



# Platinum Group Metals Yearbook 2018



CPM Group

Jeffrey M. Christian  
Rohit Savant

10 July 2018

# Special Thank You to This Year's Sponsors

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# *Economy*

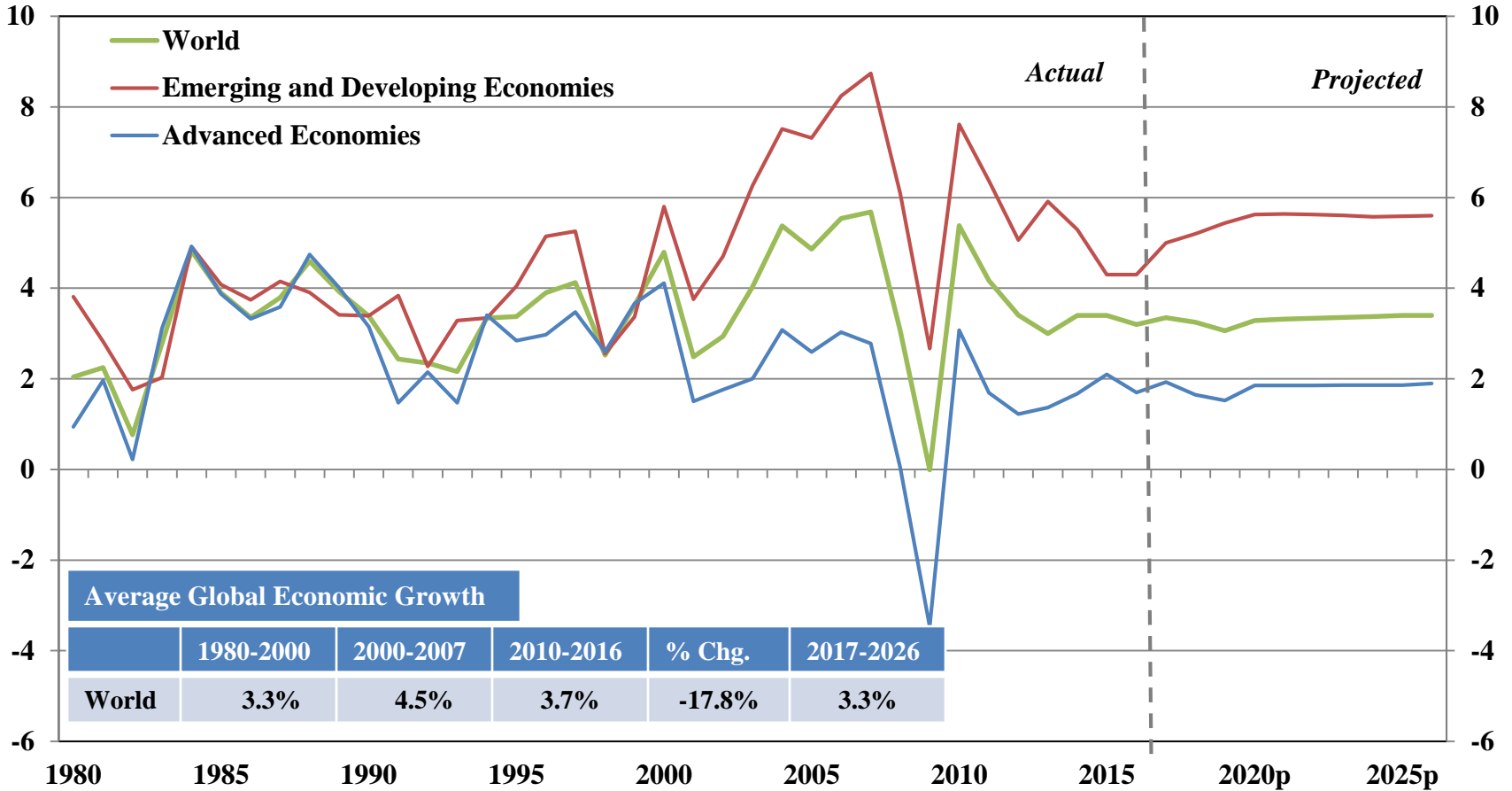
# Global Economic Growth

## Real Gross Domestic Product

Annual, Projected Through 2026

Percent Change

Percent Change



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# *Themes*

# Platinum Prices

Platinum Prices: 1 January 2010 to 5 July 2018

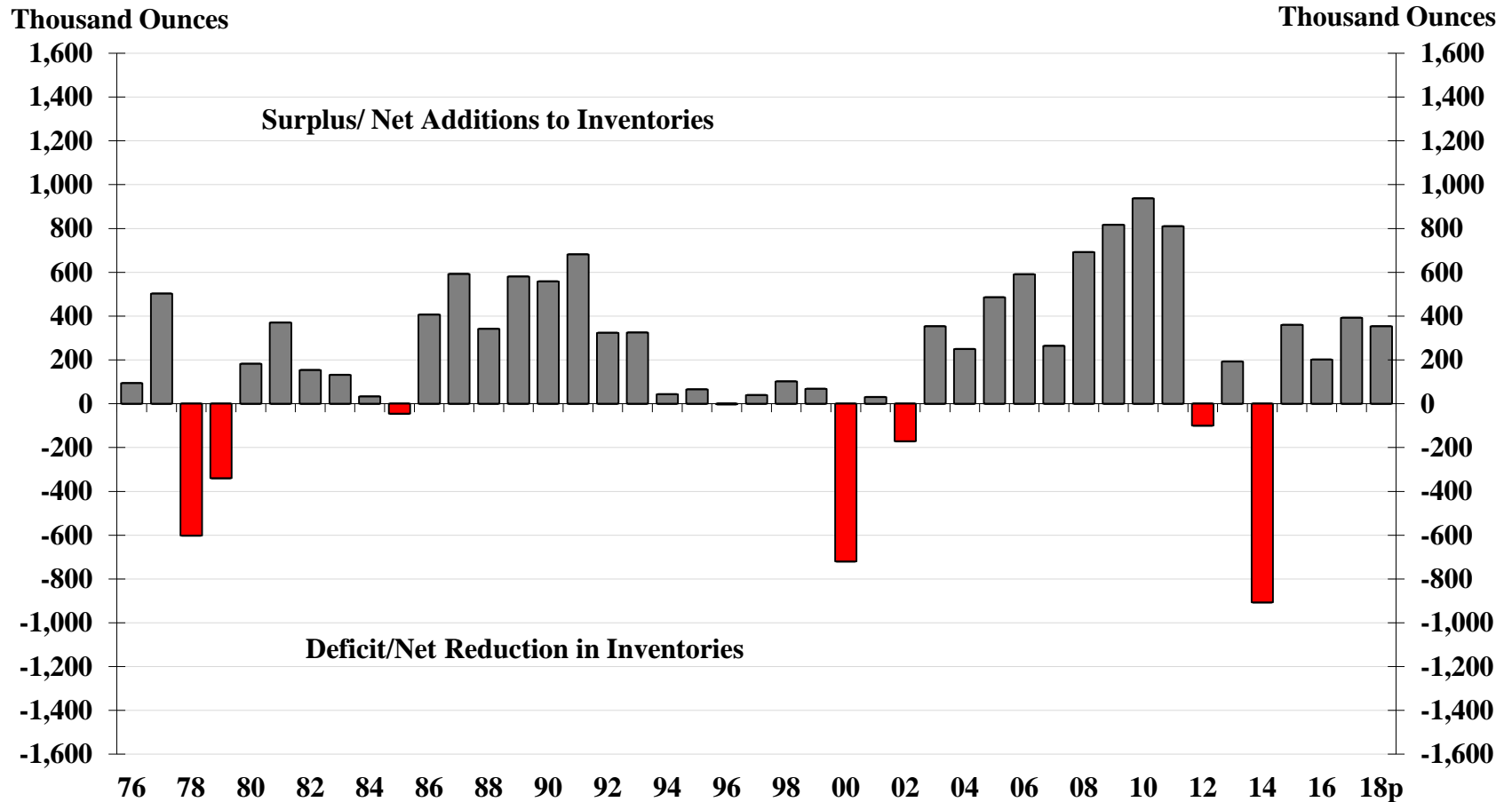
\$/Oz



# Platinum Market Remains In A Surplus

## Platinum Surplus/Deficit

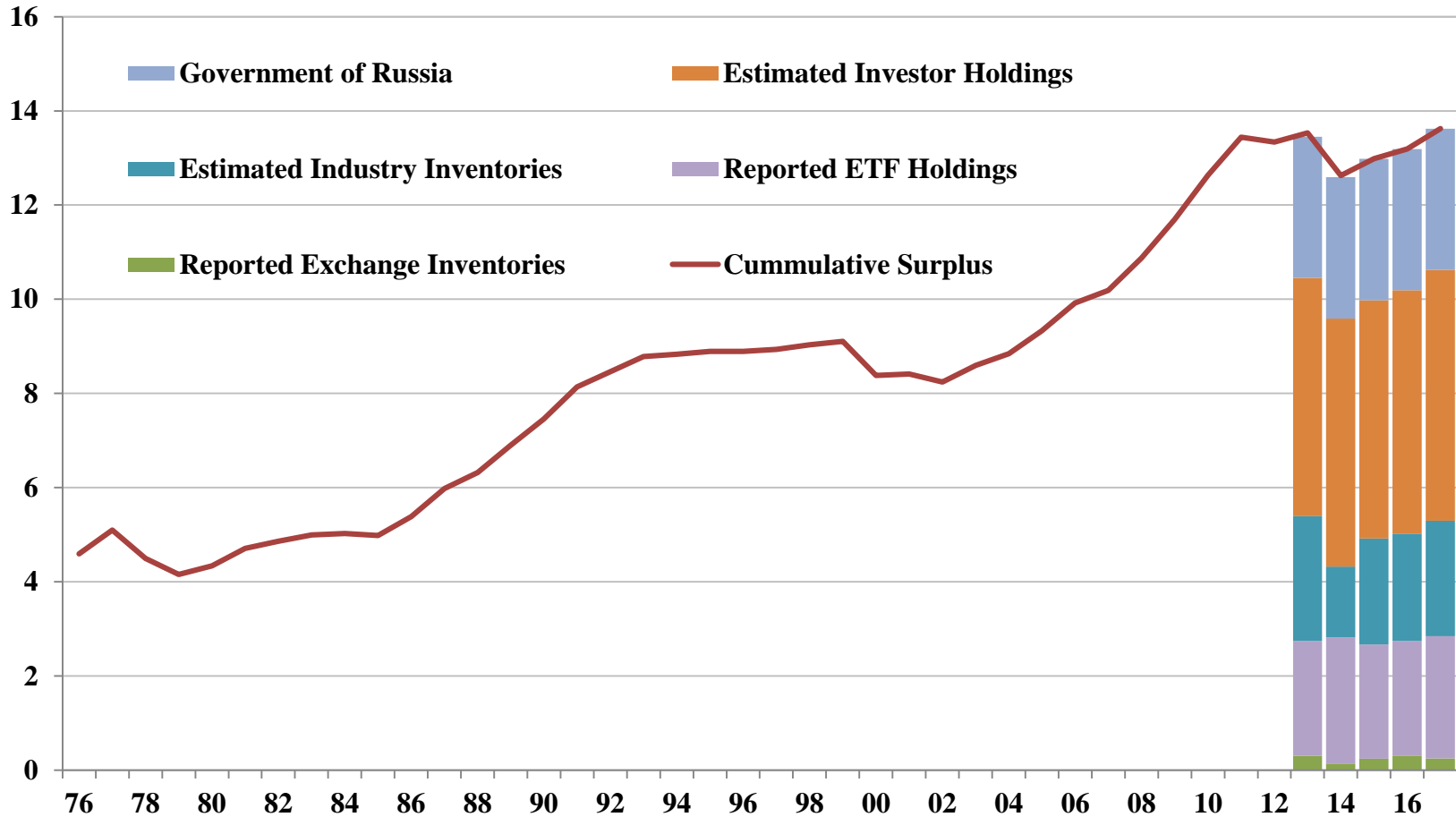
Annual, Projected Through 2018



# Platinum Cumulative Surpluses Recover

## Cumulative Platinum Surplus And Its Disposition

Mil. Oz.





# Palladium Prices

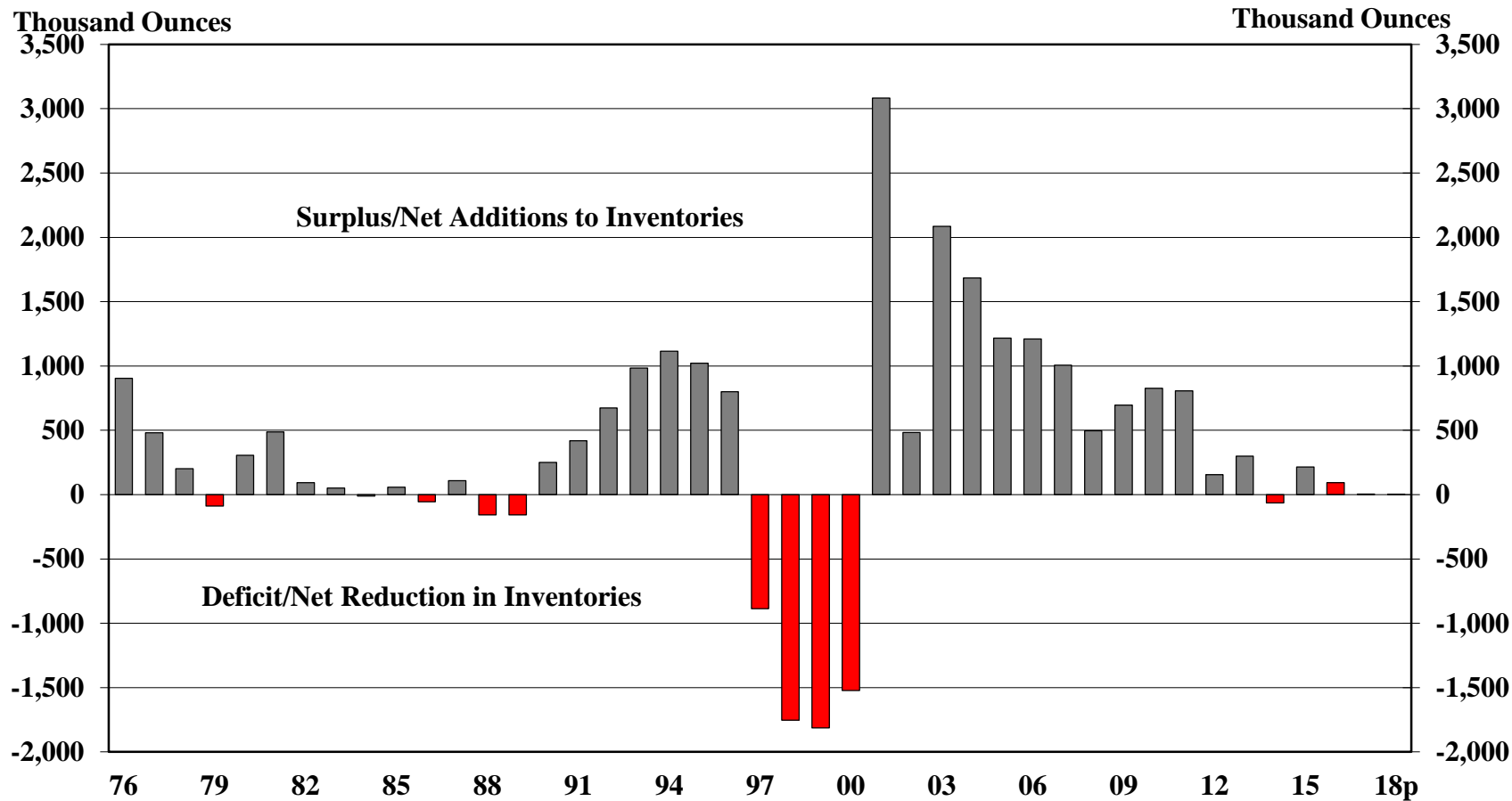
Palladium Prices: 1 January 2010 to 5 July 2018



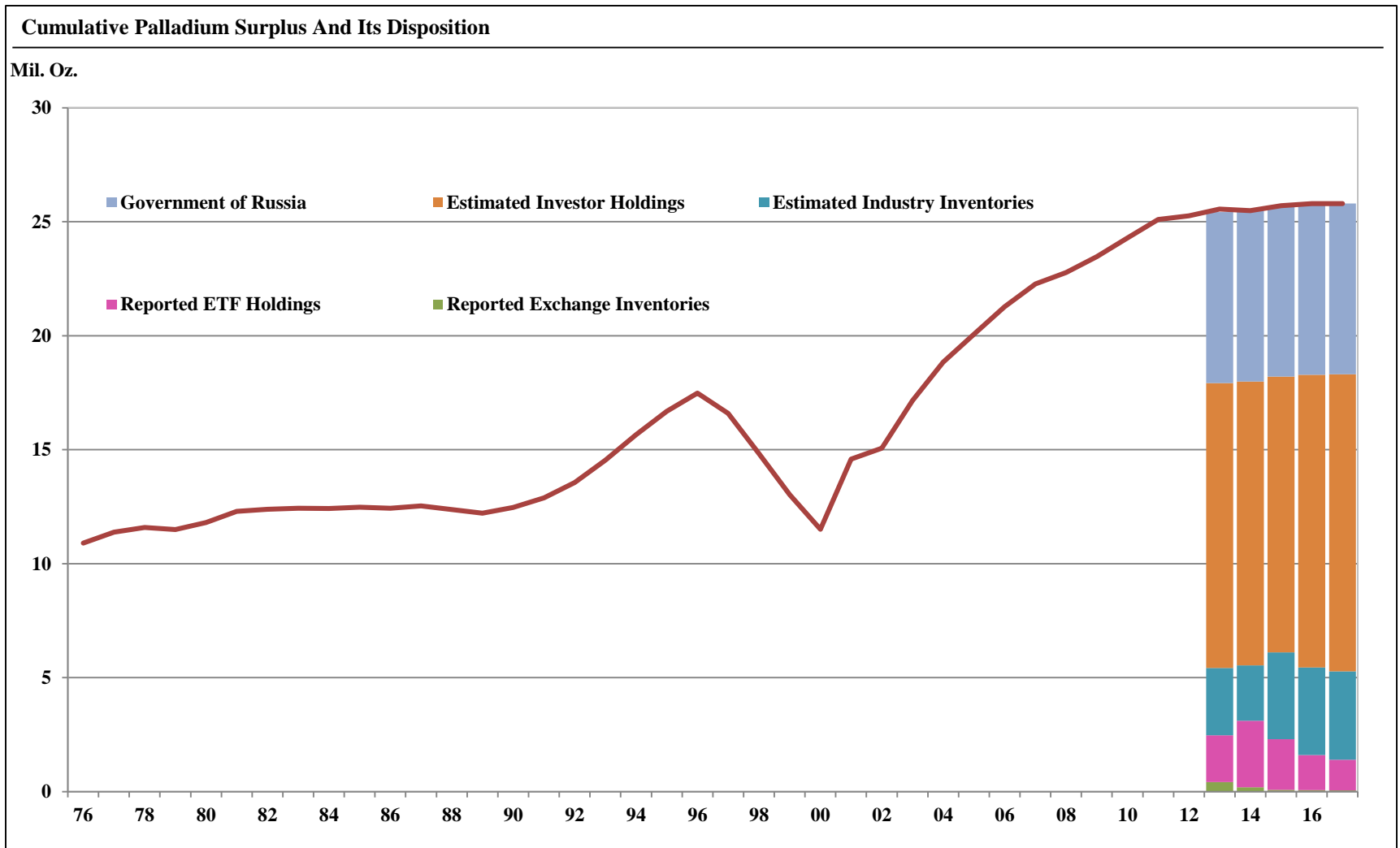
# Palladium Tight Market Conditions

## Palladium Surplus/Deficit

Annual, Projected Through 2018



# Palladium Investors Increase Their Holdings

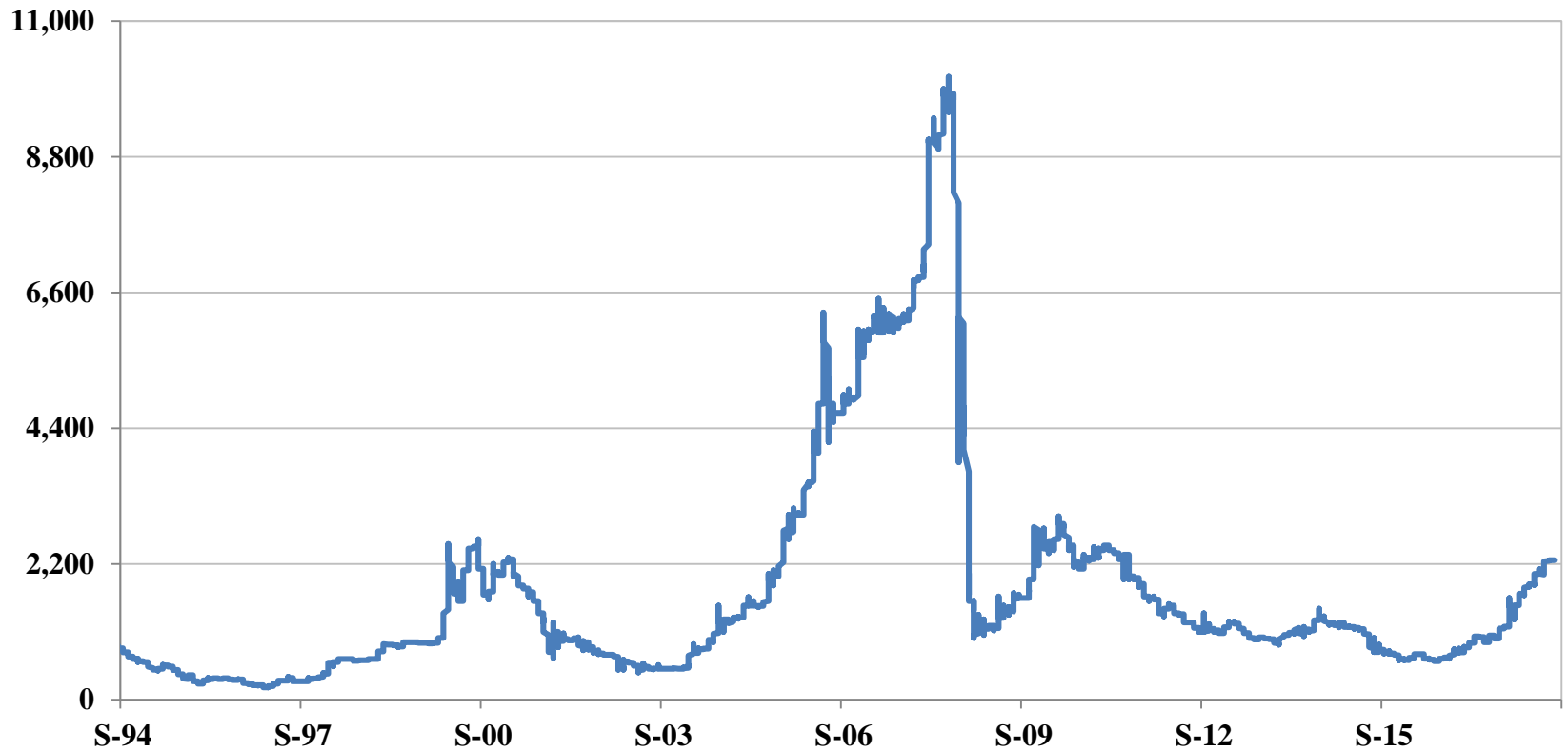


# Rhodium Prices

Daily JM Rhodium Prices

Through 5 July 2018

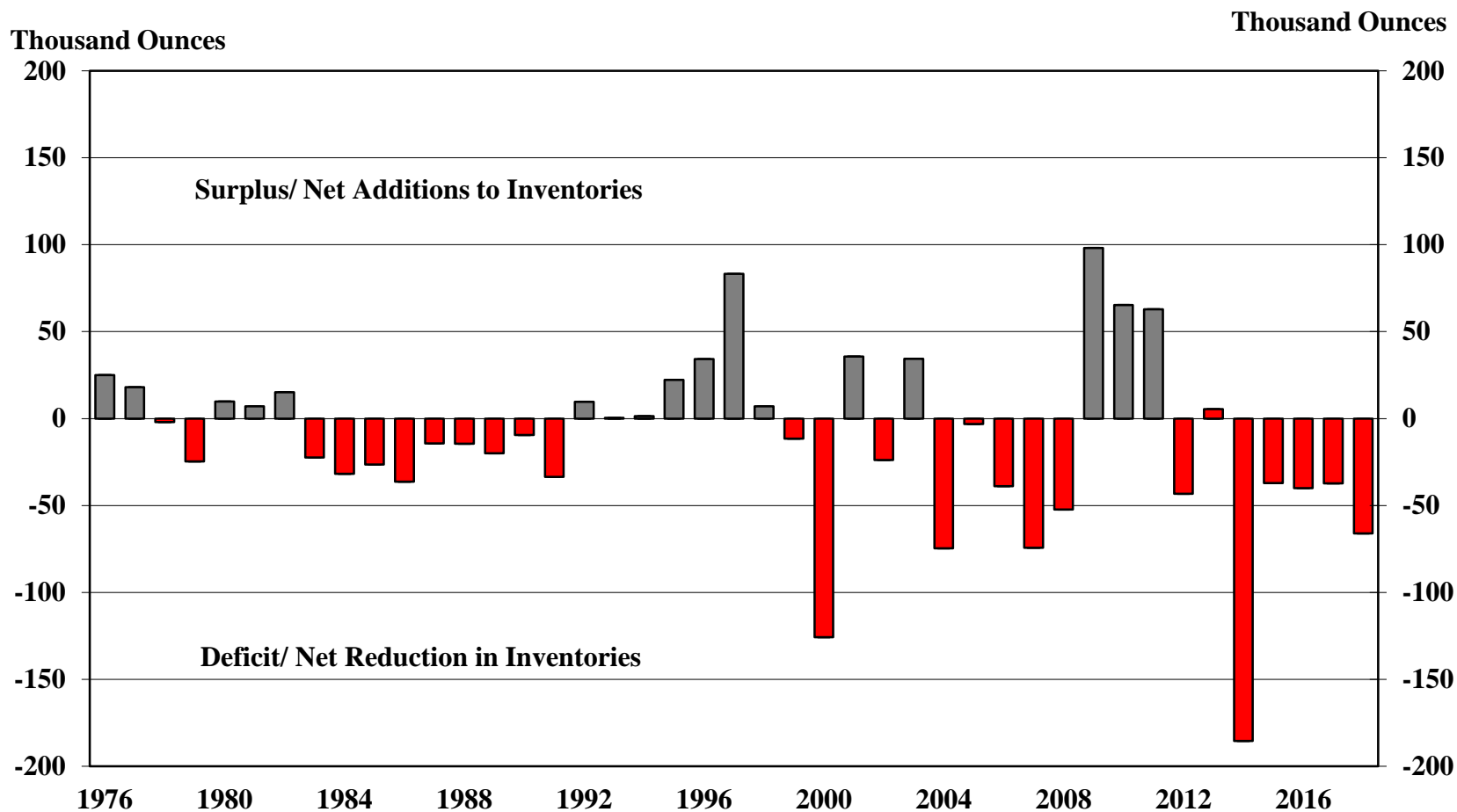
\$/Ounce



# Rhodium Surplus/Deficit

## Rhodium Surplus/Deficit

Annual, Projected Through 2018

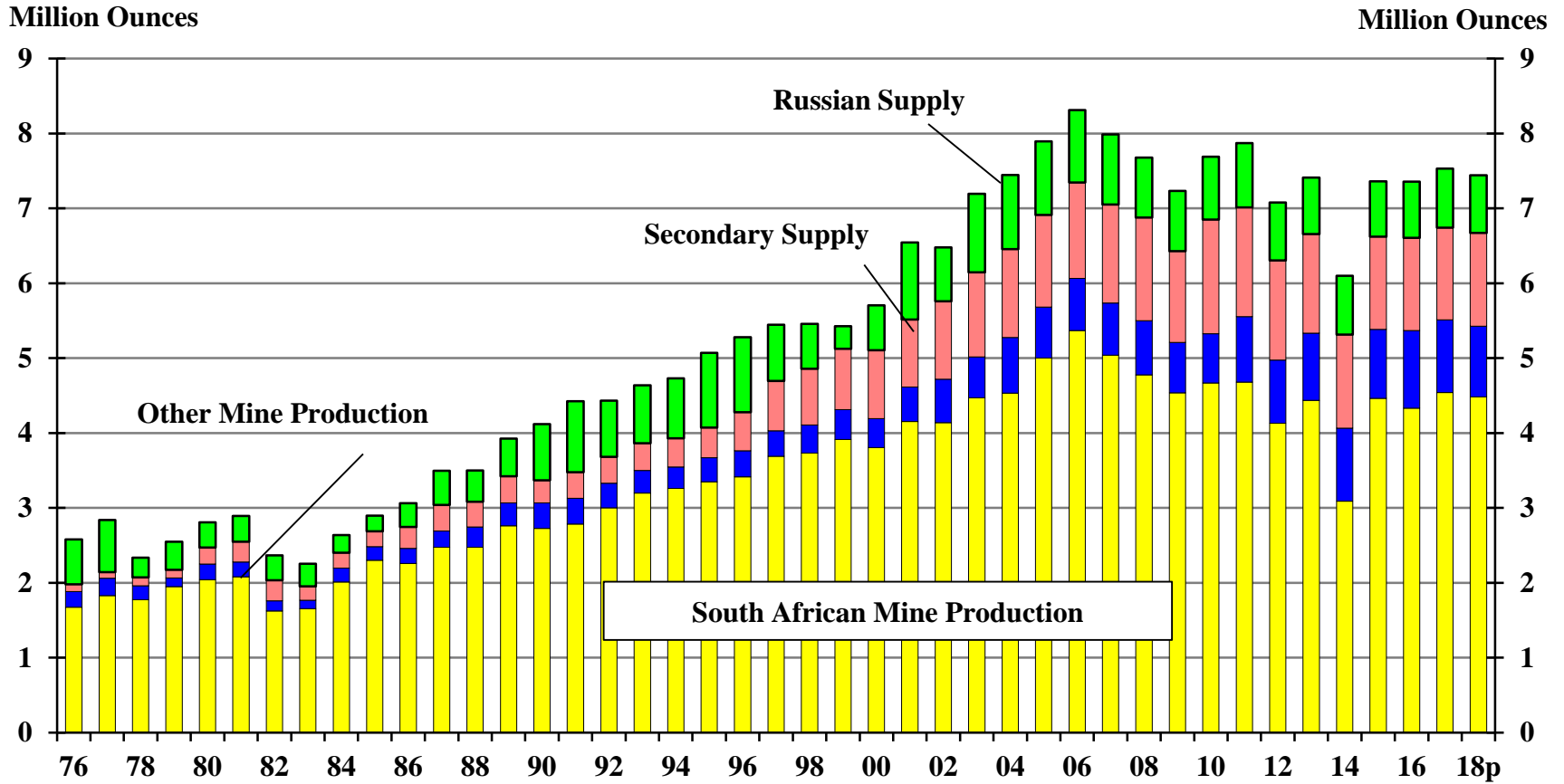


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# *Platinum*

# Platinum Supply Needs To Decline Further

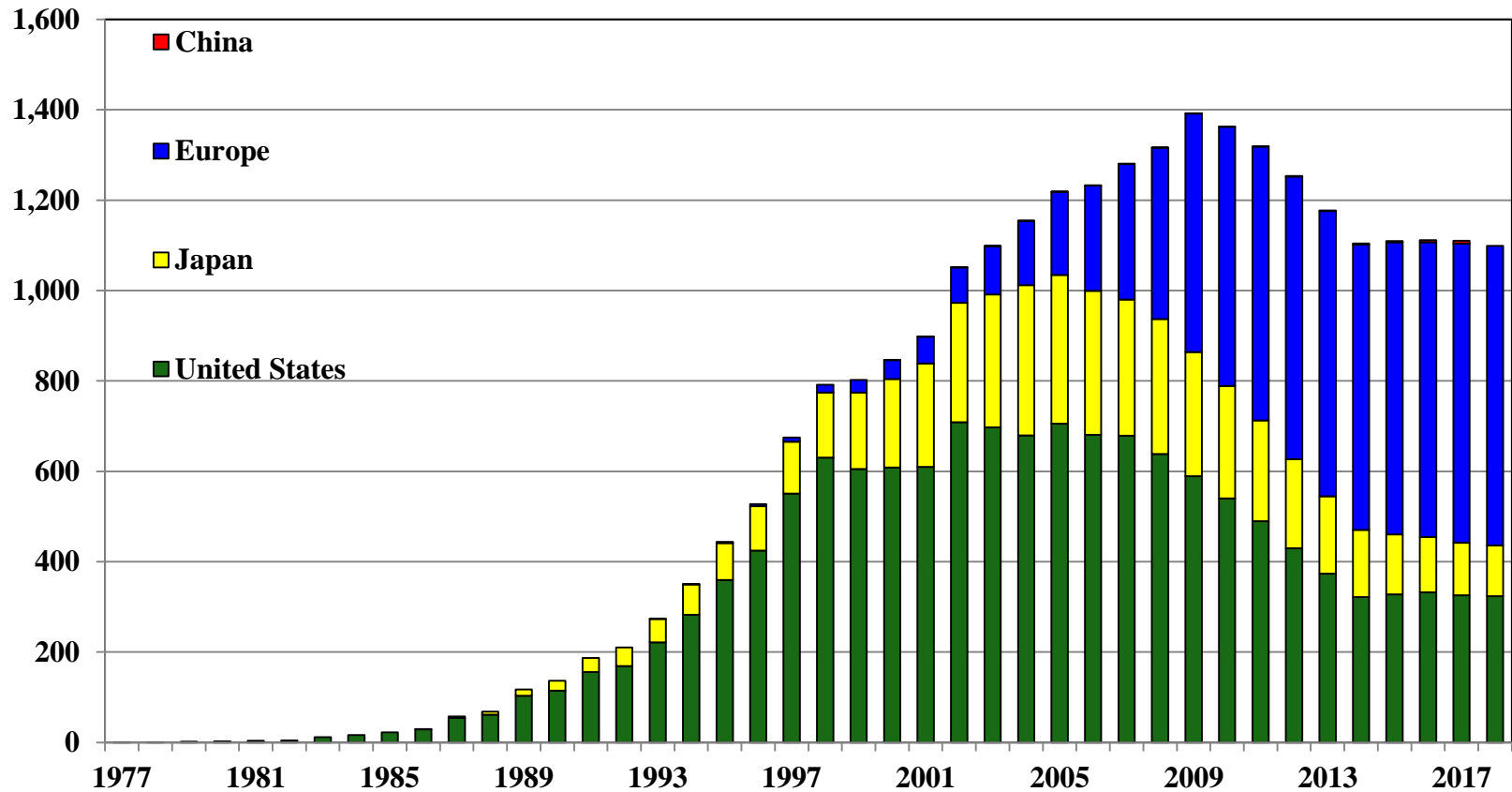
Annual Platinum Supply  
Projected Through 2018



# Platinum Secondary Supply Plateaus At Lower Levels

Platinum Available for Recovery from Spent Auto Catalysts  
Annual, Projected Through 2018

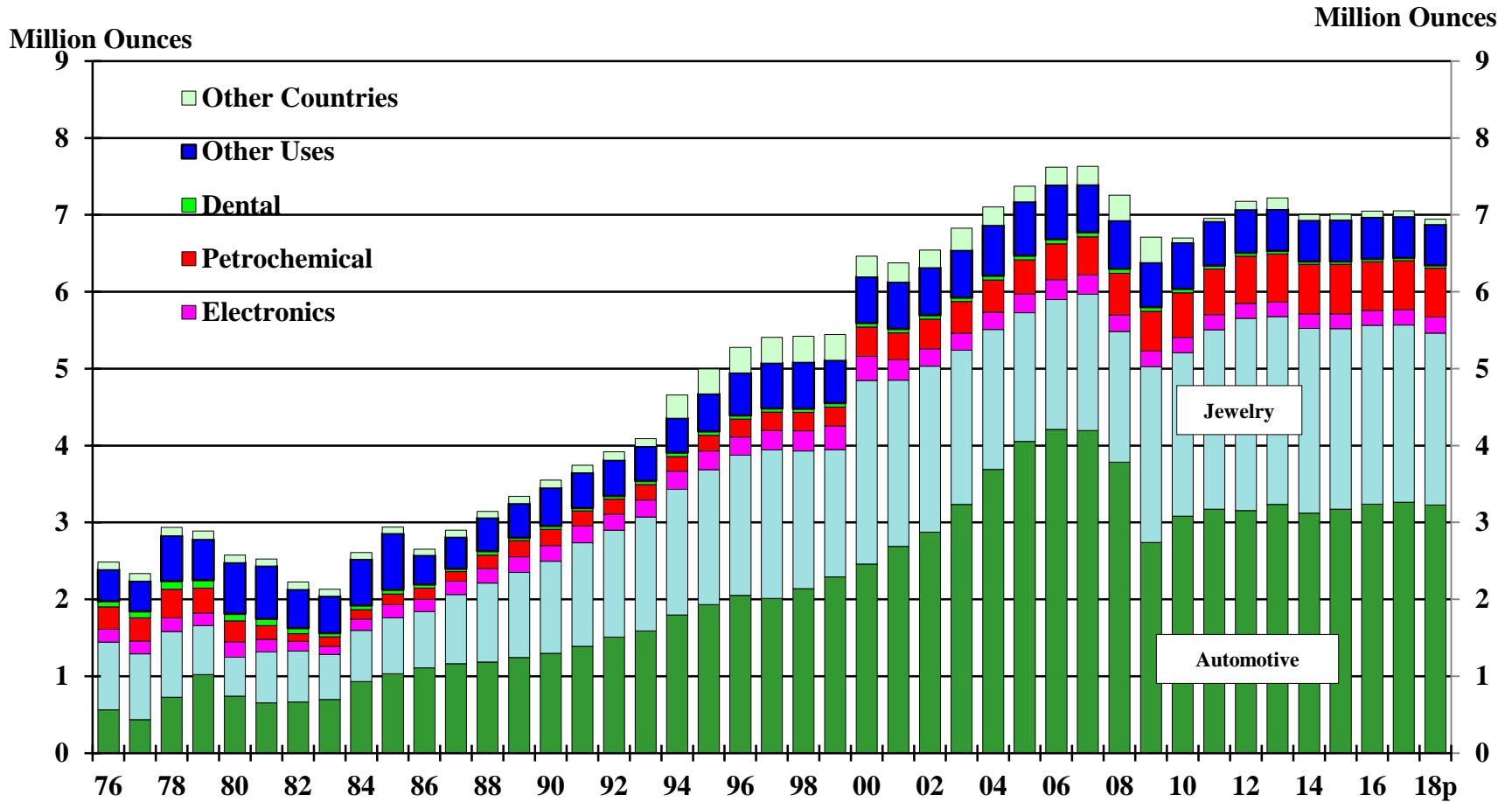
Thousand Troy Ounces





# Fabrication Demand Has Been Flat For Over Seven Years

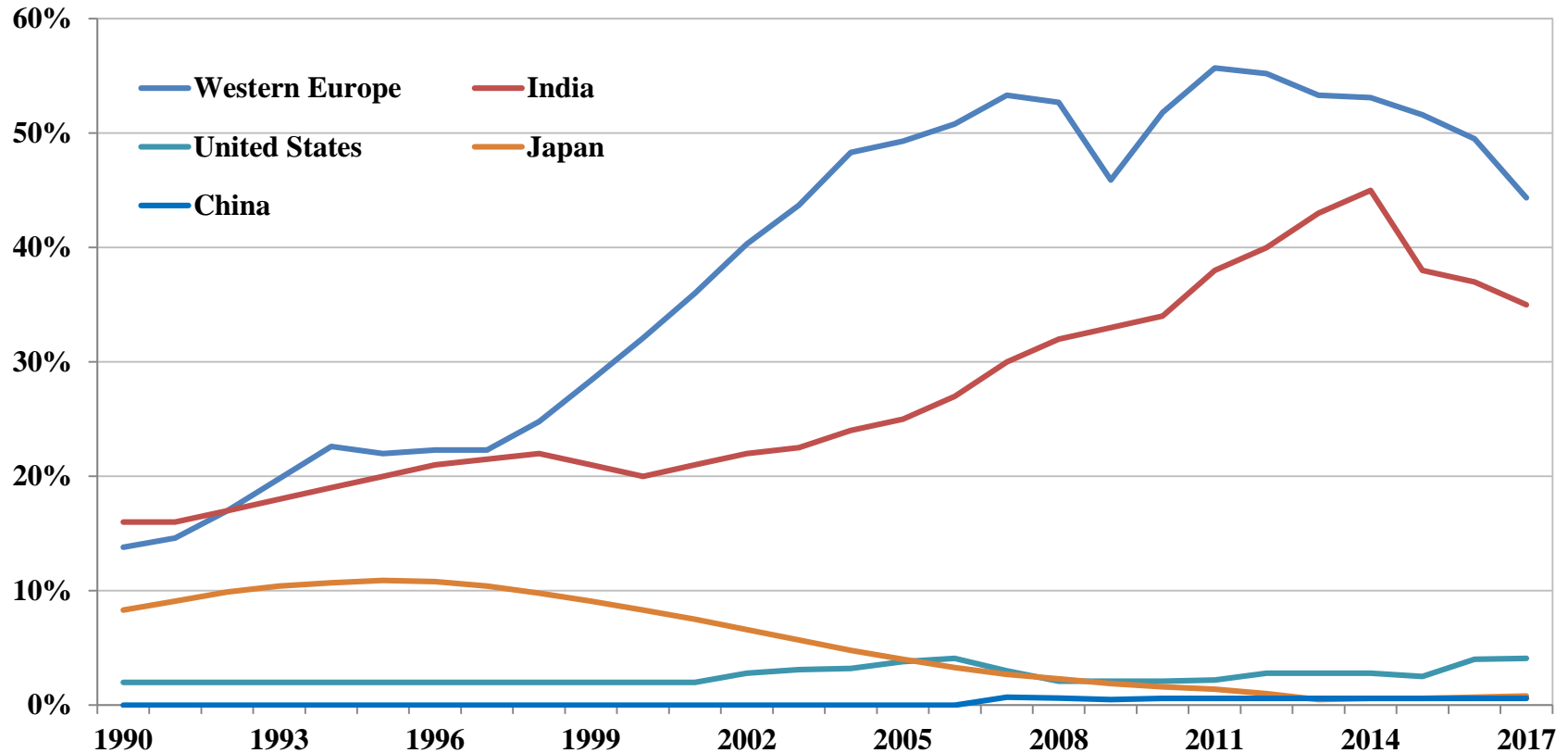
Annual Platinum Fabrication Demand  
Through 2018



# Declining Market Share For Diesel Passenger Vehicles

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

Annual, through 2017



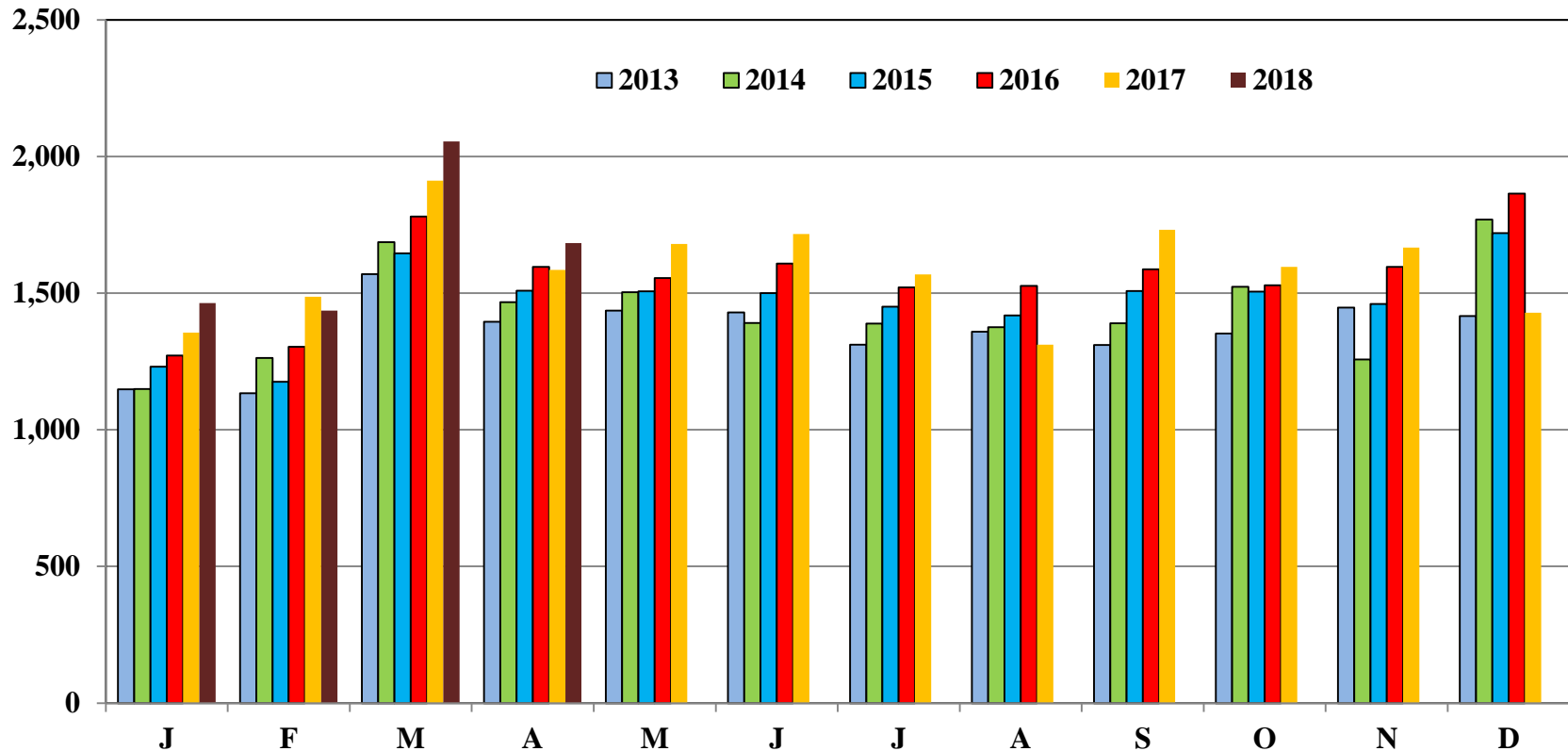
Note: Japanese data is diesels as a percent of cars in use. U.S. data is estimated for 1990 through 2001.

Sources: Historical data-JAMA, ACEA, CAAM, news articles. Projections & estimated data-CPM Group

# Strength In Commercial Vehicles Is Offsetting Weakness In Passenger Vehicle Demand

## Monthly Commercial Vehicle Sales

Thous Units



Notes: Countries/regions included in this data series are China, US, Europe, Japan, India, and Brazil. These countries/regions account for 75% of global annual sales.

Sources: national auto associations, OICA, Bloomberg

# **Alternate Auto Technologies Are Not Expected To Be Positive or Negative For Platinum In The Short Term**

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## **Fuel Cells**

**Fuel cells have been commercialized**

**In theory, this is positive for platinum fabrication demand**

**However, the greatest research efforts in this technology are being made toward reducing the amount of platinum used**

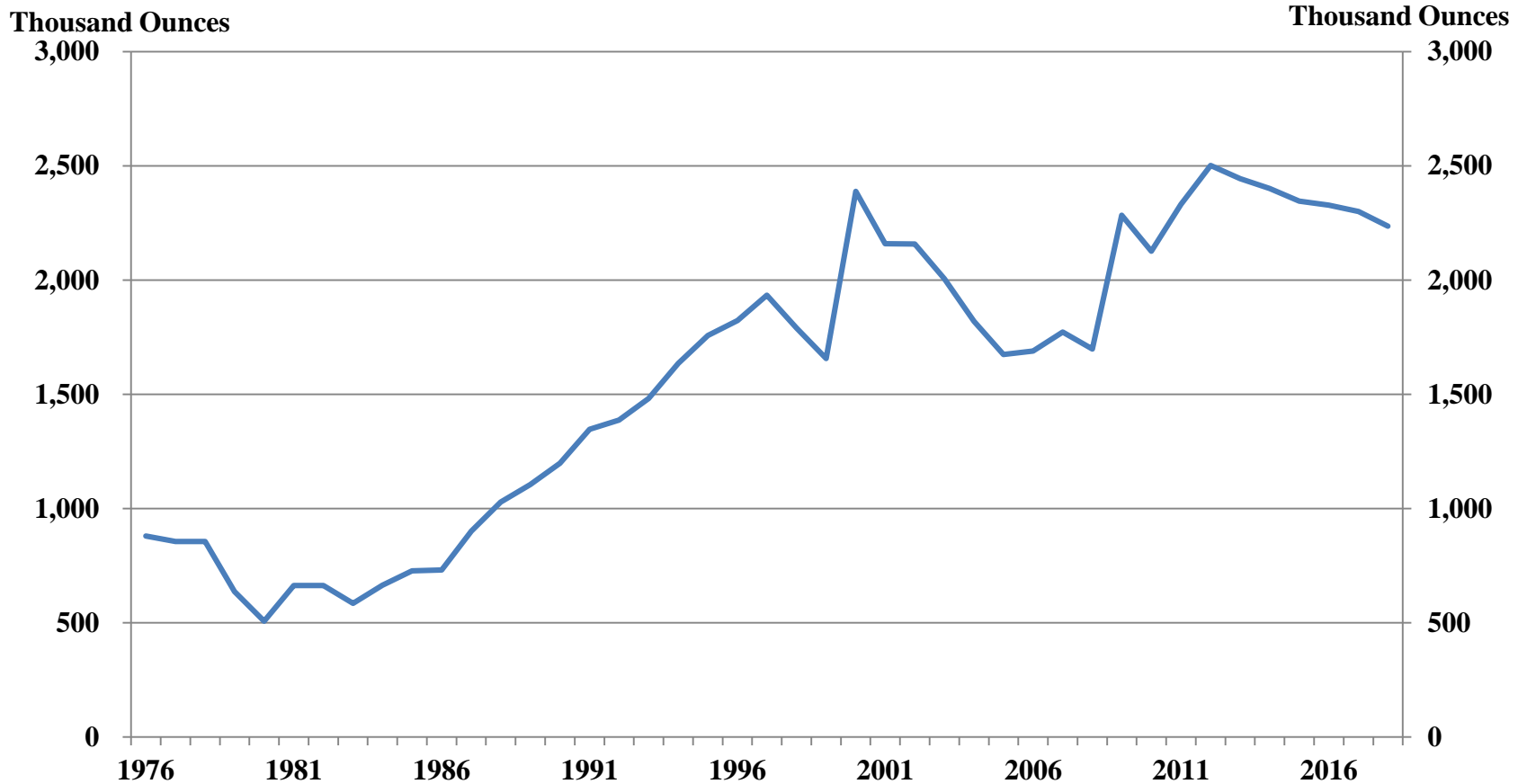
## **Electric Vehicles**

**Are Not Expected To Have Any Meaningful Impact on PGM Demand for at least another 10-15 years at the least.**

# Platinum Jewelry Demand Fails To Rise

## Platinum Jewelry Demand

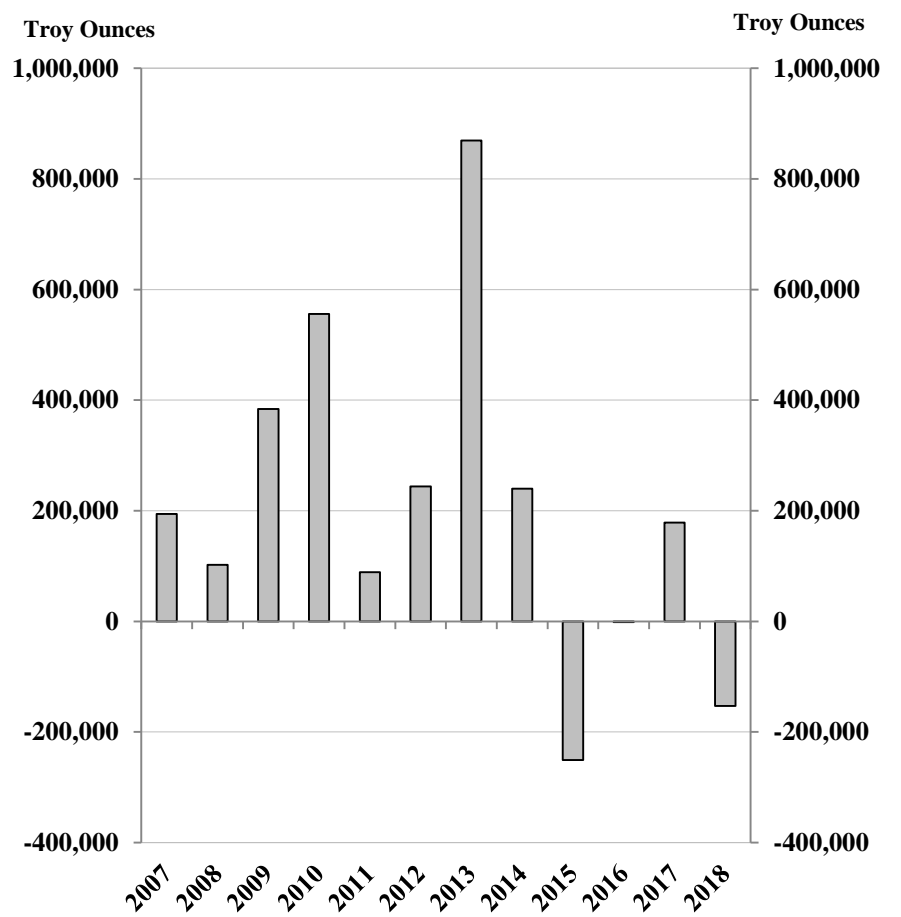
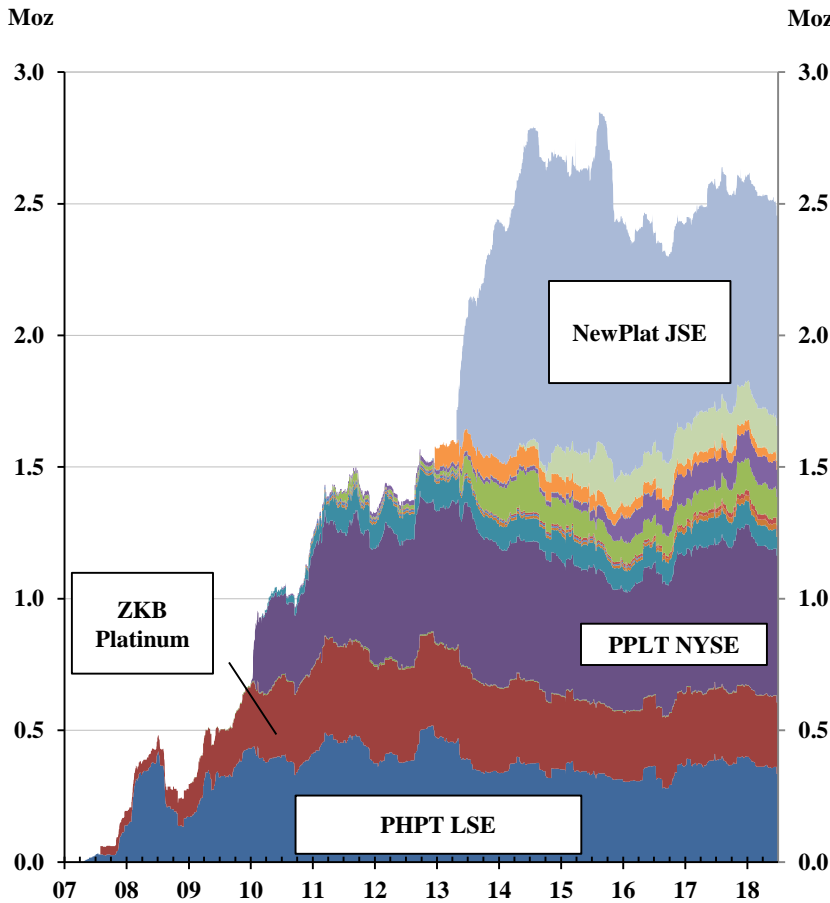
Annual Data, Projected Through 2018



# Investors Net Sellers Of Platinum ETPs YTD

Platinum Exchange Traded Product Holdings  
Daily Through June 2018

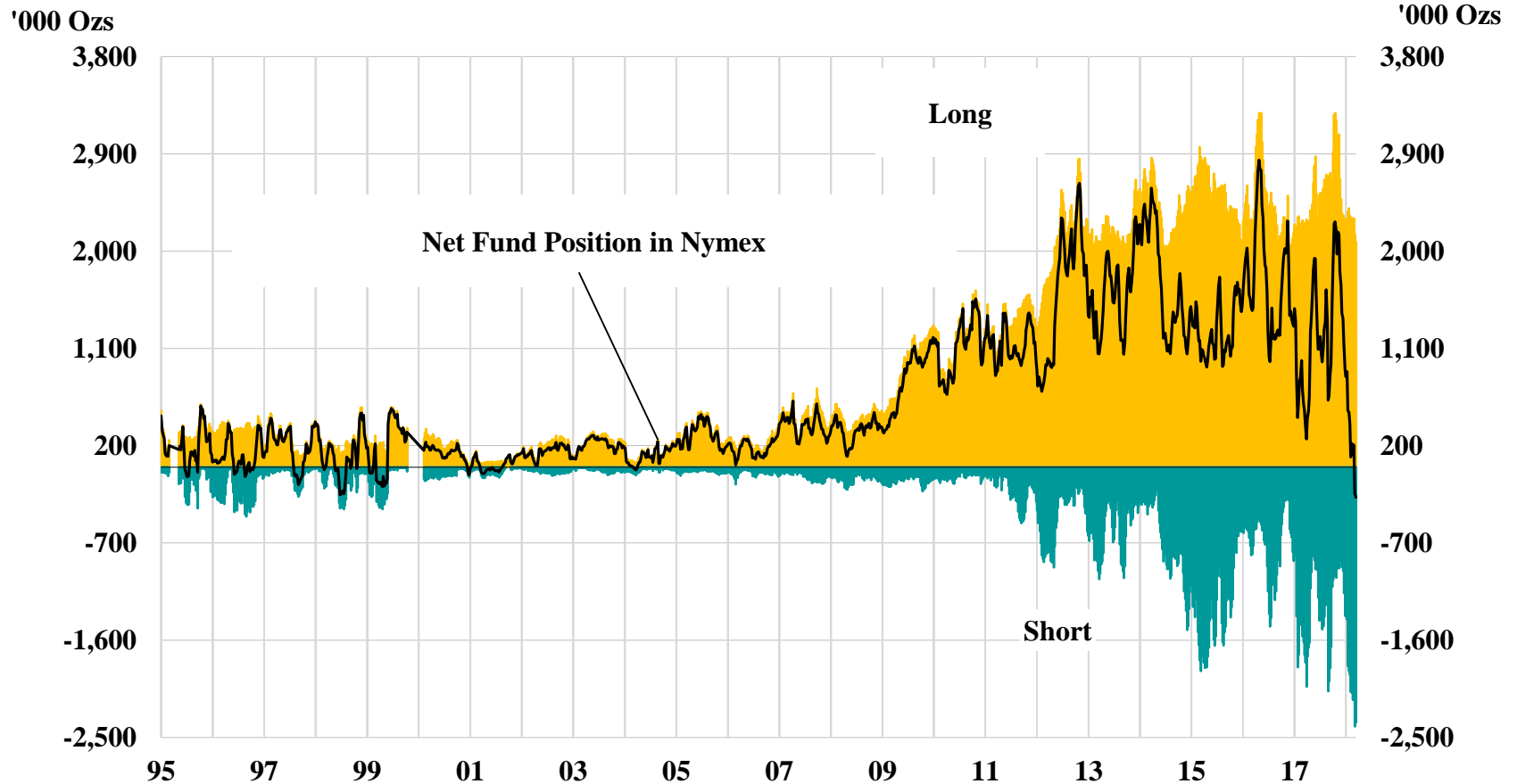
Annual Changes to Platinum ETP Holdings  
Annual, Through June 2018



# Platinum Non-Commercials Turn Net Short

## Non-Commercial Gross Long and Short Platinum Positions

*Nymex Futures & Options. Weekly Data, Through 26 Jun. 2018*



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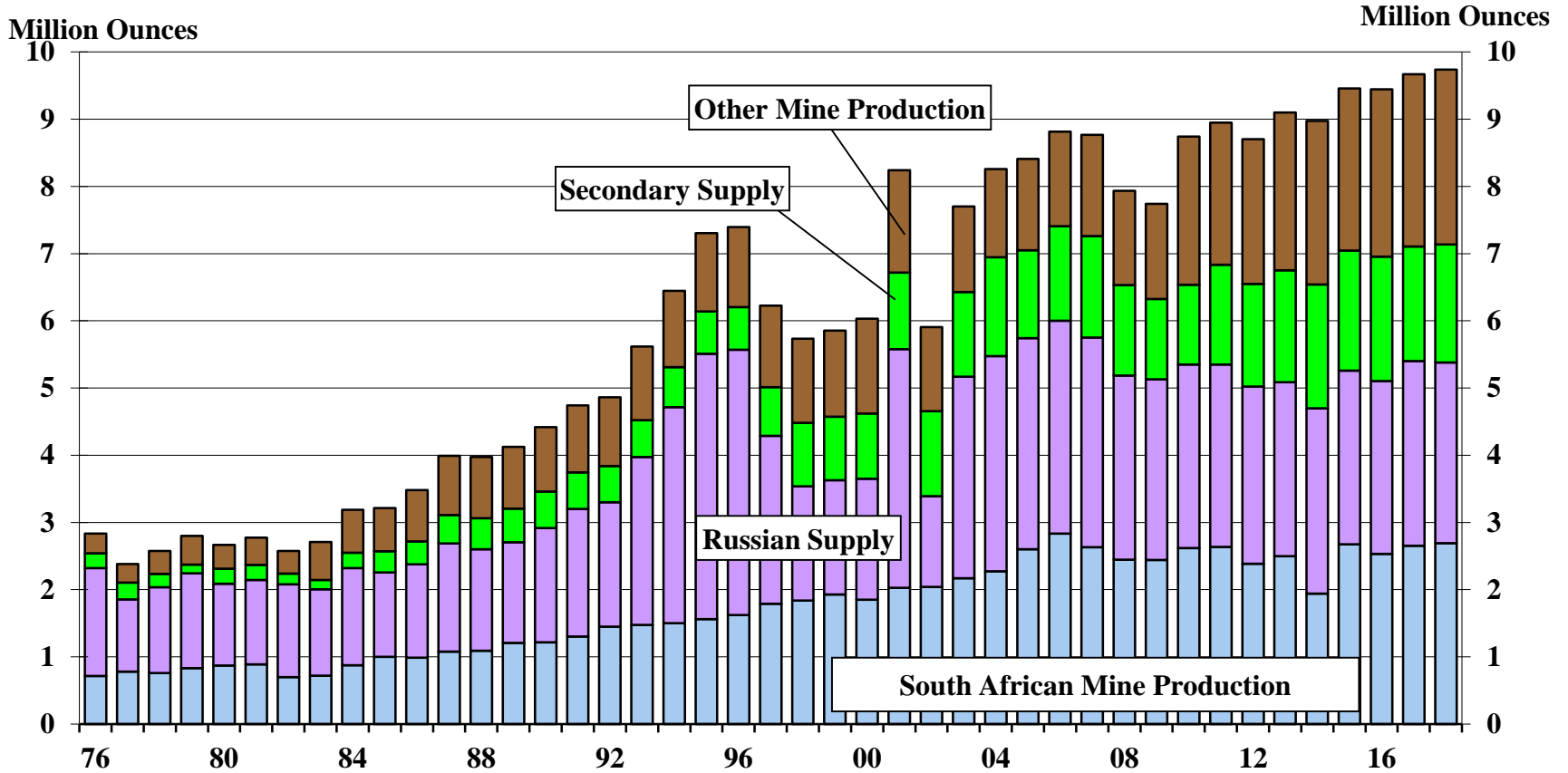
# *Palladium*



# Annual Palladium Supply To Rise At A Gradual Rate This Year

## Annual Palladium Supply

Projected Through 2018

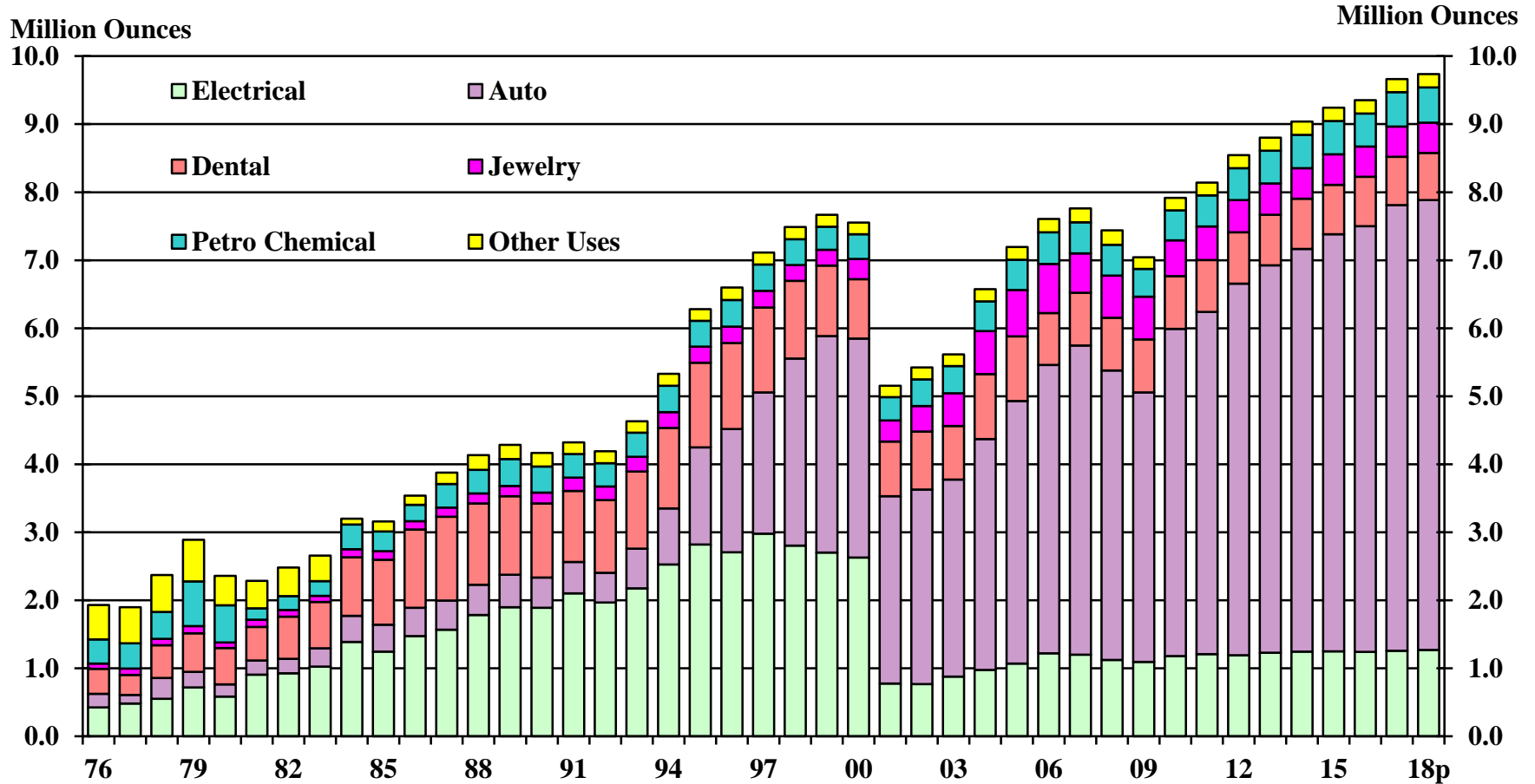


Note: Russian supply is exports through 2002 and production since 2003.

# Annual Palladium Fabrication Demand To Continue Rising This Year

## Annual Palladium Fabrication Demand

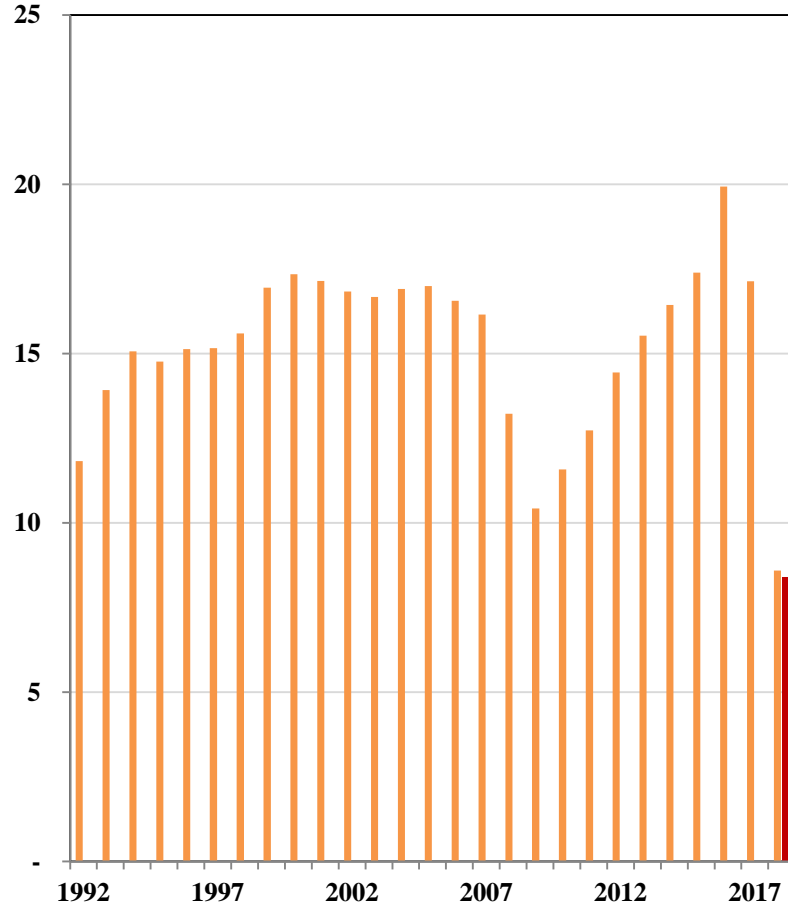
*Projected Through 2018*



# Strong Vehicle Sales

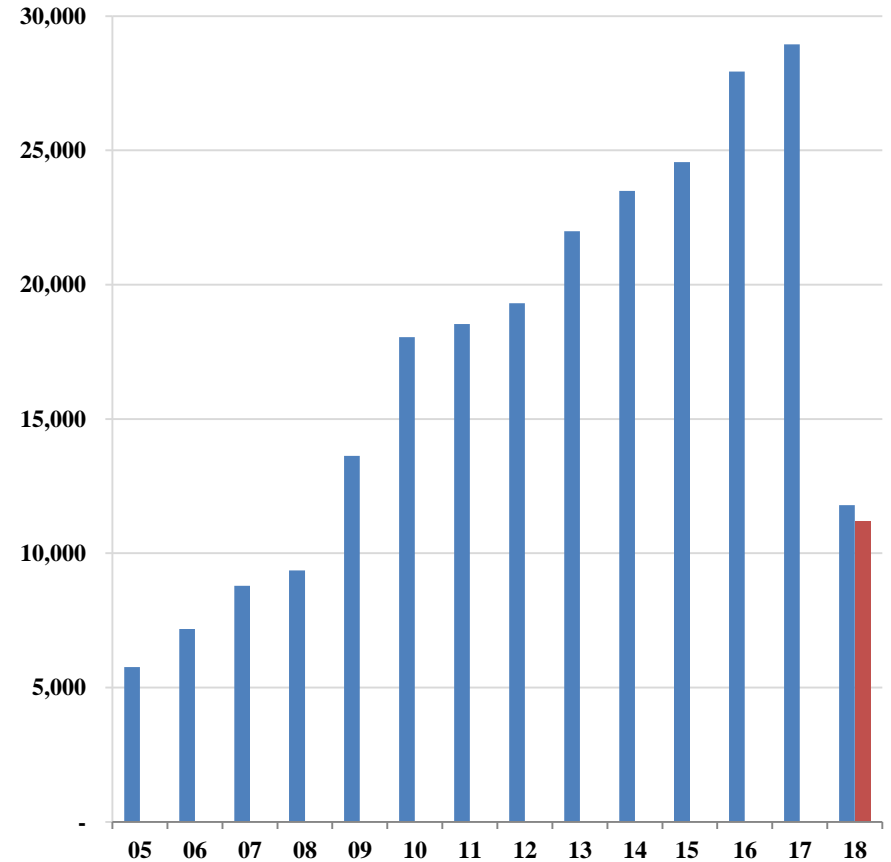
U.S. Auto Sales

Million Units



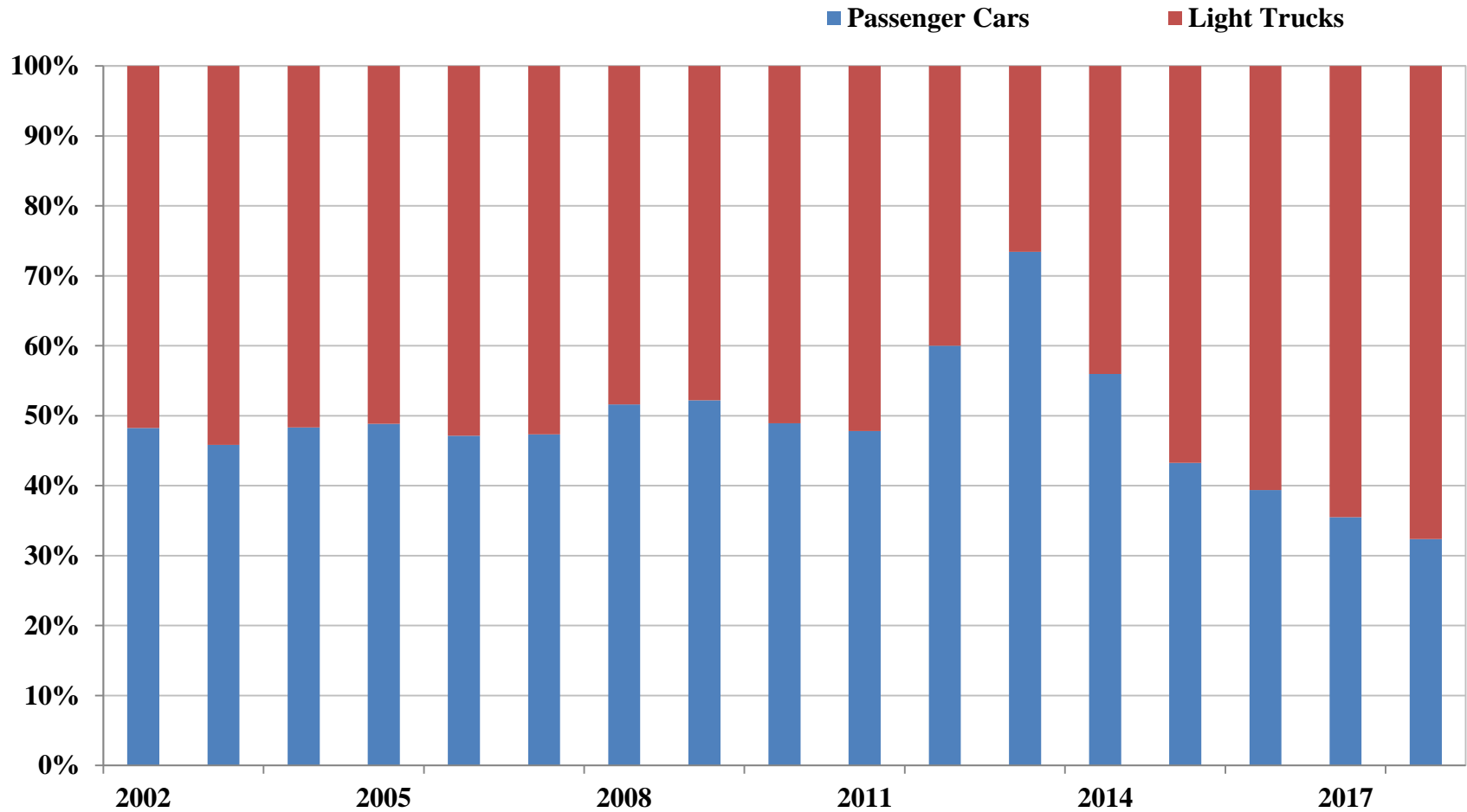
Annual Vehicle Sales in China

Thousand Vehicles



# US Sales Continue To Grow Larger

Ratio of US Cars to Light Truck Sales

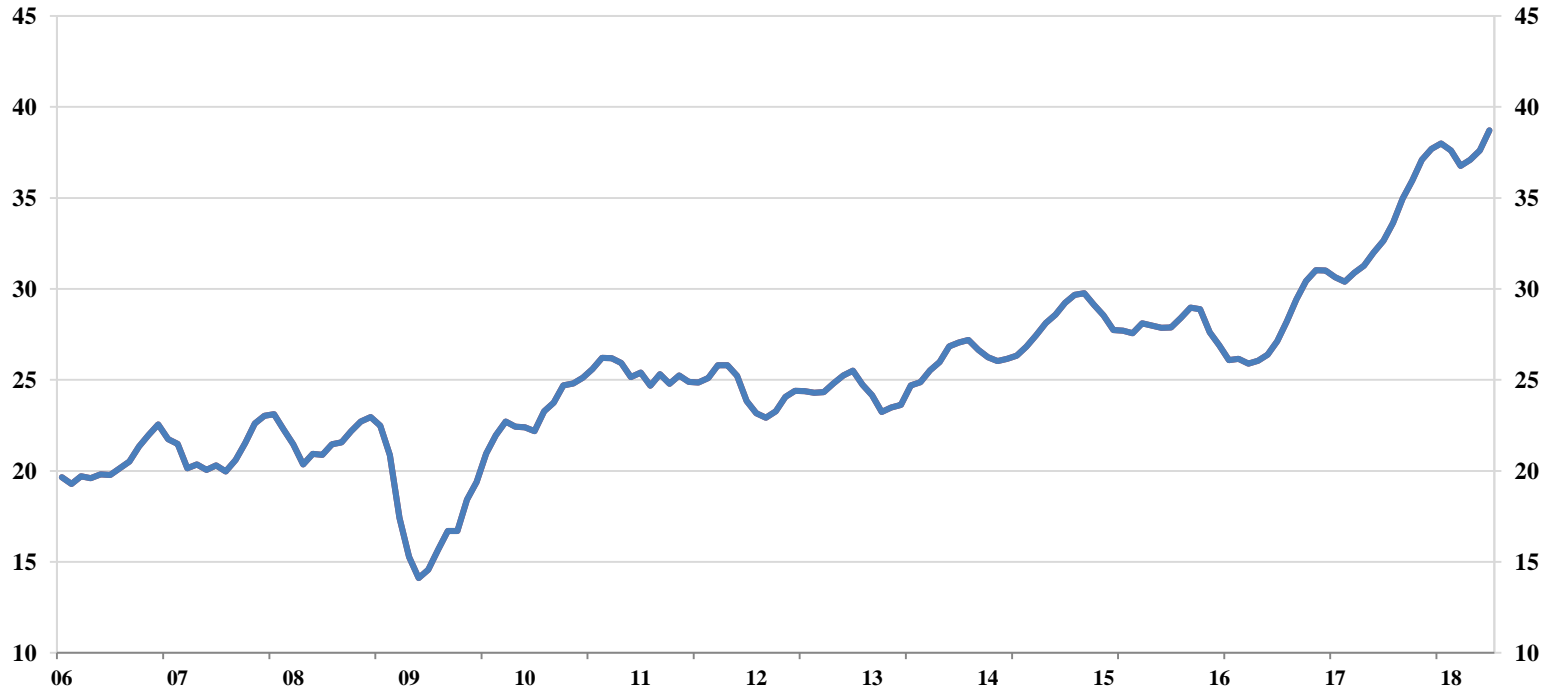


# Global Semiconductor Sales Up Strongly

Monthly Global Semiconductor Sales  
Data through May 2018

Billion USD

Billion USD

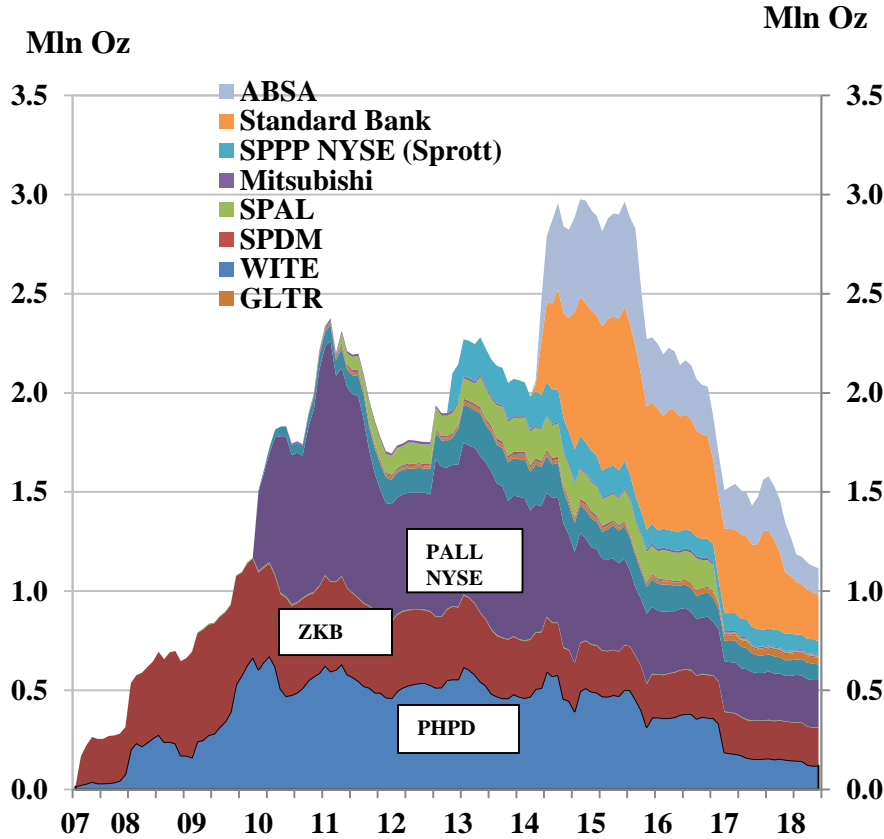


Source: Semiconductor Industry Association, via Bloomberg.

# Investors Net Sellers Of Palladium ETPs YTD

## Palladium ETP Holdings

Monthly Data, Through June 2018

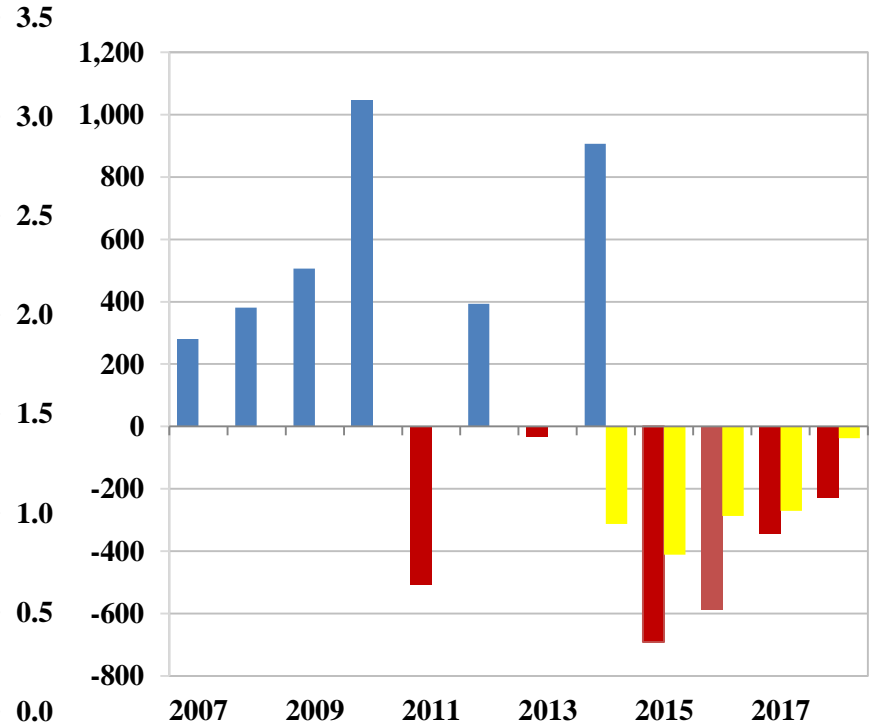


Source: ETP issuer website, Bloomberg

## Annual Changes to Palladium ETP Holdings

Through June 2018

Thousand Ounces



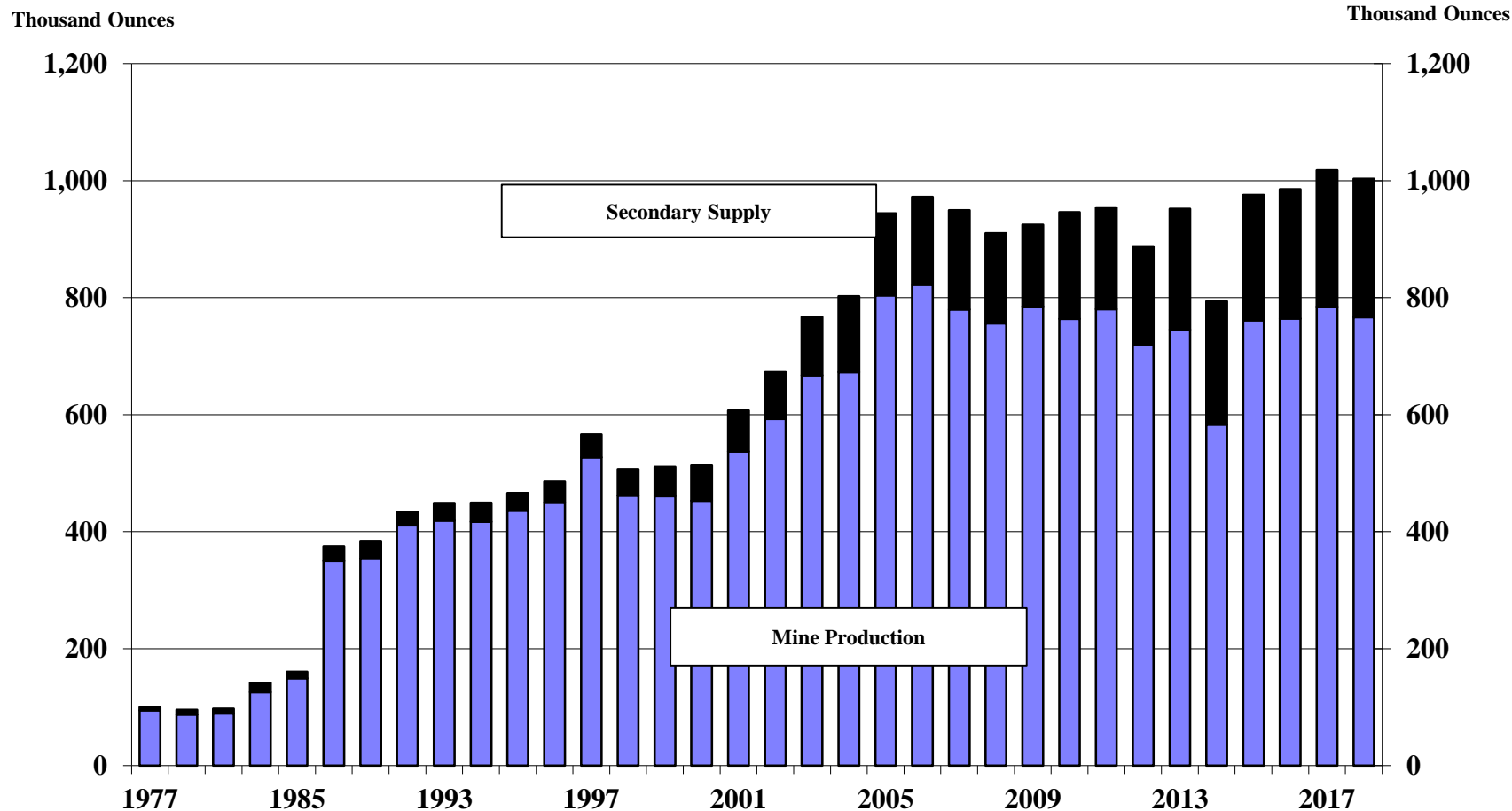
Source: Bloomberg, ETP issuer website . Note: Yellow bar represents year-to-date change in ETP holdings excluding two South African palladium ETPs.

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# *Rhodium*

# Rhodium Supply Expected to Decline Slightly

Annual Rhodium Supply  
Projected Through 2018



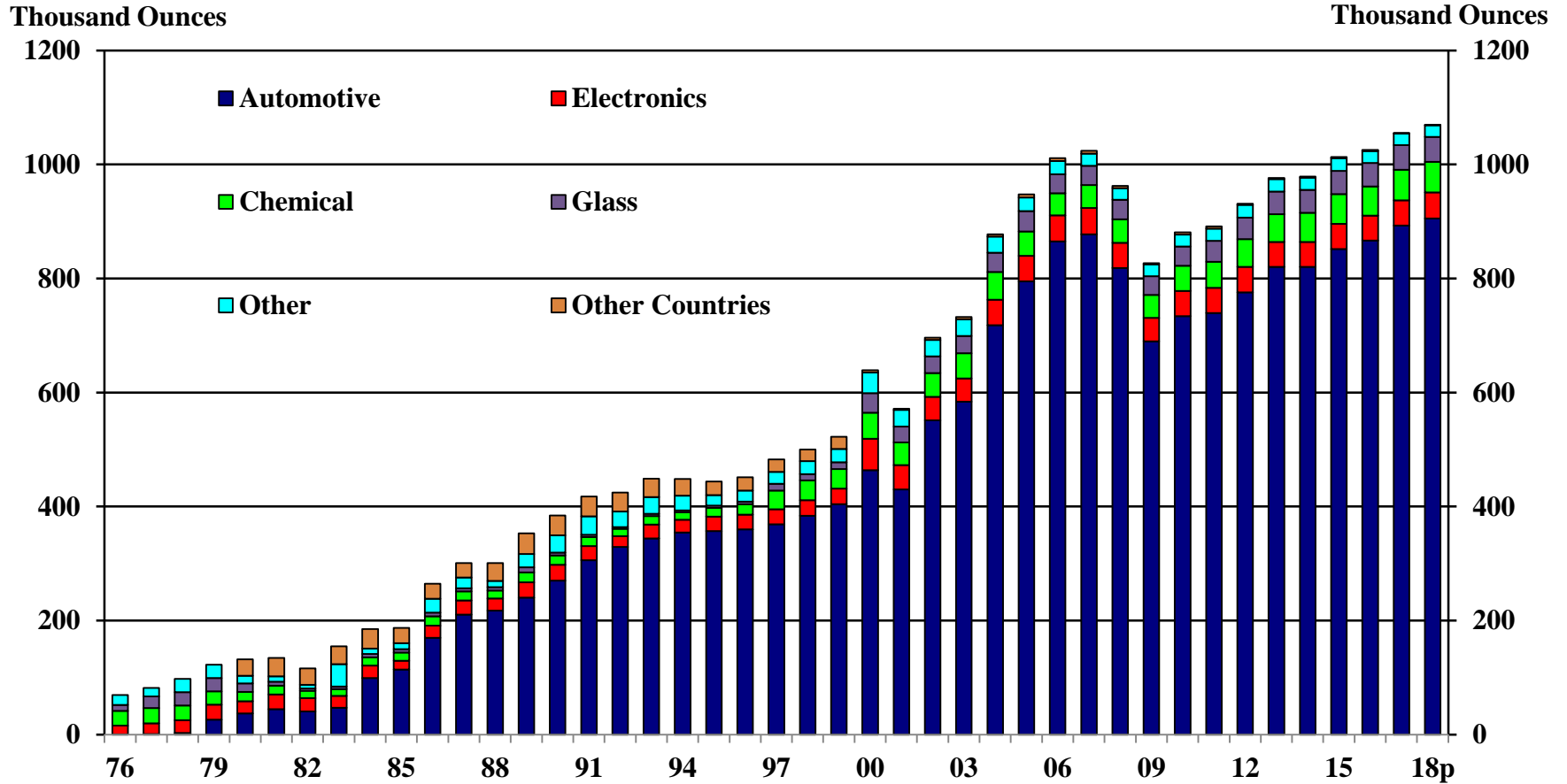
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# Rhodium Fabrication Demand: Rising

## Rhodium Fabrication Demand

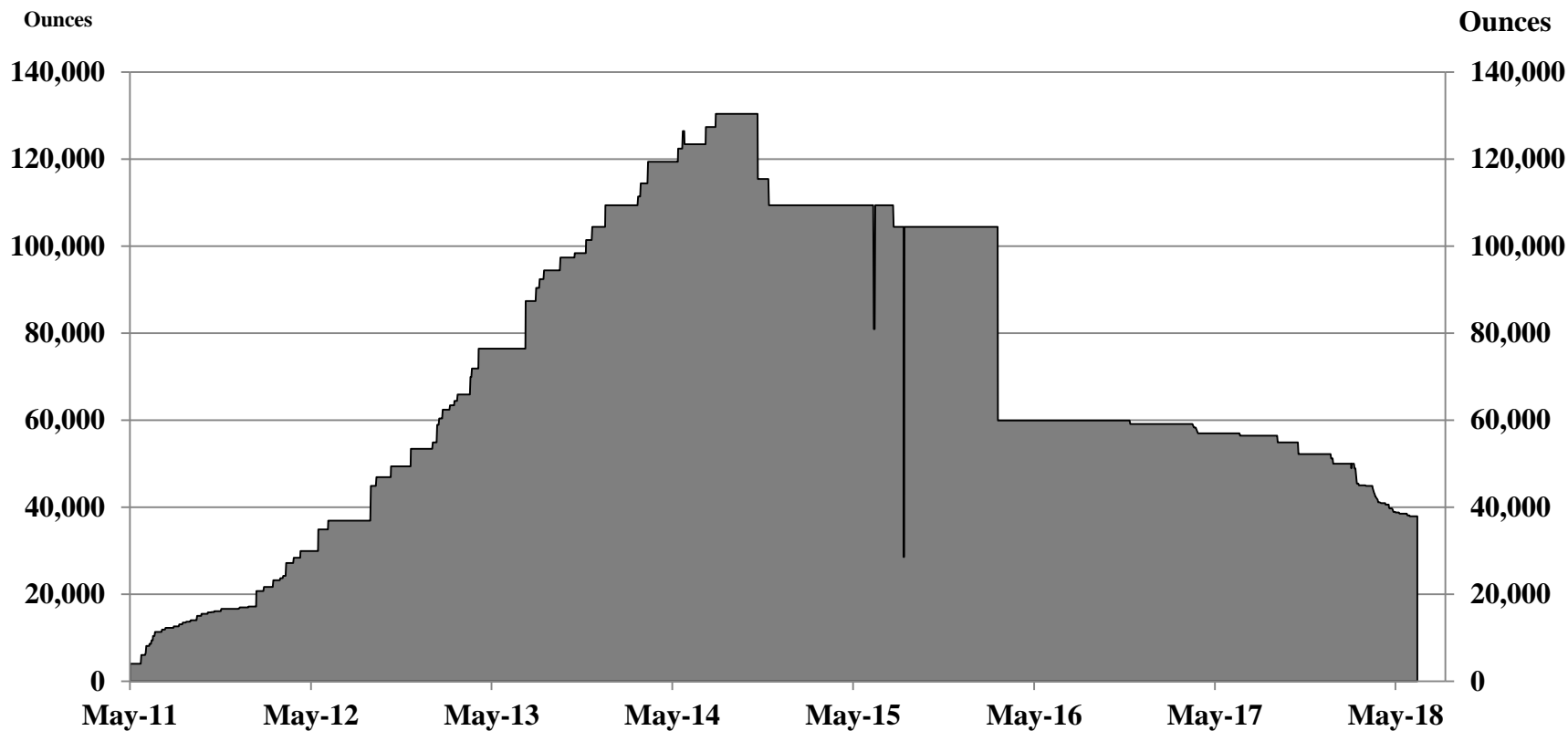
Annual Data, Projected Through 2018



# ETF Investors Have Been Selling

## Rhodium Exchange Traded Product Holdings

Daily, Through June 2018



Note: Metal is stored in the United Kingdom and is the combined holdings of the ETC's two primary listings, the db Physical Rhodium ETC (EUR) traded on the Xetra and Borse Italiano and the db Physical Rhodium ETC traded on the LSE.

Source: db, Bloomberg

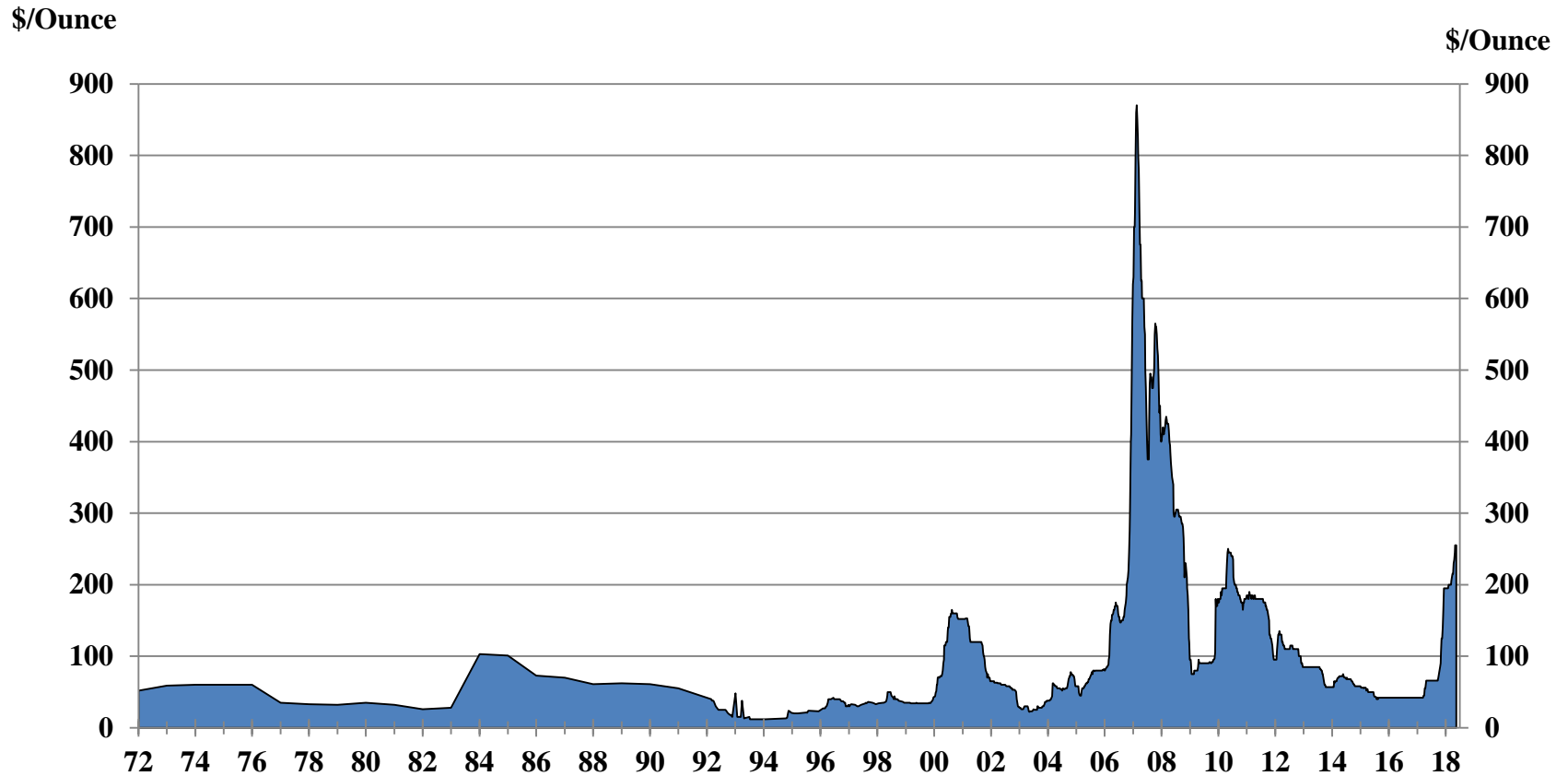
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# *Minor PGMs*

# Ruthenium

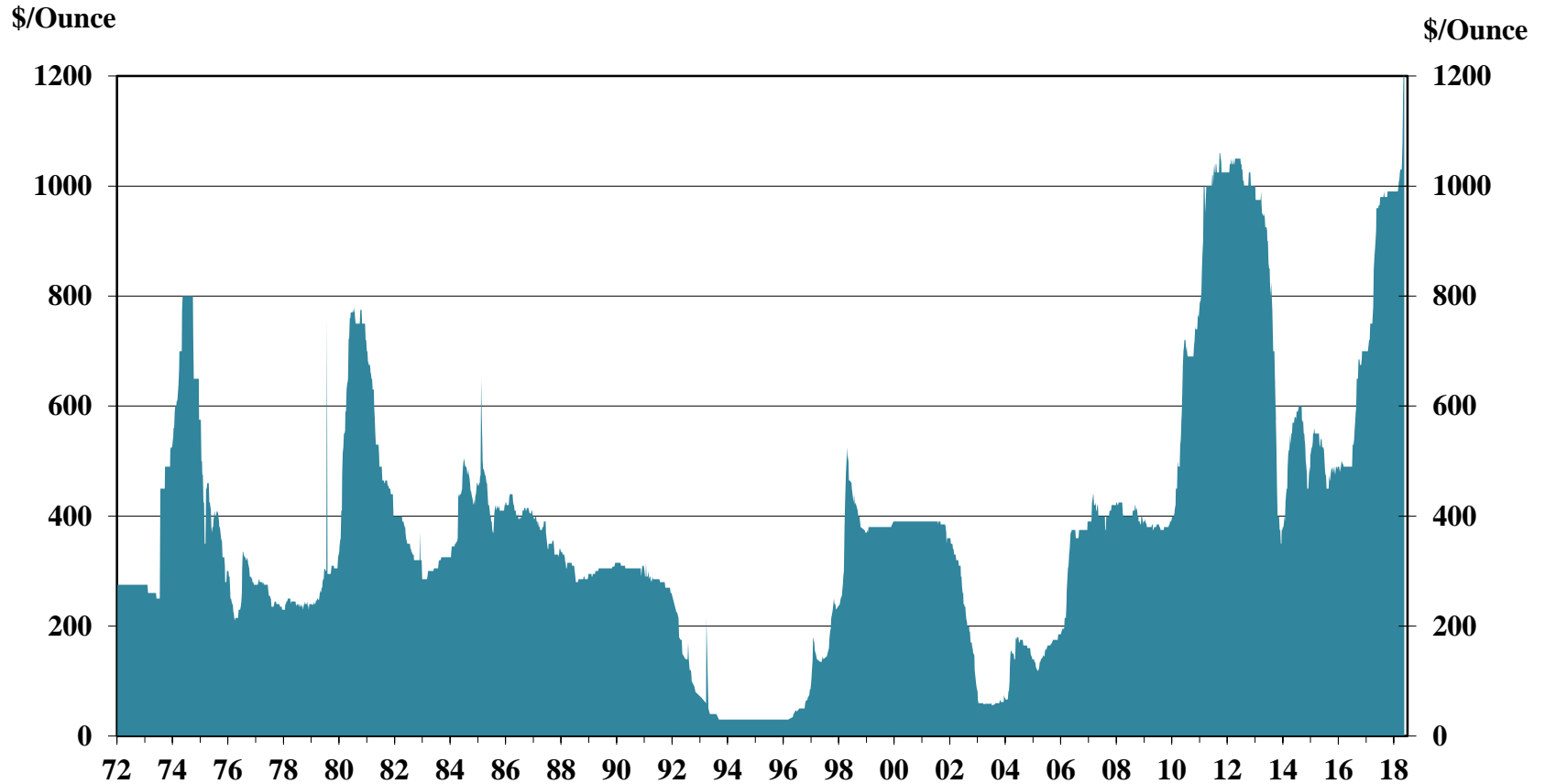
## The Price of Ruthenium

*Metals Week New York Dealer Prices, Through 17 May 2018*



# Iridium

The Price of Iridium  
*Metals Week New York Dealer Prices, Through 17 May 2018*



# Osmium

The Price of Osmium  
Metals Week New York Dealer Prices, Through 17 May 2018

