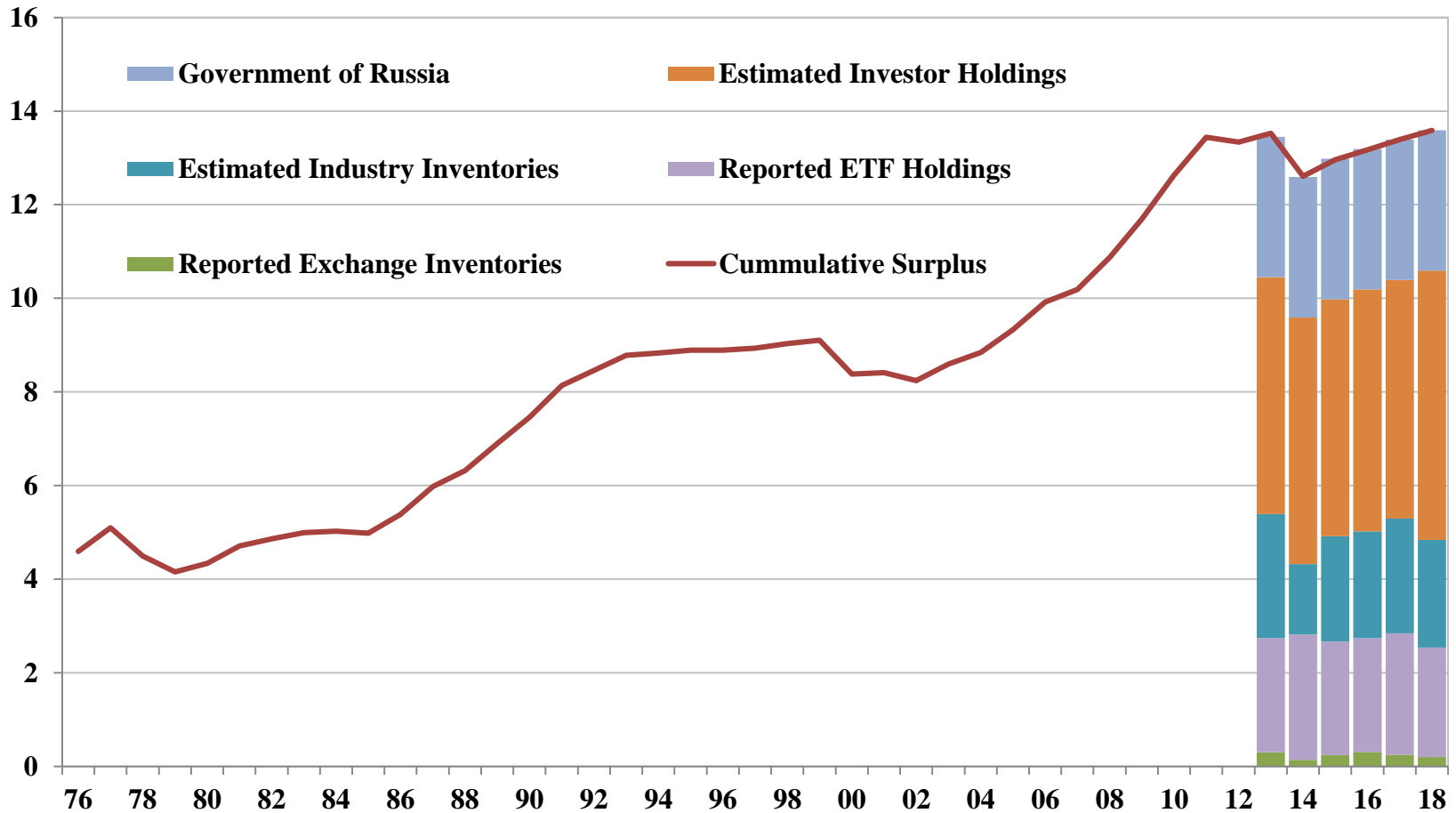
**Platinum Surplus/Deficit**  
**Annual, Projected Through 2019**



# Platinum Inventories

## Cumulative Platinum Surplus And Its Disposition

Mil. Oz.



# Palladium Prices

Palladium Prices: 1 January 2010 to 8 July 2019



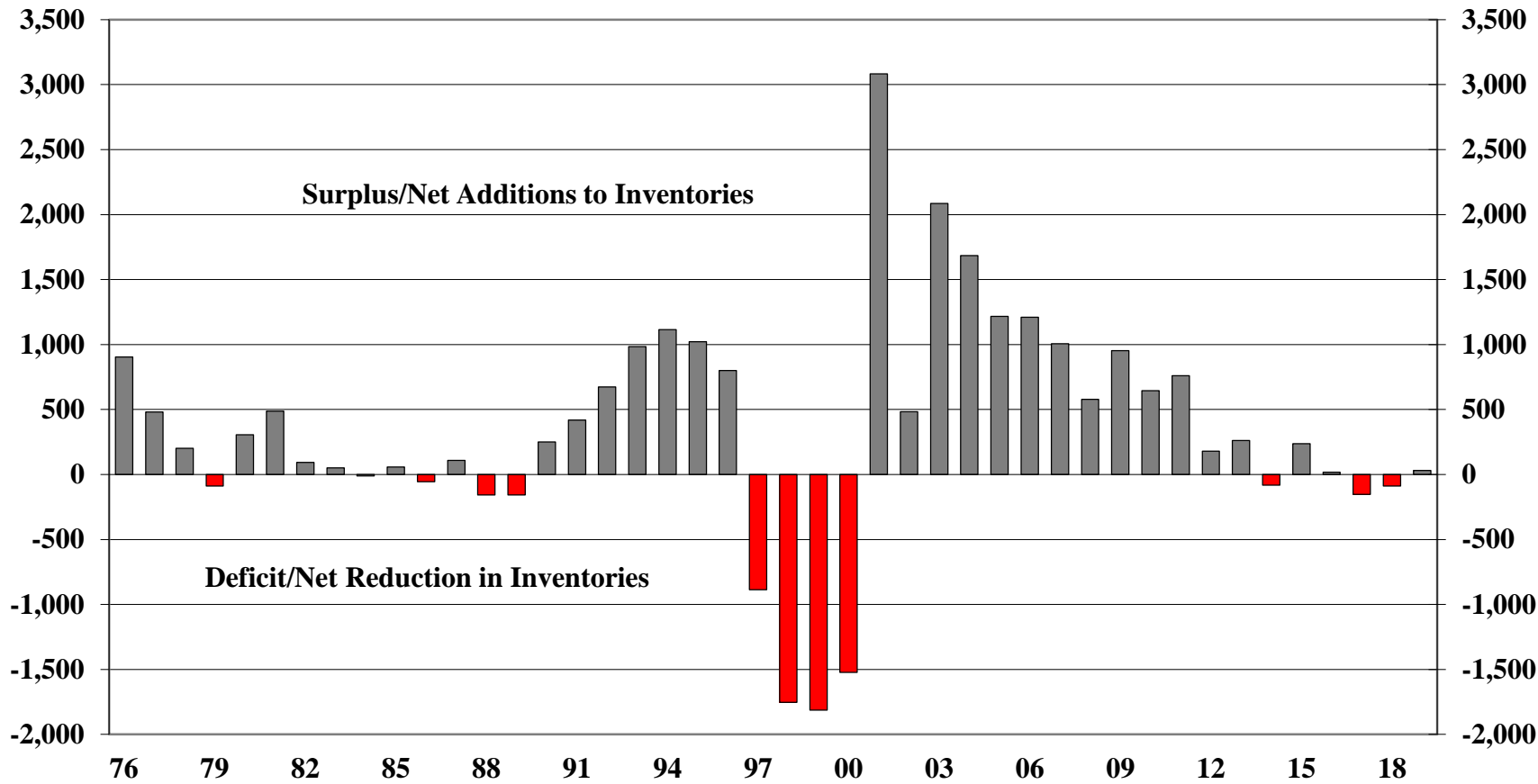
# Palladium Tight Market Conditions

## Palladium Surplus/Deficit

Annual, Projected Through 2019

Thousand Ounces

Thousand Ounces

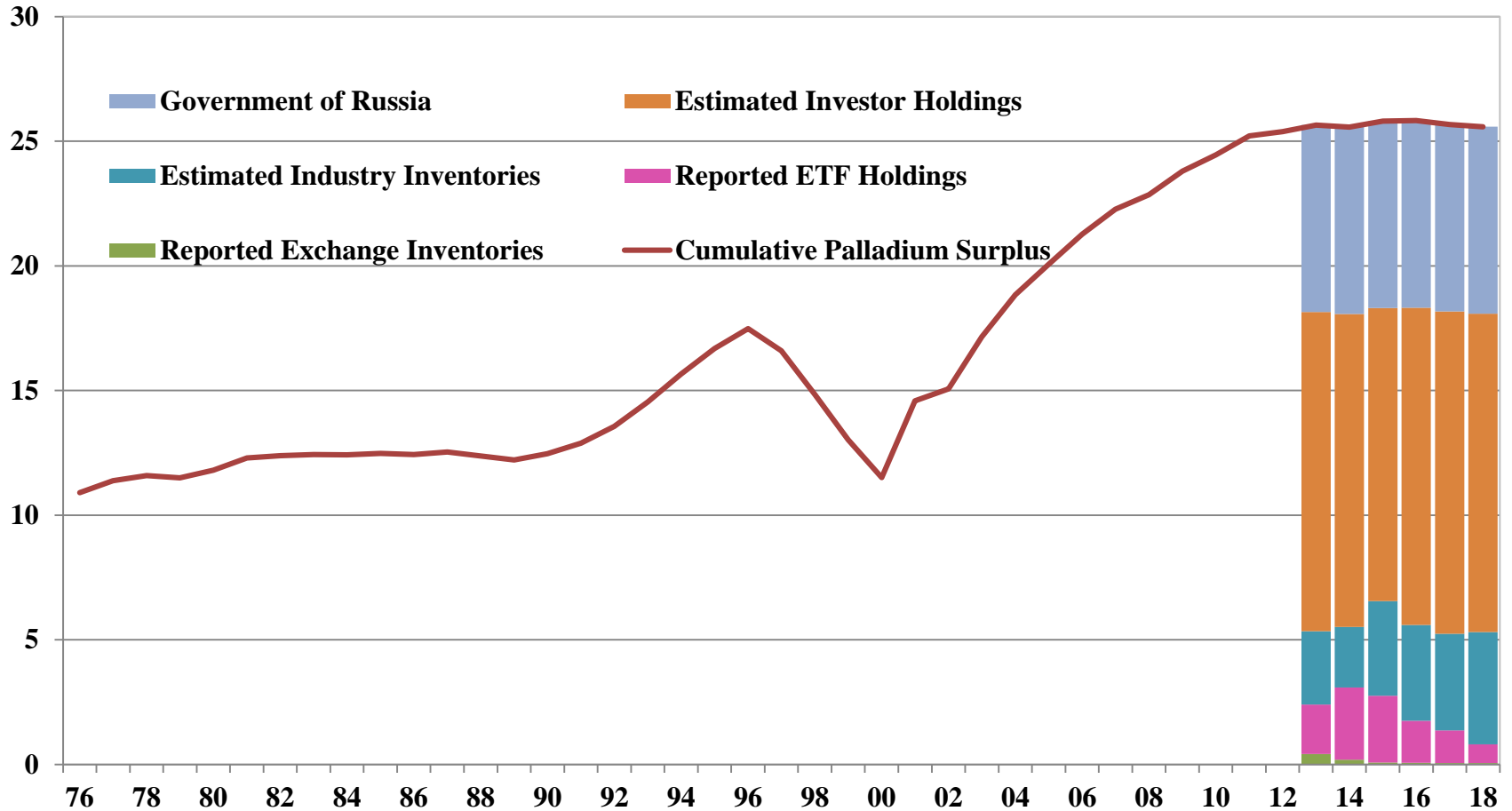




# Palladium Inventories

## Cumulative Palladium Surplus And Its Disposition

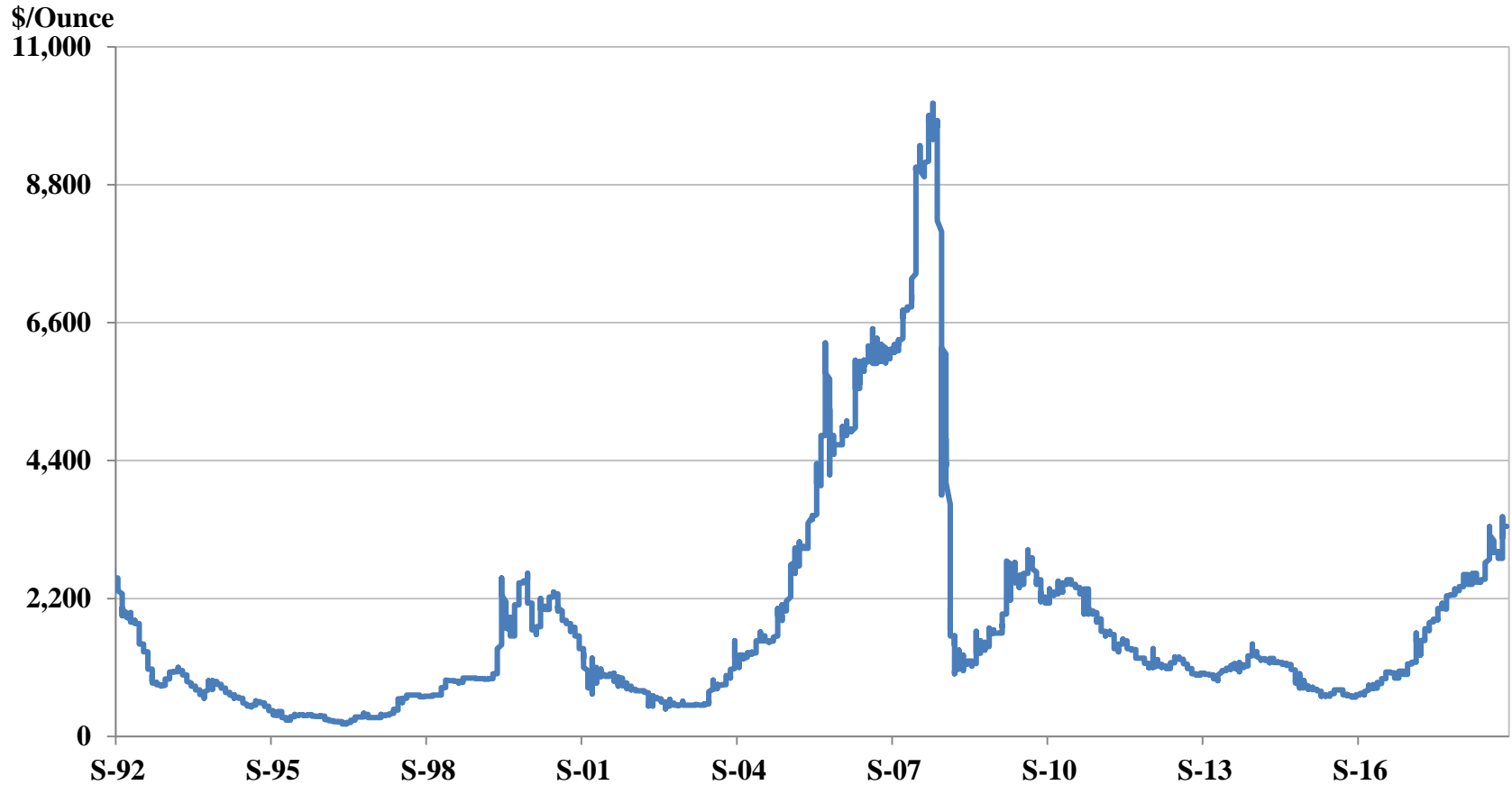
Mil. Oz.



# Rhodium Prices

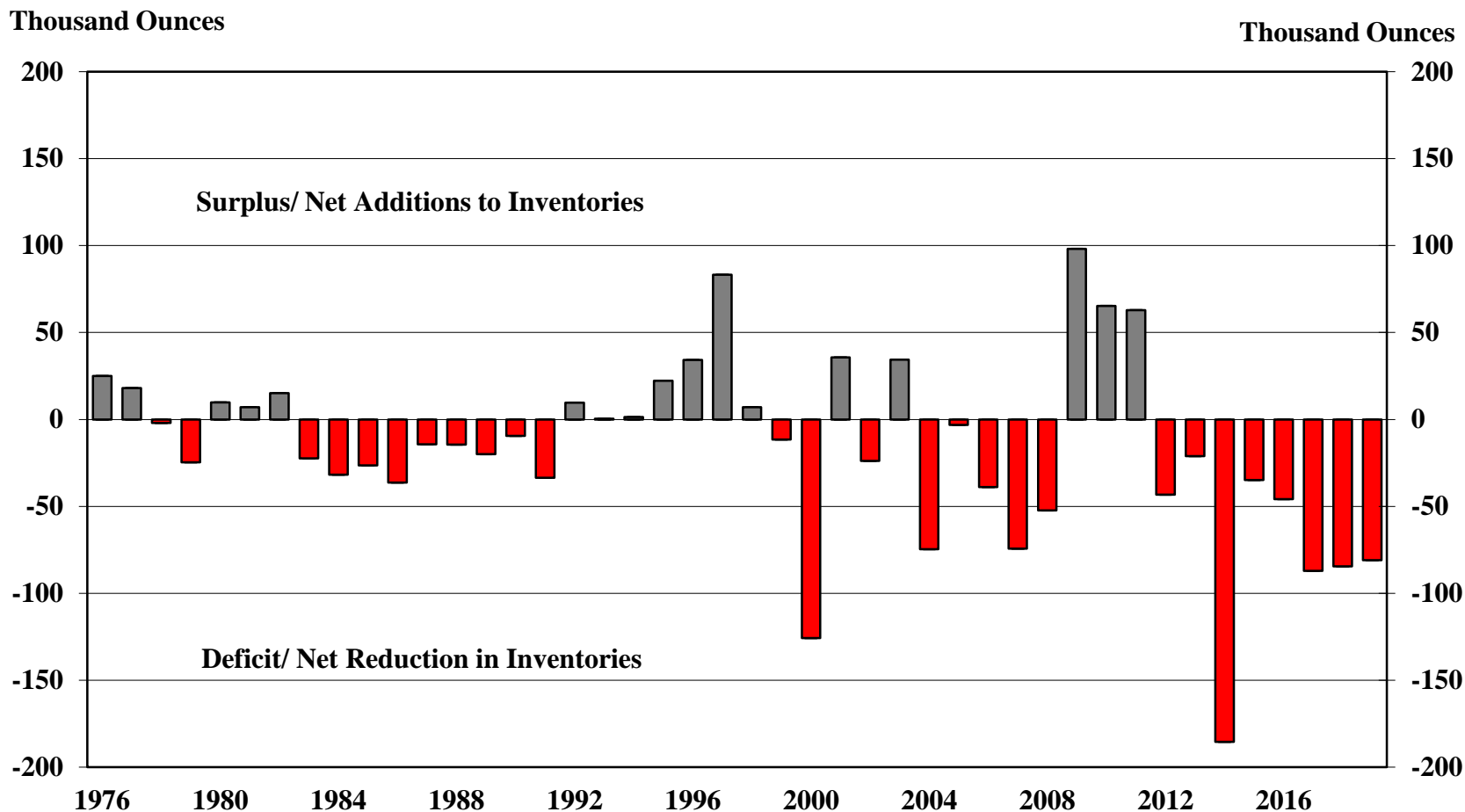
## Daily JM Rhodium Prices

Through 8 July 2019



# Rhodium Surplus/Deficit

Rhodium Surplus/Deficit  
Annual, Projected Through 2019

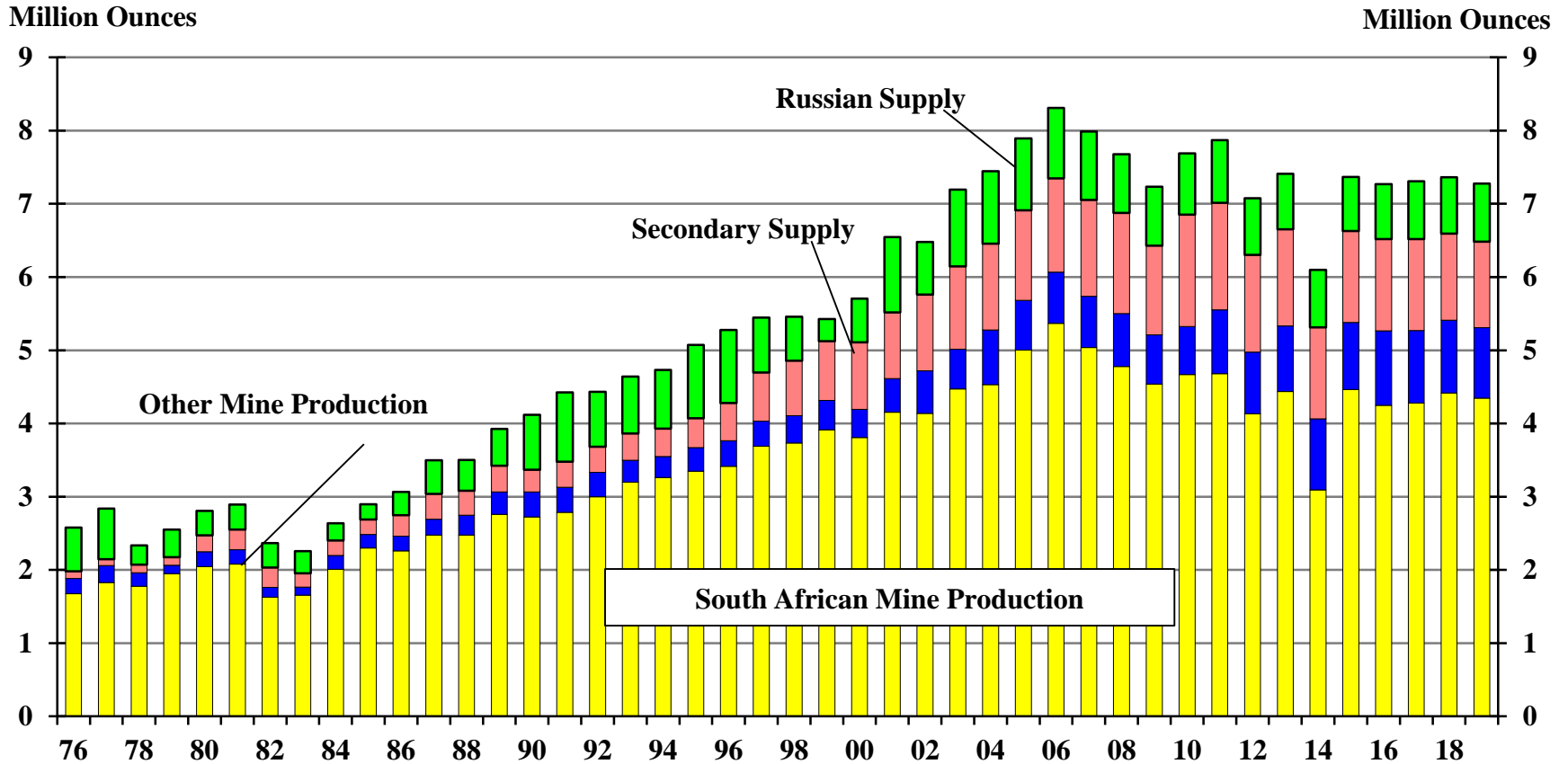


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# *Platinum*

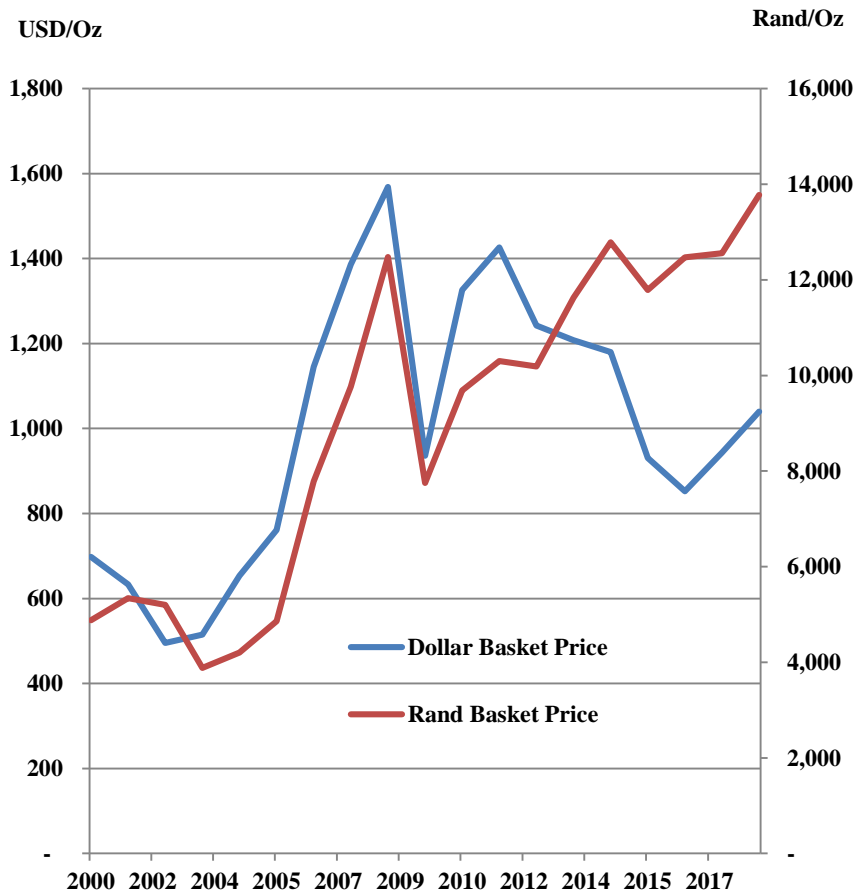
# Platinum Supply: More Than Needed

Annual Platinum Supply  
Projected Through 2019

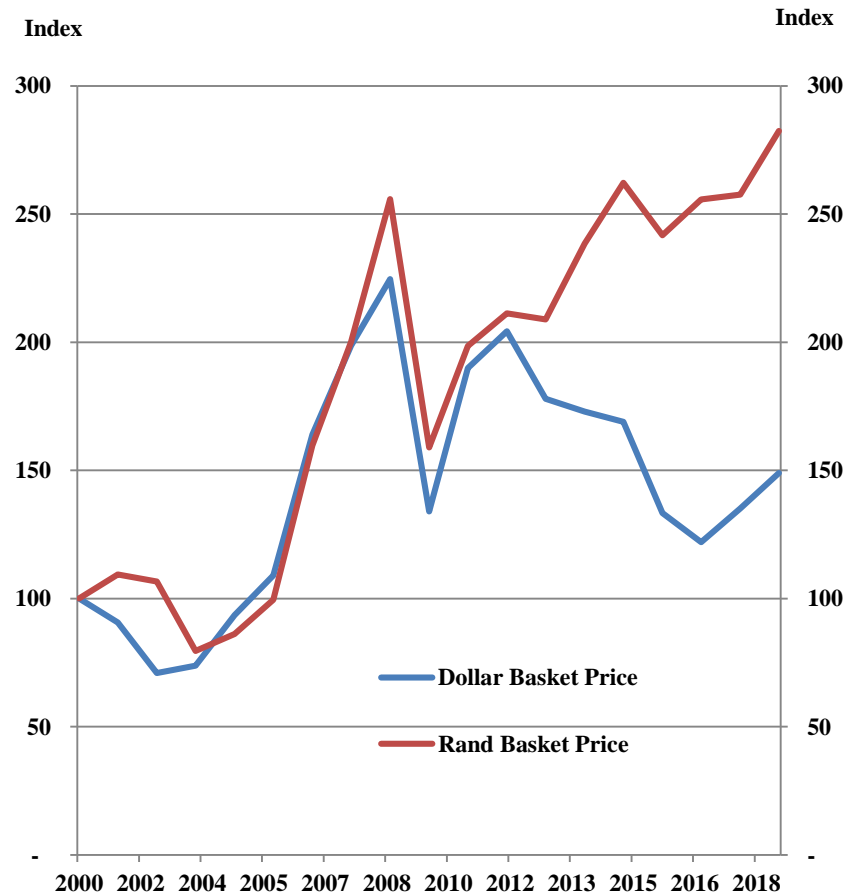


# Rand To The Rescue

3PGM+Au Basket Price

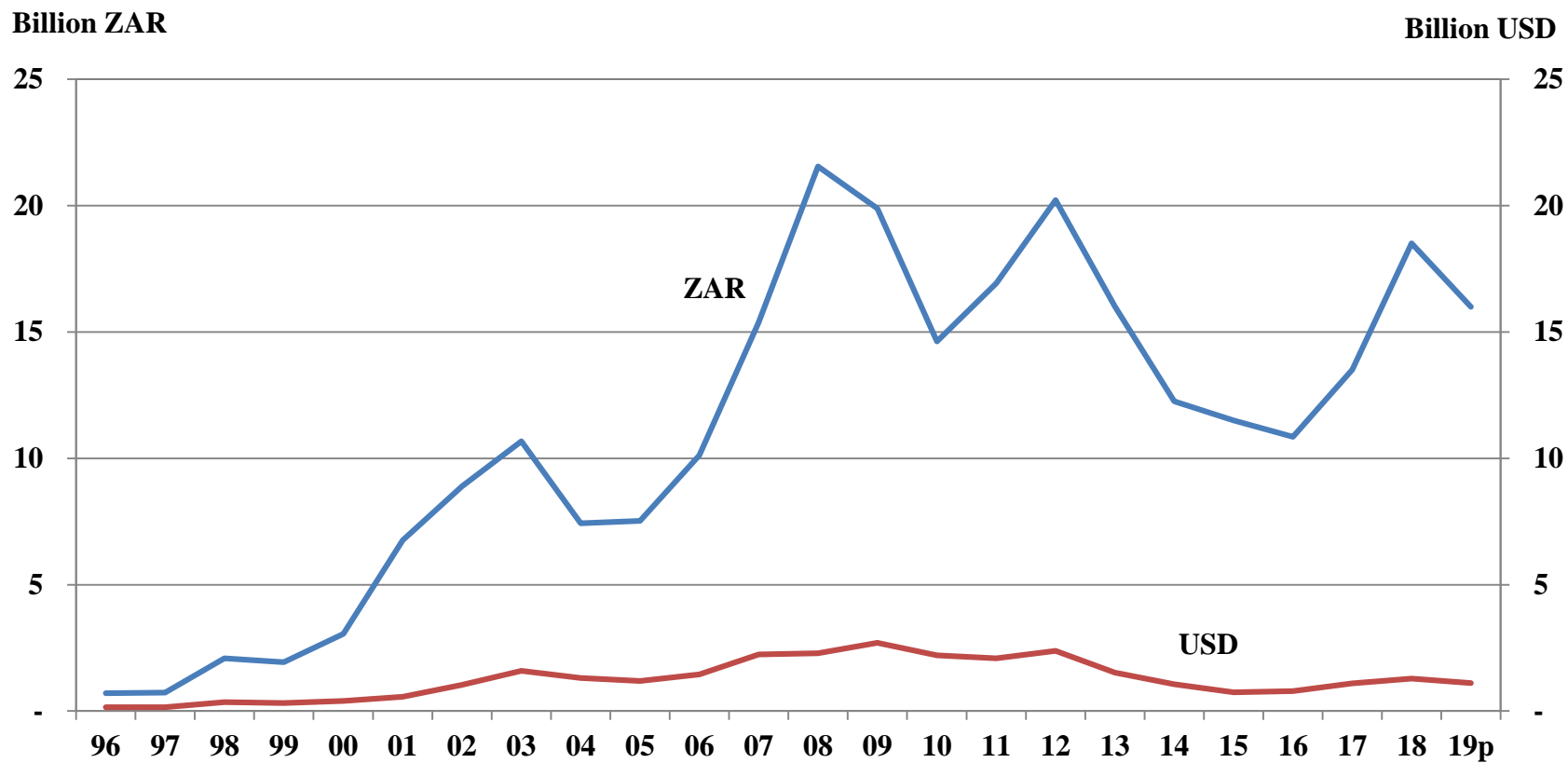


3PGM+Au Basket Price



# South African Platinum Mining Capex

## Total South African Capex



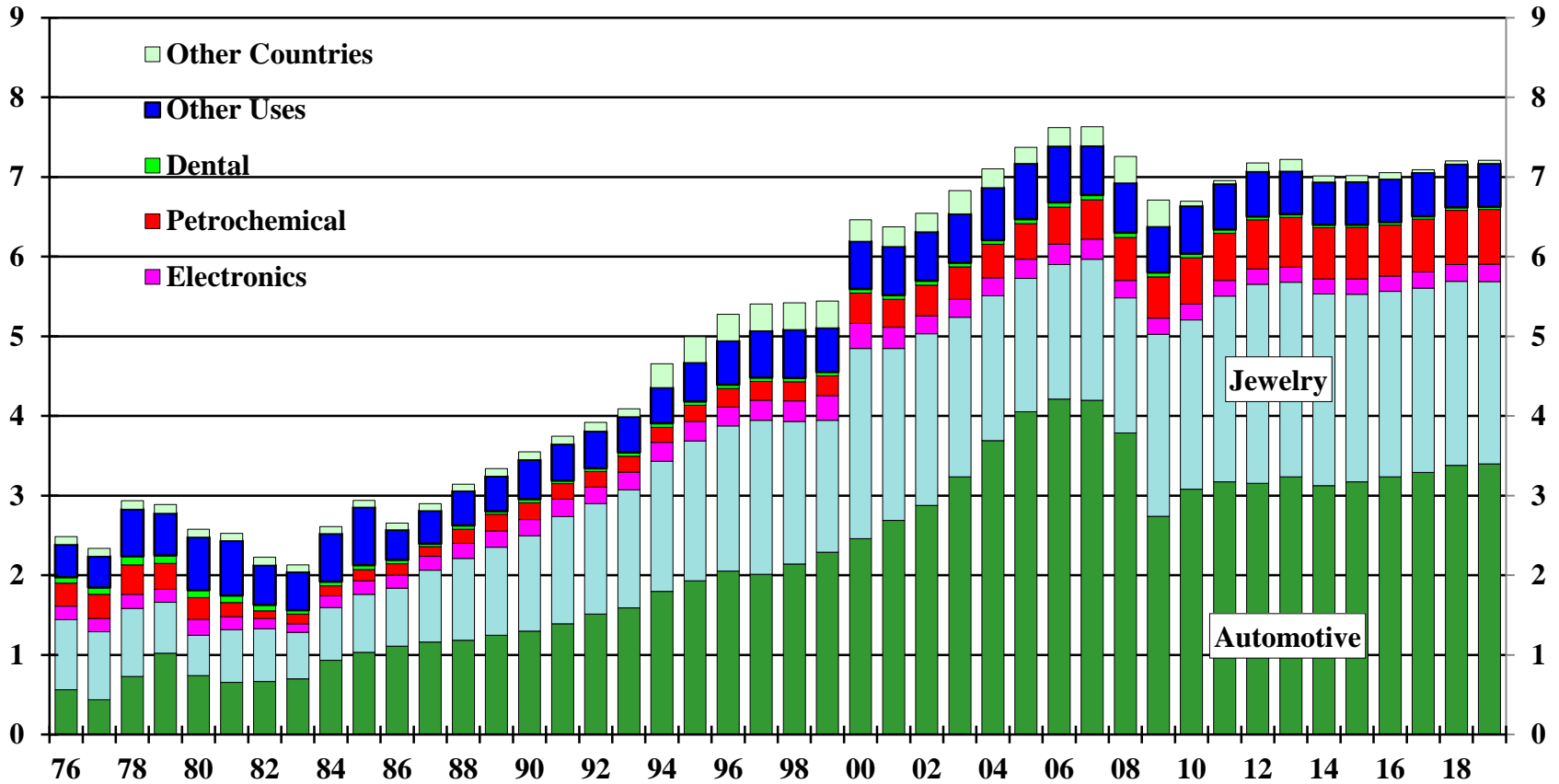
# Fabrication Demand Continues To Inch Higher

## Annual Platinum Fabrication Demand

Through 2019

Million Ounces

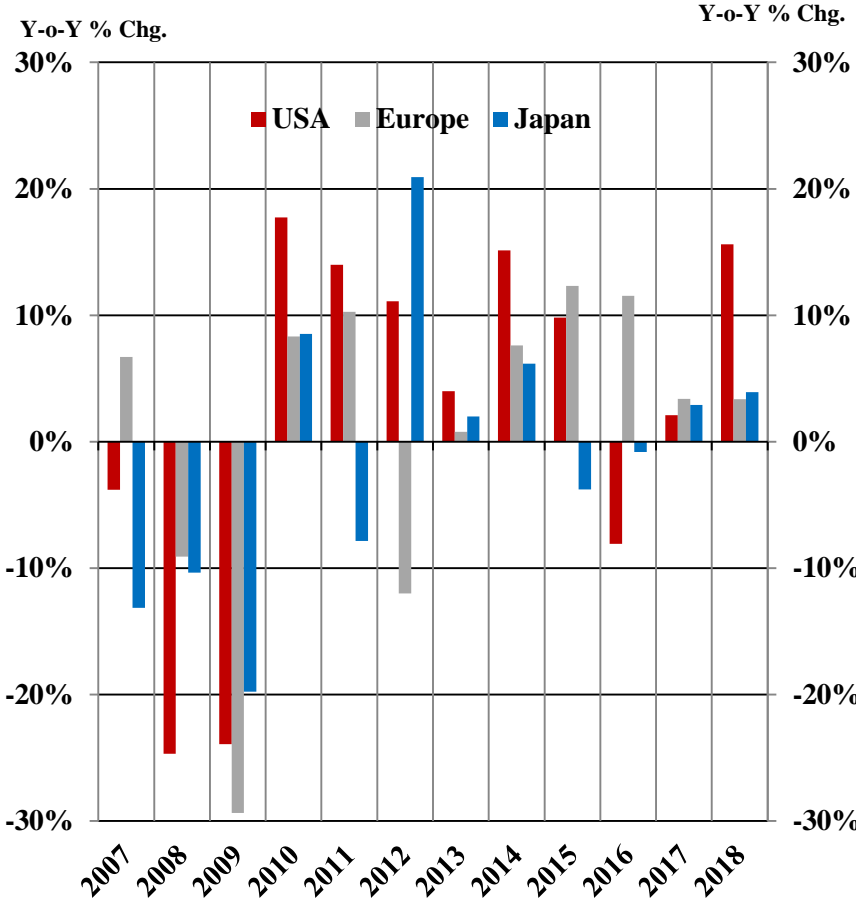
Million Ounces



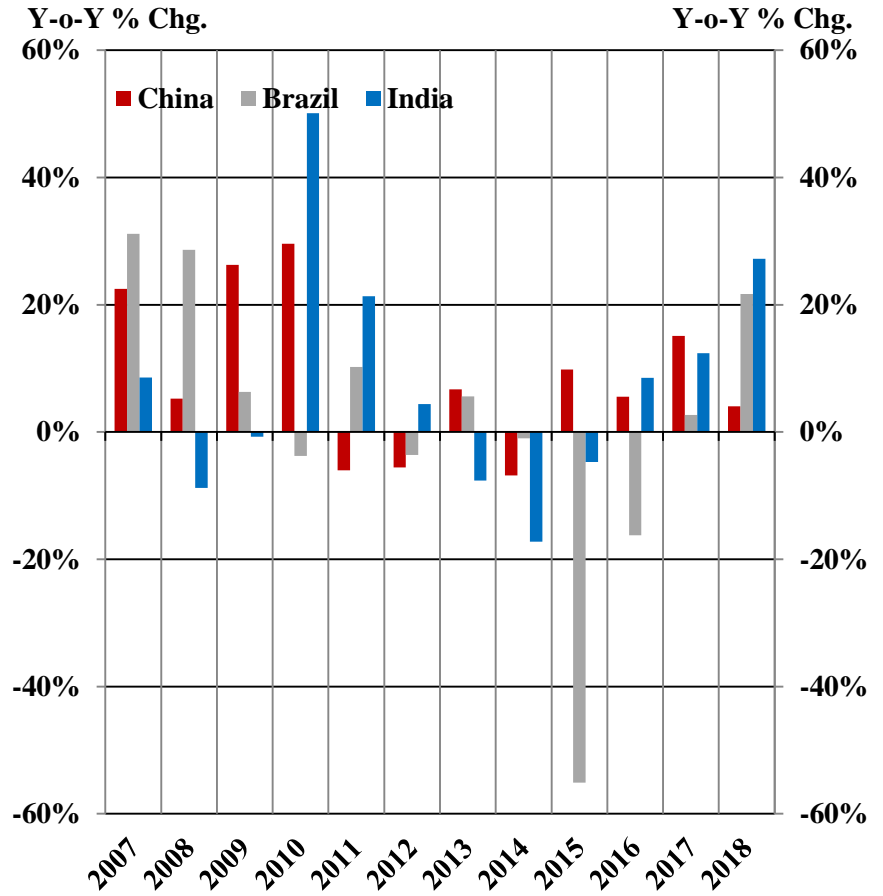


# Strength In Commercial Vehicles Sales Has Been Driving Force

Commercial Vehicle Sales in Major Developed Auto Markets



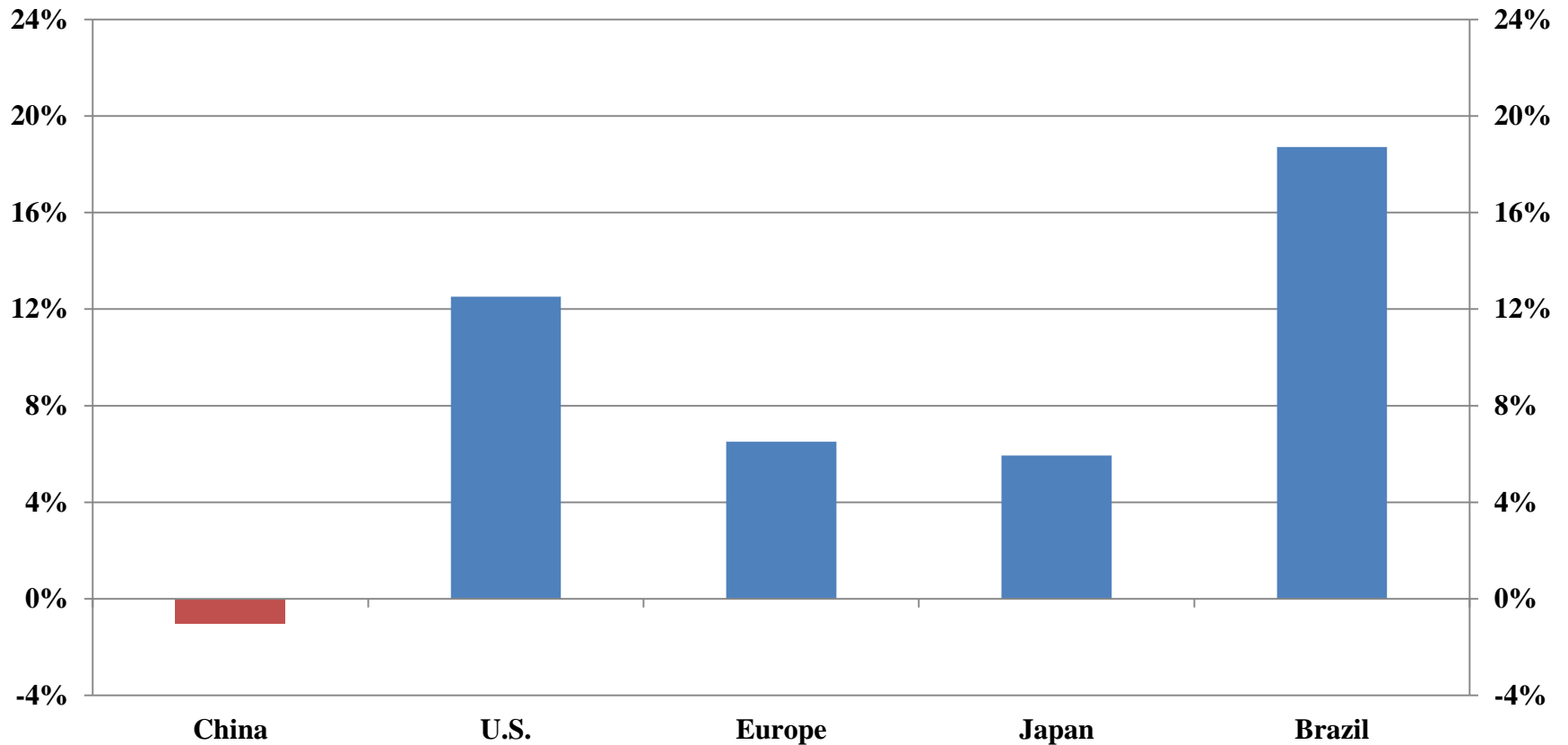
Commercial Vehicle Sales in Major Developing Auto Markets



# But This Source Of Demand Is Expected To Be Weaker This Year

## YTD Commercial Vehicle Sales Growth by Region

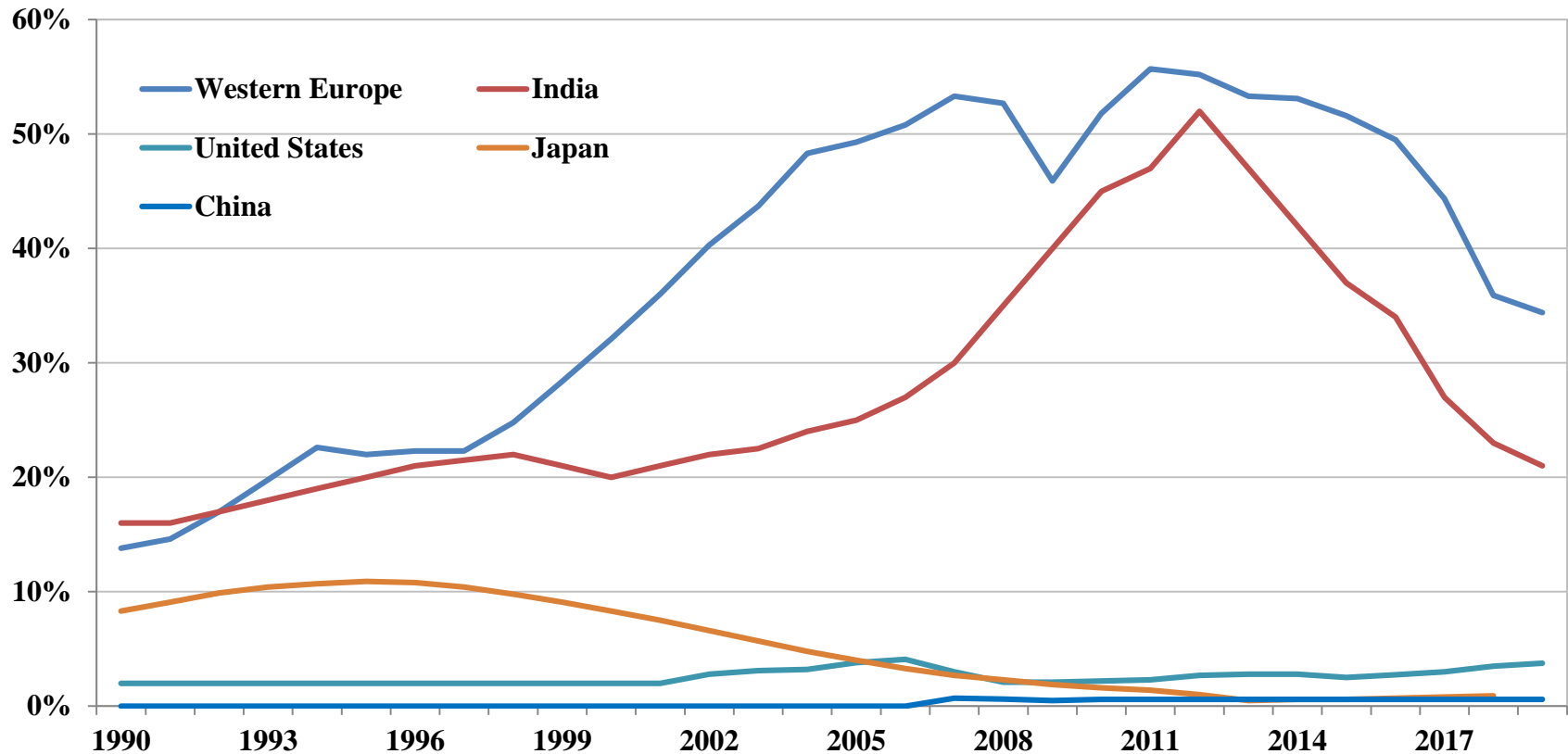
May 2019



# Declining Market Share For Diesel Passenger Vehicles

## Diesel's Market Share of Major Passenger Car Markets

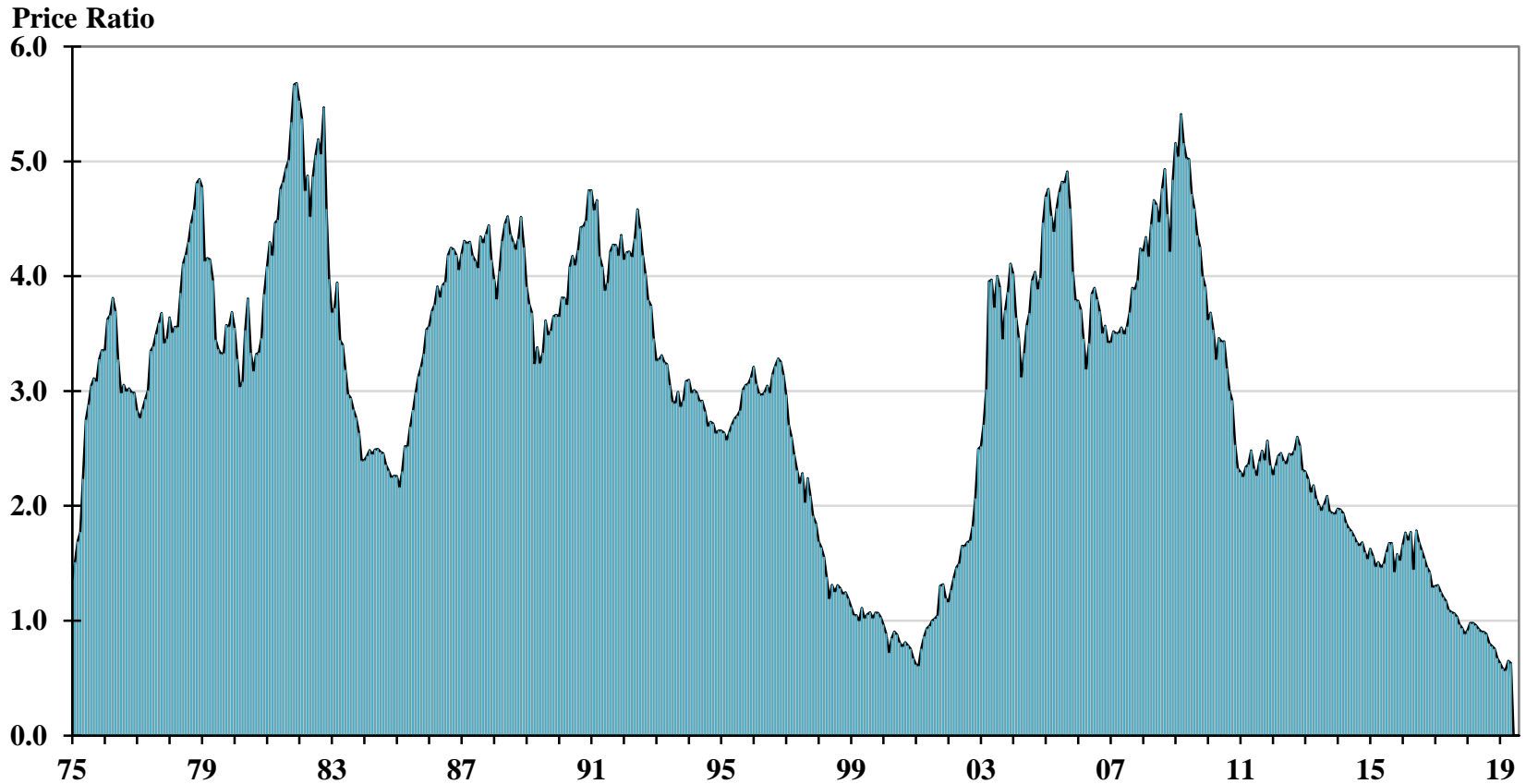
Annual, through 2019



Note: Japanese data is diesels as a percent of cars in use. U.S. data is estimated for 1990 through 2001.  
Sources: Historical data-JAMA, ACEA, CAAM, news articles. Projections & estimated data-CPM Group

# Substitution of Palladium with Platinum

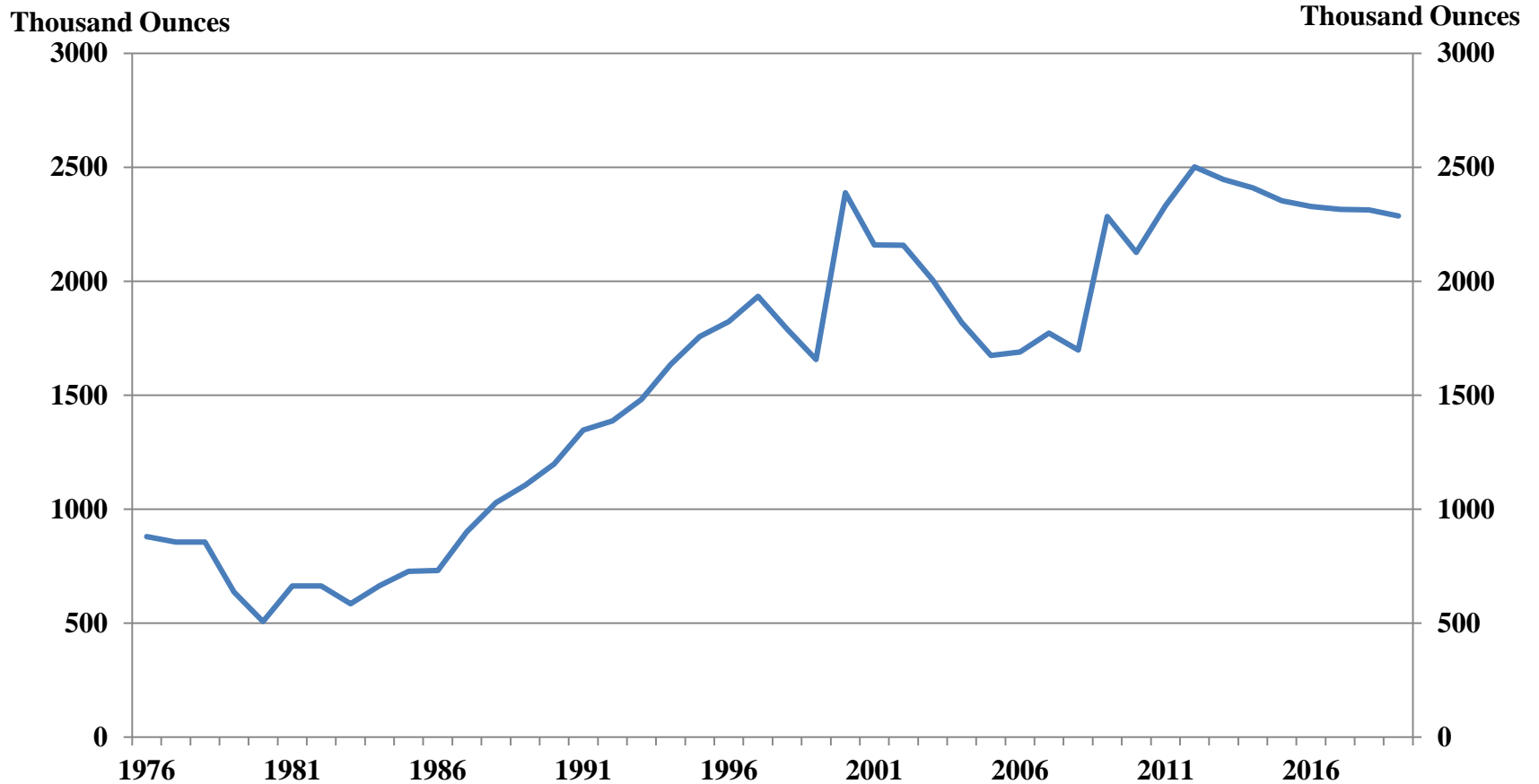
Platinum - Palladium Price Ratio  
Monthly Data, Through June 2019



# Platinum Jewelry Demand Continues To Pose A Headwind

## Platinum Jewelry Demand

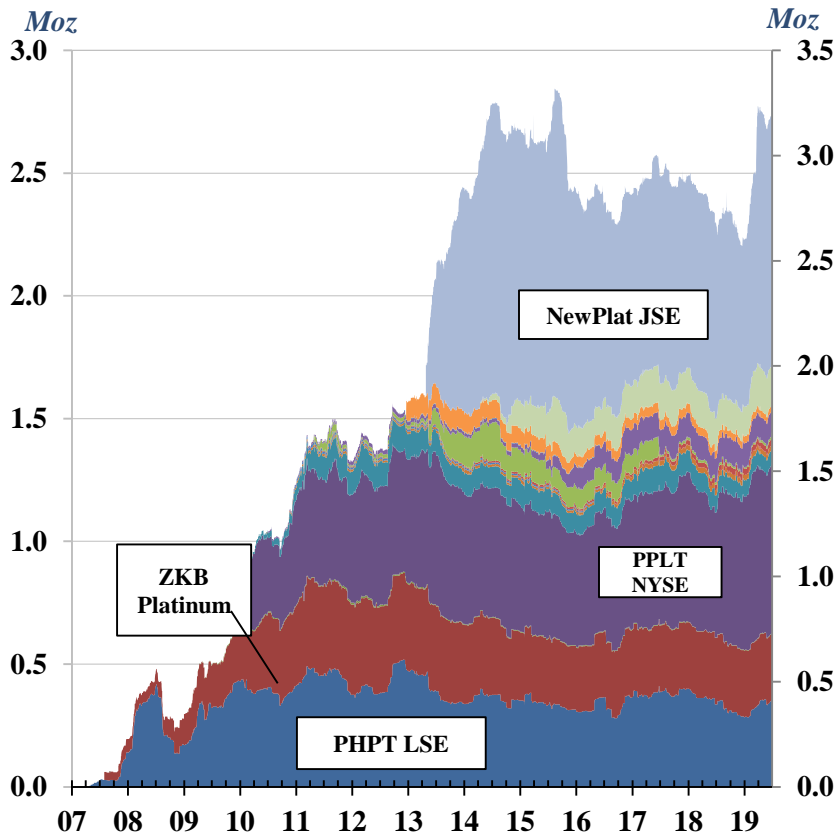
Annual Data, Projected Through 2019



# Platinum ETF Investors: Big Buyers YTD

## Platinum Exchange Traded Product Holdings

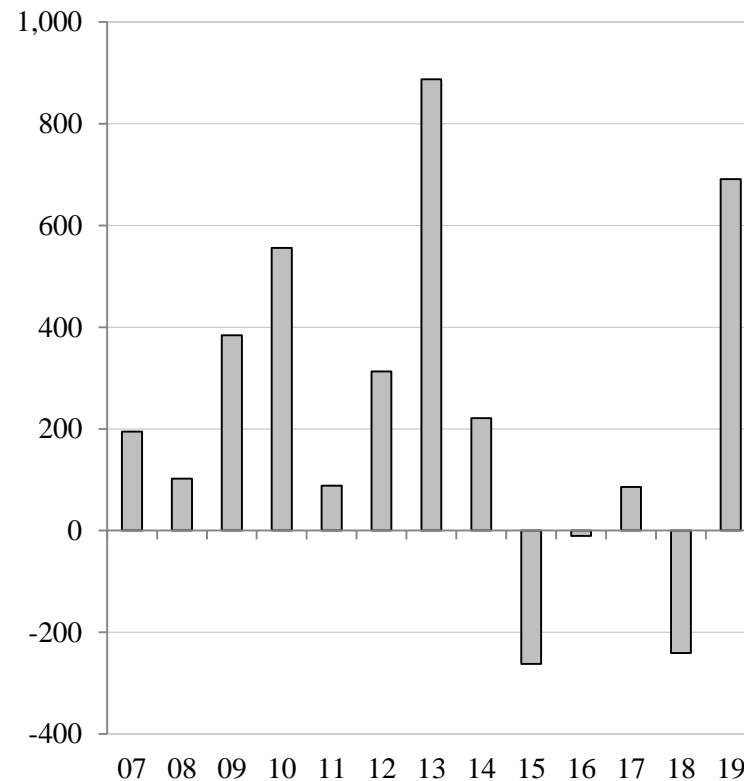
Daily, through June 2019



## Annual Changes to Platinum ETP Holdings

Through June 2019

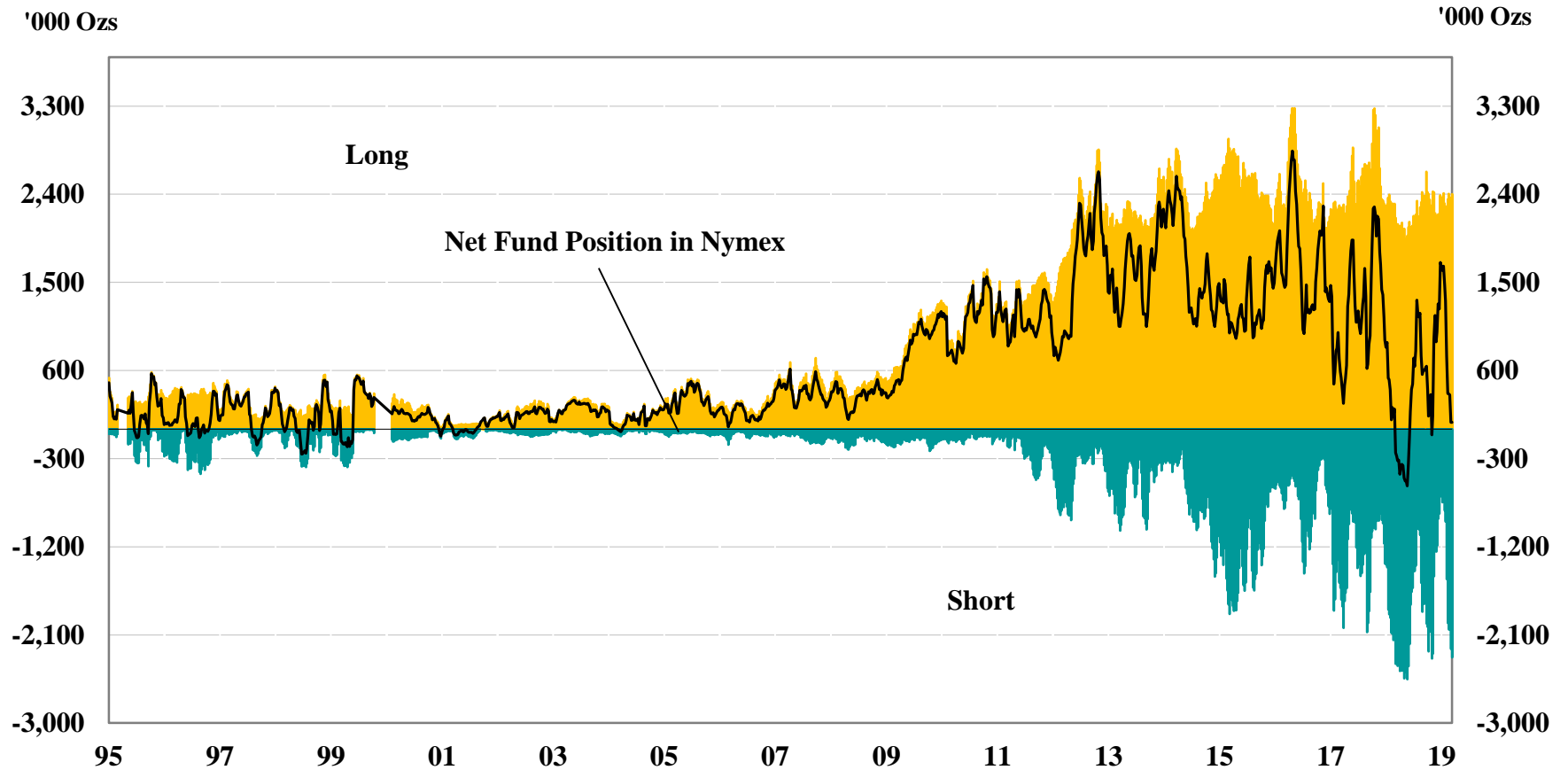
Thou. Ounces



# Platinum Non-Commercials

## Non-Commercial Gross Long and Short Platinum Positions

*Nymex Futures & Options. Weekly Data, Through 25 Jun. 2019*



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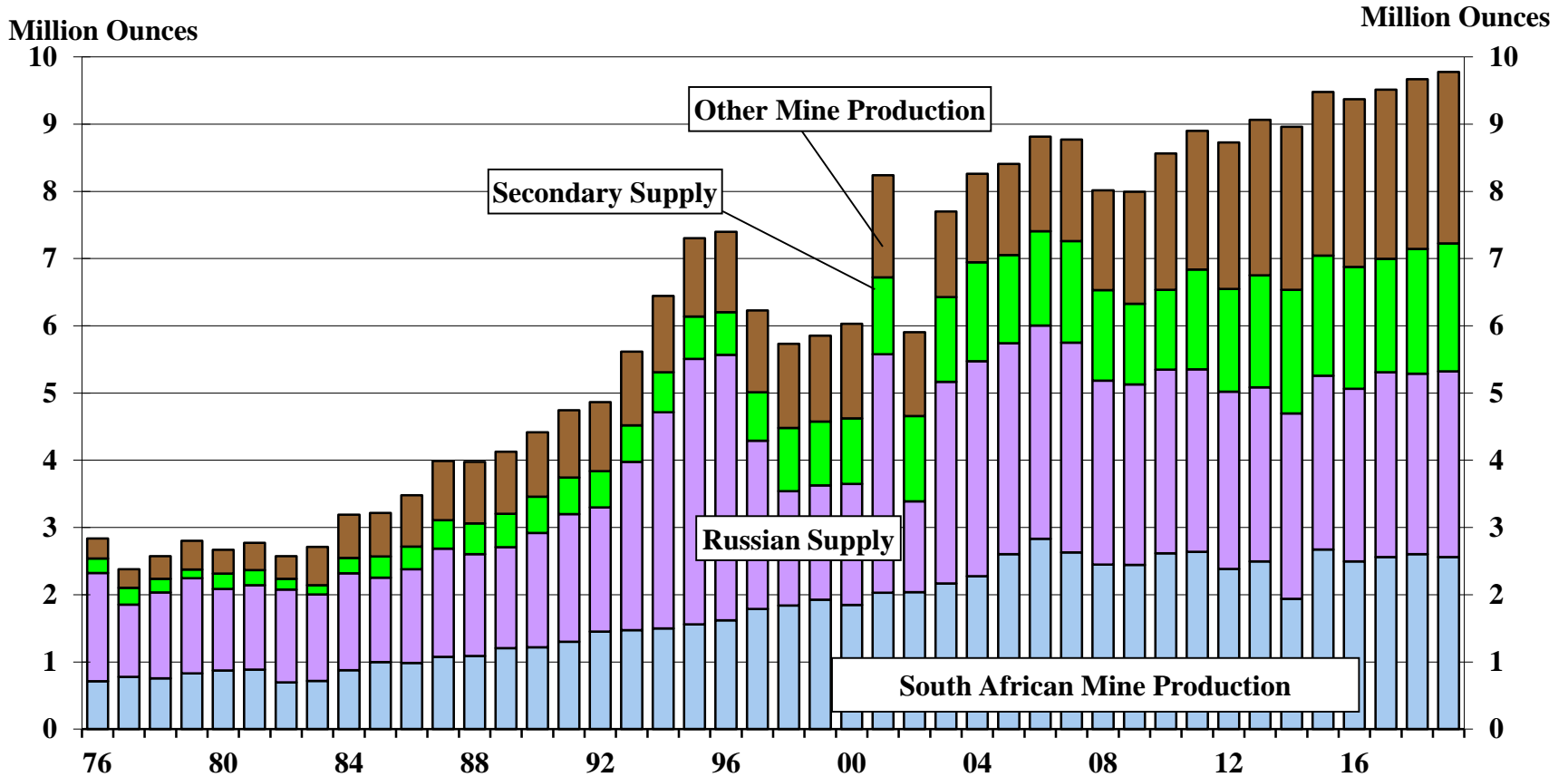
# *Palladium*



# Total Palladium Supply To Continue Rising

## Annual Palladium Supply

Projected Through 2019



Note: Russian supply is exports through 2002 and production since 2003.

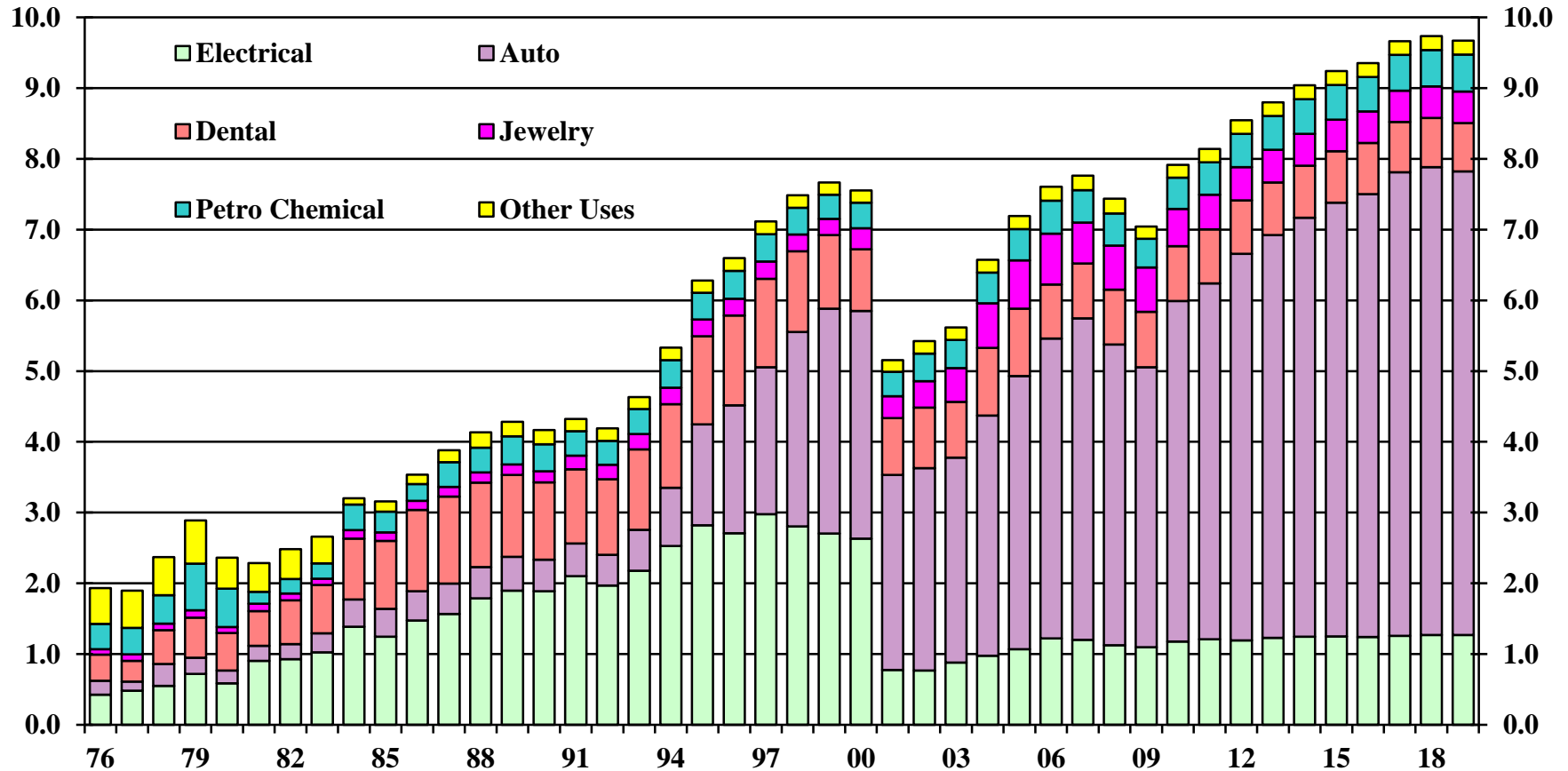
# Rising Headwinds For Palladium Fabrication Demand

## Annual Palladium Fabrication Demand

*Projected Through 2019*

Million Ounces

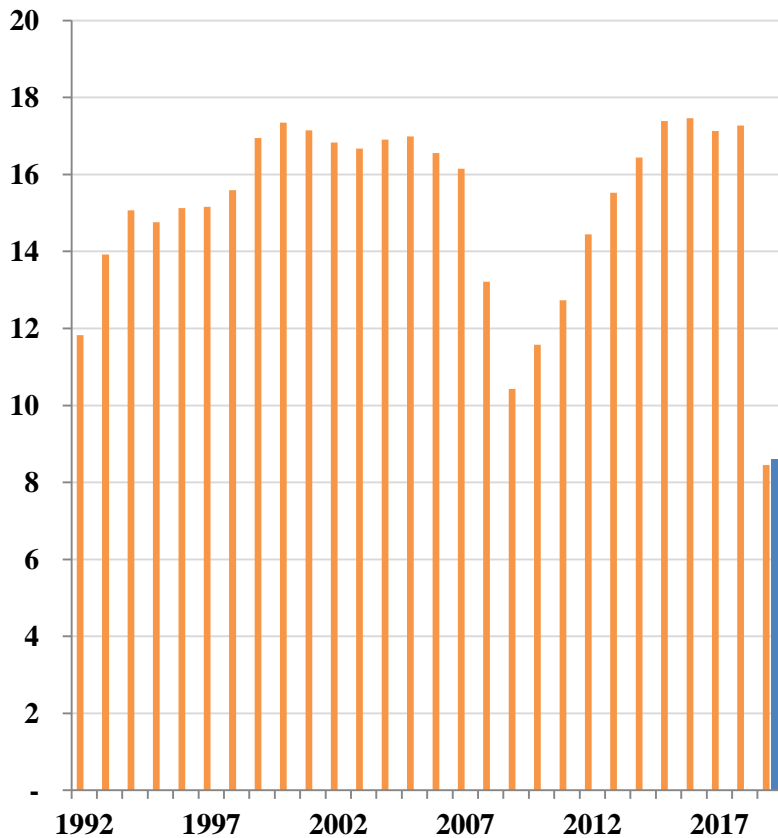
Million Ounces



# Passenger Vehicle Demand Softening

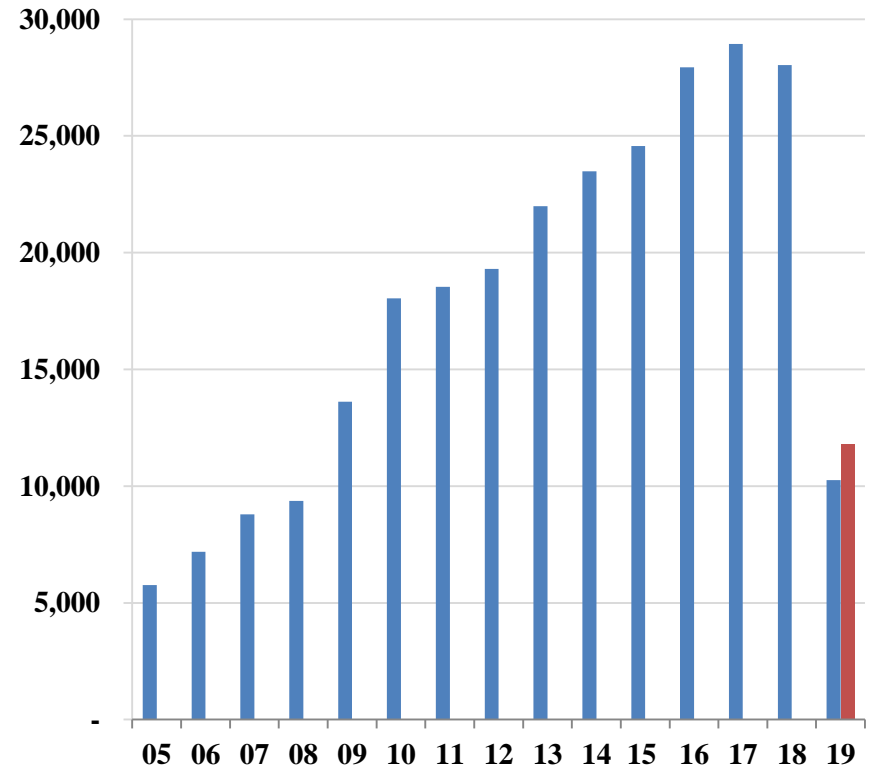
U.S. Auto Sales

Million Units



Annual Vehicle Sales in China

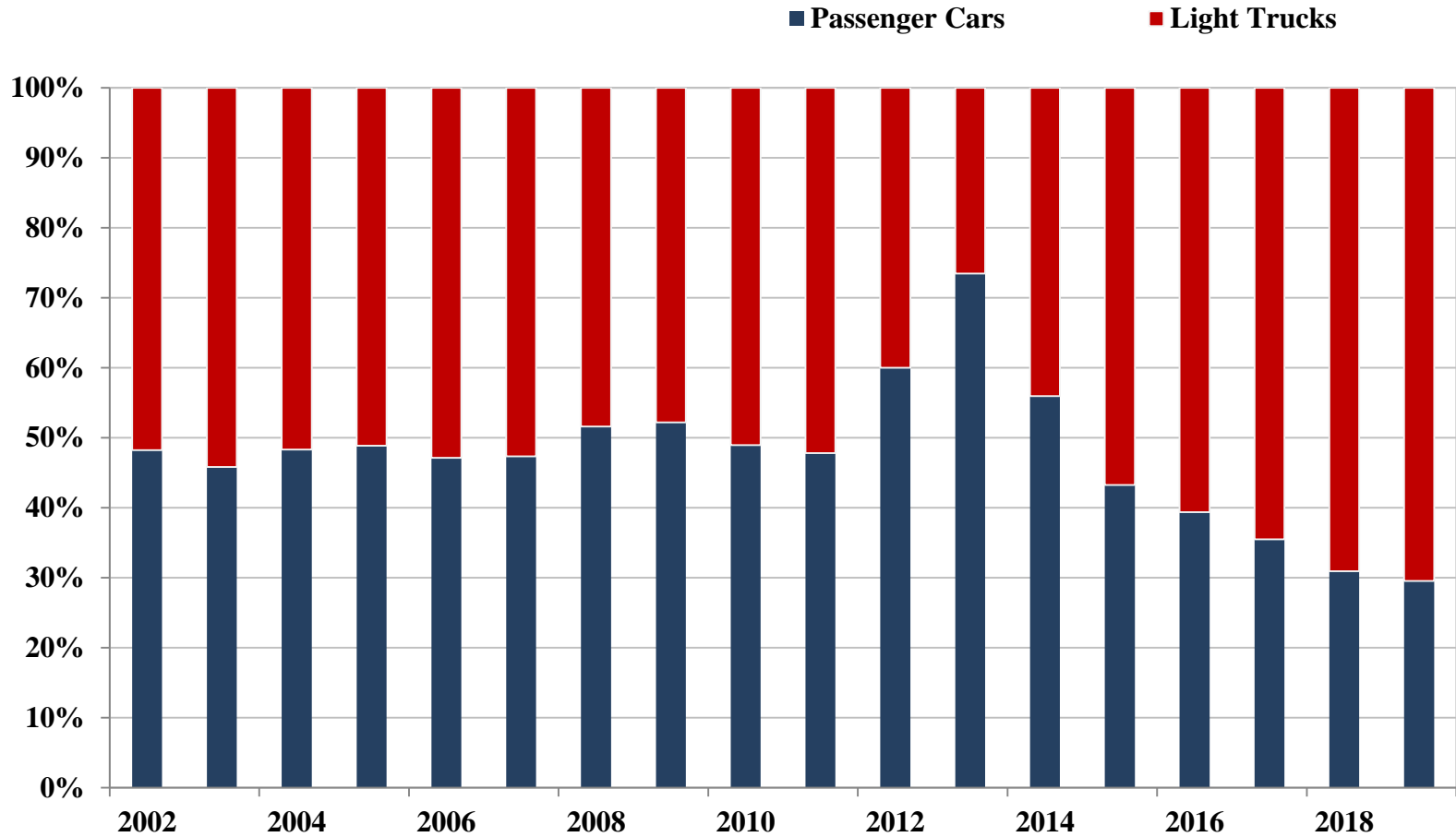
Thousand Vehicles



Note: 2019 data is through May. Red bar is for same period in 2018.

# US Vehicles Continue To Grow Larger

## Ratio Of U.S. Car and Light Truck Sales



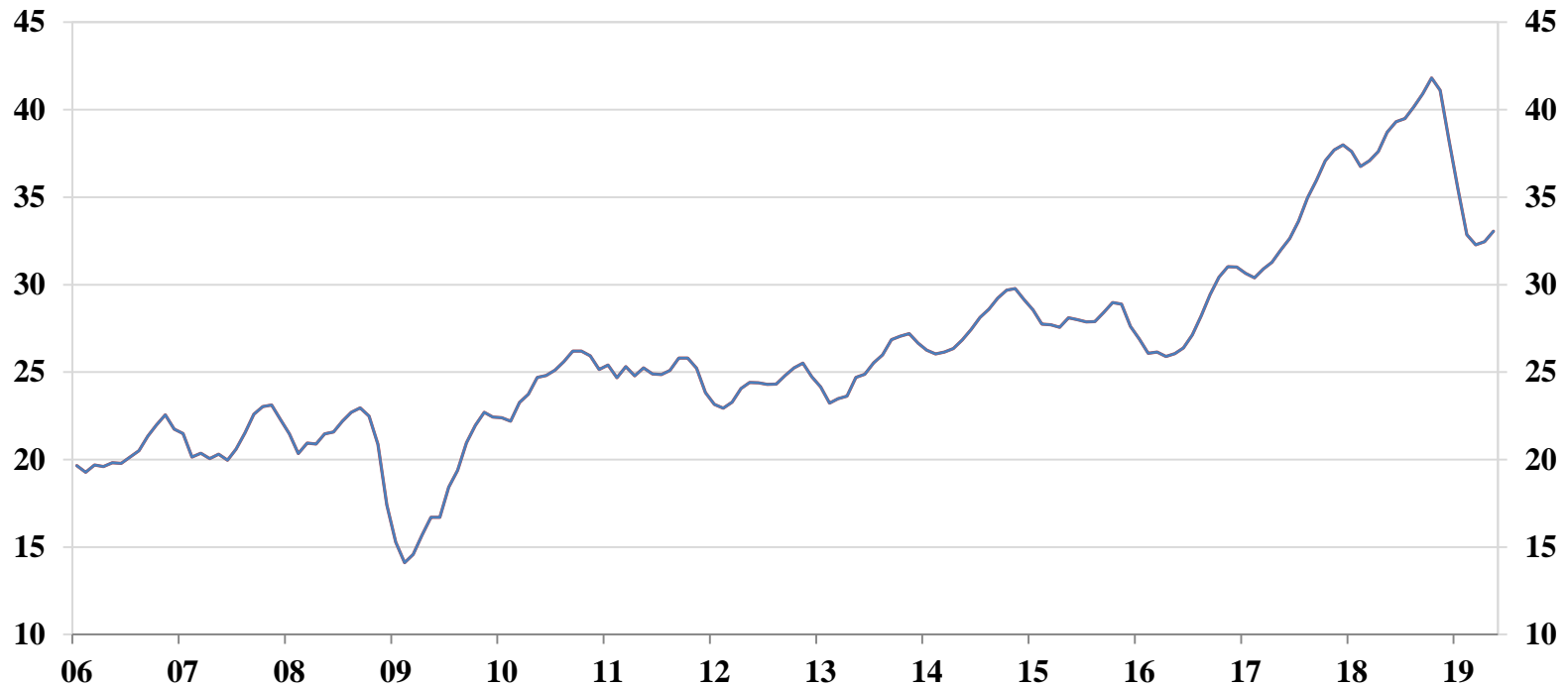
# Global Semiconductor Sales Down Strongly

Monthly Global Semiconductor Sales

May, 2019

Billion USD

Billion USD

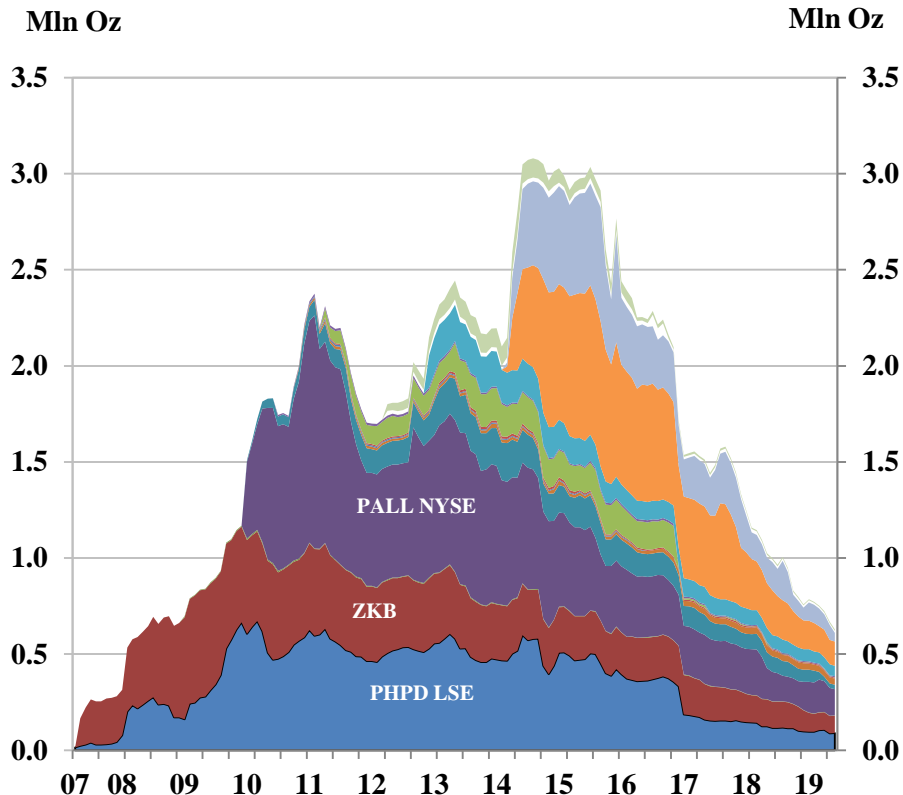


Source: Semiconductor Industry Association, via Bloomberg.

# Investors Net Sellers Of Palladium ETPs

## Palladium ETP Holdings

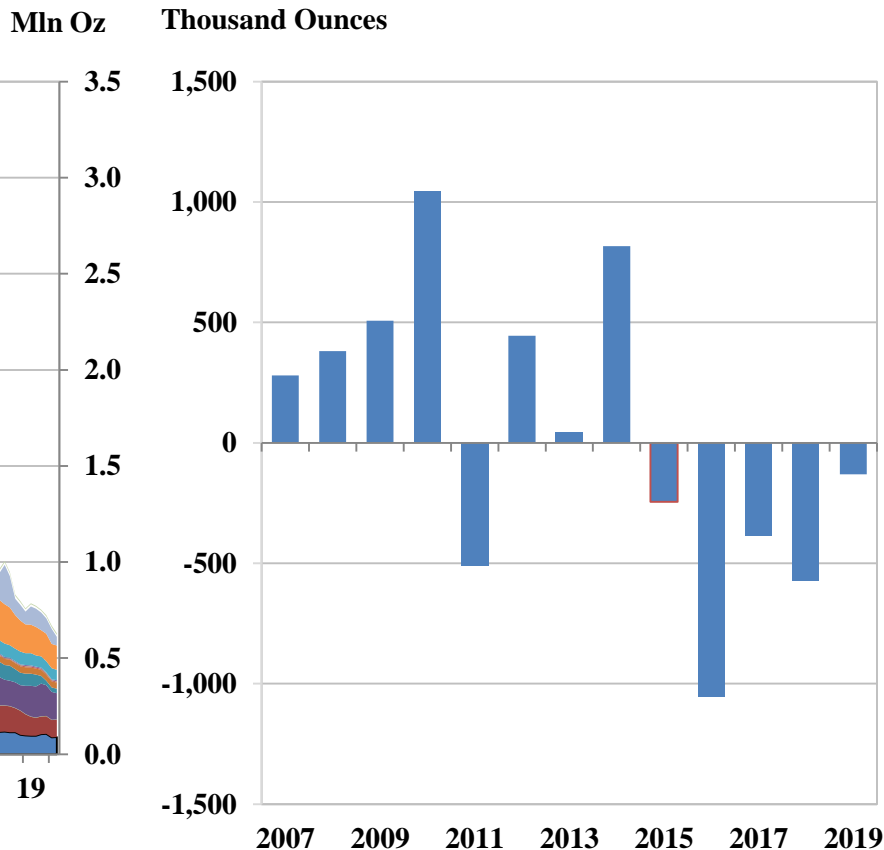
Monthly Data, Through June 2018



Source: ETP issuer website, Bloomberg

## Annual Changes to Palladium ETP Holdings

Through June 2019



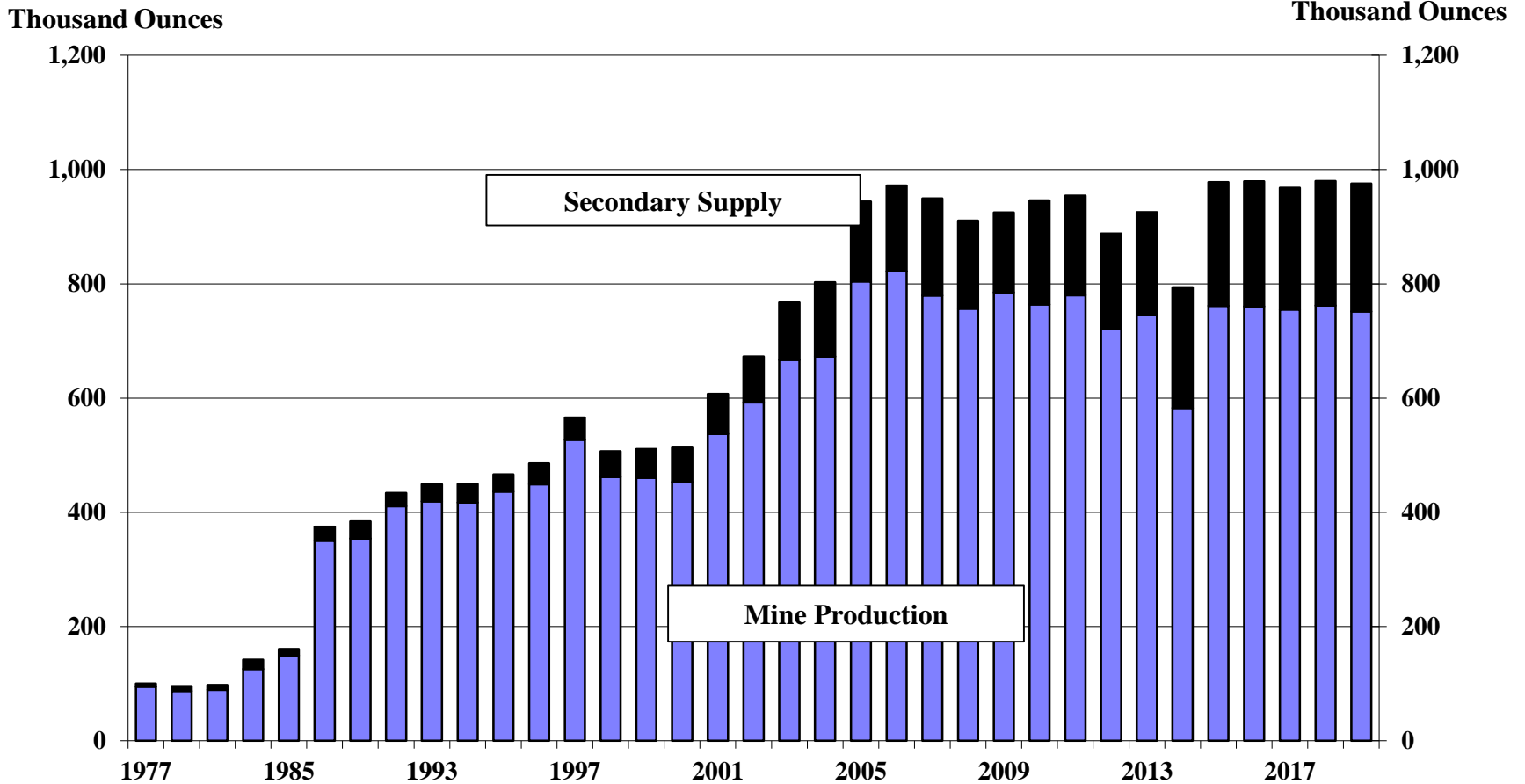
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# *Rhodium*

# Rhodium Supply Remains Largely Flat

## Annual Rhodium Supply

*Projected Through 2019*



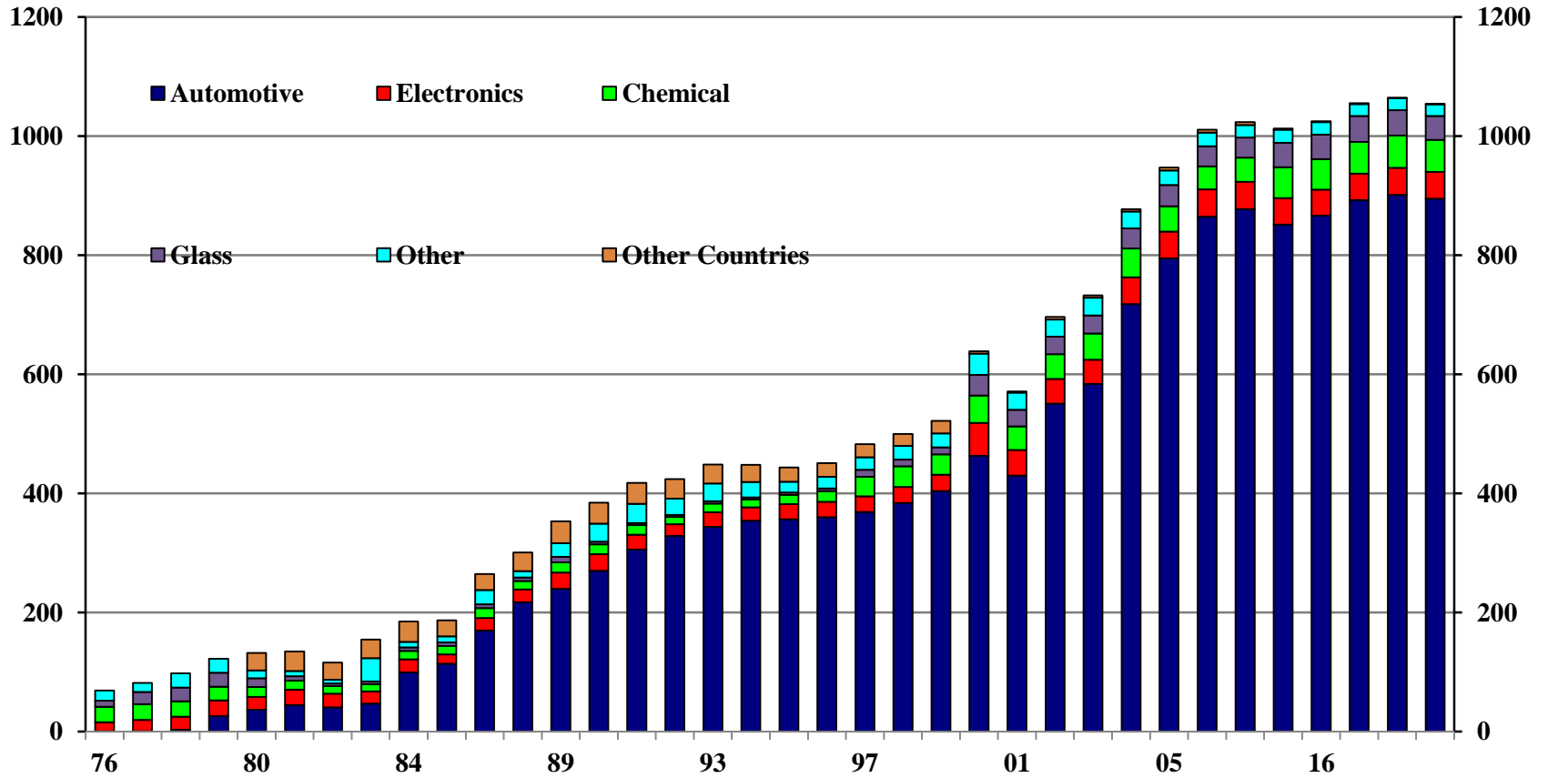


# Rhodium Fabrication Demand

## Rhodium Fabrication Demand

Annual Data, Projected Through 2019

Thousand Ounces



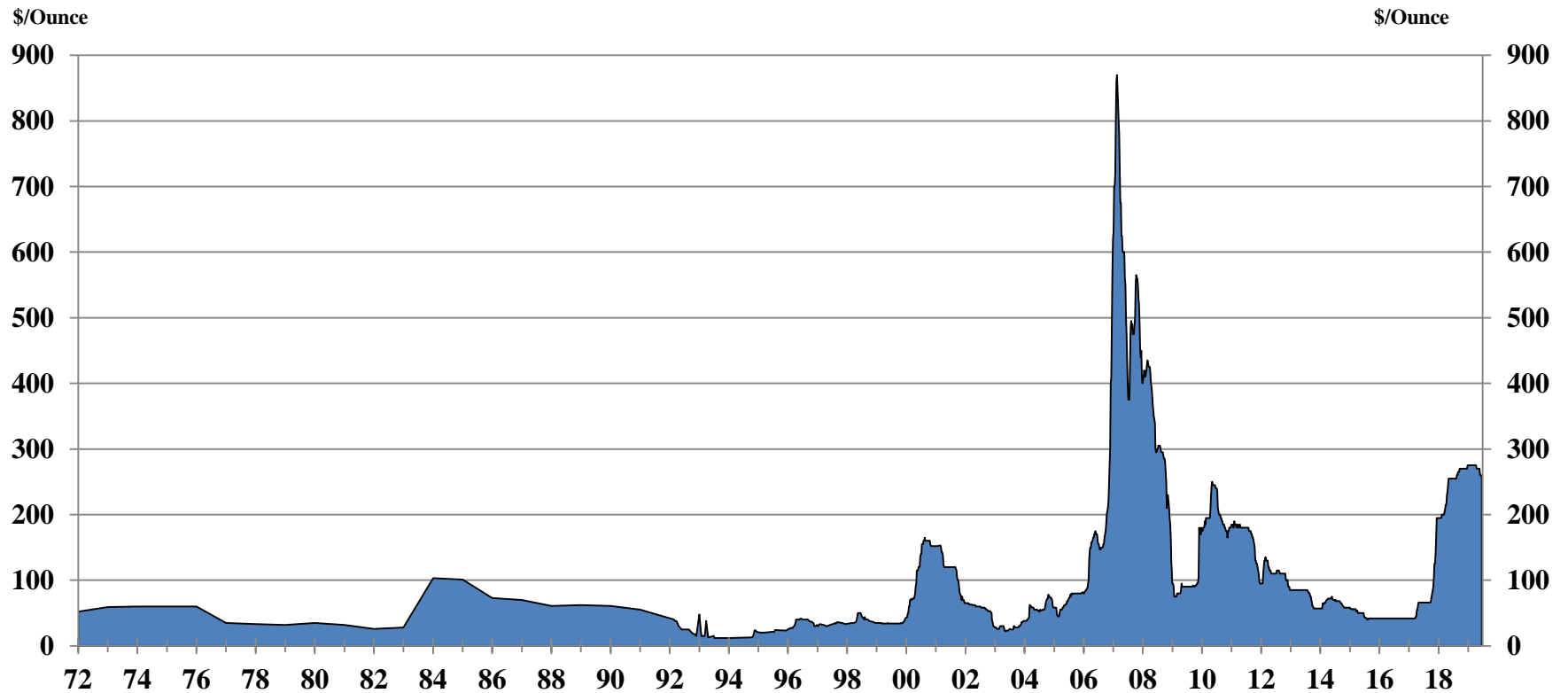
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# *Minor PGMs*

# Ruthenium

## The Price of Ruthenium

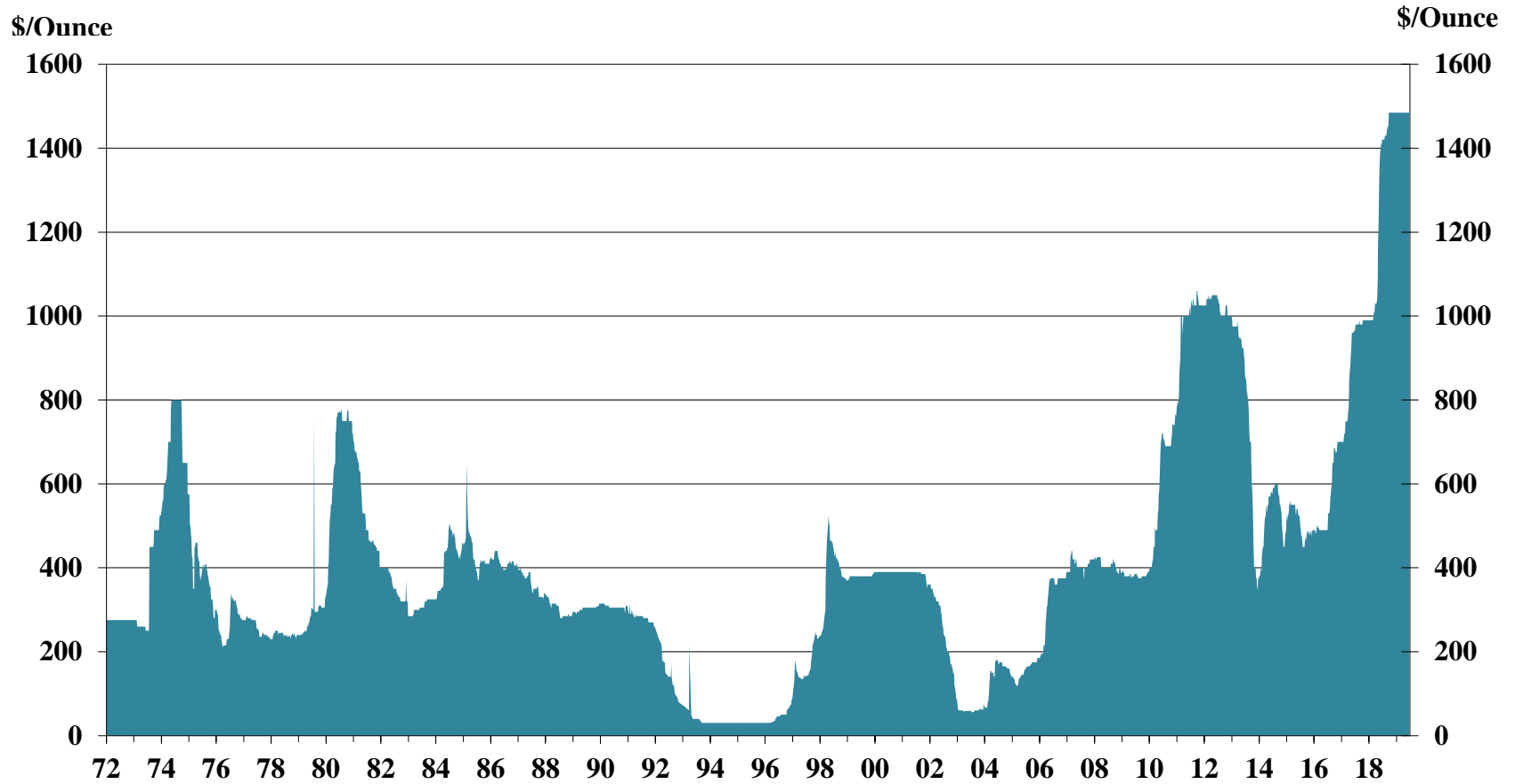
Weekly, Through 17 June 2019



# Iridium

## The Price of Iridium

*Weekly, Through 17 June 2019*



# Osmium

The Price of Osmium  
Weekly, Through 17 June 2019

