

# CES 2020 and the Consumer Electronics Industry

Bill Jewell

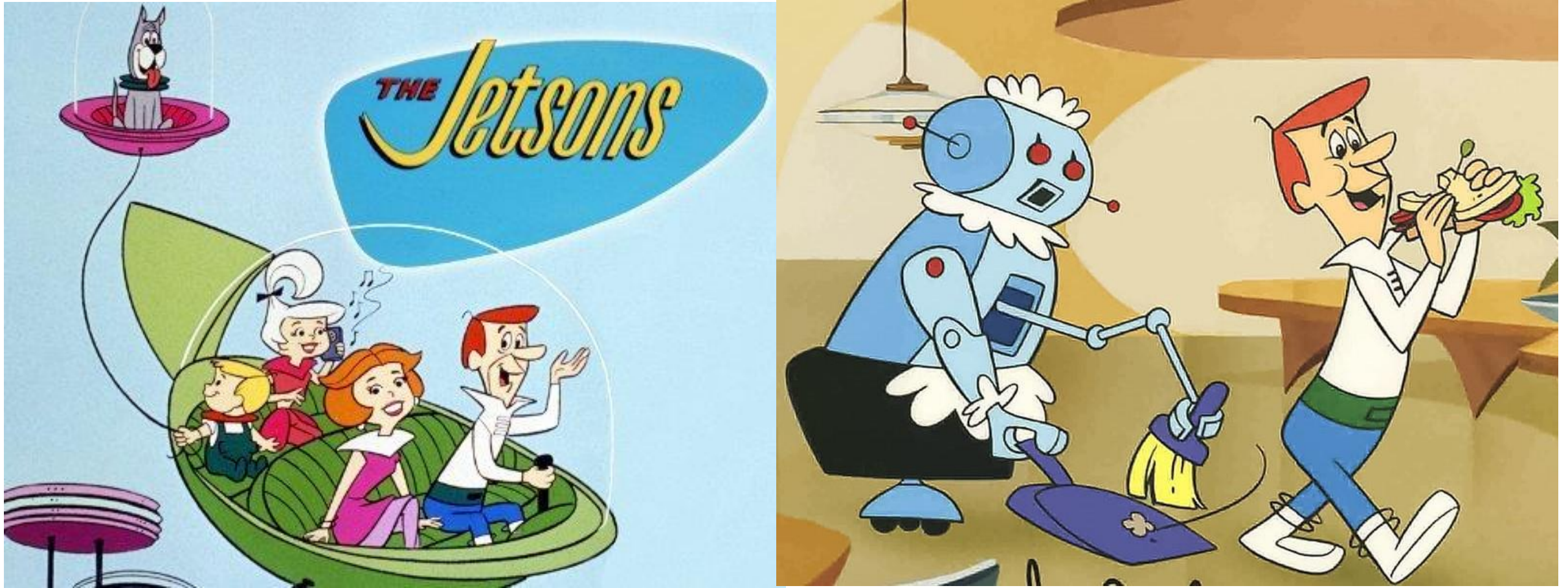
Semiconductor Intelligence, LLC

[www.sc-iq.com](http://www.sc-iq.com)

# CES 2020

- **CES (formerly Consumer Electronics Show) is held annually in Las Vegas**
- **Features over 4,500 exhibiting companies and over 175,000 attendees**
- **Over 2.9 million square feet of exhibit space (3 X Dallas Convention Center)**
- **Sponsored by the Consumer Technology Association (CTA)**

# Flying cars and robot maids: The Jetsons, 1962





# CES 2020: Self-driving vehicles



# CES 2020: Toyota ePalette and Micro Palette





# CES 2020: Hyundai's prototype Uber air taxi



# CES 2020: Robots



Remote field repairs



Vacuum



Pet dog



Defibrillator



Play ping pong



Inspect hazardous areas

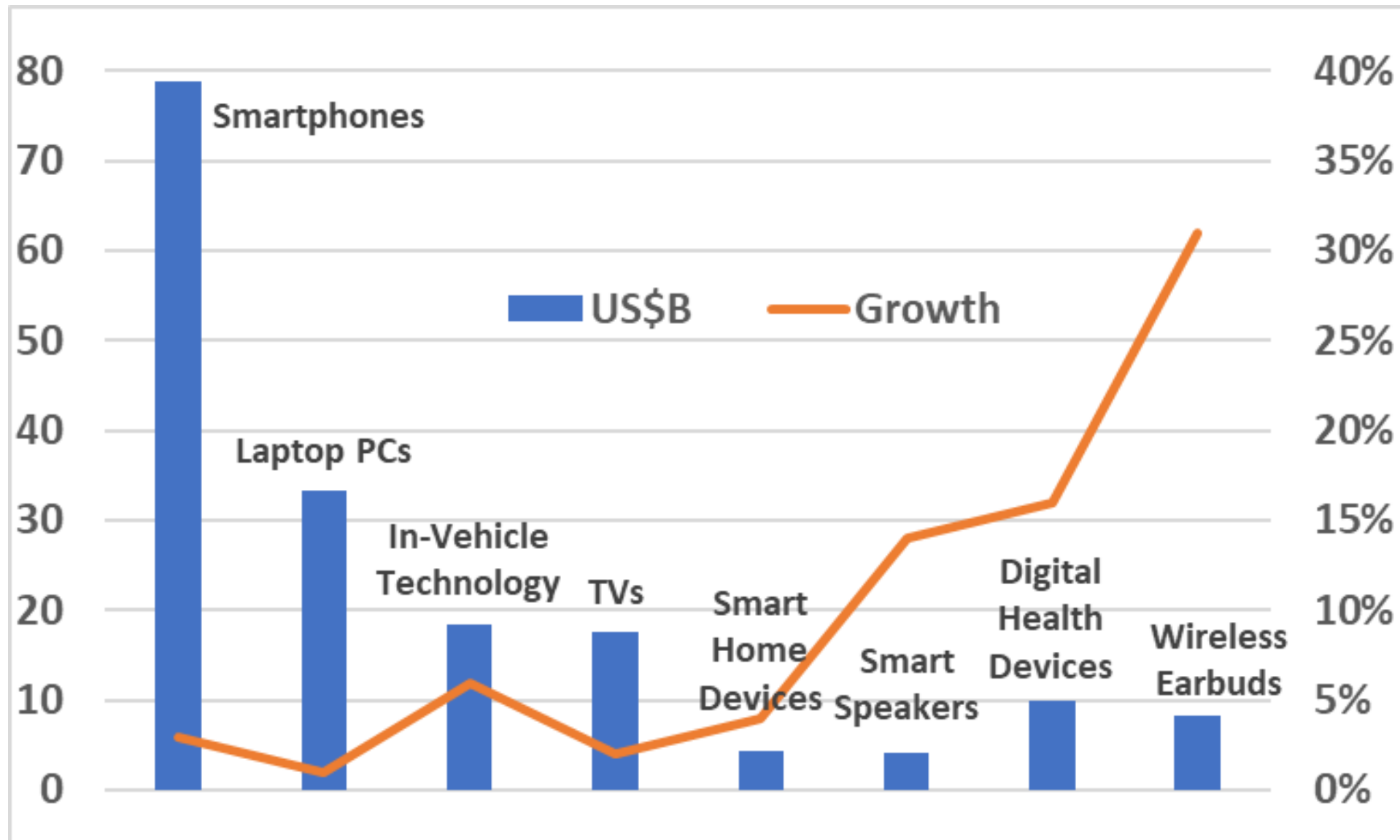


Make deliveries



Information

# 2020 U.S. Consumer Electronics, \$B – Source: CTA





# What you will see in 2020

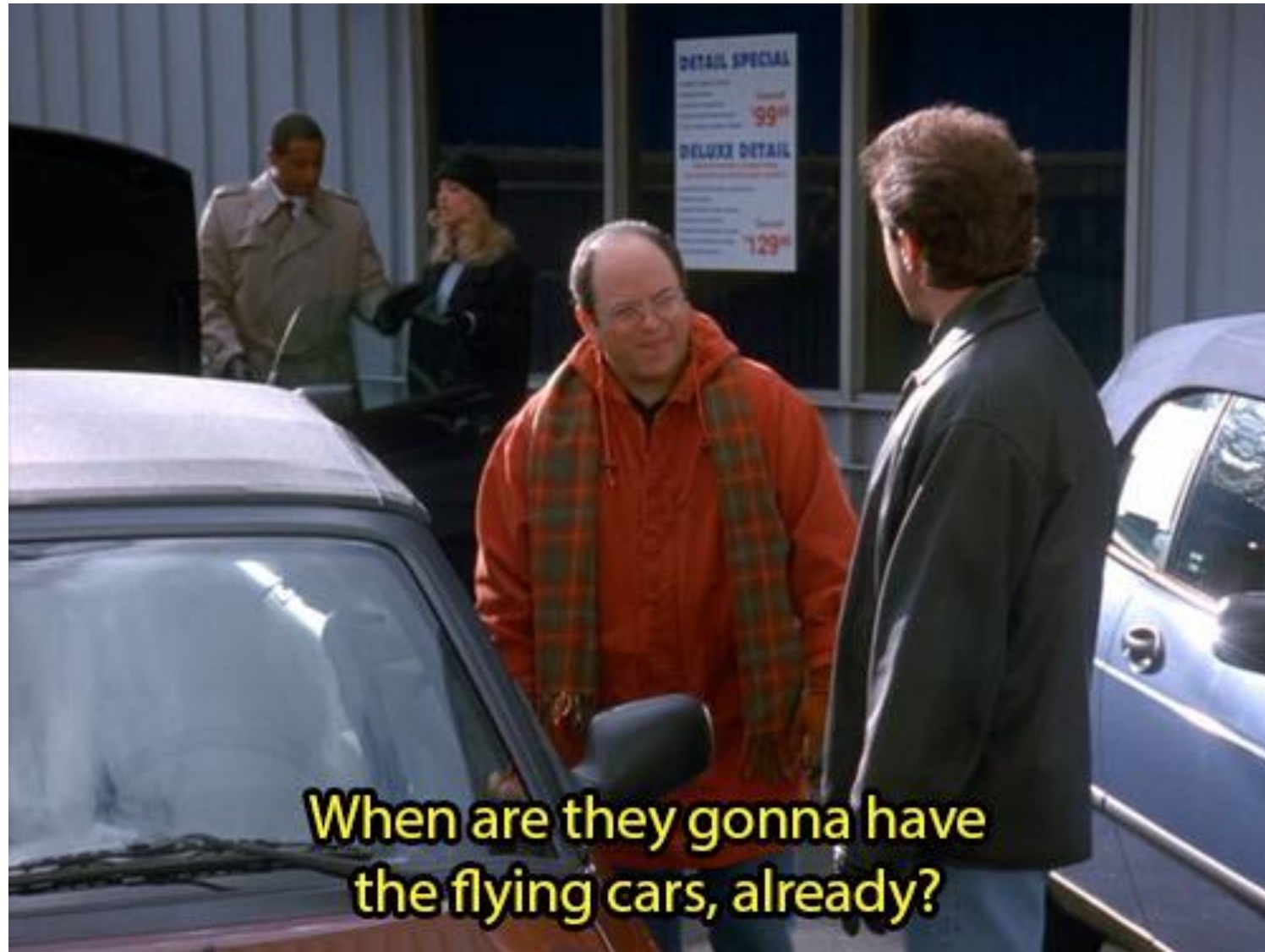
## ➤ 5G Smartphones

- 5G data speeds will be 1 to 10 gigabits per second (Gbps), up to 100 X 4G speeds
- 5G speeds about 10X home internet speeds, some may drop home internet
- AT&T, Verizon and T-Mobile/Sprint 5G networks deployed in Dallas & other cities
- 5G smartphones are now available from Samsung, LG, Motorola, OnePlus & others
- Apple 5G smartphone expected in September 2020 (could be delayed)
- 5G also for machine-to-machine communications (Internet of Things or IoT)
- COVID-19 will likely delay 5G infrastructure deployment & 5G smartphone buys

# What you will see in 2020

## ➤ 8K TV

- 8K TVs have twice the resolution of 4K UHD and 16 times full HD TVs
- Currently available from Samsung, LG, Sony and others
- Sizes range from 55" to 98", priced from \$2,500 to \$60,000 (BestBuy)
- 8K TVs should be mainstream in 4 to 5 years, 8K content will lag by 2 to 3 years





# What you will see by 2030

## ➤ Self driving cars

- Technology exists, automakers must prove safety and reliability
- Wide-spread adoption will depend on implementation of regulations
- Electric cars will be more common as batteries improve and costs fall

## ➤ Useful robots

- Sophisticated sensors, artificial intelligence (AI), advanced robotic mechanics and internet connections will allow robots to perform practical functions

## ➤ Flying cars?

- Probably not

# COVID-19 and Electronics Supply

## Major company reports show production returning to previous levels

- Foxconn is the largest contract electronics manufacturer (makes Apple iPhone)

Based in Taiwan, most manufacturing is in China

March 2020 revenue up 60% from February, down 8% from year ago

- Lenovo of China is the largest PC maker

“Although the China factory closures caused short-term impact on production and supply, we were able to minimize this as much as possible.”

- Samsung of South Korea is largest smartphone and TV supplier

Guidance is 1Q 2020 revenue up 5% from a year ago

# COVID-19 and Electronics Demand

## ➤ Demand trends unpredictable

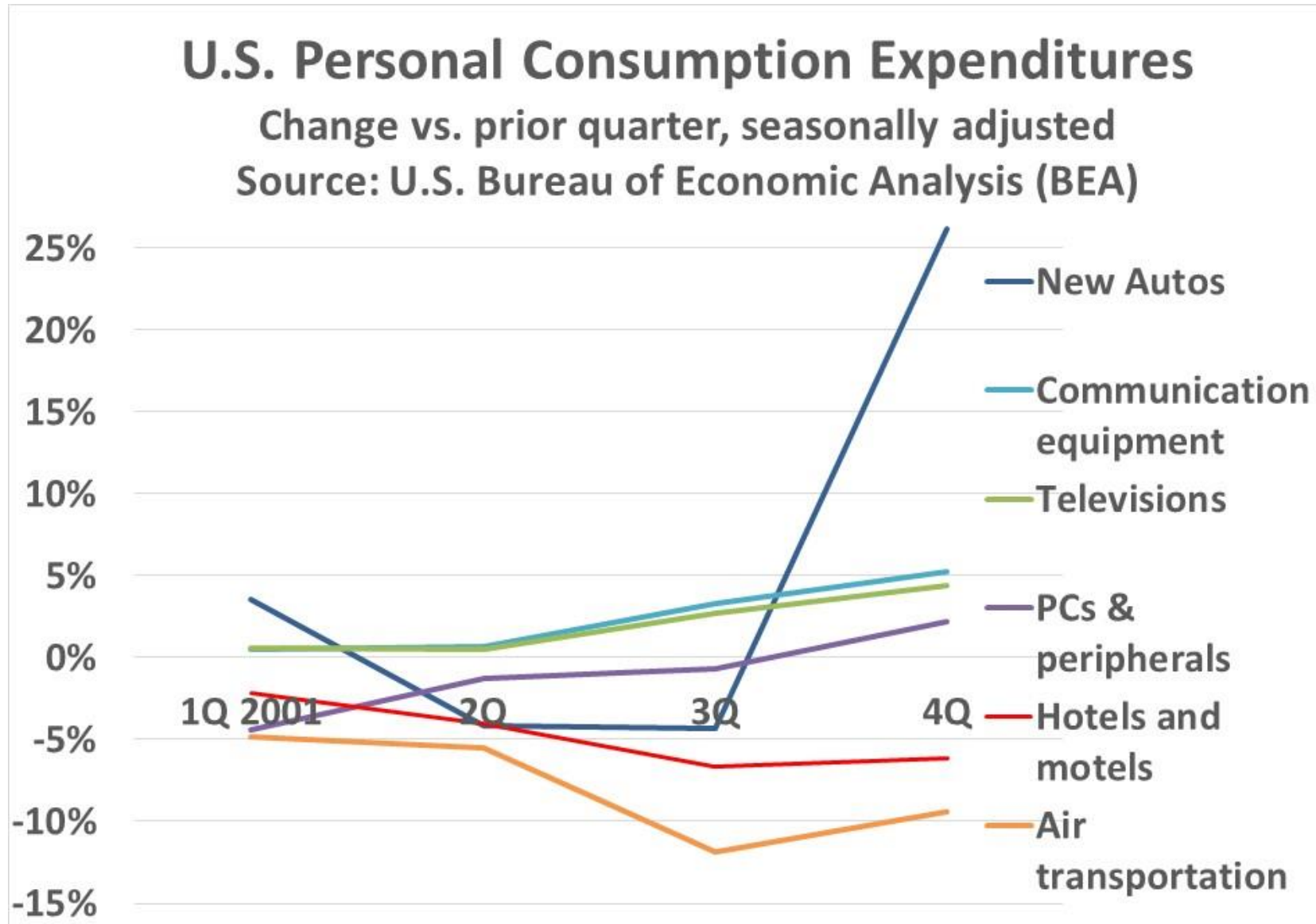
- Households with jobs will have pent-up demand; less money spent on dining out, entertainment and travel will be available for goods such as electronics
- Households temporarily without jobs will drastically cut discretionary spending

## ➤ Post 9-11 trends suggest possible upturn in electronics demand

- Air travel was severely curtailed after Sept. 11, 2001 terrorist attacks in U.S.
- Leisure travel was substantially reduced in 3<sup>rd</sup> and 4<sup>th</sup> quarters of 2001
- Consumers shifted discretionary spending towards new automobiles, mobile phones, televisions, and PCs.



# Post 9-11 spending boost on autos & electronics



# Conclusions

- **Innovations in semiconductors, electronics, software and services will continue to drive new and improved products**
- **Impact of COVID-19 on electronics demand is unpredictable, but history suggests consumers could boost spending on electronics once economy recovers**