



*36th Annual*  
**Economic  
Outlook  
Symposium**  
*Friday, December 2, 2022*

**Consensus Outlook for 2023**

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Senior Business Economist

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Research Assistant

## 2021 Economic Outlook Symposium

### Q3/2021 Forecast Winners

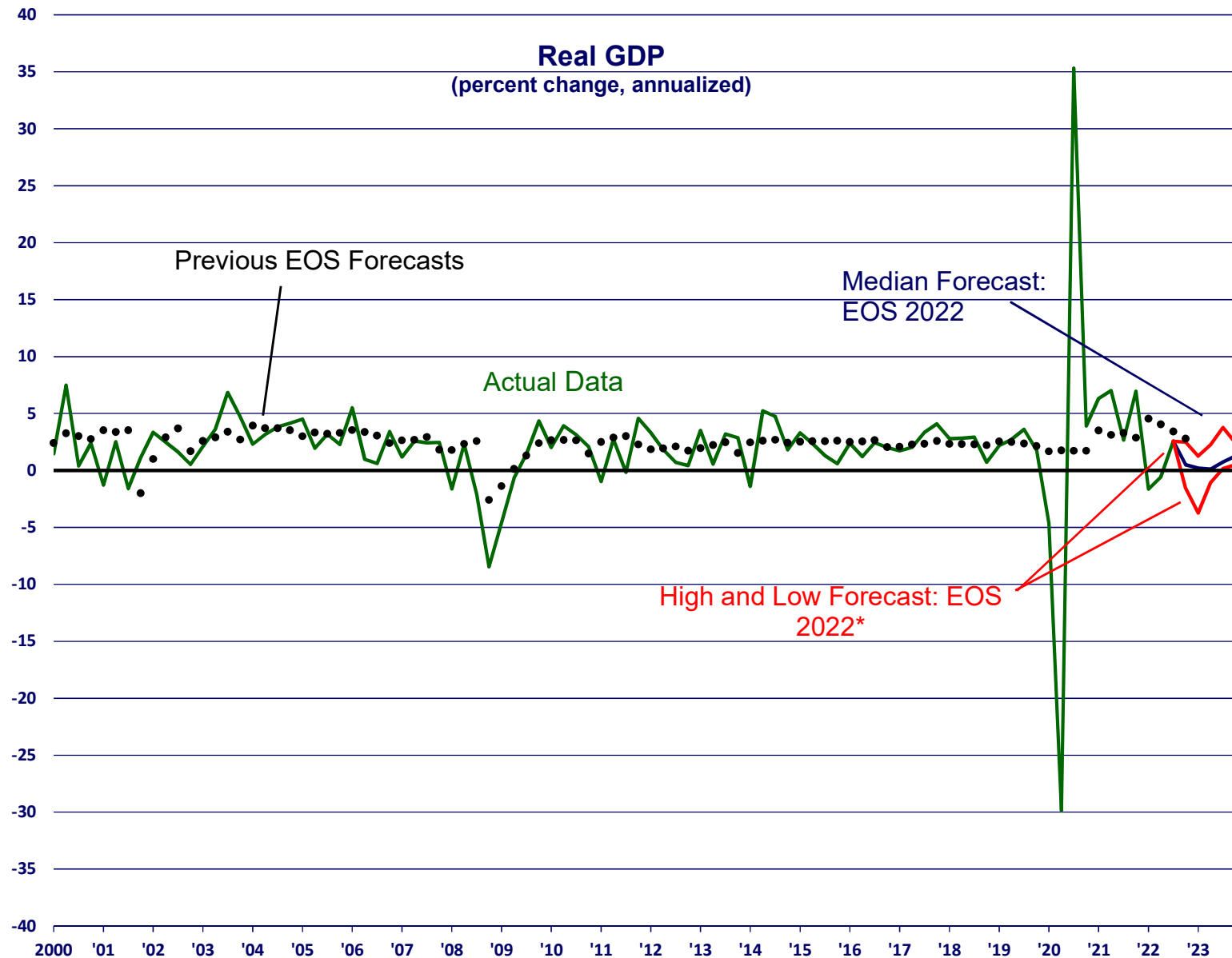
Overall	Tom Portz - Sterling Capital Management, Inc.	
GDP, current dollars	Bill Rapp	
GDP price index, chain-type	Eric Hale - Trader Oasis	
Real GDP, chained dollars	Tom Portz - Sterling Capital Management, Inc.	
Personal consumption expenditures	Carl Tannenbaum and Ryan James Boyle - Northern Trust	
Business fixed investment	Ronald Pankau - JH Best and Sons	
Residential investment	Rajeev Dhawan - Georgia State University	
Change in private inventories	Eric Hale - Trader Oasis	
Net exports	Jack Kleinhenz - National Retail Federation	
Government consumption expenditures and gross investment	Bill Witte - Witte Econometrics/FTR	
Industrial production	Diane Swonk - Grant Thornton LLP	
Car & light truck sales	Matthew Kodis - Iowa Economic Development Authority	
Housing starts	Maira Trimble and Jordan Vickers - Eaton	
Oil Price	Todd Tomalak - John Burns Real Estate Consulting	
Unemployment rate	Diane Swonk - Grant Thornton LLP	Mark Zhang - Navistar
Inflation rate (CPI)	Todd Tomalak - John Burns Real Estate Consulting	
Treasury constant maturity one-year rate	Tom Guthrie - FM Fincorp	
Treasury constant maturity ten-year rate	Tom Guthrie - FM Fincorp	
J.P. Morgan broad nominal effective exchange rate	Todd Tomalak - John Burns Real Estate Consulting	

## Contributors

Thad Bartosz	Aurora Circuits, Inc.
Peter Bernstein	RCF Economic and Financial Consulting
Carl Tannenbaum and Ryan Boyle	Northern Trust
Rajeev Dhawan	Georgia State University
Tom Guthrie	FM Fincorp
Nick Janet	State Farm
Matthew Kodis	Iowa Economic Development Authority
Monalisa Kulkarni	State Farm
Dave Lauer	Bureau of Labor Statistics
William V Rapp	Center For Bubble Research Inc
Matías Scaglione	Motio
Brian Schwadron	U. S. Steel
Romina Soria	Wisconsin Department of Revenue
Jonathan Starks	FTR
Yingzi Su	GM
Vignesh Swarnam	University of Michigan
Todd Tomalak	Zonda
Bill Witte	Witte Econometrics/FTR
Mark Zhang	Navistar

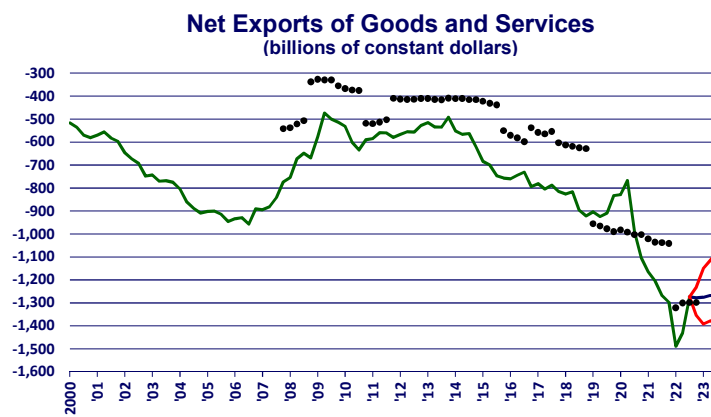
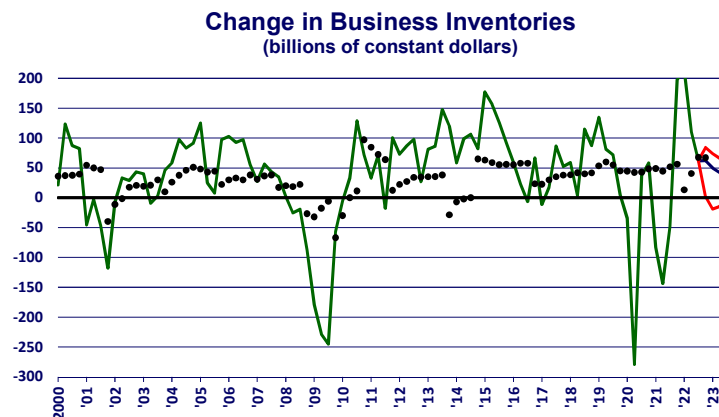
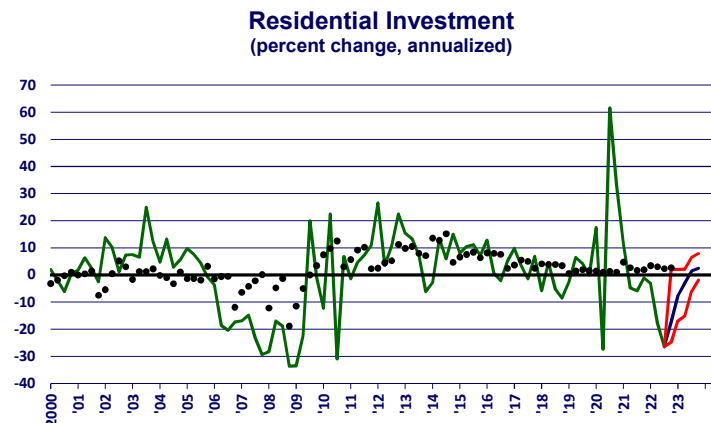
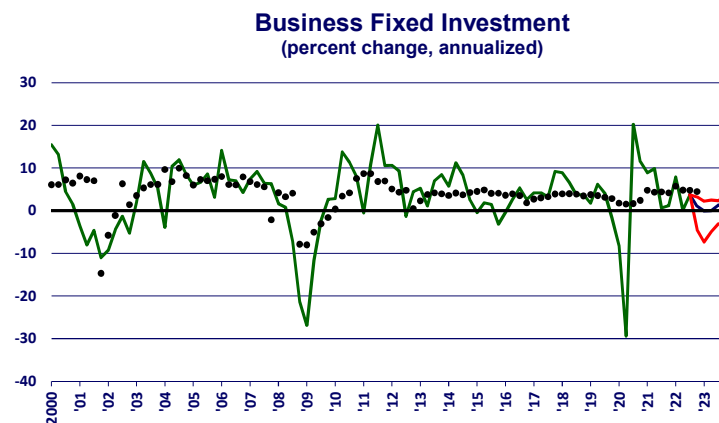
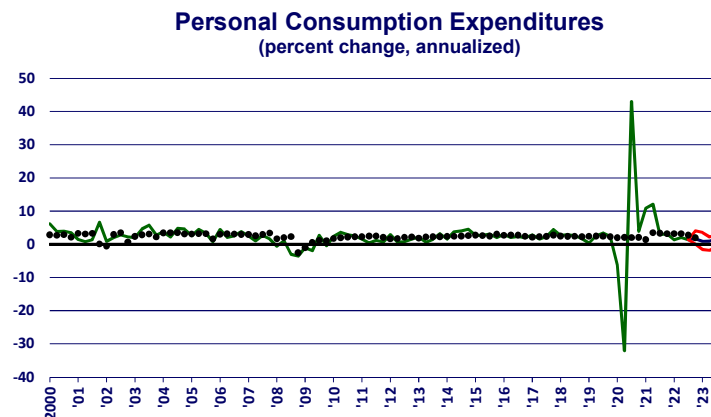
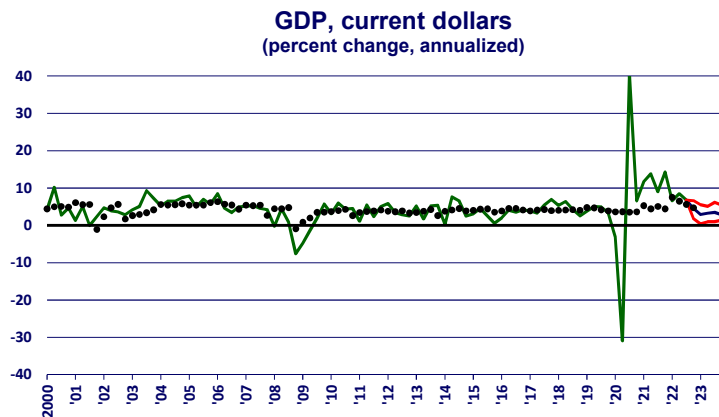
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# Figure 1 - Forecast of GDP and Related Items

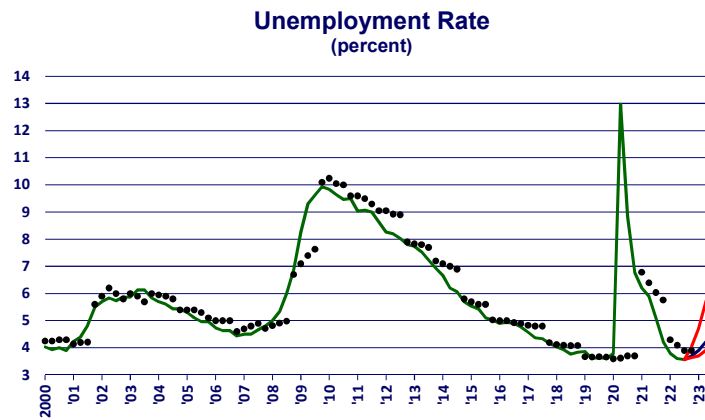
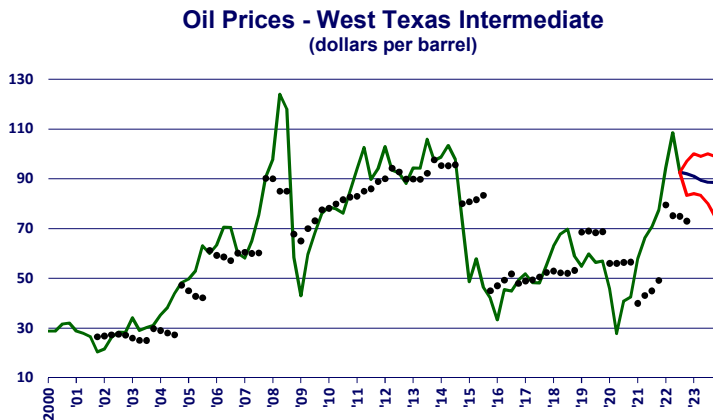
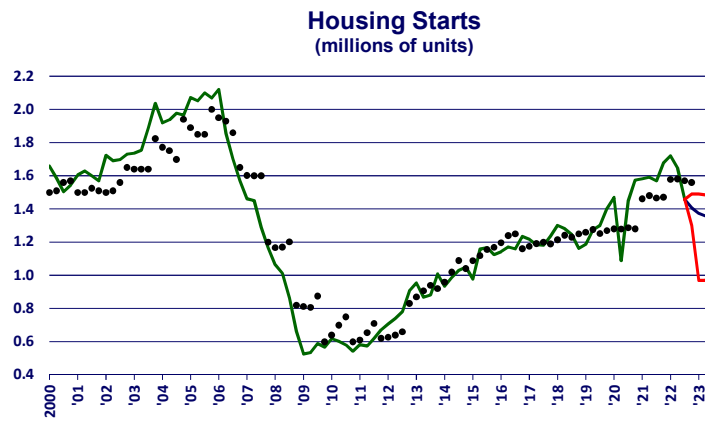
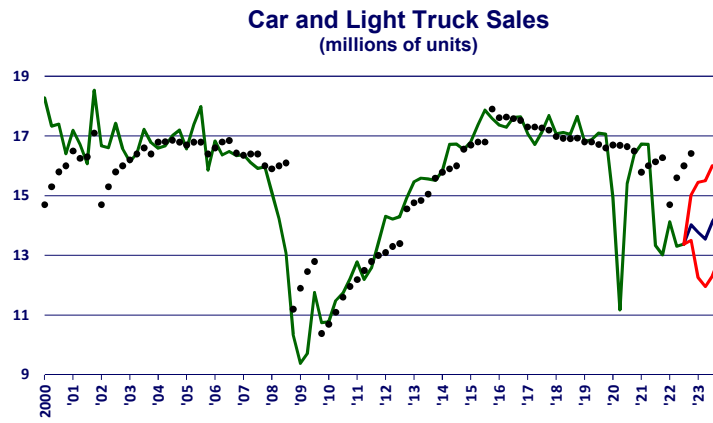
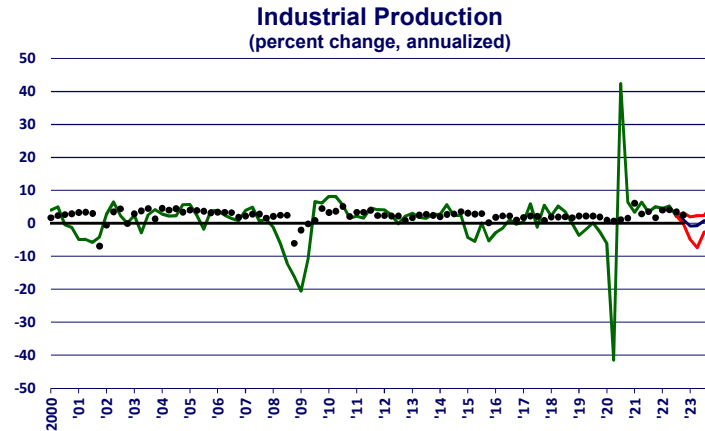
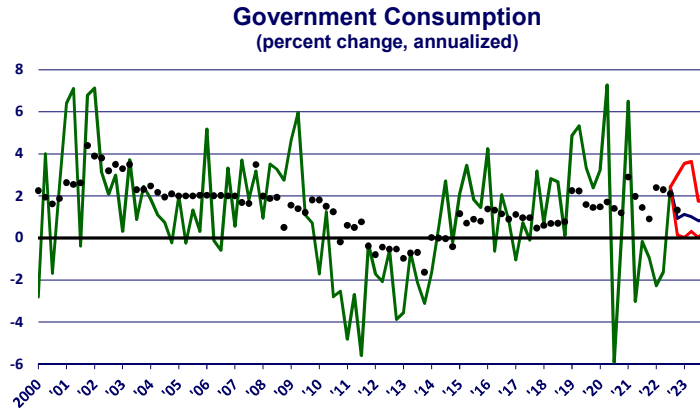


\* Excludes the two highest and lowest forecasts.

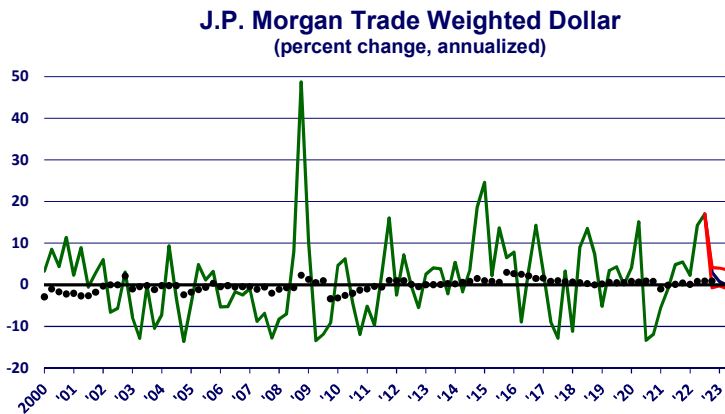
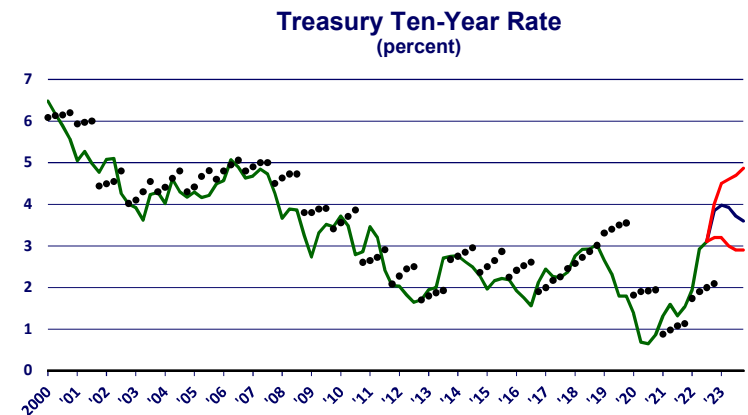
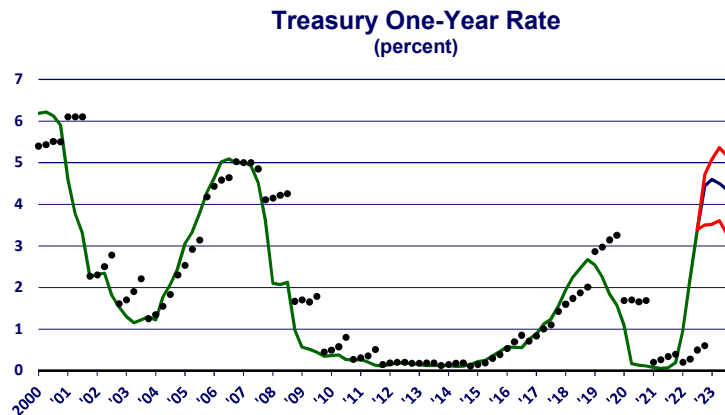
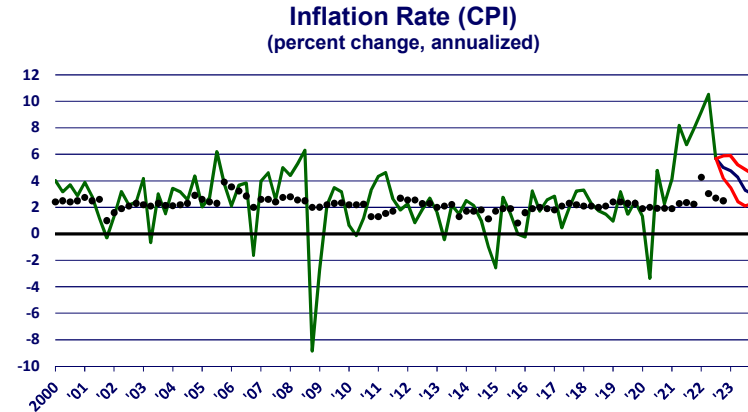
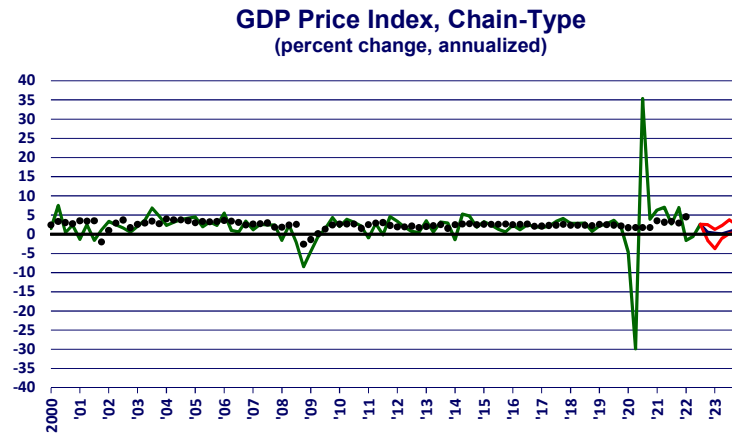
**Figure 2 - Forecast of GDP and Related Items**



**Figure 3 - Forecast of GDP and Related Items**



**Figure 4 - Forecast of GDP and Related Items**



**Table 1 - Median Forecast of GDP and Related Items**

	2021	2022	2023	Q322	Q422	Q123	Q223	Q323	Q423
GDP, current dollars*	12.2%	<b>6.6%</b>	<b>3.0%</b>	6.7%	<b>4.5%</b>	<b>2.9%</b>	<b>3.3%</b>	<b>3.5%</b>	<b>2.8%</b>
GDP price index, chain-type*	6.1%	<b>6.4%</b>	<b>3.2%</b>	6.2%	<b>4.5%</b>	<b>4.2%</b>	<b>3.2%</b>	<b>3.0%</b>	<b>2.5%</b>
Real GDP, chained dollars*	5.7%	<b>0.2%</b>	<b>0.6%</b>	2.7%	<b>0.5%</b>	<b>0.2%</b>	<b>0.1%</b>	<b>0.7%</b>	<b>1.3%</b>
Personal consumption expenditures*	7.2%	<b>1.6%</b>	<b>1.0%</b>	3.0%	<b>1.7%</b>	<b>0.9%</b>	<b>1.0%</b>	<b>1.6%</b>	<b>1.7%</b>
Business fixed investment*	5.0%	<b>3.1%</b>	<b>0.4%</b>	0.6%	<b>1.0%</b>	<b>-0.1%</b>	<b>0.0%</b>	<b>1.3%</b>	<b>0.6%</b>
Residential investment*	-0.3%	<b>-16.5%</b>	<b>-1.5%</b>	-5.8%	<b>-17.2%</b>	<b>-7.6%</b>	<b>-3.0%</b>	<b>1.5%</b>	<b>2.4%</b>
Change in private inventories (billions of constant dollars)**	\$197.6	<b>\$62.3</b>	<b>\$44.0</b>	-\$48.6	<b>\$62.3</b>	<b>\$49.5</b>	<b>\$42.1</b>	<b>\$43.5</b>	<b>\$44.0</b>
Net exports of goods and services (billions of constant dollars)**	-\$1,297.6	<b>-\$1,277.8</b>	<b>-\$1,266.8</b>	-\$1,267.5	<b>-\$1,277.8</b>	<b>-\$1,275.0</b>	<b>-\$1,267.6</b>	<b>-\$1,273.7</b>	<b>-\$1,266.8</b>
Government consumption expenditures and gross investment*	0.5%	<b>-0.2%</b>	<b>1.0%</b>	-0.2%	<b>0.9%</b>	<b>1.1%</b>	<b>1.0%</b>	<b>0.8%</b>	<b>0.9%</b>
Industrial production*	4.5%	<b>3.3%</b>	<b>-0.1%</b>	3.4%	<b>1.1%</b>	<b>-0.8%</b>	<b>-0.7%</b>	<b>0.8%</b>	<b>0.5%</b>
Car & light truck sales (millions - calendar year including imports)***	14.9	<b>13.9</b>	<b>14.6</b>	13.3	<b>14.0</b>	<b>13.8</b>	<b>13.5</b>	<b>14.1</b>	<b>14.5</b>
Housing starts (millions)***	1.61	<b>1.56</b>	<b>1.36</b>	1.57	<b>1.41</b>	<b>1.37</b>	<b>1.36</b>	<b>1.35</b>	<b>1.34</b>
Oil price (dollars per barrel of West Texas Intermediate)**	\$77.44	<b>\$92.00</b>	<b>\$88.50</b>	\$70.56	<b>\$92.00</b>	<b>\$91.04</b>	<b>\$89.40</b>	<b>\$88.63</b>	<b>\$88.50</b>
Unemployment rate**	4.2%	<b>3.7%</b>	<b>4.4%</b>	5.1%	<b>3.7%</b>	<b>3.9%</b>	<b>4.2%</b>	<b>4.5%</b>	<b>4.4%</b>
Inflation rate (consumer price index)*	6.7%	<b>7.6%</b>	<b>3.7%</b>	6.7%	<b>5.0%</b>	<b>4.8%</b>	<b>4.3%</b>	<b>3.3%</b>	<b>3.0%</b>
Treasury constant maturity one-year rate**	0.20%	<b>4.44%</b>	<b>4.04%</b>	0.08%	<b>4.44%</b>	<b>4.60%</b>	<b>4.50%</b>	<b>4.36%</b>	<b>4.04%</b>
Treasury constant maturity ten-year rate**	1.54%	<b>3.85%</b>	<b>3.60%</b>	1.32%	<b>3.85%</b>	<b>3.98%</b>	<b>3.93%</b>	<b>3.71%</b>	<b>3.60%</b>
J.P. Morgan trade weighted OECD dollar*	0.9%	<b>11.4%</b>	<b>-1.9%</b>	1.2%	<b>3.0%</b>	<b>0.7%</b>	<b>0.0%</b>	<b>-1.0%</b>	<b>-0.4%</b>

\*Annual: Q4 over Q4    **Quarterly:** Quarter to Quarter change, annual rate

\*\*Annals are Q4 value

\*\*\*Annals are yearly average

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**Table 2 - Mean Forecast of GDP and Related Items**

	2021	2022	2023	Q322	Q422	Q123	Q223	Q323	Q423
GDP, current dollars*	12.2%	<b>6.3%</b>	<b>2.7%</b>	6.7%	<b>3.5%</b>	<b>2.6%</b>	<b>2.4%</b>	<b>3.2%</b>	<b>2.7%</b>
GDP price index, chain-type*	6.1%	<b>6.5%</b>	<b>2.6%</b>	6.2%	<b>4.6%</b>	<b>4.1%</b>	<b>2.2%</b>	<b>2.3%</b>	<b>2.0%</b>
Real GDP, chained dollars*	5.7%	<b>0.3%</b>	<b>0.8%</b>	2.7%	<b>1.1%</b>	<b>-0.6%</b>	<b>1.2%</b>	<b>1.3%</b>	<b>1.6%</b>
Personal consumption expenditures*	7.2%	<b>1.8%</b>	<b>1.2%</b>	3.0%	<b>2.3%</b>	<b>1.2%</b>	<b>0.9%</b>	<b>1.4%</b>	<b>1.2%</b>
Business fixed investment*	5.0%	<b>2.9%</b>	<b>0.3%</b>	0.6%	<b>0.3%</b>	<b>-1.3%</b>	<b>-0.1%</b>	<b>1.2%</b>	<b>1.5%</b>
Residential investment*	-0.3%	<b>-15.1%</b>	<b>-1.9%</b>	-5.8%	<b>-9.8%</b>	<b>-7.4%</b>	<b>-3.6%</b>	<b>0.6%</b>	<b>3.5%</b>
Change in private inventories (billions of constant dollars)**	\$197.6	<b>\$52.2</b>	<b>\$45.7</b>	-\$48.6	<b>\$52.2</b>	<b>\$35.3</b>	<b>\$31.8</b>	<b>\$43.4</b>	<b>\$45.7</b>
Net exports of goods and services (billions of constant dollars)**	-\$1,297.6	<b>-\$1,287.2</b>	<b>-\$1,183.7</b>	-\$1,267.5	<b>-\$1,287.2</b>	<b>-\$1,233.8</b>	<b>-\$1,227.5</b>	<b>-\$1,220.8</b>	<b>-\$1,183.7</b>
Government consumption expenditures and gross investment*	0.5%	<b>-0.1%</b>	<b>-2.8%</b>	-0.2%	<b>1.2%</b>	<b>-3.6%</b>	<b>23.9%</b>	<b>1.4%</b>	<b>1.5%</b>
Industrial production*	4.5%	<b>3.2%</b>	<b>-0.1%</b>	3.4%	<b>1.0%</b>	<b>-0.8%</b>	<b>-1.2%</b>	<b>1.0%</b>	<b>0.8%</b>
Car & light truck sales (millions - calendar year including imports)***	14.9	<b>13.9</b>	<b>14.6</b>	13.3	<b>14.2</b>	<b>12.8</b>	<b>13.0</b>	<b>13.6</b>	<b>14.0</b>
Housing starts (millions)***	1.61	<b>1.51</b>	<b>1.35</b>	1.57	<b>1.39</b>	<b>1.23</b>	<b>1.24</b>	<b>1.28</b>	<b>1.30</b>
Oil price (dollars per barrel of West Texas Intermediate)**	\$77.44	<b>\$89.82</b>	<b>\$88.59</b>	\$70.56	<b>\$89.82</b>	<b>\$94.07</b>	<b>\$89.80</b>	<b>\$88.90</b>	<b>\$88.59</b>
Unemployment rate**	4.2%	<b>3.9%</b>	<b>5.0%</b>	5.1%	<b>3.9%</b>	<b>4.2%</b>	<b>4.5%</b>	<b>4.8%</b>	<b>5.0%</b>
Inflation rate (consumer price index)*	6.7%	<b>7.6%</b>	<b>3.9%</b>	6.7%	<b>5.0%</b>	<b>4.9%</b>	<b>4.2%</b>	<b>3.4%</b>	<b>3.0%</b>
Treasury constant maturity one-year rate**	0.20%	<b>4.04%</b>	<b>4.02%</b>	0.08%	<b>4.04%</b>	<b>4.28%</b>	<b>4.31%</b>	<b>4.19%</b>	<b>4.02%</b>
Treasury constant maturity ten-year rate**	1.54%	<b>3.60%</b>	<b>3.67%</b>	1.32%	<b>3.60%</b>	<b>3.75%</b>	<b>3.76%</b>	<b>3.72%</b>	<b>3.67%</b>
J.P. Morgan trade weighted OECD dollar*	0.9%	<b>11.1%</b>	<b>2.4%</b>	1.2%	<b>2.7%</b>	<b>0.9%</b>	<b>0.6%</b>	<b>0.4%</b>	<b>0.2%</b>

\*Annual: Q4 over Q4    **Quarterly:** Quarter to Quarter change, annual rate

\*\*Annals are Q4 value

\*\*\*Annals are yearly average

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**Table 3 - GDP, Current Dollars**

Individual	Q4 over Q4			Q322	Q422	Q123	Q223	Q323	Q423
	2021	2022	2023						
	12.2%			6.7%					
4		6.9%	5.9%		5.8%	5.8%	5.9%	6.2%	5.9%
3		7.1%	5.4%		6.6%	5.6%	5.3%	5.5%	5.2%
2		7.0%	4.4%		6.4%	5.5%	5.1%	5.1%	1.8%
14		6.7%	4.3%		5.0%	2.8%	3.5%	5.3%	5.7%
9		6.3%	4.2%		3.5%	4.0%	4.2%	7.5%	1.4%
8		6.8%	4.2%		5.4%	0.3%	4.2%	7.0%	5.3%
7		6.2%	3.8%		3.1%	3.0%	3.3%	3.7%	5.4%
5		7.2%	3.6%		7.1%	4.8%	3.7%	3.1%	2.9%
13		7.1%	3.0%		6.8%	4.7%	3.3%	1.0%	3.1%
16		7.0%	2.9%		6.1%	3.6%	2.6%	3.2%	2.1%
10		6.8%	2.8%		5.4%	3.8%	2.4%	2.7%	2.6%
15		6.3%	2.8%		3.6%	1.5%	2.4%	3.5%	3.9%
6		6.1%	2.8%		2.6%	2.5%	1.6%	4.4%	2.7%
17		6.3%	2.7%		3.3%	1.3%	2.3%	3.4%	3.9%
11		1.0%	2.0%		-15.6%	0.4%	4.5%	0.9%	2.4%
12		5.8%	1.1%		1.5%	0.7%	0.4%	1.4%	1.7%
1		6.5%	1.0%		4.1%	1.0%	1.0%	1.0%	1.0%
18		5.9%	-8.6%		1.8%	-5.0%	-12.0%	-8.3%	-8.9%
MEDIAN		6.6%	3.0%		4.5%	2.9%	3.3%	3.5%	2.8%
MEAN		6.3%	2.7%		3.5%	2.6%	2.4%	3.2%	2.7%
STD DEV		1.3%	3.0%		4.9%	2.6%	3.8%	3.4%	3.2%
HIGH		7.2%	5.9%		7.1%	5.8%	5.9%	7.5%	5.9%
LOW		1.0%	-8.6%		-15.6%	-5.0%	-12.0%	-8.3%	-8.9%

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**Table 4 - GDP Price Index, Chain-type**

Individual	Q4 over Q4			Q322	Q422	Q123	Q223	Q323	Q423
	2021	2022	2023						
	6.1%			4.1%					
1		6.3%	10.4%		4.1%	10.4%	10.4%	10.4%	10.4%
14		6.4%	4.7%		4.5%	5.0%	5.0%	4.6%	4.3%
4		6.4%	4.7%		4.5%	4.9%	4.9%	4.6%	4.2%
3		6.5%	3.7%		4.7%	4.3%	3.9%	3.5%	3.3%
9		6.9%	3.6%		6.1%	5.3%	4.0%	3.0%	2.1%
16		6.8%	3.5%		5.8%	5.0%	3.4%	3.0%	2.7%
8		6.6%	3.5%		5.2%	4.2%	3.5%	3.1%	3.0%
17		6.7%	3.5%		5.5%	4.4%	3.7%	3.1%	2.7%
15		6.7%	3.4%		5.3%	4.4%	3.3%	3.1%	2.6%
7		5.9%	3.1%		2.6%	3.1%	3.1%	3.1%	3.1%
13		6.4%	2.9%		4.2%	3.8%	2.8%	2.8%	2.1%
5		6.9%	2.8%		6.2%	3.7%	2.7%	2.6%	2.4%
2		6.4%	2.8%		4.2%	3.8%	2.8%	2.8%	1.8%
10		6.0%	2.5%		2.9%	2.8%	2.5%	2.5%	2.1%
12		6.1%	2.4%		3.2%	2.8%	2.5%	2.2%	2.1%
6		5.9%	2.0%		2.3%	2.1%	2.2%	1.6%	2.2%
11		7.6%	-4.6%		9.1%	6.2%	-11.5%	-6.1%	-6.2%
18		5.9%	-7.8%		2.6%	-2.5%	-9.6%	-9.3%	-9.8%
MEDIAN		6.4%	3.2%		4.5%	4.2%	3.2%	3.0%	2.5%
MEAN		6.5%	2.6%		4.6%	4.1%	2.2%	2.3%	2.0%
STD DEV		0.4%	3.6%		1.6%	2.4%	4.9%	4.0%	4.0%
HIGH		7.6%	10.4%		9.1%	10.4%	10.4%	10.4%	10.4%
LOW		5.9%	-7.8%		2.3%	-2.5%	-11.5%	-9.3%	-9.8%

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**Table 5 - Real GDP, Chained Dollars**

Individual	Q4 over Q4			Q322	Q422	Q123	Q223	Q323	Q423
	2021	2022	2023						
	5.7%			2.6%					
1		1.1%	10.4%		4.1%	10.4%	10.4%	10.4%	10.4%
2		0.6%	2.2%		2.1%	1.7%	2.3%	2.3%	2.4%
3		0.5%	1.6%		1.9%	1.3%	1.4%	1.9%	1.9%
4		0.4%	1.2%		1.2%	0.8%	0.9%	1.5%	1.6%
5		0.3%	0.8%		0.9%	1.1%	0.9%	0.5%	0.6%
6		0.2%	0.8%		0.3%	0.4%	-0.6%	2.7%	0.5%
7		0.2%	0.7%		0.6%	0.4%	0.6%	0.8%	1.2%
8		0.1%	0.7%		0.2%	-3.7%	0.6%	3.8%	2.2%
9		-0.6%	0.7%		-2.6%	-1.1%	0.1%	1.3%	2.4%
10		0.7%	0.5%		2.4%	0.9%	0.1%	0.3%	0.7%
11		0.0%	0.4%		-0.4%	-9.6%	-5.0%	5.3%	12.3%
12		0.2%	0.2%		0.4%	0.1%	-0.1%	0.3%	0.5%
13		0.7%	0.2%		2.5%	0.9%	-0.2%	-1.0%	1.0%
14		0.2%	-0.4%		0.4%	-2.1%	-1.5%	0.7%	1.3%
15		-0.3%	-0.5%		-1.6%	-3.0%	-0.9%	0.6%	1.3%
16		0.2%	-0.6%		0.3%	-1.2%	-0.8%	0.2%	-0.5%
17		-0.4%	-0.7%		-1.9%	-3.3%	-1.1%	0.5%	1.2%
18		2.1%	-3.1%		8.2%	-5.2%	14.0%	-7.8%	-11.5%
MEDIAN		0.2%	0.6%		0.5%	0.2%	0.1%	0.7%	1.3%
MEAN		0.3%	0.8%		1.1%	-0.6%	1.2%	1.3%	1.6%
STD DEV		0.6%	2.6%		2.4%	3.9%	4.2%	3.3%	4.6%
HIGH		2.1%	10.4%		8.2%	10.4%	14.0%	10.4%	12.3%
LOW		-0.6%	-3.1%		-2.6%	-9.6%	-5.0%	-7.8%	-11.5%

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**Table 6 - Personal Consumption Expenditures**

Individual	Q4 over Q4			Q322	Q422	Q123	Q223	Q323	Q423
	2021	2022	2023						
	7.2%			1.4%					
1		2.2%	10.4%		4.1%	10.4%	10.4%	10.4%	10.4%
12		1.6%	2.2%		1.5%	1.2%	2.2%	2.8%	2.4%
2		1.7%	2.2%		2.1%	1.7%	2.3%	2.3%	2.4%
7		1.7%	1.9%		2.2%	1.4%	1.7%	1.8%	2.8%
3		1.8%	1.9%		2.5%	1.8%	1.9%	1.9%	2.0%
11		3.7%	1.7%		10.3%	-2.7%	1.4%	5.7%	2.8%
4		1.4%	1.4%		0.9%	0.7%	1.0%	1.9%	1.9%
6		1.5%	1.2%		1.1%	0.9%	0.4%	2.5%	0.9%
10		1.5%	1.1%		1.2%	0.5%	1.4%	1.3%	1.2%
5		1.7%	1.0%		1.8%	1.1%	1.6%	0.6%	0.6%
15		1.3%	0.3%		0.3%	-1.3%	0.9%	0.8%	1.0%
17		1.2%	0.3%		-0.1%	-1.6%	0.9%	0.8%	1.1%
9		1.1%	0.1%		-0.5%	-1.2%	-0.7%	0.5%	1.8%
13		2.8%	0.0%		6.6%	3.6%	-1.9%	-1.4%	-0.3%
14		1.2%	-0.1%		0.0%	-1.2%	-1.3%	0.7%	1.5%
16		1.8%	-0.2%		2.3%	0.9%	0.1%	-0.8%	-0.8%
8		1.9%	-0.3%		2.7%	-3.2%	-1.8%	2.0%	2.0%
18		1.6%	-4.0%		1.4%	8.2%	-3.9%	-7.8%	-11.5%
MEDIAN		1.6%	1.0%		1.7%	0.9%	1.0%	1.6%	1.7%
MEAN		1.8%	1.2%		2.3%	1.2%	0.9%	1.4%	1.2%
STD DEV		0.6%	2.6%		2.5%	3.3%	2.8%	3.4%	3.8%
HIGH		3.7%	10.4%		10.3%	10.4%	10.4%	10.4%	10.4%
LOW		1.1%	-4.0%		-0.5%	-3.2%	-3.9%	-7.8%	-11.5%

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**Table 7 - Business Fixed Investment**

Individual	Q4 over Q4			Q322	Q422	Q123	Q223	Q323	Q423
	2021	2022	2023						
	5.0%			3.7%					
1		3.9%	10.4%		4.1%	10.4%	10.4%	10.4%	10.4%
11		-0.4%	4.4%		-12.0%	-13.3%	7.5%	12.7%	13.1%
7		4.9%	2.3%		8.1%	5.4%	1.2%	2.1%	0.5%
2		1.8%	2.2%		-4.3%	1.5%	2.5%	2.3%	2.4%
10		3.4%	2.0%		2.2%	2.2%	1.8%	1.9%	2.0%
3		3.5%	1.9%		2.4%	2.0%	1.3%	2.3%	2.0%
4		3.5%	1.2%		2.3%	0.8%	0.6%	1.5%	1.8%
13		2.9%	0.7%		0.2%	1.2%	0.3%	0.5%	0.7%
6		3.1%	0.6%		0.8%	-0.2%	0.6%	2.0%	0.1%
12		3.1%	0.1%		1.0%	0.3%	-0.4%	0.1%	0.3%
9		3.4%	0.0%		2.1%	-4.8%	-0.6%	1.9%	3.5%
5		3.7%	-0.7%		3.2%	0.0%	-0.5%	-1.0%	-1.3%
8		3.6%	-1.0%		3.0%	-3.0%	-4.9%	1.2%	3.0%
16		3.0%	-1.9%		0.4%	-3.1%	-2.1%	-0.7%	-1.8%
14		3.0%	-3.6%		0.5%	-5.1%	-6.9%	-3.0%	0.6%
18		3.1%	-3.9%		1.0%	-1.3%	-3.4%	-6.2%	-4.7%
15		1.7%	-4.5%		-4.4%	-7.4%	-4.6%	-3.1%	-2.7%
17		1.4%	-5.3%		-5.6%	-8.4%	-5.1%	-3.8%	-3.6%
MEDIAN		3.1%	0.4%		1.0%	-0.1%	0.0%	1.3%	0.6%
MEAN		2.9%	0.3%		0.3%	-1.3%	-0.1%	1.2%	1.5%
STD DEV		1.1%	3.5%		4.3%	5.2%	4.2%	4.4%	4.3%
HIGH		4.9%	10.4%		8.1%	10.4%	10.4%	12.7%	13.1%
LOW		-0.4%	-5.3%		-12.0%	-13.3%	-6.9%	-6.2%	-4.7%

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**Table 8 - Residential Investment**

Individual	Q4 over Q4			Q322	Q422	Q123	Q223	Q323	Q423
	2021	2022	2023						
	-0.3%			-42.0%					
1		-11.6%	10.4%		4.1%	10.4%	10.4%	10.4%	10.4%
11		1.4%	2.1%		80.1%	3.9%	1.7%	1.7%	1.1%
2		-12.0%	2.0%		2.1%	1.2%	2.3%	2.3%	2.4%
8		-18.0%	1.3%		-22.8%	-15.9%	-3.9%	12.6%	15.9%
3		-14.2%	0.9%		-7.4%	-7.5%	-0.7%	6.5%	6.1%
7		-17.6%	0.9%		-21.5%	-8.6%	2.1%	5.7%	4.9%
5		-16.9%	0.8%		-18.5%	-4.0%	1.9%	3.2%	2.2%
10		-14.8%	-0.2%		-10.0%	-7.2%	-2.8%	2.5%	7.2%
4		-16.2%	-1.4%		-15.9%	-7.7%	-2.2%	1.3%	3.5%
18		-13.8%	-1.6%		-6.0%	2.0%	-3.2%	-3.2%	-2.0%
13		-16.2%	-1.7%		-16.0%	-17.0%	2.1%	2.1%	7.9%
12		-18.0%	-2.2%		-22.9%	-5.2%	-4.4%	-0.8%	1.6%
6		-12.6%	-3.6%		-0.2%	1.2%	-6.6%	-9.4%	1.0%
9		-18.9%	-3.9%		-26.2%	-9.5%	-4.9%	-1.0%	0.0%
16		-18.2%	-6.1%		-23.8%	-12.0%	-7.5%	-2.5%	-1.9%
15		-18.5%	-8.8%		-24.8%	-16.6%	-15.1%	-4.9%	2.7%
17		-18.6%	-9.5%		-25.0%	-17.0%	-16.0%	-6.0%	2.5%
14		-17.7%	-14.2%		-21.6%	-23.8%	-17.9%	-10.5%	-3.0%
MEDIAN		-16.5%	-1.5%		-17.2%	-7.6%	-3.0%	1.5%	2.4%
MEAN		-15.1%	-1.9%		-9.8%	-7.4%	-3.6%	0.6%	3.5%
STD DEV		4.6%	5.3%		23.8%	8.6%	7.0%	6.0%	4.6%
HIGH		1.4%	10.4%		80.1%	10.4%	10.4%	12.6%	15.9%
LOW		-18.9%	-14.2%		-26.2%	-23.8%	-17.9%	-10.5%	-3.0%

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**Table 9 - Change in Private Inventories**

Individual	Q4 value			Q322	Q422	Q123	Q223	Q323	Q423
	2021	2022	2023						
	\$197.6			\$61.9					
3		\$62.2	\$90.5		\$62.2	\$65.4	\$71.6	\$81.1	\$90.5
6		\$90.4	\$84.4		\$90.4	\$74.8	\$47.9	\$70.4	\$84.4
1		\$62.5	\$69.0		\$62.5	\$64.1	\$65.7	\$67.3	\$69.0
10		\$80.8	\$68.0		\$80.8	\$81.6	\$80.0	\$78.0	\$68.0
4		\$64.2	\$64.9		\$64.2	\$63.9	\$64.2	\$64.5	\$64.9
14		\$84.2	\$64.9		\$84.2	\$43.9	\$44.2	\$64.5	\$64.9
9		\$62.5	\$59.7		\$62.5	\$62.0	\$60.3	\$59.2	\$59.7
17		\$42.2	\$45.4		\$42.2	\$18.6	-\$14.7	\$17.7	\$45.4
7		\$55.0	\$45.0		\$55.0	\$66.0	\$66.0	\$55.0	\$45.0
8		-\$21.0	\$43.0		-\$21.0	-\$79.0	\$12.0	\$50.0	\$43.0
15		\$42.0	\$42.8		\$42.0	\$17.7	-\$14.6	\$15.3	\$42.8
13		\$58.5	\$42.0		\$58.5	\$39.0	\$35.0	\$37.0	\$42.0
2		\$27.2	\$28.7		\$27.2	-\$19.1	-\$15.2	\$31.3	\$28.7
5		\$72.9	\$22.2		\$72.9	\$74.0	\$45.7	\$33.1	\$22.2
16		\$94.9	\$21.4		\$94.9	\$35.8	\$1.0	\$27.7	\$21.4
18		\$65.0	\$20.0		\$65.0	\$55.0	\$40.0	\$32.0	\$20.0
12		\$1.8	\$15.4		\$1.8	-\$24.9	-\$12.4	\$1.2	\$15.4
11		-\$5.0	-\$5.0		-\$5.0	-\$4.0	-\$5.0	-\$4.0	-\$5.0
MEDIAN		\$62.3	\$44.0		\$62.3	\$49.5	\$42.1	\$43.5	\$44.0
MEAN		\$52.2	\$45.7		\$52.2	\$35.3	\$31.8	\$43.4	\$45.7
STD DEV		\$31.8	\$24.8		\$31.8	\$41.9	\$33.3	\$25.2	\$24.8
HIGH		\$94.9	\$90.5		\$94.9	\$81.6	\$80.0	\$81.1	\$90.5
LOW		-\$21.0	-\$5.0		-\$21.0	-\$79.0	-\$15.2	-\$4.0	-\$5.0

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**Table 10 - Net Exports of Goods and Services**

Individual	Q4 value			Q322	Q422	Q123	Q223	Q323	Q423
	2021	2022	2023						
	-\$1,297.6			-\$1,274.0					
11		-\$1,500.0	\$150.0		-\$1,500.0	-\$500.0	-\$500.0	-\$500.0	\$150.0
12		-\$1,152.0	-\$834.2		-\$1,152.0	-\$1,074.2	-\$989.6	-\$901.7	-\$834.2
8		-\$1,175.0	-\$1,079.0		-\$1,175.0	-\$1,150.0	-\$1,115.0	-\$1,079.0	-\$1,079.0
14		-\$1,251.3	-\$1,128.5		-\$1,251.3	-\$1,204.4	-\$1,156.3	-\$1,135.8	-\$1,128.5
6		-\$1,230.2	-\$1,179.8		-\$1,230.2	-\$1,217.0	-\$1,204.1	-\$1,191.8	-\$1,179.8
18		-\$1,275.0	-\$1,230.0		-\$1,275.0	-\$1,260.0	-\$1,250.0	-\$1,240.0	-\$1,230.0
4		-\$1,248.3	-\$1,247.3		-\$1,248.3	-\$1,233.9	-\$1,227.9	-\$1,234.5	-\$1,247.3
9		-\$1,264.5	-\$1,254.0		-\$1,264.5	-\$1,255.0	-\$1,243.0	-\$1,245.0	-\$1,254.0
16		-\$1,291.0	-\$1,264.3		-\$1,291.0	-\$1,314.3	-\$1,297.9	-\$1,283.5	-\$1,264.3
17		-\$1,255.9	-\$1,269.3		-\$1,255.9	-\$1,280.1	-\$1,265.7	-\$1,273.3	-\$1,269.3
15		-\$1,259.9	-\$1,270.8		-\$1,259.9	-\$1,285.7	-\$1,269.4	-\$1,274.0	-\$1,270.8
2		-\$1,280.6	-\$1,307.8		-\$1,280.6	-\$1,285.5	-\$1,292.7	-\$1,300.1	-\$1,307.8
13		-\$1,350.0	-\$1,325.0		-\$1,350.0	-\$1,392.0	-\$1,378.0	-\$1,318.0	-\$1,325.0
3		-\$1,291.1	-\$1,349.1		-\$1,291.1	-\$1,303.8	-\$1,322.2	-\$1,333.9	-\$1,349.1
10		-\$1,297.1	-\$1,377.0		-\$1,297.1	-\$1,269.8	-\$1,311.1	-\$1,354.5	-\$1,377.0
5		-\$1,406.2	-\$1,379.4		-\$1,406.2	-\$1,414.0	-\$1,404.5	-\$1,394.0	-\$1,379.4
1		-\$1,286.7	-\$1,420.3		-\$1,286.7	-\$1,318.9	-\$1,351.9	-\$1,385.7	-\$1,420.3
7		-\$1,355.0	-\$1,540.0		-\$1,355.0	-\$1,450.0	-\$1,515.0	-\$1,530.0	-\$1,540.0
MEDIAN		-\$1,277.8	-\$1,266.8		-\$1,277.8	-\$1,275.0	-\$1,267.6	-\$1,273.7	-\$1,266.8
MEAN		-\$1,287.2	-\$1,183.7		-\$1,287.2	-\$1,233.8	-\$1,227.5	-\$1,220.8	-\$1,183.7
STD DEV		\$77.3	\$355.0		\$77.3	\$197.9	\$208.9	\$218.5	\$355.0
HIGH		-\$1,152.0	\$150.0		-\$1,152.0	-\$500.0	-\$500.0	-\$500.0	\$150.0
LOW		-\$1,500.0	-\$1,540.0		-\$1,500.0	-\$1,450.0	-\$1,515.0	-\$1,530.0	-\$1,540.0

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**Table 11 - Government Consumption Expenditures and Gross Investment**

Individual	Q4 over Q4			Q322	Q422	Q123	Q223	Q323	Q423
	2021	2022	2023						
	0.5%			2.4%					
1		0.6%	10.4%		4.1%	10.4%	10.4%	10.4%	10.4%
9		0.4%	3.9%		3.0%	3.5%	3.6%	4.1%	4.5%
5		0.0%	1.9%		1.7%	3.3%	1.4%	1.4%	1.3%
3		0.1%	1.8%		1.9%	1.8%	1.8%	1.8%	1.7%
16		-0.2%	1.6%		0.9%	3.7%	1.3%	0.9%	0.7%
15		-0.1%	1.5%		1.0%	3.2%	0.9%	0.8%	1.1%
17		-0.1%	1.4%		1.0%	3.1%	0.8%	0.8%	1.0%
10		-0.2%	1.1%		0.9%	1.3%	1.2%	1.1%	1.0%
12		-0.1%	1.0%		1.0%	1.0%	1.1%	1.0%	1.1%
8		0.6%	1.0%		4.2%	0.5%	1.3%	1.8%	0.5%
7		-0.2%	0.9%		0.6%	1.2%	0.6%	0.6%	1.2%
13		-0.3%	0.8%		0.5%	1.1%	0.8%	0.6%	0.6%
6		-0.3%	0.7%		0.5%	0.7%	0.9%	0.4%	0.6%
4		-0.2%	0.6%		0.9%	0.7%	0.4%	0.5%	0.6%
14		-0.2%	0.4%		0.8%	0.6%	0.3%	0.3%	0.4%
2		-0.3%	0.0%		0.1%	0.0%	0.0%	0.0%	0.1%
18		-0.7%	-1.2%		-1.1%	-1.2%	-3.5%	-0.6%	0.6%
11		-0.4%	-77.9%		0.0%	-100.0%	406.3%	0.0%	0.0%
MEDIAN		-0.2%	1.0%		0.9%	1.1%	1.0%	0.8%	0.9%
MEAN		-0.1%	-2.8%		1.2%	-3.6%	23.9%	1.4%	1.5%
STD DEV		0.3%	18.4%		1.3%	23.5%	92.8%	2.4%	2.4%
HIGH		0.6%	10.4%		4.2%	10.4%	406.3%	10.4%	10.4%
LOW		-0.7%	-77.9%		-1.1%	-100.0%	-3.5%	-0.6%	0.0%

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**Table 12 - Industrial Production**

Individual	Q4 over Q4			Q322	Q422	Q123	Q223	Q323	Q423
	2021	2022	2023						
	4.5%			2.2%					
1		4.2%	10.4%		5.0%	10.4%	10.4%	10.4%	10.4%
11		0.3%	3.9%		-10.2%	-3.9%	4.0%	8.1%	7.9%
3		3.7%	2.4%		2.8%	2.1%	2.0%	2.4%	3.0%
2		2.2%	2.0%		-2.9%	1.9%	2.3%	1.5%	2.3%
12		3.7%	1.1%		2.8%	1.1%	0.8%	1.1%	1.5%
10		3.8%	0.8%		3.2%	1.1%	0.8%	0.4%	0.8%
7		4.2%	0.5%		4.8%	-1.9%	1.1%	1.9%	0.8%
9		3.3%	0.1%		1.3%	-0.8%	0.0%	0.4%	0.8%
6		3.0%	0.1%		0.0%	-0.5%	-0.9%	1.6%	0.1%
4		3.1%	-0.4%		0.5%	-0.9%	-0.8%	0.0%	0.2%
8		3.8%	-0.6%		3.3%	-3.1%	-5.6%	1.6%	5.2%
5		3.2%	-0.7%		0.8%	-0.9%	-0.7%	-0.6%	-0.6%
13		3.3%	-0.8%		1.3%	0.0%	-0.8%	-1.1%	-1.1%
16		3.8%	-2.7%		3.2%	-3.5%	-3.6%	-1.6%	-1.9%
14		3.0%	-3.5%		0.2%	-5.2%	-5.5%	-2.7%	-0.6%
15		3.2%	-4.3%		0.9%	-5.6%	-9.3%	1.4%	-3.4%
18		3.2%	-4.8%		0.9%	0.0%	-7.4%	-3.8%	-7.6%
17		3.2%	-4.9%		0.9%	-4.9%	-8.2%	-3.1%	-3.1%
MEDIAN		3.3%	-0.1%		1.1%	-0.8%	-0.7%	0.8%	0.5%
MEAN		3.2%	-0.1%		1.0%	-0.8%	-1.2%	1.0%	0.8%
STD DEV		0.9%	3.5%		3.3%	3.6%	4.7%	3.4%	4.0%
HIGH		4.2%	10.4%		5.0%	10.4%	10.4%	10.4%	10.4%
LOW		0.3%	-4.9%		-10.2%	-5.6%	-9.3%	-3.8%	-7.6%

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**Table 13 - Car and Light Truck Sales (millions)**

Individual	2021	2022	2023	Q322	Q422	Q123	Q223	Q323	Q423
	14.9			13.4					
7		14.0	16.1		15.0	15.5	15.8	16.4	16.8
10		13.8	16.0		13.8	14.5	15.5	16.0	16.0
11		13.5	16.0		13.5	2.5	2.5	5.0	6.0
6		14.0	15.8		15.2	15.5	15.6	16.1	16.0
1		15.5	15.7		13.4	13.8	14.1	14.5	14.8
3		14.0	15.5		15.0	15.4	15.5	15.4	15.9
2		14.1	15.0		14.1	14.2	14.5	14.7	15.0
13		13.8	14.9		15.0	14.7	15.2	15.1	14.6
9		14.0	14.6		14.0	13.5	13.5	14.3	14.6
18		14.4	14.5		14.4	3.5	7.0	10.8	14.5
16		13.9	14.3		14.7	14.9	14.6	14.1	13.5
4		13.7	13.7		14.0	13.8	13.5	13.7	13.7
8		14.0	13.4		15.1	14.0	13.1	12.9	13.7
12		13.6	13.4		13.5	13.6	13.3	13.1	13.5
15		13.6	13.3		13.7	13.3	13.2	13.4	13.5
17		13.6	12.9		13.6	13.0	12.8	12.9	12.9
14		13.5	12.3		13.4	12.3	12.0	12.3	12.8
MEDIAN		13.9	14.6		14.0	13.8	13.5	14.1	14.5
MEAN		13.9	14.6		14.2	12.8	13.0	13.6	14.0
STD DEV		0.5	1.2		0.6	3.7	3.3	2.6	2.3
HIGH		15.5	16.1		15.2	15.5	15.8	16.4	16.8
LOW		13.5	12.3		13.4	2.5	2.5	5.0	6.0

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**Table 14 - Housing Starts (millions)**

Individual	2021	2022	2023	Q322	Q422	Q123	Q223	Q323	Q423
	1.61			1.46					
1		1.67	1.69		1.47	1.51	1.55	1.59	1.63
2		1.40	1.50		1.43	1.43	1.50	1.50	1.60
6		1.58	1.49		1.50	1.50	1.48	1.49	1.50
7		1.56	1.46		1.43	1.45	1.46	1.48	1.52
10		1.58	1.46		1.50	1.49	1.48	1.47	1.46
9		1.49	1.43		1.49	1.46	1.44	1.43	1.43
13		1.56	1.40		1.41	1.37	1.35	1.35	1.39
3		1.56	1.40		1.42	1.38	1.37	1.41	1.44
5		1.57	1.36		1.45	1.40	1.37	1.35	1.33
4		1.56	1.36		1.39	1.39	1.36	1.34	1.33
12		1.56	1.32		1.40	1.35	1.31	1.28	1.34
14		1.55	1.32		1.38	1.36	1.32	1.29	1.30
18		1.45	1.30		1.40	0.30	0.80	1.10	1.30
11		1.01	1.25		1.01	0.25	0.25	0.40	0.40
16		1.56	1.22		1.40	1.29	1.25	1.19	1.14
15		1.54	1.13		1.33	1.10	1.00	1.07	1.07
8		1.52	1.11		1.25	0.97	0.97	1.24	1.27
17		1.50	1.10		1.30	1.20	1.10	1.00	1.00
MEDIAN		1.56	1.36		1.41	1.37	1.36	1.35	1.34
MEAN		1.51	1.35		1.39	1.23	1.24	1.28	1.30
STD DEV		0.13	0.15		0.11	0.37	0.31	0.26	0.27
HIGH		1.67	1.69		1.50	1.51	1.55	1.59	1.63
LOW		1.01	1.10		1.01	0.25	0.25	0.40	0.40

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**Table 15 - Oil Price (West Texas Intermediate, Dollars Per Barrel)**

Individual	Q4 value			Q322	Q422	Q123	Q223	Q323	Q423
	2021	2022	2023						
	\$77.44			\$92.63					
9		\$95.00	\$105.00		\$95.00	\$98.00	\$99.00	\$102.00	\$105.00
1		\$93.53	\$103.24		\$93.53	\$95.86	\$98.26	\$100.72	\$103.24
4		\$93.00	\$99.00		\$93.00	\$100.00	\$100.00	\$100.00	\$99.00
14		\$93.00	\$99.00		\$93.00	\$100.00	\$100.00	\$100.00	\$99.00
17		\$99.40	\$98.20		\$99.40	\$94.20	\$89.80	\$94.10	\$98.20
8		\$59.52	\$97.67		\$59.52	\$90.33	\$91.33	\$95.67	\$97.67
15		\$97.04	\$94.82		\$97.04	\$91.74	\$87.04	\$90.92	\$94.82
13		\$87.00	\$89.00		\$87.00	\$88.00	\$88.00	\$85.00	\$89.00
10		\$90.00	\$88.00		\$90.00	\$89.50	\$89.00	\$88.50	\$88.00
6		\$83.29	\$86.72		\$83.29	\$83.73	\$87.35	\$88.73	\$86.72
16		\$95.29	\$84.93		\$95.29	\$105.30	\$92.69	\$88.53	\$84.93
2		\$91.00	\$83.00		\$91.00	\$89.00	\$88.00	\$85.00	\$83.00
12		\$87.00	\$79.90		\$87.00	\$85.40	\$83.30	\$81.20	\$79.90
7		\$88.00	\$75.00		\$88.00	\$84.00	\$82.00	\$80.00	\$75.00
18		\$120.00	\$70.00		\$120.00	\$148.00	\$98.00	\$78.00	\$70.00
11		\$65.00	\$64.00		\$65.00	\$62.00	\$63.00	\$64.00	\$64.00
MEDIAN		\$92.00	\$88.50		\$92.00	\$91.04	\$89.40	\$88.63	\$88.50
MEAN		\$89.82	\$88.59		\$89.82	\$94.07	\$89.80	\$88.90	\$88.59
STD DEV		\$13.09	\$11.65		\$13.09	\$16.84	\$8.96	\$9.82	\$11.65
HIGH		\$120.00	\$105.00		\$120.00	\$148.00	\$100.00	\$102.00	\$105.00
LOW		\$59.52	\$64.00		\$59.52	\$62.00	\$63.00	\$64.00	\$64.00

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**Table 16 - Unemployment Rate**

Individual	Q4 value			Q322	Q422	Q123	Q223	Q323	Q423
	2021	2022	2023						
	4.2%			3.6%					
8		3.8%	7.4%		3.8%	4.5%	5.2%	6.6%	7.4%
17		4.1%	7.0%		4.1%	4.7%	5.7%	6.4%	7.0%
15		4.0%	6.7%		4.0%	4.7%	5.4%	6.1%	6.7%
14		3.9%	6.5%		3.9%	4.7%	5.9%	6.4%	6.5%
11		6.1%	5.6%		6.1%	6.7%	6.5%	5.9%	5.6%
16		3.8%	5.2%		3.8%	4.0%	4.3%	4.8%	5.2%
18		3.8%	5.0%		3.8%	3.7%	4.1%	4.6%	5.0%
13		3.7%	4.5%		3.7%	3.9%	4.1%	4.5%	4.5%
4		3.8%	4.4%		3.8%	4.2%	4.5%	4.5%	4.4%
9		3.6%	4.4%		3.6%	3.7%	4.3%	4.5%	4.4%
12		3.7%	4.4%		3.7%	4.0%	4.3%	4.5%	4.4%
10		3.7%	4.3%		3.7%	3.9%	4.0%	4.2%	4.3%
5		3.7%	4.1%		3.7%	3.8%	3.9%	4.0%	4.1%
7		3.7%	4.1%		3.7%	3.8%	3.9%	4.1%	4.1%
6		3.6%	4.0%		3.6%	3.7%	4.2%	4.0%	4.0%
3		3.7%	4.0%		3.7%	3.8%	3.9%	4.0%	4.0%
1		3.6%	4.0%		3.6%	3.7%	3.8%	3.9%	4.0%
2		3.7%	3.5%		3.7%	3.8%	3.9%	3.7%	3.5%
MEDIAN		3.7%	4.4%		3.7%	3.9%	4.2%	4.5%	4.4%
MEAN		3.9%	5.0%		3.9%	4.2%	4.5%	4.8%	5.0%
STD DEV		0.6%	1.1%		0.6%	0.7%	0.8%	1.0%	1.1%
HIGH		6.1%	7.4%		6.1%	6.7%	6.5%	6.6%	7.4%
LOW		3.6%	3.5%		3.6%	3.7%	3.8%	3.7%	3.5%

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**Table 17 - Consumer Price Index Inflation Rate**

Individual	Q4 over Q4			Q322	Q422	Q123	Q223	Q323	Q423
	2021	2022	2023						
	6.7%			5.7%					
1		7.8%	6.1%		5.8%	5.9%	6.0%	6.2%	6.4%
2		7.7%	5.0%		5.6%	5.3%	5.1%	4.9%	4.7%
11		7.6%	4.9%		5.1%	5.4%	5.1%	4.8%	4.5%
14		7.5%	4.9%		4.8%	5.2%	5.1%	4.9%	4.5%
4		7.5%	4.7%		4.8%	5.1%	5.0%	4.6%	4.2%
17		7.8%	4.6%		6.0%	5.6%	4.7%	4.3%	3.7%
8		7.6%	4.5%		5.0%	7.2%	8.1%	0.2%	2.7%
15		7.8%	4.4%		5.9%	5.3%	4.4%	4.2%	3.8%
9		7.6%	3.8%		5.0%	4.2%	4.1%	3.9%	3.2%
12		7.6%	3.6%		5.0%	4.4%	3.8%	3.4%	3.0%
3		7.4%	3.4%		4.5%	3.9%	3.5%	3.2%	3.0%
18		8.3%	3.2%		7.8%	9.5%	5.2%	2.1%	-3.6%
16		7.6%	3.1%		5.0%	4.2%	2.4%	2.8%	2.9%
13		7.5%	3.0%		4.8%	4.0%	2.9%	2.7%	2.5%
7		7.3%	2.9%		4.0%	3.6%	3.1%	2.5%	2.3%
10		7.4%	2.8%		4.2%	3.5%	2.8%	2.6%	2.5%
5		7.6%	2.7%		5.1%	3.3%	2.1%	2.6%	2.9%
6		6.9%	1.9%		2.3%	2.1%	2.1%	2.1%	1.5%
MEDIAN		7.6%	3.7%		5.0%	4.8%	4.3%	3.3%	3.0%
MEAN		7.6%	3.9%		5.0%	4.9%	4.2%	3.4%	3.0%
STD DEV		0.3%	1.0%		1.1%	1.6%	1.5%	1.4%	1.9%
HIGH		8.3%	6.1%		7.8%	9.5%	8.1%	6.2%	6.4%
LOW		6.9%	1.9%		2.3%	2.1%	2.1%	0.2%	-3.6%

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**Table 18 - Treasury Constant Maturity - One-year Rate**

Individual	Q4 value			Q322	Q422	Q123	Q223	Q323	Q423
	2021	2022	2023						
	0.20%			3.40%					
12		4.30%	6.20%		4.30%	5.20%	5.90%	6.00%	6.20%
14		4.07%	5.60%		4.07%	5.08%	5.42%	5.50%	5.60%
16		5.14%	4.87%		5.14%	5.32%	5.36%	5.18%	4.87%
8		4.31%	4.80%		4.31%	4.87%	4.97%	4.97%	4.80%
6		3.76%	4.67%		3.76%	4.04%	4.34%	4.56%	4.67%
10		4.70%	4.60%		4.70%	4.90%	4.80%	4.70%	4.60%
7		4.50%	4.50%		4.50%	4.60%	4.60%	4.50%	4.50%
15		4.52%	4.05%		4.52%	4.65%	4.54%	4.36%	4.05%
3		4.44%	4.04%		4.44%	4.44%	4.39%	4.34%	4.04%
18		4.50%	4.00%		4.50%	5.00%	5.00%	4.50%	4.00%
13		4.70%	4.00%		4.70%	4.80%	4.50%	4.30%	4.00%
17		4.50%	3.90%		4.50%	4.60%	4.50%	4.30%	3.90%
5		3.80%	3.90%		3.80%	4.00%	4.00%	4.00%	3.90%
1		3.43%	3.79%		3.43%	3.52%	3.61%	3.70%	3.79%
2		3.50%	3.30%		3.50%	3.30%	3.30%	3.30%	3.30%
9		4.50%	2.00%		4.50%	4.40%	4.00%	3.00%	2.00%
11		0.07%	0.10%		0.07%	0.05%	0.09%	0.10%	0.10%
MEDIAN		4.44%	4.04%		4.44%	4.60%	4.50%	4.36%	4.04%
MEAN		4.04%	4.02%		4.04%	4.28%	4.31%	4.19%	4.02%
STD DEV		1.09%	1.32%		1.09%	1.19%	1.23%	1.25%	1.32%
HIGH		5.14%	6.20%		5.14%	5.32%	5.90%	6.00%	6.20%
LOW		0.07%	0.10%		0.07%	0.05%	0.09%	0.10%	0.10%

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**Table 19 - Treasury Constant Maturity - Ten-year Rate**

Individual	Q4 value			Q322	Q422	Q123	Q223	Q323	Q423
	2021	2022	2023						
	1.54%			3.11%					
14		3.59%	5.02%		3.59%	4.12%	4.49%	4.76%	5.02%
8		4.09%	5.00%		4.09%	4.50%	4.70%	4.93%	5.00%
4		3.59%	4.87%		3.59%	4.04%	4.38%	4.65%	4.87%
6		3.89%	4.76%		3.89%	4.23%	4.67%	4.70%	4.76%
7		4.00%	4.50%		4.00%	4.60%	4.60%	4.60%	4.50%
12		3.89%	4.50%		3.89%	4.50%	4.60%	4.60%	4.50%
16		4.33%	3.99%		4.33%	4.41%	4.29%	4.19%	3.99%
10		4.00%	3.80%		4.00%	4.25%	4.10%	4.00%	3.80%
3		3.91%	3.73%		3.91%	3.99%	4.34%	3.86%	3.73%
1		3.14%	3.47%		3.14%	3.22%	3.30%	3.38%	3.47%
15		3.99%	3.34%		3.99%	3.97%	3.75%	3.57%	3.34%
17		4.00%	3.30%		4.00%	3.90%	3.70%	3.50%	3.30%
13		3.80%	3.20%		3.80%	3.90%	3.70%	3.40%	3.20%
5		3.24%	3.20%		3.24%	3.28%	3.27%	3.29%	3.20%
9		3.40%	2.90%		3.40%	3.30%	3.20%	3.10%	2.90%
2		3.20%	2.90%		3.20%	3.10%	3.00%	2.90%	2.90%
18		3.50%	2.10%		3.50%	3.20%	2.60%	2.40%	2.10%
11		1.24%	1.44%		1.24%	0.90%	1.00%	1.20%	1.44%
MEDIAN		3.85%	3.60%		3.85%	3.98%	3.93%	3.71%	3.60%
MEAN		3.60%	3.67%		3.60%	3.75%	3.76%	3.72%	3.67%
STD DEV		0.66%	0.97%		0.66%	0.84%	0.92%	0.94%	0.97%
HIGH		4.33%	5.02%		4.33%	4.60%	4.70%	4.93%	5.02%
LOW		1.24%	1.44%		1.24%	0.90%	1.00%	1.20%	1.44%

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**Table 20 - J.P. Morgan Trade Weighted OECD Dollar**

Individual	Q4 over Q4			Q322	Q422	Q123	Q223	Q323	Q423
	2021	2022	2023						
	0.9%			4.0%					
1		12.5%	18.3%		4.0%	4.1%	4.2%	4.4%	4.5%
18		11.4%	18.2%		3.0%	4.0%	4.2%	4.4%	4.5%
12		12.7%	14.6%		4.2%	4.0%	3.6%	3.3%	3.0%
6		7.4%	3.0%		-0.7%	2.2%	-0.7%	1.9%	-0.4%
7		7.1%	0.5%		-1.0%	1.0%	0.5%	-0.5%	-0.5%
14		21.8%	0.0%		12.6%	0.0%	0.0%	0.0%	0.0%
17		11.2%	-1.9%		2.8%	0.7%	0.6%	-1.1%	-2.1%
15		11.5%	-1.9%		3.1%	0.8%	0.5%	-1.1%	-2.1%
2		8.7%	-2.0%		0.5%	0.0%	-1.0%	-1.0%	0.0%
16		12.6%	-2.8%		4.1%	0.7%	-0.3%	-1.5%	-1.7%
11		6.0%	-3.0%		-2.0%	-0.3%	-0.8%	-1.0%	-1.0%
13		8.7%	-5.9%		0.5%	-2.0%	-2.0%	-1.0%	-1.0%
8		12.5%	-6.2%		4.0%	-3.7%	-0.9%	-1.4%	-0.3%
MEDIAN		11.4%	-1.9%		3.0%	0.7%	0.0%	-1.0%	-0.4%
MEAN		11.1%	2.4%		2.7%	0.9%	0.6%	0.4%	0.2%
STD DEV		3.8%	8.4%		3.6%	2.2%	2.0%	2.2%	2.2%
HIGH		21.8%	18.3%		12.6%	4.1%	4.2%	4.4%	4.5%
LOW		6.0%	-6.2%		-2.0%	-3.7%	-2.0%	-1.5%	-2.1%

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**Table 21a - Individual Forecasts for 2023**

Individual	GDP current dollars	GDP price index, Chain-type	Real GDP, chained dollars	Personal consumption expenditures	Business fixed investment	Residential investment	Change in private inventories	Net exports	Government consumption expenditures and gross investment
1	1.0%	10.4%	10.4%	10.4%	10.4%	10.4%	\$69.0	-\$1,420.3	10.38%
2	4.4%	2.8%	2.2%	2.2%	2.2%	2.0%	\$28.7	-\$1,307.8	0.03%
3	5.4%	3.7%	1.6%	1.9%	1.9%	0.9%	\$90.5	-\$1,349.1	1.76%
4	5.9%	4.7%	1.2%	1.4%	1.2%	-1.4%	\$64.9	-\$1,247.3	0.55%
5	3.6%	2.8%	0.8%	1.0%	-0.7%	0.8%	\$22.2	-\$1,379.4	1.85%
6	2.8%	2.0%	0.8%	1.2%	0.6%	-3.6%	\$84.4	-\$1,179.8	0.66%
7	3.8%	3.1%	0.7%	1.9%	2.3%	0.9%	\$45.0	-\$1,540.0	0.88%
8	4.2%	3.5%	0.7%	-0.3%	-1.0%	1.3%	\$43.0	-\$1,079.0	0.99%
9	4.2%	3.6%	0.7%	0.1%	0.0%	-3.9%	\$59.7	-\$1,254.0	3.94%
10	2.8%	2.5%	0.5%	1.1%	2.0%	-0.2%	\$68.0	-\$1,377.0	1.14%
11	2.0%	-4.6%	0.4%	1.7%	4.4%	2.1%	(\$5.0)	\$150.0	-77.94%
12	1.1%	2.4%	0.2%	2.2%	0.1%	-2.2%	\$15.4	-\$834.2	1.05%
13	3.0%	2.9%	0.2%	0.0%	0.7%	-1.7%	\$42.0	-\$1,325.0	0.76%
14	4.3%	4.7%	-0.4%	-0.1%	-3.6%	-14.2%	\$64.9	-\$1,128.5	0.41%
15	2.8%	3.4%	-0.5%	0.3%	-4.5%	-8.8%	\$42.8	-\$1,270.8	1.49%
16	2.9%	3.5%	-0.6%	-0.2%	-1.9%	-6.1%	\$21.4	-\$1,264.3	1.63%
17	2.7%	3.5%	-0.7%	0.3%	-5.3%	-9.5%	\$45.4	-\$1,269.3	1.44%
18	-8.6%	-7.8%	-3.1%	-4.0%	-3.9%	-1.6%	\$20.0	-\$1,230.0	-1.18%
MEDIAN	3.0%	3.2%	0.6%	1.0%	0.4%	-1.5%	\$44.0	-\$1,266.8	1.0%
MEAN	2.7%	2.6%	0.8%	1.2%	0.3%	-1.9%	\$45.7	-\$1,183.7	-2.8%
STD DEV	3.0%	3.6%	2.6%	2.6%	3.5%	5.3%	\$24.8	\$355.0	18.4%
HIGH	5.9%	10.4%	10.4%	10.4%	10.4%	10.4%	\$90.5	\$150.0	10.4%
LOW	-8.6%	-7.8%	-3.1%	-4.0%	-5.3%	-14.2%	-\$5.0	-\$1,540.0	-77.9%

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**Table 21b - Individual Forecasts for 2023**

Individual	Industrial production	Car & light truck sales	Housing starts	Oil Price	Unemployment rate	Inflation rate (CPI)	Treasury constant maturity one-year rate	Treasury constant maturity ten-year rate	J.P. Morgan trade weighted OECD dollar
1	10.4%	15.7	1.69	\$103.24	4.0%	6.1%	3.79%	3.47%	18.3%
2	2.0%	15.0	1.50	\$83.00	3.5%	5.0%	3.30%	2.90%	-2.0%
3	2.4%	15.5	1.40		4.0%	3.4%	4.04%	3.73%	
4	-0.4%	13.7	1.36	\$99.00	4.4%	4.7%		4.87%	
5	-0.7%		1.36		4.1%	2.7%	3.90%	3.20%	
6	0.1%	15.8	1.49	\$86.72	4.0%	1.9%	4.67%	4.76%	3.0%
7	0.5%	16.1	1.46	\$75.00	4.1%	2.9%	4.50%	4.50%	0.5%
8	-0.6%	13.4	1.11	\$97.67	7.4%	4.5%	4.80%	5.00%	-6.2%
9	0.1%	14.6	1.43	\$105.00	4.4%	3.8%	2.00%	2.90%	
10	0.8%	16.0	1.46	\$88.00	4.3%	2.8%	4.60%	3.80%	
11	3.9%	16.0	1.25	\$64.00	5.6%	4.9%	0.10%	1.44%	-3.0%
12	1.1%	13.4	1.32	\$79.90	4.4%	3.6%	6.20%	4.50%	14.6%
13	-0.8%	14.9	1.40	\$89.00	4.5%	3.0%	4.00%	3.20%	-5.9%
14	-3.5%	12.3	1.32	\$99.00	6.5	4.9	5.60%	5.02%	0.0
15	-4.3%	13.3	1.13	\$94.82	6.7%	4.4%	4.05%	3.34%	-1.9%
16	-2.7%	14.3	1.22	\$84.93	5.2%	3.1%	4.87%	3.99%	-2.8%
17	-4.9%	12.9	1.10	\$98.20	7.0%	4.6%	3.90%	3.30%	-1.9%
18	-4.8%	14.5	1.30	\$70.00	5.0%	3.2%	4.00%	2.10%	18.2%
MEDIAN	-0.1%	14.6	1.36	\$88.50	4.4%	3.7%	4.04%	3.60%	-1.9%
MEAN	-0.1%	14.6	1.35	\$88.59	5.0%	3.9%	4.02%	3.67%	2.4%
STD DEV	3.5%	1.2	0.15	\$11.65	1.1%	1.0%	1.32%	0.97%	8.4%
HIGH	10.4%	16.1	1.69	\$105.00	7.4%	6.1%	6.20%	5.02%	18.3%
LOW	-4.9%	12.3	1.10	\$64.00	3.5%	1.9%	0.10%	1.44%	-6.2%

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