



Gamma Investment Program

Gamma Intelligence Reports[®]

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Gamma Investment Program

Gamma Global Macro Model

- The Gamma Investment Program is our institutional suite of forecasting and research products for the major developed and emerging economies covering stock indexes, bonds, individual equities, currencies, commodities, and economic conditions (Table 1).
- The Program is based on our Gamma Global Macro Model, a proprietary, fundamentally-based, nonlinear econometric algorithm that has accurately predicted major trends and inflection points for over 35 years.
- The Gamma Program delivers objective, unbiased, data-driven financial and economic forecasts, investment recommendations, analysis, and research tools needed to preserve and grow wealth.

TABLE 1: Gamma Global Macro Model Markets

Country	Stock Indexes	Country	Fixed Income	FX Rates	Commodities	Country	Equity Index Constituents	Category	Country	Economic Indicators
USA	S&P 500	USA	2, 5, 10, 30 Yr Treas	USD/CAD	Gold	USA	S&P 500	Large Cap	USA	Interest Rates
USA	Nadaq Composite	USA	Invest Grade Corp	USD/MXN	Silver	USA	S&P 400	Mid-Cap	Canada	Stock Indexes
Canada	S&P/TSX 60	USA	High Yield Corp	USD/BRL	Platinum	USA	S&P 600	Small-Cap	Mexico	Commodity Indexes
Mexico	IPC	Canada	10 Yr Govt	USD/JPY	Palladium	Canada	S&P/TSX 60	Large Cap	Brazil	Exchange Rates
Brazil	Bovespa	Mexico	10 Yr Govt	AUD/USD	Aluminum	Japan	Nikkei 225	Large Cap	Japan	Money Supply
Japan	TOPIX	Brazil	10 Yr Govt	USD/KRW	Copper	Australia	S&P/ASX 200	Large, Mid-Cap	Australia	Output
Australia	S&P/ASX 200	Japan	10 Yr JGB	USD/CNY	Lead	Eurozone	STOXX 600	Large-Cap	S. Korea	Employment
S. Korea	KOSPI	Australia	10 Yr Govt	USD/INR	Nickel				China	Income
China	Hang Seng CEI	S. Korea	10 Yr Govt	USD/SGD	Tin				India	Consumption
China / HK	Hang Seng	China	10 Yr Govt	EUR/USD	Zinc				Eurozone	Housing
India	Nifty 500	India	10 Yr Govt	GBP/USD	Crude Oil				Germany	Capital Investment
Eurozone	STOXX 600	Germany	10 Yr Bund	USD/NOK	Natural Gas				France	Consumer Prices
Germany	DAX	France	10 Yr OAT	USD/SEK					Italy	Producer Prices
France	CAC 40	Italy	10 Yr BTP	USD/RUB					Switzerland	Housing Prices
Italy	FTSE/MIB 30	Switzerland	10 Yr Confederation	USD/ZAR					UK	Imports
Switzerland	Swiss Market	UK	15 Yr Gilt	BTC/USD					Russia	Exports
UK	FTSE 100	Russia	10 Yr Govt						S. Africa	
Russia	RTS 50	S. Africa	10 Yr Govt							
S. Africa	FTSE/JSE 40									

Gamma Investment Program Features

Analysis and Indicators

- **Gamma Macro, Equity, and Economic Intelligence Reports**®
 - Concise monthly summary and analysis of Gamma Global Macro Model forecasts and investment recommendations
- **Directional Forecast Indicator Tables and Charts**
 - Monthly expected return forecasts and recommended trade and position recommendations for all Gamma Global Macro Model markets and S&P 500, S&P 400, S&P 600, TSX 60, STOXX 600, Nikkei 225, and ASX 200 constituent companies
- **Valuation Indicator Tables and Charts**
 - Proprietary valuation indicators for all Gamma Global Macro Model markets including valuation-based expected return forecasts
- **Seasonal Return Analysis**
- **Behavioral and Sentiment Tables and Charts**
 - Sentiment-based expected return forecasts.
- **Long-Term Economic and Financial Forecasts for Major G-10 and Emerging Market Countries**
- **Global Economic and Financial Reference Tables and Charts**
- **Intramonth Updates and Periodic Analytical Papers on Major Economic and Financial Topics.**

Gamma Intelligence Reports®

Macro, Equity, and Economic

- The Gamma Intelligence Reports® provide a concise monthly summary and analysis of forecasts and investment recommendations from the Gamma Global Macro Model



Macro Intelligence Report

July 2022

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Equity Intelligence Report

July 2022

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Gamma Global Macro Model Highlights

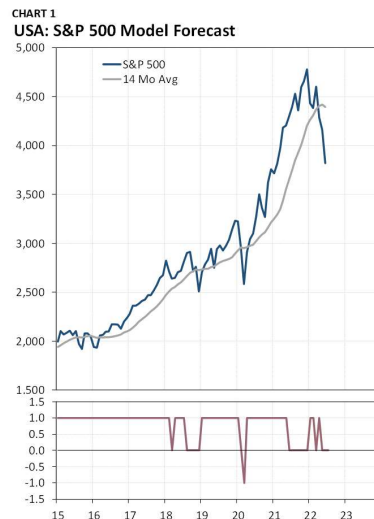
- The S&P 500 and Nasdaq Models remained neutral for July in response to expectations of a further rise in US interest rates. Unchanged from June, all 19 international stock index models also remained neutral as central banks around the world hike rates to bring inflation under control. The European Central Bank (ECB), in particular, has hinted that it will hike rates in July for the first time since 2011.
- The 10- and 30-Year Treasury Models remained long (lower yields) for July. The long-term Treasury Models were joined by the Investment Grade Corporate Model which had been generally short since September 2020. As has been the case for several months, the forecast is supported by favorable valuation, a strong dollar, and clearer signs that inflation is peaking despite the recent Ukraine-induced spike in food and energy prices.
- The Gold Model covered its long position and went short for July joining the other precious metals which have been short the past several months. Favorable valuation and geopolitical cross-currents have failed to offset the negative impact of rising interest rates and the recent collapse in cryptocurrencies.
- The EUR/USD Model remained short the Euro as the Federal Reserve continues to lead the ECB in raising rates. The ECB, despite surging Eurozone inflation, has been constrained by an economy weakened by the imposition of trade restrictions on Russia as a result of its invasion of Ukraine.

I. Equity Index Outlook

The Gamma S&P 500 and Nasdaq Models remained neutral for July (Chart 1). US stocks rallied mid-month on hopes that the Fed would slow its pace of tightening. Those hopes faded on Fed Chairman Powell's comments that his primary concern was that inflation expectations would become embedded and eventually require even higher rates. The comments confirmed the market's expectation that rates would likely be hiked another 75 bps in July and again in September.

Neutral Factors

- Money growth has collapsed but is still painting a mixed picture of liquidity. The Fed's rate hikes have caused real M2 growth to turn negative (Chart 2). Real M2 has fallen four months in a row and is now down -1.7% *yr/yr*, the first time *yr/yr* growth has been negative since 2010. Offsetting this, however, is real True Money Supply (TMS) growth which continues to hover at a 4.9% *yr/yr* rate. TMS continues to be supported by growth in demand deposits which reflect a steady increase in bank lending. Bank credit



Gamma Equity Model Highlights

- Individual equity recommendation top names are AVGO, KBH, ADBE, INCY, MTD, and FTL.
- The Energy and Real Estate sectors remained the only two sectors forecasting a positive return for July. The consumer discretionary and technology sectors were forecasted to be the worst performers for the month due to persistent overvaluation.
- The S&P 500 and Nasdaq Models remained neutral for July in response to expectations of a further rise in US interest rates. Unchanged from June, all 19 international stock index models also remained neutral as central banks around the world hike rates to bring inflation under control. The European Central Bank (ECB), in particular, has hinted that it will hike rates in July for the first time since 2011.

I. Stock Recommendations – prices as of the close on 6.30.22



1) AVGO Broadcom Inc. (\$485.81)

- Broadcom Inc. is a technology company that designs, develops and supplies various semiconductor and infrastructure software solutions.
- It trades at a forward P/E (NTM) of 12.30 and has a dividend yield of 3.37% (the company has been paying dividends for the past 12 years).
- AVGO is a top pick of Deutsche Bank analyst describing it as a “safe port” in the current “macro storm.” “We believe Broadcom’s combination of infrastructure-heavy, mission-critical semiconductor and software products with relatively minimal consumer-oriented exposure as offering desirable stability in an environment of rising macro/semi sector volatility and an attractive investment for those that value long-term returns.”
- It is the preferred stock in the sector because of its defensive characteristics.
- Broadcom is well positioned with a steady offering of infrastructure-heavy, mission-critical semiconductor and related products.
- It is also listed as one of Wall Street’s favorite dividend payers in the S&P 500 and a company that is winning the inflation battle and expanding margins.
- AVGO management is prioritizing shipping based on true-demand instead of aggregate bookings.

Gamma Macro Directional Indicators

Expected Return Forecasts and Recommended Trades

- The Gamma Global Macro Model generates one-month-ahead expected return forecasts and investment recommendations for all the major asset classes. Forecasts are summarized in tables and charts showing the direction of the signal.



Equity Index Model Forecasts

July 2022

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Equity Index Model Forecasts

July 2022

TABLE 1

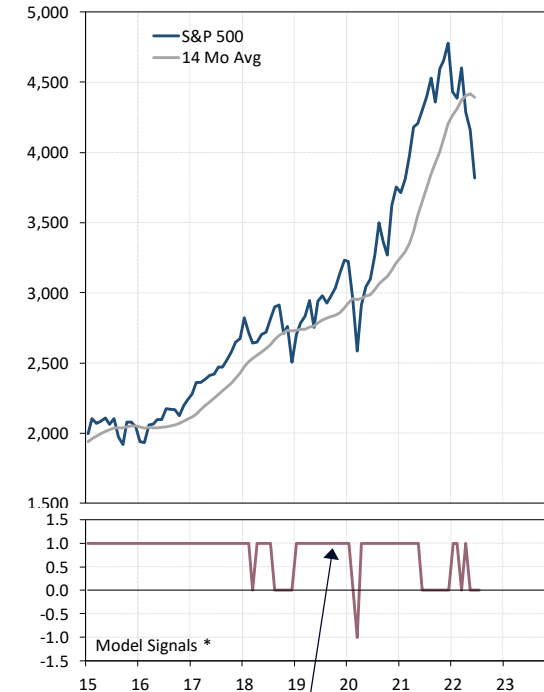
1 MONTH STOCK INDEX MODEL FORECASTS (%)

Country	Stock Index	Price	1 Mo Forecast	Previous Forecast	Position	Trade	Updated
USA	S&P 500	3,818.83	0.00%	0.00%	Neutral	Hold	6/30/22
USA	Nadaq	10,910.37	0.00%	0.00%	Neutral	Hold	6/30/22
Canada	S&P/TSX 60	1,138.08	0.00%	0.00%	Neutral	Hold	6/30/22
Mexico	IPC	47,313.78	0.00%	0.00%	Neutral	Hold	6/30/22
Brazil	Bovespa	97,957.81	0.00%	0.00%	Neutral	Hold	6/30/22
Japan	TOPIX	1,870.82	0.00%	0.00%	Neutral	Hold	6/30/22
Australia	S&P/ASX 200	6,568.10	0.00%	0.00%	Neutral	Hold	6/30/22
S. Korea	KOSPI	2,332.64	0.00%	0.00%	Neutral	Hold	6/30/22
China	Hang Seng CEI	7,666.88	0.00%	0.00%	Neutral	Hold	6/30/22
China / HK	Hang Seng	12,696.80	0.00%	0.00%	Neutral	Hold	6/30/22
India	Nifty 500	13,387.55	0.00%	0.00%	Neutral	Hold	6/30/22
Eurozone	STOXX 600	405.61	0.00%	0.00%	Neutral	Hold	6/30/22
Germany	DAX	12,696.80	0.00%	0.00%	Neutral	Hold	6/30/22
France	CAC 40	5,887.40	0.00%	0.00%	Neutral	Hold	6/30/22
Italy	FTSE/MIB 30	21,202.41	0.00%	0.00%	Neutral	Hold	6/30/22
Switzerland	Swiss Market	10,689.46	0.00%	0.00%	Neutral	Hold	6/30/22
UK	FTSE 100	7,136.98	0.00%	0.00%	Neutral	Hold	6/30/22
Russia	RTS 50	1,353.95	0.00%	0.00%	Neutral	Hold	6/30/22
S. Africa	FTSE/JSE 40	60,184.66	0.00%	0.00%	Neutral	Hold	6/30/22

1-month expected return forecasts, previous month's forecasts, recommended positions, and recommended trades

Country	Instrument	1 Mo Fcst	Position	Trade	Updated
USA	S&P 500	0.00%	Neutral	Hold	6/30/2022

USA: S&P 500 Model Forecast



Graphic presentation of Gamma Macro Model directional forecast (1=bullish, -1=bearish, 0=neutral)

Gamma Equity Forecasts

Forecasts and Analysis of Companies, Sectors, and Indexes

- The Gamma Global Macro Model generates expected return forecasts for companies and sectors in the **S&P 500, S&P 400, S&P 600, TSX 60, STOXX 600, Nikkei 225, and ASX 200.**



Company Stock Model Forecasts

August 2022

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Equity Sector Model Forecasts

August 2022

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S&P 500 LARGE CAP STOCKS

1 Month Company Stock Price Forecasts (%)

Company	Ticker	1 Mo Forecast	Previous Forecast	Change	Factor Momentum
AMAZON.COM	AMZN	3.01%	2.09%	0.93%	Positive
ABBOTT LABORATORIES	ABT	0.93%	0.60%	0.33%	Neutral
AES	AES	2.68%	2.10%	0.58%	Neutral
ABIOMED	ABMD	4.43%	5.66%	-1.23%	Neutral
INTERNATIONAL BUS.MCHS.	IBM	1.31%	0.16%	1.15%	Neutral
ADVANCED MICRO DEVICES	AMD	3.42%	1.35%	2.07%	Neutral
ADOBE (NAS)	ADBE	5.13%	5.04%	0.09%	Neutral
ALEXANDRIA RLST.EQTIES.	ARE	1.15%	1.79%	-0.64%	Neutral
AIR PRDS.& CHEMS.	APD	0.84%	0.35%	0.49%	Positive
ALASKA AIR GROUP	ALK	0.35%	-0.59%	0.95%	Neutral
BOSTON PROPERTIES	BXP	1.09%	1.29%	-0.21%	Neutral
ALLSTATE ORD SHS	ALL	1.92%	0.57%	1.34%	Neutral
HONEYWELL INTL.	HON	0.49%	-0.56%	1.05%	Positive
AMGEN	AMGN	0.94%	1.25%	-0.30%	Neutral
HESS	HES	0.70%	-0.20%	0.90%	Neutral
AMERICAN EXPRESS	AXP	1.45%	0.25%	1.20%	Neutral
AMER.ELEC.PWR.	AEP	-0.27%	-0.73%	0.46%	Neutral
AFLAC	AFL	0.75%	-0.04%	0.79%	Neutral
AMERICAN INTL.GP.	AIG	-0.87%	-2.60%	1.73%	Neutral
ANALOG DEVICES	ADI	1.92%	3.00%	-1.08%	Neutral
VALERO ENERGY	VLO	4.50%	2.29%	2.20%	Positive
COMCAST A	CMCSA	1.18%	-0.07%	1.25%	Neutral
ANSYS	ANSS	0.72%	2.20%	-1.49%	Neutral
APPLE	AAPL	2.23%	0.60%	1.62%	Neutral
APPLIED MATS.	AMAT	2.82%	2.28%	0.54%	Neutral

1 MONTH STOCK SECTOR MODEL FORECASTS (%)

Sector	Ticker	1 Mo Forecast	Previous Forecast	Updated
Real Estate	XLRE	2.97%	0.20%	7/29/22
Energy	XLE	1.09%	0.42%	7/29/22
Gold Mining	---	0.00%	-0.57%	7/29/22
Financials	XLF	-0.03%	-2.27%	7/29/22
Utilities	XLU	-0.06%	-0.62%	7/29/22
Materials	XLB	-0.48%	-1.09%	7/29/22
Health Care	XLV	-0.48%	-1.22%	7/29/22
Consumer Stap	XLP	-0.48%	-0.96%	7/29/22
Industrials	XLI	-0.55%	-1.33%	7/29/22
Consumer Disc	XLY	-1.36%	-3.02%	7/29/22
Communicatio	XLC	-1.89%	-2.45%	7/29/22
Technology	XLK	-2.47%	-3.44%	7/29/22

1-month expected return forecasts, previous month's forecasts, and factor momentum

Gamma Valuation Indicators

Valuation Measures and Valuation-Based Expected Return Forecasts

- Proprietary measures of market valuation and 1-month to 5-year expected return forecasts based on current valuations. Measures and forecasts are summarized in tables and charts.



Equity Index Valuation vs Forward Return Analysis

July 2022

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TABLE 1

VALUATION vs FORWARD RETURN ANALYSIS - ANNUALIZED RETURNS

Updated: 06/30/22

Country	Valuation		Valuation-Based Forecast (Annualized, %)						
	(σ)	(%)	1 Mo	3 Mo	6 Mo	1 Yr	2 Yr	3 Yr	5 Yr
United States	+0.28	+6%	9.4%	9.5%	9.9%	10.5%	11.2%	11.5%	11.8%
S&P 500	+0.16	+3%	11.0%	10.9%	11.3%	11.7%	12.1%	12.3%	12.5%
Nasdaq	+0.47	+13%	8.4%	8.3%	9.0%	10.0%	11.3%	11.9%	12.1%
S&P 600 Small Cap	-1.57	-26%	39.3%	38.1%	35.6%	31.1%	21.9%	18.0%	16.6%
Canada	-1.75	-29%	25.8%	25.3%	25.5%	25.0%	20.0%	17.1%	17.3%
Brazil	-2.74	-55%	92.2%	86.1%	75.7%	58.8%	45.0%	39.1%	31.7%
Mexico	-1.57	-23%	33.1%	32.2%	34.9%	30.9%	27.3%	27.0%	24.6%
Australia	-1.99	-46%	28.4%	27.8%	27.5%	27.5%	24.0%	20.5%	19.9%
Japan	-0.16	-7%	7.8%	7.8%	8.2%	8.6%	8.9%	9.2%	9.4%
China	-0.82	-30%	27.6%	27.0%	25.0%	22.2%	18.5%	18.5%	22.0%
S. Korea	-1.24	-28%	38.3%	37.1%	35.2%	35.5%	25.4%	19.3%	14.9%
India	-1.10	-20%	35.9%	34.9%	37.4%	37.1%	28.5%	25.3%	23.8%
Europe	-1.96	-44%	22.0%	21.6%	25.1%	24.5%	21.4%	19.5%	18.9%
Germany	-2.38	-50%	22.4%	22.0%	23.7%	23.4%	20.9%	19.7%	18.3%
France	-1.09	-23%	21.3%	20.9%	22.7%	22.1%	20.0%	18.4%	17.2%
Italy	-1.63	-39%	13.9%	13.7%	17.0%	19.2%	17.8%	15.7%	16.7%
Switzerland	-2.29	-44%	12.0%	11.9%	15.1%	14.5%	12.8%	11.9%	14.0%
UK	-0.61	-15%	18.4%	18.1%	18.7%	17.8%	15.9%	16.1%	15.7%
Russia	-1.49	-55%	61.1%	58.2%	72.8%	66.6%	56.0%	43.3%	43.6%
S. Africa	-1.98	-32%	36.2%	35.1%	37.5%	36.0%	34.0%	32.9%	24.5%

1-month to 5-year annualized expected returns based on current valuation

Current over/under-valuation in standard deviations (σ) and percentage terms.



Equity Index Valuation Analysis

July 2022

Country	Index	Valuation	Valuation	Annual Forecast (%)		Updated
		(σ)	(%)	1 Yr	3 Yr	
USA	S&P 500	+0.16	+3%	11.3%	12.1%	6/30/2022

USA: S&P 500 Valuation



Graphic presentation of market valuation in standard deviations (σ)

Gamma Seasonal Analysis

Seasonal Measures of Monthly and Annual Price Changes

- Charts of average monthly changes and their effect on cumulative annual returns.

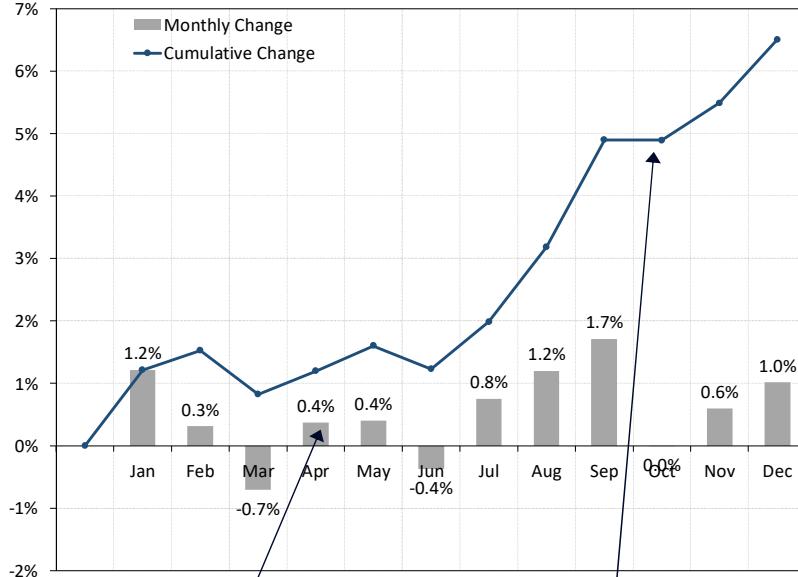


Commodity Seasonal Analysis - Precious Metals

July 2022

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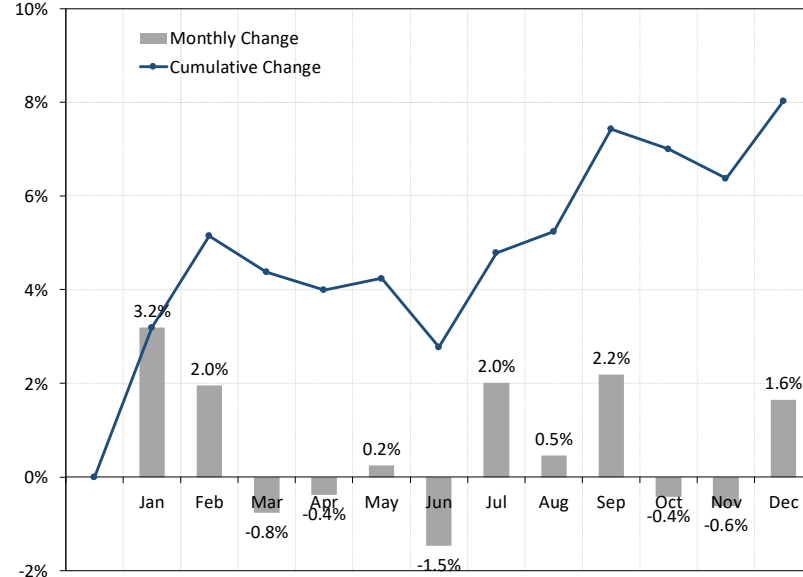
Avg Mo Change: Cash Gold (1975 - Present)



Average historical monthly % change in price/return.

Cumulative annual change due to seasonals

Avg Mo Change: Cash Silver (1975 - Present)



Gamma Sentiment Indicators

Sentiment Measures and Sentiment-Based Expected Return Forecasts

- Behavioral measures of investor sentiment and 1-month to 5-year expected return forecasts based on current sentiment. Measures and forecasts are summarized in tables and charts.



Sentiment Indicators vs Forward Return Analysis

July 2022



Equity Sentiment Analysis

July 2022

TABLE 1

EQUITY SENTIMENT INDICATORS vs FORWARD RETURN ANALYSIS - ANNUALIZED RETURNS

Updated: 06/30/22

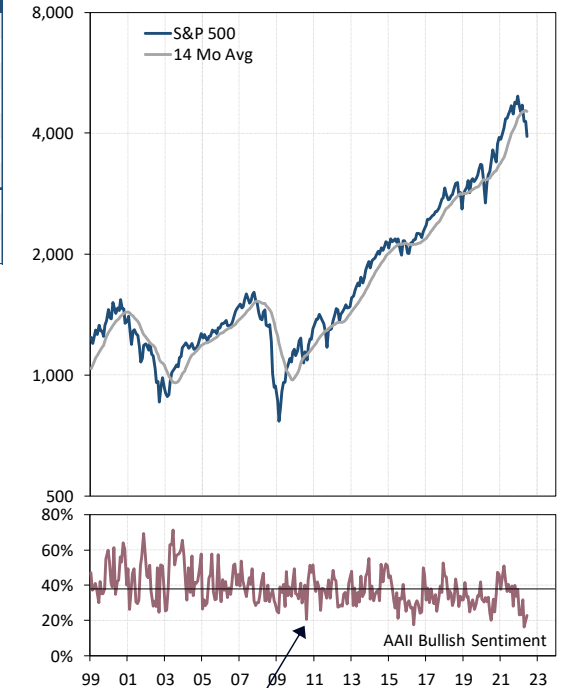
Indicator	Current	Valuation	Sentiment-Based Forecast (Annualized, %)						
	Value	(σ)	1 Mo	3 Mo	6 Mo	1 Yr	2 Yr	3 Yr	5 Yr
CBOE Put / Call Ratio	0.96	+0.40	16.8%	12.6%	12.0%	12.4%	12.0%	11.3%	11.4%
AAII Bullish Sentiment	23%	-1.52	18.2%	22.0%	24.0%	20.8%	18.3%	17.0%	17.0%
AAII Equity Allocation	65%	+0.38	11.8%	12.4%	12.2%	12.5%	13.4%	13.8%	12.2%
Advisor Bullish Sentiment	31%	-1.56	13.0%	16.8%	18.1%	20.2%	18.8%	18.5%	18.4%
% of S&P 500 Stocks at 12 Mo High	3%	-1.47	14.3%	20.4%	21.8%	20.2%	19.0%	16.0%	15.5%
% of S&P 500 Stocks Positive Yr/Yr	31%	-1.68	13.6%	14.4%	11.8%	17.2%	15.6%	14.8%	15.0%
CBOE VIX	29%	+1.27	17.7%	23.3%	19.0%	13.9%	11.0%	9.7%	9.2%
Forecast Avg Return (%)	---	---	15.0%	17.4%	16.9%	16.7%	15.5%	14.5%	14.3%
S&P 500 Historical Avg Return (%)	---	---	12.3%	12.4%	12.6%	12.9%	13.1%	13.1%	13.3%
DIFFERENCE (Forecast - S&P 500)	---	---	2.7%	4.9%	4.3%	3.9%	2.3%	1.4%	1.0%

Current sentiment and value in standard deviations (σ)

1-month to 5-year annualized expected returns based on current sentiment

Indicator	Current Value	Valuation (σ)	Annual Forecast (%)		Updated
			1 Yr	3 Yr	
AAII Bullish Sentiment	23%	-1.52	20.8%	17.0%	6/30/2022

S&P 500 vs AAIL Bullish Sentiment



Graphic presentation of investor sentiment

Gamma Economic Indicators

International Economic Forecasts

- Long-term economic forecasts covering interest rates, stock indexes, exchange rates, price indexes, output, employment, consumption, and investment for the major developed and emerging economies. Measures and forecasts are summarized in tables and charts.



Economic Forecasts - USA
September 2022

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Economic Forecasts - USA
September 2022

TABLE 1

Updated: 08/15/22

Indicator	Measure	End of	Current Value	Model Forecast					
				1 Mo	3 Mo	6 Mo	1 Yr	2 Yr	3 Yr
3 Mo T-Bill	Yield, %	July	2.34	2.51	2.71	2.88	2.33	1.86	1.88
5 Yr T-Note	Yield, %	July	2.70	2.76	2.83	2.84	2.59	2.06	1.87
10 Yr T-Note	Yield, %	July	2.64	2.70	2.77	2.80	2.65	2.20	2.01
30 Yr T-Bond	Yield, %	July	2.98	3.04	3.12	3.17	3.09	2.70	2.53
S&P 500 Index	Level	July	4,130.29	4,090.98	4,030.52	3,951.54	3,991.85	4,381.60	4,857.55
S&P/GSCI Commodity Index	Yr/Yr, %	July	28.0%	29.7%	14.3%	5.9%	-7.6%	-2.7%	3.6%
Raw Industrials Materials	Yr/Yr, %	July	-3.2%	-4.6%	-9.7%	-11.3%	-7.7%	-1.5%	4.3%
EUR/USD	Spot	July	0.9950	0.9940	0.9930	0.9920	0.9910	0.9900	0.9890
USD/JPY	Spot	July	132.00	132.13	132.26	132.40	132.53	132.66	132.79
USD/CAD	Spot	July	1.2933	1.2946	1.2959	1.2972	1.2985	1.2998	1.3011
USD/MXN	Spot	July	19.934	19.954	19.974	19.994	20.014	20.034	20.054
AUD/USD	Spot	July	0.6960	0.6953	0.6946	0.6939	0.6932	0.6925	0.6918
USD/CNY	Spot	July	6.852	6.8591	6.8659	6.8728	6.8796	6.8865	6.8934
Gold	Cash, \$/oz	July	\$1,764	\$1,772	\$1,803	\$1,868	\$2,056	\$2,371	\$2,672
True Money Supply {TMS}	Yr/Yr, %	July	8.4%	10.0%	11.8%	8.5%	3.3%	8.8%	9.6%
M1	Yr/Yr, %	July	5.2%	4.4%	3.7%	2.5%	7.0%	9.8%	9.0%
M2	Yr/Yr, %	July	5.3%	4.6%	4.2%	3.2%	7.0%	9.2%	8.6%
C&I Loans and Leases	Yr/Yr, %	July	10.5%	12.8%	16.0%	16.7%	13.1%	5.1%	7.6%
Index of Leading Indicators	Yr/Yr, %	July	0.0%	-1.5%	-3.5%	-6.3%	-7.9%	0.4%	3.5%
Index of Coincident Indicators	Yr/Yr, %	July	2.1%	2.0%	1.1%	-0.2%	-2.0%	0.2%	2.8%
Industrial Production	Yr/Yr, %	July	3.9%	3.6%	2.2%	-0.3%	-5.6%	-1.3%	2.7%
Nonag Payrolls	Yr/Yr, %	July	4.2%	4.0%	3.4%	2.3%	0.4%	0.3%	2.1%
Unemployment Rate	Level, %	July	3.5%	3.6%	3.7%	3.9%	4.2%	4.2%	3.5%
Personal Income	Yr/Yr, %	June	5.7%	4.8%	6.6%	6.3%	7.3%	7.6%	7.7%
PCE	Yr/Yr, %	June	8.4%	9.0%	8.5%	9.4%	7.5%	7.5%	7.9%
Retail Sales	Yr/Yr, %	July	10.3%	9.4%	6.9%	5.6%	0.8%	1.4%	3.0%

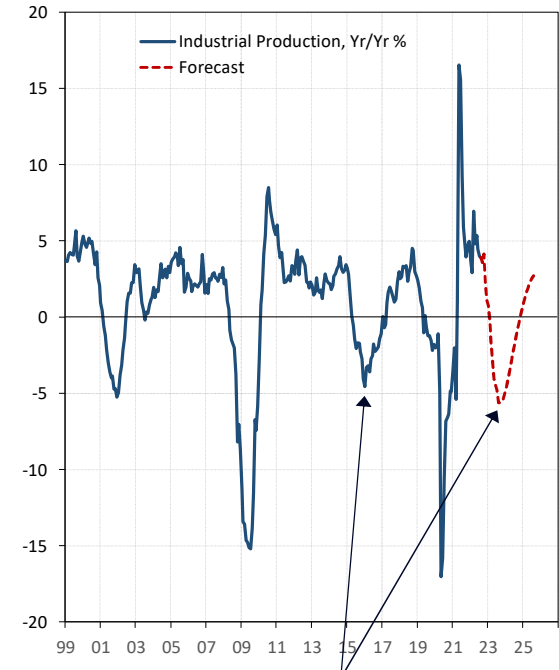


1-month to 3-year forecasts

OUTPUT, EMPLOYMENT, AND INCOME INDICATORS

Indicator	Measure	End of	Value	1 Yr Fcst	Change
Industrial Production	Yr/Yr %	July	3.9%	-5.6%	-9.5%

Industrial Production Forecast



Graphic presentation of historical economic data and model forecast

Gamma Investment Consulting Principals

Karl V. Chalupa is the CEO and Co-Founder of Gamma Investment Consulting and Editor of the Gamma Intelligence Reports. He is also President of Gamma Capital LLC, a quantitative global macro investment firm. Mr. Chalupa developed the Gamma Investment Program used for previously trading the firm's \$400 million global macro program. He was previously Director of Risk Management at Titan Advisors LLC, a \$4.5 billion alternative investments firm. Mr. Chalupa was also Managing Director of the Currency and Alternative Investment Strategies Groups at State Street Global Advisors (SSGA) where he developed a \$9 billion currency overlay program and launched SSGA's first hedge fund based on his Gamma Model. Mr. Chalupa spent 13 years at ABN Amro Bank where he traded interest rate and currency derivatives and was Manager of the Proprietary Trading and Economic Research Desk. He began his career as an economist for the Federal Reserve Bank of Chicago. Mr. Chalupa holds an MA in Economics from Brown University, graduated magna cum laude from Northern Illinois University with BAs in Economics and Political Science, and is Series 3 registered.

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