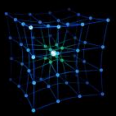




USD to COP Forecast (Pricing Assets | Market Points model)

Dynamic multivariate projection system grounded in a structural and mechanistic approach. It interprets the historical behavior of the U.S. dollar and recalibrates its trajectory based on current market conditions, using nonlinear dynamics among key financial assets and adapting in real time through supervised learning.

Rather than smoothing out volatility, the model embraces it—treating chaos as an informational asset. It forecasts operational ranges with minimal error margins while honoring the real and dynamic nature of financial markets.



S & P 500

BB+ = Grado NO inversión especulativo

FITCH

BB+ = Grado NO inversión especulativo

MOODY'S

Baa2 = Grado medio superior

YIELD BONDS 10 Y EEUU:

4,40%

YIELD BONDS 10Y COL:

12.41%

PREMIUM COL:

8,01(%)

CDS 5y COL:

277,53 bps

FISCAL DEFICIT 24 (% of GDP):

6.8%

BUDGET DEFIIT 25 (% of GDP):

5,6%

Fixed Exchange rate (1931 -1967): 2,25%

Mini-Devaluations (1697 – 1991): 10,20%

Crawling Bands (1991-1999): 16,8%

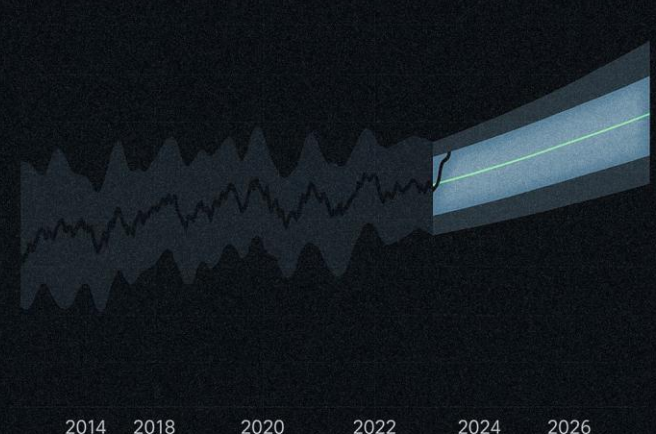
Floating Exchange rate (> 1999) : 20,9%



PRICING ASSETS | MARKET POINTS.....

June 2025

Exchange Rate



Projected **December 4,413**
Range **June 4,072 – 4,238**
IPAC **June 0,99**
Seasonality **0,98**
IPAC Fairly Valued
Confidence **91,38%**

Range
IPAC
Seasonality

BRENT		
Min	Max	USD
USD 27,37	USD 38,62	\$ 5.654,52
USD 38,62	USD 49,87	\$ 5.403,48
USD 49,87	USD 61,12	\$ 4.784,81
USD 61,12	USD 72,37	\$ 4.191,71
USD 72,37	USD 83,62	\$ 4.209,22
USD 83,62	USD 94,87	\$ 4.130,47
USD 94,87	USD 106,12	\$ 5.263,37
USD 106,12	USD 117,37	\$ 4.703,98

MCSI COLCAP		
Min	Max	USD
1.086,50	1.183,53	\$ 4.654,20
1.183,53	1.280,56	\$ 4.123,12
1.280,56	1.377,58	\$ 4.312,19
1.377,58	1.474,61	\$ 4.289,15
1.474,61	1.571,64	\$ 4.129,28
1.571,64	1.668,67	\$ 4.191,71
1.668,67	1.765,70	\$ 3.539,89
1.765,70	1.862,73	\$ 3.438,60

NASDAQ		
Min	Max	USD
2.734,98	5.096,88	\$ 4.632,59
5.096,88	7.458,77	\$ 4.610,46
7.458,77	9.820,67	\$ 5.340,91
9.820,67	12.182,56	\$ 5.212,62
12.182,56	14.544,46	\$ 5.163,12
14.544,46	16.906,35	\$ 4.514,07
16.906,35	19.268,24	\$ 4.274,82
19.268,24	21.630,14	\$ 4.182,09

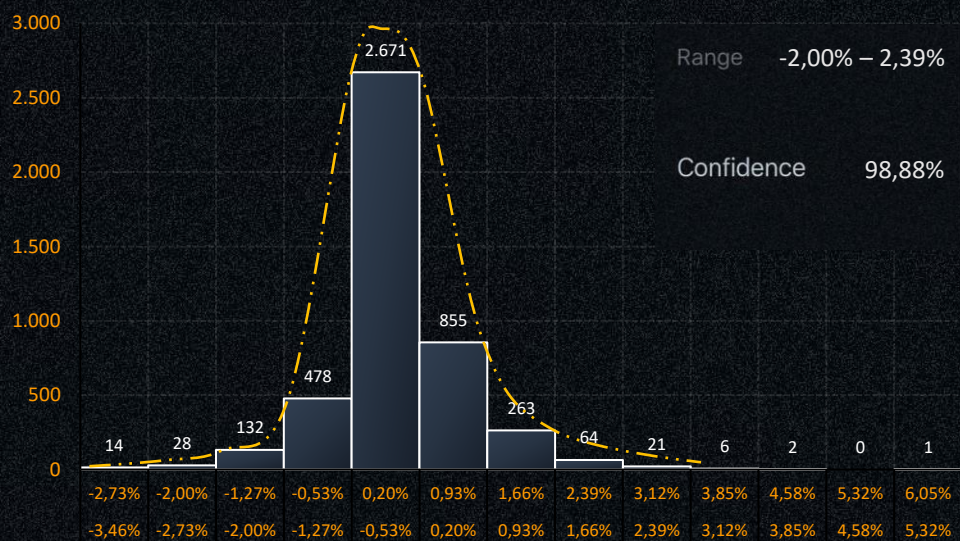
GOLD		
Min	Max	USD
USD 1.070,52	USD 1.351,13	\$ 4.668,55
USD 1.351,13	USD 1.631,74	\$ 5.130,67
USD 1.631,74	USD 1.912,35	\$ 5.268,35
USD 1.912,35	USD 2.192,96	\$ 4.114,02
USD 2.192,96	USD 2.473,57	\$ 4.156,07
USD 2.473,57	USD 2.754,18	\$ 4.289,15
USD 2.754,18	USD 3.034,79	\$ 4.133,46
USD 3.034,79	USD 3.315,40	\$ 4.209,74

NYSE		
Min	Max	USD
8.753,17	10.163,95	\$ 5.330,64
10.163,95	11.574,74	\$ 5.654,52
11.574,74	12.985,52	\$ 5.421,57
12.985,52	14.396,31	\$ 5.729,54
14.396,31	15.807,09	\$ 4.904,61
15.807,09	17.217,88	\$ 4.114,78
17.217,88	18.628,66	\$ 4.274,82
18.628,66	20.039,45	\$ 4.182,09

S & P 500		
Min	Max	USD
1.479,21	2.049,83	\$ 5.330,64
2.049,83	2.620,46	\$ 4.642,81
2.620,46	3.191,09	\$ 5.582,32
3.191,09	3.761,72	\$ 5.729,54
3.761,72	4.332,34	\$ 5.089,46
4.332,34	4.902,97	\$ 4.114,78
4.902,97	5.473,60	\$ 4.274,82
5.473,60	6.044,23	\$ 4.182,09

NORMAL DISTRIBUTION

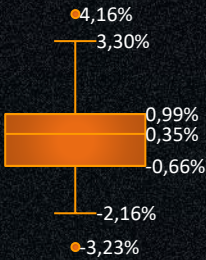
June 2025



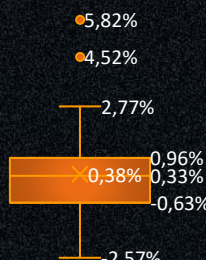
BOXPLOT LAST 3 GOVERNMENTS

June 2025

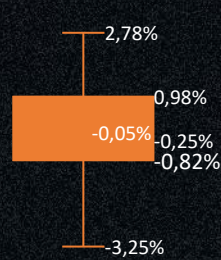
Boxplot Santos Prom. mensual



Boxplot Duque Prom. mensual



Boxplot Petro Prom. mensual



SYSTEMATIC RISK

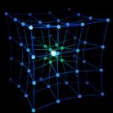
Brent **-0,13**
MCSI Colcap **-0,23**
NYSE **-0,33**
Nasdaq **-0,18**
S&P 500 **-0,27**
Dow Jones **-0,27**
Wilshire 5000 **-0,23**

OPTIMAL DISTRIBUTION

Brent **3,30%**
Gold **36,90%**
USD **63,10%**
EUR **0,00%**
GBP **0,00%**
JPY **0,00%**
CNY **0,00%**

CONDITIONAL PROB

USD **↑**
MARKET INDEX **↓**
PROBABILITY **50,6%**



S & P 500

BB+ = Grado NO inversión especulativo

FITCH

BB+ = Grado NO inversión especulativo

MOODY's

Baa2 = Grado medio superior

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USD HISTORICAL SEASONAL FACTOR 14y

June 2025

Mes	2.013	2.014	2.015	2.016	2.017	2.018	2.019	2.020	2.021	2.022	2.023	2.024	2.025	Prom
January	0,95	0,98	0,87	1,07	1,00	0,97	0,96	0,89	0,93	0,94	1,09	0,96	1,02	0,97
February	0,96	1,02	0,88	1,10	0,98	0,97	0,95	0,92	0,95	0,92	1,11	0,97	0,98	0,98
March	0,97	1,01	0,94	1,02	1,00	0,96	0,96	1,05	0,97	0,89	1,10	0,96	0,99	0,99
April	0,98	0,97	0,91	0,98	0,98	0,94	0,96	1,07	0,98	0,89	1,05	0,95	1,02	0,97
May	0,99	0,96	0,89	0,98	0,99	0,97	1,01	1,04	1,00	0,94	1,05	0,95	1,00	0,98
June	1,02	0,94	0,93	0,98	1,00	0,98	0,99	1,00	0,99	0,93	0,97	1,00	0,99	0,98
July	1,02	0,93	1,00	0,97	1,03	0,97	0,98	0,99	1,02	1,03	0,94	0,99	0,99	0,99
August	1,02	0,95	1,10	0,97	1,01	1,00	1,04	1,02	1,04	1,02	0,94	1,00	1,01	1,01
September	1,03	0,99	1,12	0,96	0,99	1,02	1,04	1,01	1,02	1,04	0,93	1,03	1,01	1,01
October	1,01	1,02	1,06	0,96	1,00	1,05	1,05	1,03	1,01	1,11	0,98	1,05	1,03	1,03
November	1,03	1,07	1,10	1,02	1,02	1,08	1,04	0,99	1,04	1,16	0,93	1,08	1,05	1,05
December	1,03	1,17	1,18	0,99	1,01	1,09	1,03	0,93	1,06	1,13	0,91	1,08	1,05	1,05

Times	January	February	March	April	May	June	July	August	September	October	November	December
< Average	10	10	9	10	10	10	9	3	4	2	2	3
> Average	3	3	4	3	3	3	4	10	9	11	11	10



EUR/USD 14y

June 2025

Month	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
January	1,33	1,36	1,16	1,09	1,06	1,22	1,14	1,11	1,22	1,13	1,08	1,09	1,03
February	1,34	1,37	1,13	1,11	1,06	1,23	1,14	1,09	1,21	1,13	1,07	1,08	1,04
March	1,30	1,38	1,08	1,11	1,07	1,23	1,13	1,10	1,19	1,10	1,07	1,09	1,08
April	1,30	1,38	1,08	1,13	1,07	1,23	1,12	1,09	1,20	1,08	1,10	1,07	1,12
May	1,30	1,37	1,12	1,13	1,11	1,18	1,12	1,09	1,21	1,06	1,09	1,08	1,13
June	1,32	1,36	1,12	1,12	1,12	1,17	1,13	1,12	1,20	1,06	1,08	1,08	1,13
July	1,31	1,35	1,10	1,11	1,15	1,17	1,12	1,14	1,18	1,02	1,11	1,08	
August	1,33	1,33	1,11	1,12	1,18	1,15	1,11	1,18	1,18	1,01	1,09	1,10	
September	1,34	1,29	1,12	1,12	1,19	1,17	1,10	1,18	1,18	0,99	1,07	1,11	
October	1,36	1,27	1,12	1,10	1,18	1,15	1,10	1,18	1,16	0,98	1,06	1,09	
November	1,35	1,25	1,07	1,08	1,17	1,14	1,10	1,18	1,14	1,02	1,08	1,06	
December	1,37	1,23	1,09	1,05	1,18	1,14	1,11	1,22	1,13	1,06	1,09	1,05	
Average	1,33	1,33	1,11	1,11	1,13	1,18	1,12	1,14	1,18	1,05	1,08	1,08	1,07



PEARSON CORRELATION COEFFICIENTS

	BRENT	GOLD	USD	EUR	GBP	JPY	CNY
BRENT	1,000	0,095	-0,355	-0,331	-0,256	-0,360	-0,317
GOLD	0,095	1,000	-0,157	0,041	0,003	0,073	-0,089
USD	-0,355	-0,157	1,000	0,834	0,777	0,812	0,948
EUR	-0,331	0,020	0,834	1,000	0,853	0,811	0,828
GBP	-0,256	0,003	0,777	0,853	1,000	0,735	0,779
JPY	-0,360	0,073	0,812	0,811	0,735	1,000	0,801
CNY	-0,317	-0,089	0,948	0,828	0,779	0,801	1,000



SYSTEMATIC RISK

Brent	-0,13
MCSI Colcap	-0,23
NYSE	-0,33
Nasdaq	-0,18
S&P 500	-0,27
Dow Jones	-0,27
Wilshire 5000	-0,23

OPTIMAL DISTRIBUTION

Brent	3,30%
Gold	36,90%
USD	63,10%
EUR	0,00%
GBP	0,00%
JPY	0,00%
CNY	0,00%



CONDITIONAL PROB

USD
MARKET INDEX
PROBABILITY 50,6%

Thursday, April 23, 2025

USD

Target

Target

Target

Target

Target

Target

Target



Baa2 = Grado medio superior

PREMIUM COL:

8.01(%)

BUDGET DEFICIT 25 (% of GDP):

5.6%

Crawling Bands: 16,8%



COLOMBIAN EXCHANGE RATE REGIME

Mini-devaluations (1967-1991)

Bands (91-99)

Floating Ex. Rate (1999....)



OPTIMAL DISTRIBUTION



CONDITIONAL PROB

USD	↑
MARKET INDEX	↓
PROBABILITY	50,6%

Tuesday, April 23, 2013
14:04:23

1

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PYRAMID DISTRIBUTION OS US EQUITY RETURNS: 1929-2024

Arithmetic Average Historical Return

1928-2024 11.79%

1975-2024 13.55%

2015-2024	14.11%
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[illegible]

RECCESION MODELS

