

Does Presidential Ideology Move the Economy? Evidence from Colombia, 1998–2025

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AUTHOR BIOGRAPHY

David Visbal and Samuel Pertuz are rising seniors at Marymount School Barranquilla. Both are accomplished mathematicians at the national level, Samuel having represented Colombia at the International Mathematical Olympiad. This shared quantitative foundation allowed them to approach the topic through complementary lenses: David through an economic-focused perspective—his intended field of study—and Samuel with his expertise in data, statistics, and programming, a field he plans to pursue further as well. Their research idea was born when they were looking for a way to understand how the upcoming Colombia presidential election could impact the future of Colombia's economy and attempting to find the economic benefits and drawbacks of each ideology.

ABSTRACT

This paper studies the extent of the effects that the ideology and radicality of a Colombian president has on the nation's economic indicators: specifically inflation and exchange rate. Using monthly data from Banco de la Republica and ideological survey scores from Latin American Parliamentary Elites Project (PELA-USAL), we constructed linear, polynomial, and XGBoost regression models alongside time series analyses to test these results. The results showed an especially strong negative correlation ($r = -0.68$) between a president's ideology score and the exchange rate, suggesting that right wing presidents are associated with a stronger valuation for the COP (Colombian peso), on average. However, XGBoost feature importance rankings show that the ideological variables measured are weak predictors relative to a lagged economic momentum. Finally, we extended our findings to a real-time test against Colombia's 2026 presidential election, to try to understand what could happen once the new president is elected.

Keywords: Colombia, political ideology, presidential elections, inflation, exchange rate, time series analysis, regression analysis, XGBoost, political economy, radicality, emerging markets, Colombian Peso.

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INTRODUCTION

Our investigation attempts to determine how much the radicality and ideology of a country's president can impact its economy. Using data from Banco de la República and survey results from the Elites Latinoamericana project conducted by the University of Salamanca (PELA-USAL), we analyzed the relationship between a president's position on the political spectrum and both Colombia's inflation rate and exchange rate (COP to USD). We used Python programming as an interface to process large amounts of data (~28 years' worth) and create models in order to find correlations and justify our results using mathematics and economics theory.

Assumptions in the models' constructions

First, we assume that the time period selected for this investigation is appropriate. We selected data from August 1998 to the end of 2025, recorded specifically in monthly intervals. Data before this time period was not used in an attempt to exclude a period in Colombia's economy where inflation was much higher due to various events that severely altered the Colombian economy. For example, previous to 1998, Colombia was substandard when tracking economic indicators; on top of that, various security threats, political instability, ideological manipulations through extortion and an emerging market in narcotics made Colombia's indicators and president's ideology deceitful. Hence, 1998 marks a year where the newly elected candidate had more room to influence with its ideology and impact the economy with enough information.

Secondly, we assume that the results obtained from the PELA (Parliamentary Elites of Latin America) provide an accurate proxy of a president's position on the political spectrum. PELA surveys are conducted on 18 Latin American countries' parliamentary members and legislators using stratified (layered) random sampling methods, applying strategies like weighting coefficients to ensure no party is overrepresented or underrepresented (PELA, 2025). Other studies have confirmed that their results are reliable, such as Saiegh (2009), which used PELA survey results passed through a scaling method to determine that a 'basic space' (a single dimension to measure ideology) exists, claiming that "survey data can be reliably used to locate legislators' ideological positions [...] in a manner analogous to [...] the U.S. Congress" (p.118).

Next, we assume that 'political ideology' is an unchanged dimension that remains constant throughout a president's term. Specifically, it is constant for the first three years of each term and then eases into the next term's baseline. Mathematically and economically, this is warranted. Firstly, predictive models meant to produce continuous values will struggle if only given a small set of discrete values on the y-axis, as in this case we are essentially temporally aggregating the data, which has been proven to create a "distorted view of parameters' values, lag structures and seasonal components," which can lead to "poor models and/or forecasts" (Pavía, 2010,

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p.449). Additionally, this more closely models real life as firms tend to adjust based on electoral uncertainty (Riem, 2016, p.2). In addition, throughout Colombian history, a president's preferred ideological policies aren't introduced until after the first year of the term has concluded. This can serve as a second surge in the "effect of ideology" as the aforementioned will inevitably wear off after the publicity of the presidential campaign stops.

We also assume that no external economic factors can influence ideology, and that markets do not re-evaluate a president's 'left-right' position and maintain only one fixed measurement, as it is very difficult for this measurement to be recorded in a periodic interval. Given that 'ideology' is highly subjective in nature, only methods such as surveys are applicable, which are often only conducted every 4 years. This reduces overall variability in our results and eliminates a possible factor for tendency but heavily simplifies the procedure.

Finally, we assume that external shocks are independent of the current president's political ideology, and that these events are equally likely to occur during any president's term. Essentially, we treat any external factors as mean-zero noise that does not affect the overall statistical measurements and features of our results. We acknowledge that this assumption may not hold properly given that many large and unique shocks such as the COVID-19 pandemic occurred during this time period, which can heavily influence results. Thus, such shocks will not serve as a main focus point when analyzing data, yet they will be considered when making conclusions.

BACKGROUND INFORMATION

Since the start of 1998, Colombia has gone through six different presidents and eight presidential terms. Colombia, with these presidents, has also gone through various changes in the political ideology spectrum. For example, in a PELA survey program ranking presidents from one through ten based on their ideology (one being extreme left and ten being extreme right), Alvaro Uribe obtained a score of 8.17/10, Gustavo Petro got 2.41/10, and Juan Manuel Santos had a score of 6.03/10 (according to survey results from a 1998-2002 period to a 2022-2026 period).

Nonetheless, the political spectrum isn't the only thing that has changed. During the past 27 years, Colombia has also endured changes in their economy, and has had to deal with crises such as the COVID-19 pandemic, the 1999 Colombian financial crisis, and effects from the 2007 US financial crisis. Still, when analyzing economic indicators such as inflation, there is a constant and relatively notable spike in the graph every four years. One of the more important changes every four years is the election of a new president, and when plotting the graphs, we realize that the spikes mostly concur with the election of the previously mentioned.

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TERMINOLOGY

Inflation rate: Defined as the rate at which prices increase over time, resulting in a fall in the purchasing value of money. In other words, it is the percentual increase in the general price level of goods and services in the economy.

Exchange rate: Defined as the value of one currency (COP) in terms of another type of currency. In this case, we use the term to refer to the TRM (*tasa real del mercado* or ‘representative market rate’), which is the exchange rate of COP to USD, measured in COP/USD.

Ideology: We defined a president’s ‘ideology’ score as a metric given based on a president’s position on the political spectrum. It is measured as a value from -10 to 10, where -10 represents extreme left and 10 represents extreme right, with 0 as the center. It is a conversion of the PELA score which is a score from 1 to 10, and is calculated as such:

$$I = \frac{20}{9} (S - 1) - 10$$

Radicality: We defined a president’s ‘radicality’ score as their deviation from 0 in their ideology score (which is equivalent to the absolute value of their ideology). It is meant to represent how radical they may be in their policies and actions regarding their side on the political spectrum.

Political Spectrum: A model used to classify political positions, parties, and ideologies, placing individuals and governments on a spectrum from left to right (in this case). Those on the left generally advocate for more social reform, equality, and government intervention in the economy, and those on the right generally want tradition, hierarchy, individual freedom, and reduced government intervention in the economy.

Coefficient of Determination: The coefficient of determination, fittingly, determines the proportion of the variance in a dependent variable Y that is explained by a statistical model based on an independent variable X (Enders, 2026). It is defined as:

$$R^2 = 1 - \frac{\sum (y_i - \hat{y}_i)^2}{\sum (y_i - \bar{y})^2}$$

where y_i , $\hat{y}_i$, and $\bar{y}$ represent the real and predicted values of Y and its mean. Higher values generally indicate greater representation of the training data, and a value of 1 is a perfect match.

Coefficient of Correlation: The coefficient of correlation describes the strength of the (often linear) relationship between two variables X and Y , expressed as a value between -1 and 1, where -1 is a perfect negative

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relationship and 1 is a perfect positive relationship ("Correlation coefficient review," n.d.). We used the Pearson correlation in this project, which is calculated as:

$$r = \frac{\sum(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum(x_i - \bar{x})^2 \sum(y_i - \bar{y})^2}}$$

Where x_i , y_i , $\bar{x}$, and $\bar{y}$ represent the real values of X and Y and their means.

SSE: SSE or 'sum of squared errors' is a common error metric used to evaluate statistical models. Its value is the sum of all the deviations of the predicted values from their corresponding real values, and thus a lower value is often more desirable. Mathematically, it is equal to

$$SSE = \sum(y_i - \hat{y}_i)^2$$

where y_i and $\hat{y}_i$ are the real and predicted values respectively. A perfect model would, for instance, yield a value of 0.

Time Series: A dataset with 'time' as the independent variable. Essentially, a dataset showing a variable's change over time.

Lag: A 'lag' of a time series is a series where each value is shifted n indexes backwards. For example, the first lag would be equivalent to having every data point shifted one month back.

Difference: A 'difference' of a time series is one where every value is subtracted with the one d indexes before it. Thus, the first difference would be the data set with each point being the difference between that one and the one before it.

Stationary Data: A time series is 'stationary' if its main statistical tendencies (mean and variance) are constant over time. This is not true, for example, if a trend is present.

DATA COLLECTION

We collected data from Banco de la República and the PELA surveys, transformed them, and compiled them into Table 1.

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Table 1

Sample of compiled dataset, 1998–2025

Date	Inflation (%/y)	Exchange Rate (COP/USD)	President	Survey Score	Ideology	Radicality	Ideological Change	I.C. (abs)
1998-08-01	18.94	1390.71	Andrés Pastrana	7.94	5.42	5.42	5.80	5.80
1998-09-01	17.80	1523.48	Andrés Pastrana	7.94	5.42	5.42	5.80	5.80
1998-10-01	17.09	1588.01	Andrés Pastrana	7.94	5.42	5.42	5.80	5.80
1998-11-01	16.35	1562.16	Andrés Pastrana	7.94	5.42	5.42	5.80	5.80
1998-12-01	16.70	1520.48	Andrés Pastrana	7.94	5.42	5.42	5.80	5.80
...	...	...	...	...	...	...	...	...
2025-09-01	5.10	4018.41	Gustavo Petro	2.41	-6.87	6.87	-12.96	12.96

Note. *Ideology, Radicality, Ideological Change, and I.C. (abs) are derived from PELA-USAL survey scores; inflation and exchange rate values are from Banco de la República. Created by authors, 2026.*

Ideological Change (I.C.) was calculated as the difference between the ideology of the previous term and the current term (data for PELA surveys before 1998 was available). Specifically, all of this data was stored in a monthly format and any data that was not recorded in this way was transformed by taking the average of sub-intervals (contained within the monthly period) or filling in missing values with the previous valid entry.

We will be analyzing the relationship between the ‘presidency’ statistics and both the inflation and exchange rates. By the ‘presidency’ data, we mean ideology, radicality, and IC. We will compare them 1:1 and generate conclusions from each comparison. It is important to note that the PELA Survey’s information contains numbers from 0 to 10. We use this information as a base for our model that modifies the rating so that it fits a scale from -10 to 10. For example, a PELA score of 5/10 is the same as a score of 0 in our model.

INDEPENDENT VARIABLES

Ideology: A number from -10 to 10 representing a president’s position on the left-right political spectrum (-10 being full left, 10 being full right, and 0 being neutral). Its domain is $[-10, 10]$.

Radicality: The absolute value of the ideology score, representing a president’s deviation from the center of the spectrum. Its domain is $[0, 10]$.

Ideological Change: The difference between the last term’s ideology and the current one, meant to show the intensity and direction of the change. Its domain is $[-20, 20]$.

I.C. (abs): The absolute value of the ideological change, a value meant only to isolate the intensity of the change between presidents. Its domain is $[0, 20]$.

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DEPENDENT VARIABLES

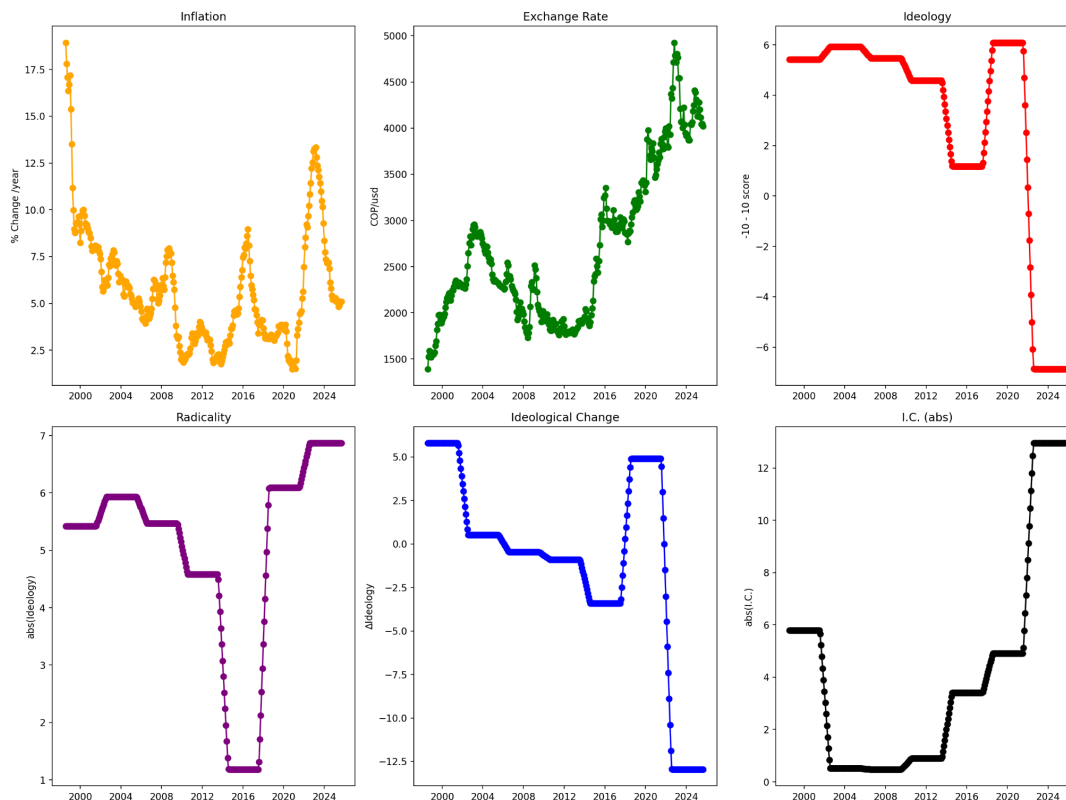
Inflation Rate: Measured in percent change per year, as in the percentage change in the relative price level per year. It has a range of $(-\infty, \infty)$.

Exchange Rate: Measured in COP/USD; represents the value of the Colombian peso relative to the US dollar (though, in this case, a higher exchange rate indicates a lower relative value for the peso). It has a range of $[0, \infty)$.

ANALYSIS OF RESULTS

Figure 1

Time series of all variables, August 1998 – 2025



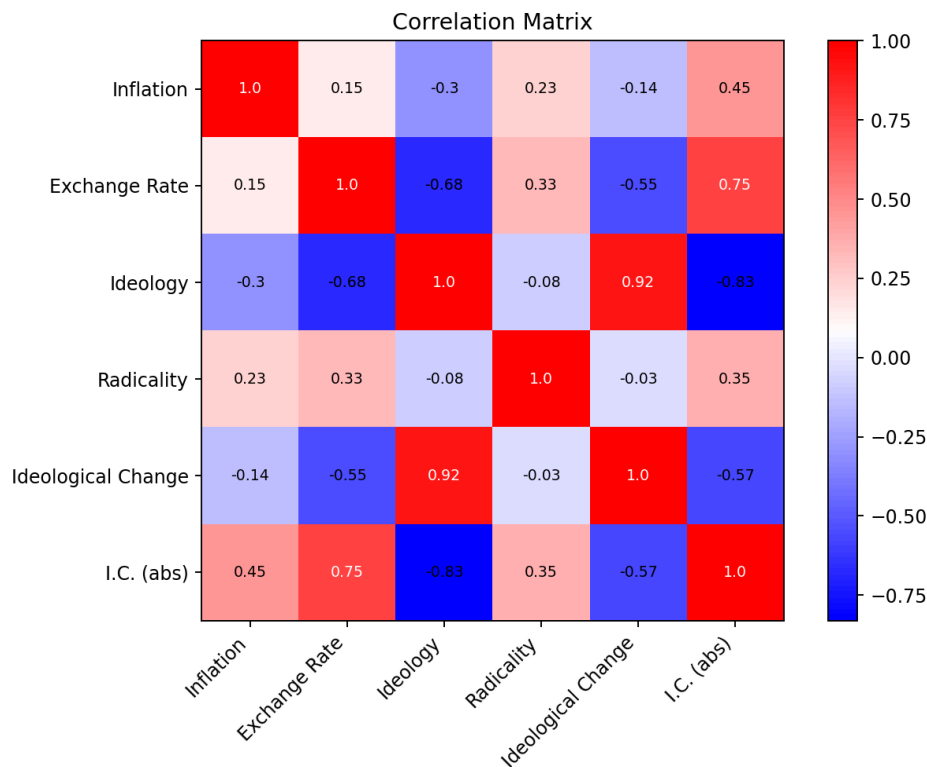
Note. The graph illustrates data that was extracted from Banco de la Republica discussing inflation and exchange rate data with the PELA-USAL (for data about political ideology). Created by authors, 2026.

The graphs from Figure 1 immediately suggest possible conjectures for our data. Specifically, it appears that the inflation rate data presents a ‘hilly’ structure, rising and falling in a cycle of 4 years. Additionally, several relationships are suggested such as a possible positive relationship between I.C. (abs) and the exchange rate, given that more spikes appear in the exchange rate at high values of I.C. (abs).

CORRELATIONS

Table 2

Pearson correlation matrix



Note. Values are Pearson's correlation matrix calculated across all monthly observations, August 1998–2025. Created by authors, 2026.

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Relationships between pairs of ‘presidency’ variables can be ignored as they are all derived from each other. We only want to consider the relationships that include inflation and exchange rate paired with one of the other ‘presidency’ variables.

Inflation and I.C. (abs)

The r -value of 0.45 between these two variables states that they have a noticeable positive relationship. This suggests that large changes in ideology between presidencies (e.g., moving from a far-right to a far-left president) cause inflation to rise. This data is evidenced in the graph, as a large spike in inflation is visible after Gustavo Petro entered office following Iván Duque (concurring with the largest spike in IC). This makes sense as a big shift in ideology is likely to create uncertainty which can cause individuals and firms to distrust its currency (and, more specifically, larger firms that hold lots of assets in COP). Additionally, a very different government might undo, change, or override policies imposed by the previous one, which can create large corrections in prices as subsidies and price controls are removed, for instance, which can have a similar effect.

Exchange rate and I.C. (abs)

The r -value of 0.75 between these variables tells us that they have a positive relationship slightly stronger than the previous one. This relationship was suggested by the previous point as distrust in a currency directly affects its exchange rate (a higher exchange rate in this case means a lower value for the currency). This means that with a larger change in ideology the countries’ currency will lose its value. As discussed previously, the uncertainty of the Colombian Peso amidst a high ideological change will cause investors to flee to a stronger currency.

Inflation and Ideology

The r -value of -0.3 shows us that the relationship between them is subtle yet noticeable. It suggests that left-winged presidents tend to cause stronger increases in inflation, but that this factor is not a very good predictor. This is evident in the graph as many spikes in inflation happen during both left and right-winged terms (but slightly more occur during left-winged ones).

Exchange rate and Ideology

The r -value of -0.68 suggests that there is a strong negative relationship between these two variables, essentially saying that left-winged presidencies lead to devaluation in Colombia’s currency. This is interesting as it suggests that Colombian citizens (and possibly the international community as well) hold more trust in

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right-winged governments than in left-winged ones, which is visible historically. This is further supported by the fact that the relationship between exchange rate and Ideological Change is -0.42 , which suggests that large changes towards further-left governments devalue the currency. This suggests that in Colombia there might be a general distrust against left-winged governments, particularly from major asset holders and firms. It is possible to understand this as Colombia's most common exporter for the past few years has been the United States of America, accounting for 30% of total exports (Observatory of Economics, 2026), who, in turn, are a right-dominant nation. Also, it is logical given that these individuals and companies above the median income and wealth do not benefit from wealth redistribution since any increase in this will result in resources being moved down (Meltzer & Richard, 1981). Since leftist governments tend to advocate for more redistribution (among other policies that increase government intervention), large asset holders can be expected to not agree with their policies.

Inflation, Exchange rate, and Radicality

Both r -values in this case are positive and relatively low (0.23, 0.33), suggesting that more radical governments have a slight yet noticeable tendency to increase these factors, but that the change of side (left to right or the opposite) has a greater effect, as evidenced by the previous higher r -values (at least for the exchange rate).

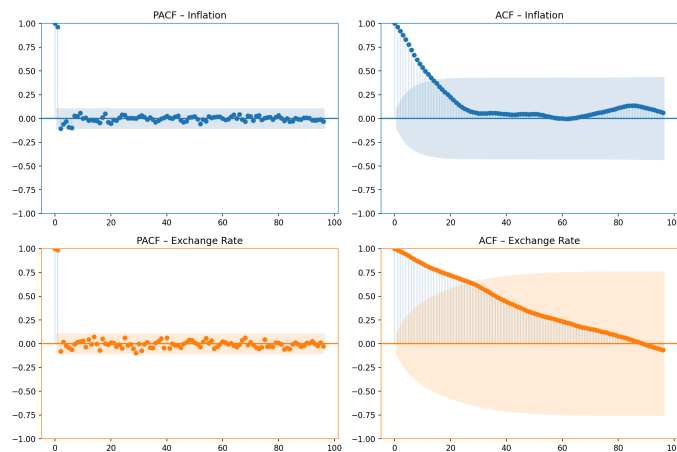
Structure and Seasonality

Next, we want to determine if our time series data exhibits a 4-year seasonal cycle. To do this, we utilized the autocorrelation function (ACF) and partial autocorrelation function (PACF) which plot the correlation of a time series with its n th lag for each n as a value from -1 to 1 . The partial autocorrelation particularly uses multivariable linear regression to eliminate the effects of previous lags to isolate the effect of the given lag:

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Figure 2

ACF and PACF prior to differencing

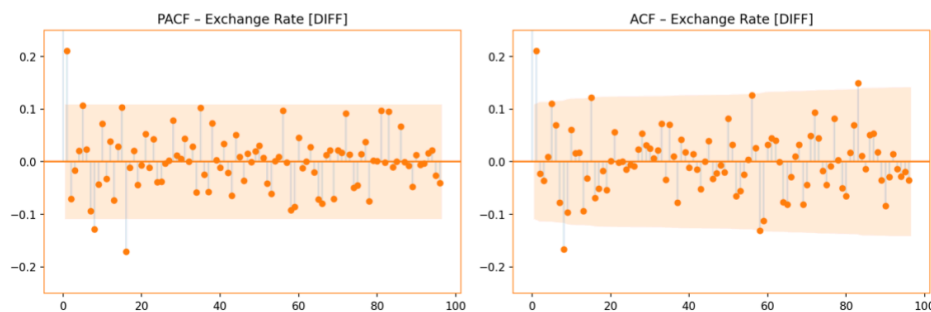


Note. Graphs show ACF and PACF for inflation and exchange rate. Created by authors, 2026.

No statistical significance above the given threshold is observed for either graph. A possible method to find any underlying recurrence would be to remove the trend and isolate potential seasonality (periodic behavior). To do this, we must first difference the data (at an order of $d=1$) to eliminate any sort of linear trend, since it removes a possible gradient in the data (the difference between any n -consecutive values in a linear function is a constant value). Doing this will allow us to isolate the impact of specific lags. However, this is only viable for our exchange rate data as the inflation rate presents no significant trend after conducting an ADF test (with $p < 0.05$).

Figure 3

ACF and PACF after first-order differencing



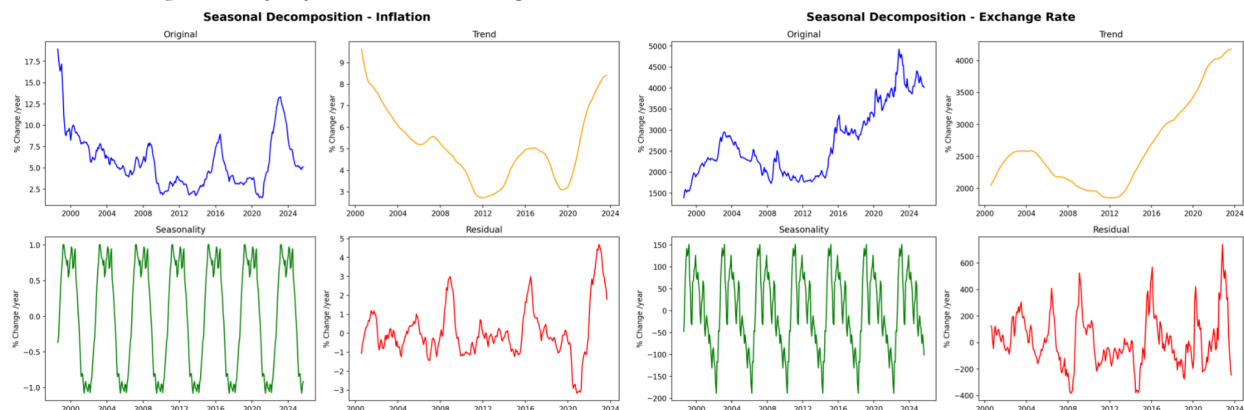
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Note. Graph shows ACF and PACF, for exchange rate, after first-order differencing to remove linear trend. Created by authors, 2026.

No significant spike around the 48-month lag is observed for these graphs, either (one is visible in the ACF graph, suggesting a possibly minimal correlation, yet it is below our region of significance). Interestingly, a spike near the 12 month lag is visible, which may be a consequence of minimum wage and other highly relevant indexed prices being set on January 1st of each year. However, noting that we still expect the 48-month lag to hold *some* predictive relevance, we perform a seasonal decomposition of both series to support our current results:

Figure 4

Seasonal decomposition of inflation and exchange rate series



Note. Graphs show 3-component decompositions of inflation and exchange rate time series into their trend, seasonality, and residual. Created by authors, 2026.

The above decompositions were performed using a 48-month periodicity. The *trend* component models the overall trend of the series, separated from external shocks, the *seasonal* component models cyclic behavior in the series in the specified period, and the *residual* component shows the remaining difference which was not modelled by the previous two components (typically related to external shocks). It is important to note that results yielded by the seasonal component may not be fully representative of the series' true behavior if the period is not obviously significant as common algorithms may force a periodic component out of nothing.

Taking these considerations into account, however, it is clear that the seasonal component suggested by the algorithm is not immediately insignificant. For both series, it was modelled to account for up to 1% and 150 COP in inflation and exchange rate respectively. However, these new findings also support our previous results:

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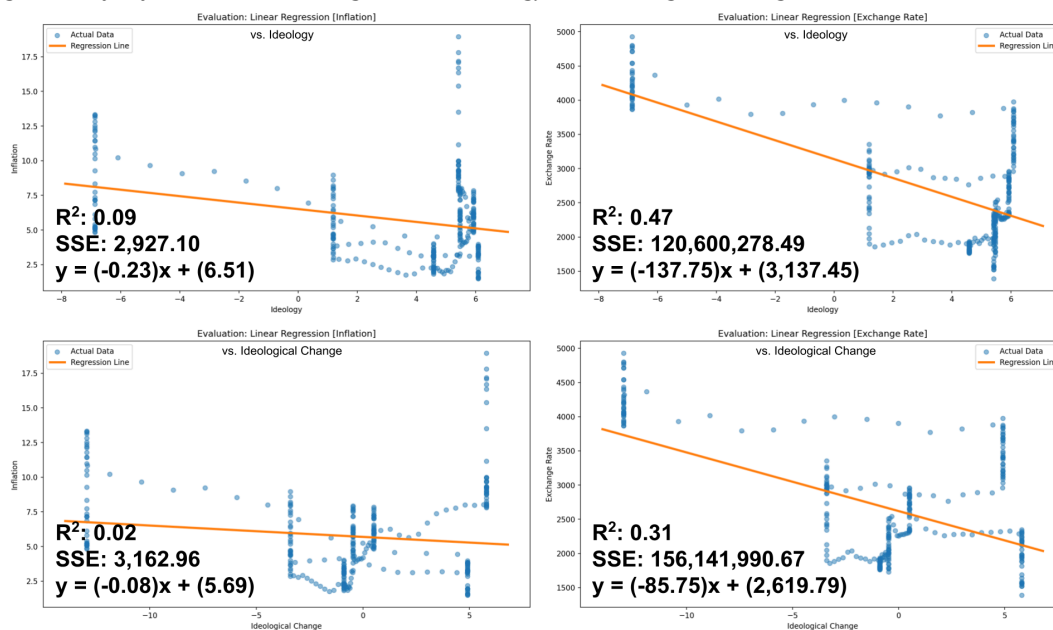
analyzing the residual graphs, these yield standard deviations of 1.4% and 195.9 COP respectively. On average, this suggests that external shocks account for greater variation in these economic variables than a 4-year cycle, a similar result to that of the previous ACF and PACF graphs, which suggest that any recurrence pattern in this period may be weak.

REGRESSION MODELS

In order to determine the correlation between these variables, we also employed various statistical models. We used these mainly to support the results yielded by the previous analyses with the patterns found by our models.

Figure 5

Linear regression of inflation and exchange rate vs. ideology and ideological change



Note. Diagrams that evaluate linear regression of inflation and exchange rate vs. ideology and ideological change. Regression lines fit using ordinary least squares on the full dataset. Created by authors, 2026

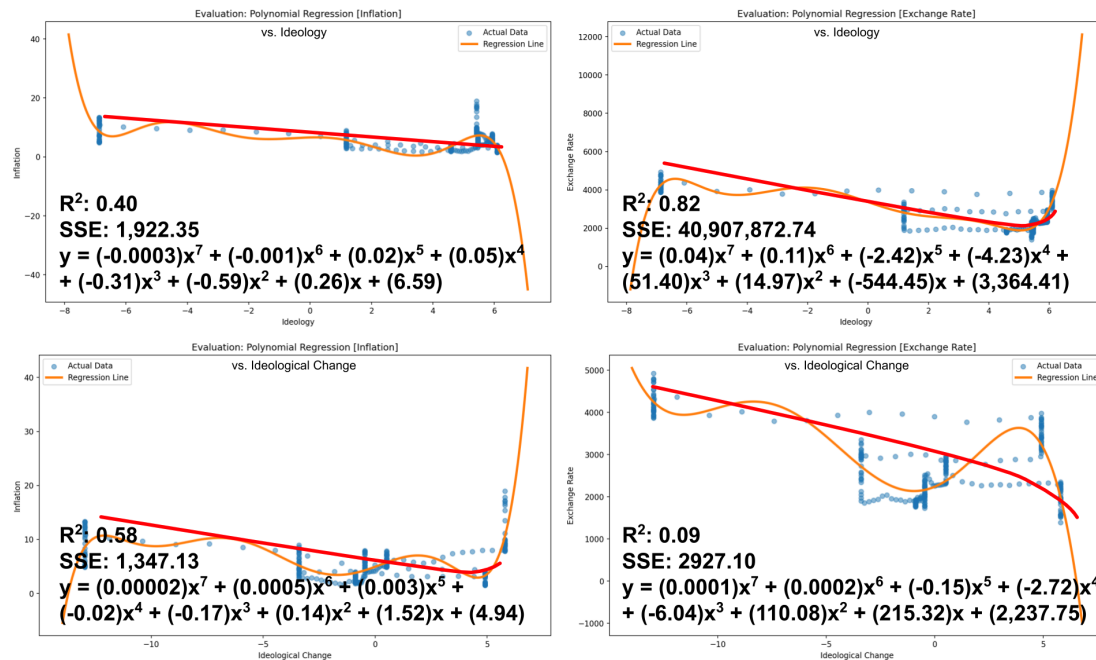
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Linear Regression

Linear ‘least squares’ regression was used, a regression model where the best possible linear function is determined by minimizing the sum of squared errors (deviations from true values). It yielded the results shown in Figure 5.

Figure 6

Polynomial regression (degree 5)

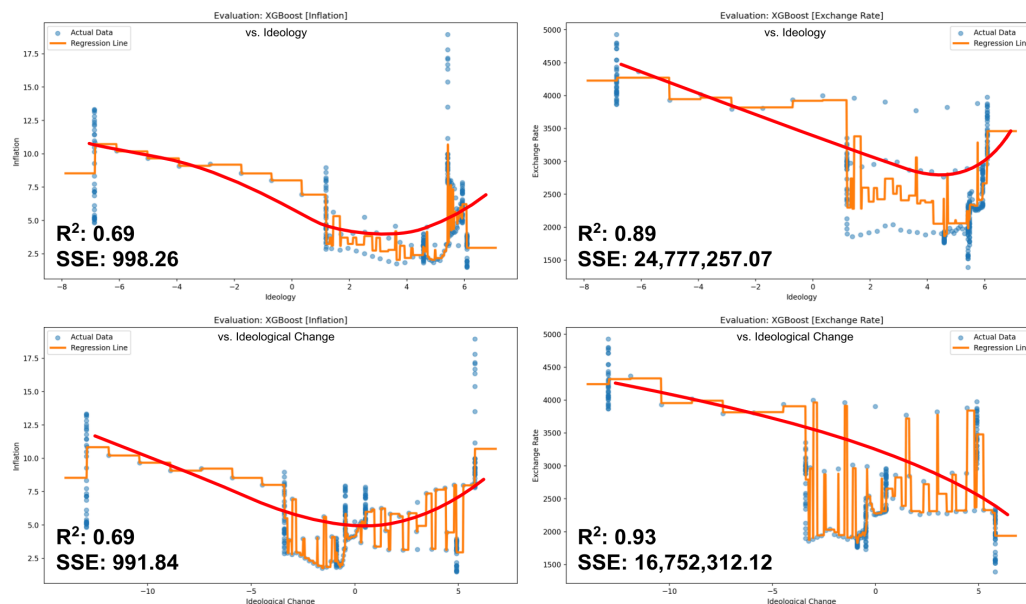


Note. Polynomial regression (Degree 5). Curves fit using a degree-5 polynomial optimized to minimize SSE. Reporting R^2 , SSE and polynomial formulae. Created by author, 2026.

Polynomial Regression (Degree 5)

A quintic polynomial optimized to minimize the sum of squared errors (SSE) was implemented similarly to linear regression. It produced the results shown in Figure 6.

Figure 7
XGBoost regression



Note. XGBoost regression with curves produced using an XGBoost regressor; R^2 and SSE reported per panel. Created by author, 2026.

Extreme Gradient Boosting Regression (XGBoost)

This regression method works by running a recursive algorithm in which the computer attempts to divide the data into 'groups' based on their variance with the mean and creates a function assigning the group's mean to each point in the group. The function then is autocorrected several times by dividing the groups into further groups, improving the function's specificity.

SSE

To calculate the SSE, we compiled the predicted values from each model and calculated the squared error for each one compared to the real values. We then added them all to obtain the SSE. An example is shown in table 3, but in practice the calculations were performed by a Python algorithm since our dataset contains over 300 rows of entries.

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Table 3
Sample SSE calculation

Ideology	Inflation (%/y)	Predicted Inflation ($y = -0.23x + 6.51$)	Error (pred - real)	Squared Error
5.42	18.94	5.26	-13.68	187.05
5.42	17.80	5.26	-12.54	157.17
5.42	17.09	5.26	-11.83	139.87
5.42	16.35	5.26	-11.09	122.91
5.42	16.70	5.26	-11.44	130.80
...	...	...	...	...
-6.87	5.10	8.09	2.99	8.94
			SSE	2927.10

Note. Table based on the linear regression of inflation on ideology shown in Figure 5 ($y = -0.23x + 6.51$). Full SSE values for all models were computed in Python. Created by author, 2026.

“Error” was calculated as $\text{inflation}_{\text{real}} - \text{inflation}_{\text{predicted}}$ and those were all squared and added together to obtain the SSE. This was done for all following models as well.

We can confirm mathematically that most of these models are decently reliable. This is because most of our data is condensed into single X values (since factors like Ideology and IC do not change for 3 years at a time), so 75% of the data is impossible to perfectly fit.

Now, to analyze the shape: note that all of these models (except possibly the linear ones) exhibit similar curves. In particular, the models comparing Ideology and IC with inflation showcase a clear upwards-facing parabolic curve (with its vertex slightly towards the right side) and those comparing the exchange rate with these variables show obvious downward curves. This supports our previous conclusions regarding correlations given that the relationship between inflation, exchange rate, and these variables was shown to be mainly negative (except for the one between inflation and IC, which is near 0 showing why the parabola’s vertex is near 0). Moreover, the parabolic structure for the inflation models is logical given that our relationships showed that inflation rose as IC (abs) increased, so we should expect it to increase outwards from 0.

TIME SERIES REGRESSION

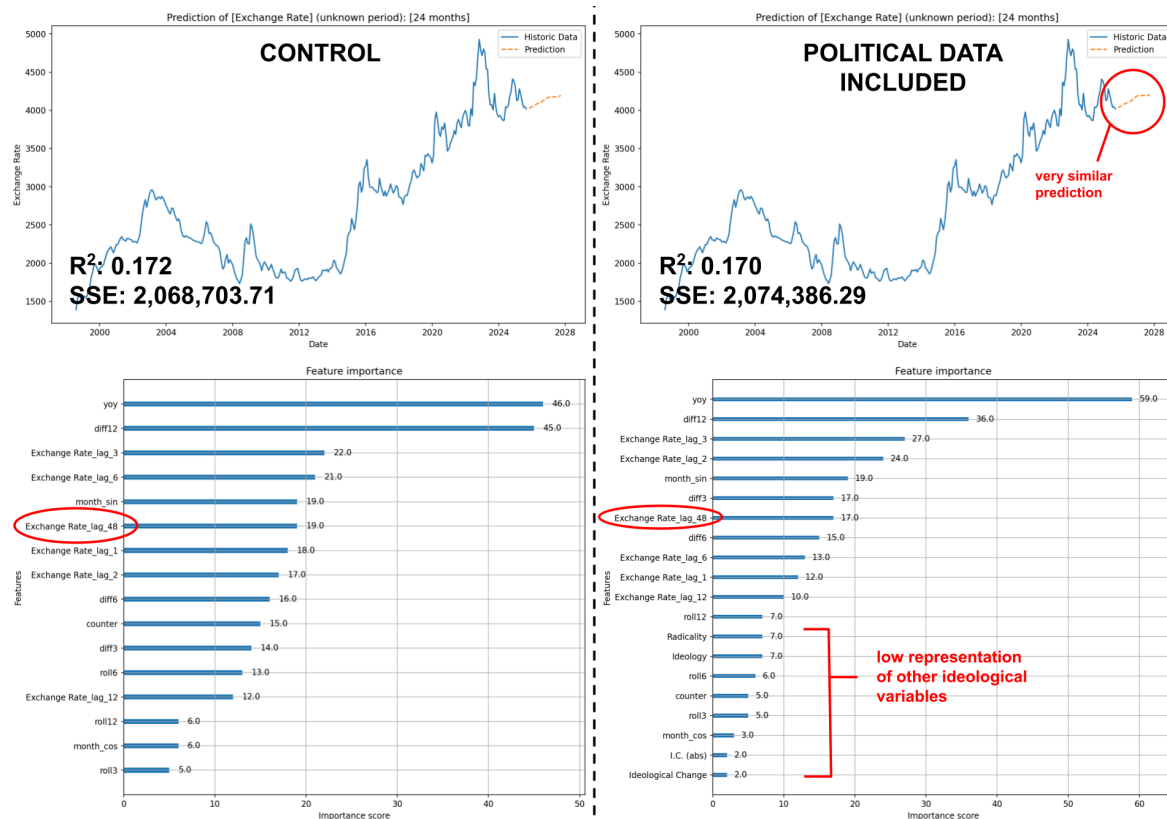
Finally, we will confirm our previous findings by analyzing the time series data for both of our economic factors to build a time series prediction model. In particular, we used an XGBoost regression model as one of its built-in features is observing the ‘importance’ of each variable in its prediction (as the points where it decides to ‘split’ the data rely on each provided data column). In particular, we trained our model to take into

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account previous lags (1, 2, 3, 6, 12, and 48 months prior), the averages of previous sets of months, the difference of the previous two elements (to represent momentum or slope), and to recognize the differences between months. Additionally, we trained every model once more to take into account our political factors. Our results are shown in Figure 8.

Figure 8

Inflation time-series prediction and feature importance, with and without political variables



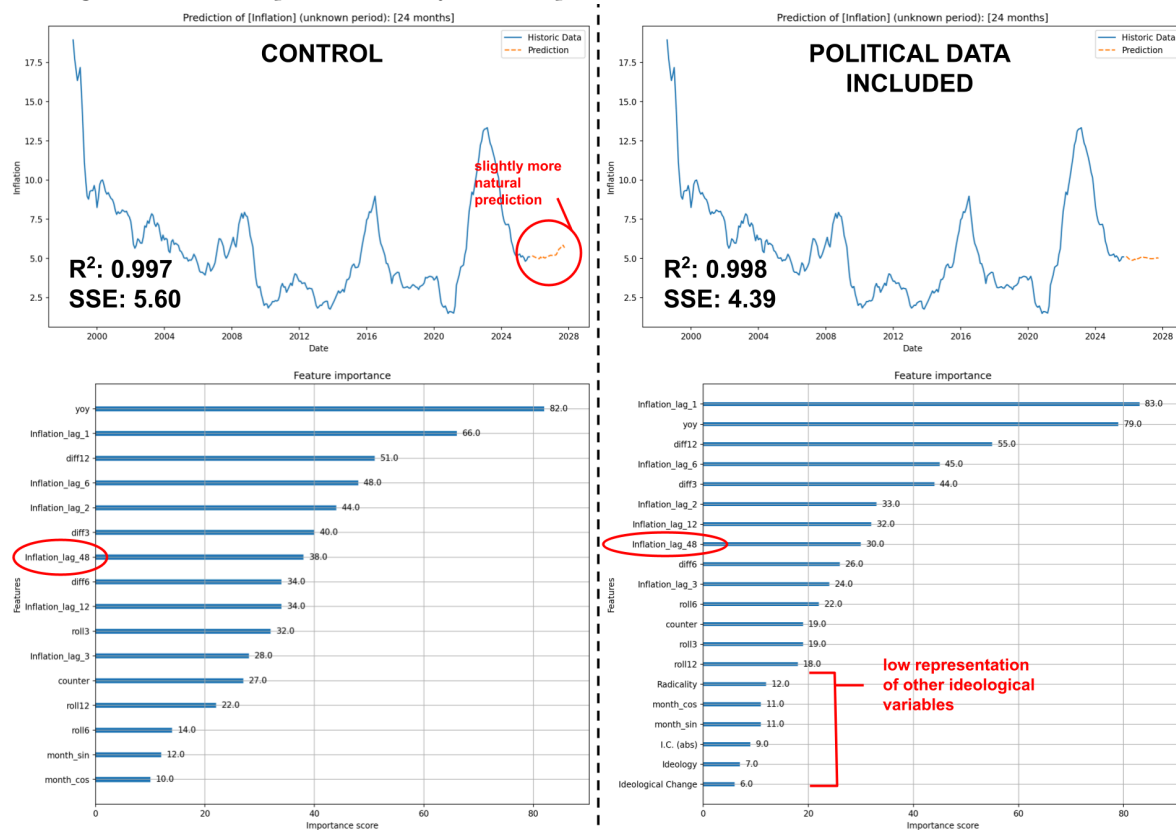
Note. Graph illustrates inflation time-series prediction and feature importance, with and without political variables. Annotated in red at the top right corner shows how both show a similar prediction for the next 24 months, regardless if political data is included. The bottom annotation illustrates low representation in the feature importance of the ideological variables tested. Exchange rate lag is also encircled in red. The results for the exchange rate models should be interpreted with caution. These models were trained on a first-differenced ($d = 1$). Because

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first differences are substantially noisier than the original series, lower R^2 values are expected than when modeling the level of the exchange rate. Created by authors, 2026.

Figure 9

Exchange rate time-series prediction and feature importance



Note. Both panels use the same lag/rolling-average feature set described in the text. Red annotations added by the author to highlight the lag-48 feature and the low importance of the ideological variables. Also top left annotation to show how the graph labelled 'control' had a more natural prediction than the graph with label 'political data included'. Created by authors, 2026.

There are some conclusions that can be drawn from this data. Firstly, it is clear that the ideological variables we defined are not good predictors of inflation or exchange rate, since they are listed near the bottom of the algorithm's list of strongest predictors. This is also supported by the fact that they do appear to have a positive effect on the R^2 value.

On the other hand, our theory of a 4-year period is somewhat supported by this data. Each respective indicator's 48th lag is consistently in the top half of strongest predictors, proving that the series' value 4 years prior has a non-negligible effect on its current value. At the same time, it is apparent that, similar to our previous results, the effect of this 48th lag is not particularly strong, either, and variables like year-over-year percentages and shorter-term lags are better predictors. The fact that our ideological variables did not function as accurate predictors could also be a consequence of our assumption that they remain constant for 3 years at a time. If these variables are unchanging for long periods of time, they are unable to account for random noise that other, more variable data points are associated with. This heavily limits the potential influence of these data columns.

EVALUATION AND REFLECTION

Our research aimed to determine how much the radicality and ideology of a country's president can impact its economy. Three findings stand out. First, we found that economically, the time series data for inflation and exchange rate show signs of having a very mild 4-year periodic effect. Given that this spike aligns with the elections of each presidential candidate, it is possible to infer that the selection tends to provoke a spike in this economic indicator, though not very pronounced. Yet, which president will make the largest/smallest spike? Second, we found there to be a strong inverse correlation between the exchange rate and the presidential ideology ($r=-0.68$). This means that a president with a negative ideology score (left-wing) will tend to provoke an increase in the exchange rate (which is detrimental for the local currency). Alternatively, a president with a positive ideology score (right-wing) will make the exchange rate lower on average. This same metric applies to inflation, but the correlation is much weaker. Third, the magnitude of the change in the ideology score also provokes an impact on economic indicators. We found out that aggressive changes in the president's ideology, for example, from Ivan Duque (6.09) to Gustavo Petro (-6.87), worsened the economic indicators more than mild ideological changes, such as the reelection of Alvaro Uribe, whose score changed 5.47 in comparison to his first term. Nevertheless, it is important to note that during the analysis, we realized that Colombia does not show a substantial correlation with the radicality of the president.

The most proven source of limitation in our study was a heavy influence from external events. Such factors like the COVID-19 pandemic and sudden devaluations of the currency in years like 2016 (PwC, 2016) could have possibly skewed our results against certain presidents and ideologies, given that many of these factors were out of their control. More recently, economic depreciation of the US Dollar (USD) in the past months of 2026, may have also proved to be an external shock that impacted results such as exchange rate.

Colombia's 2026 presidential elections offered a natural test to the model we created. The winner of the election, Abelardo de la Espriella, was the far right candidate with strong appeal to foreign investors and countries such as the United States of America. The election results ended in a margin of 1% difference of votes

between both candidates, but a look at the model could have helped us predict the possible outcomes of both candidates. Previous president Gustavo Petro leaves office with an ideological score of -6.87, with his deemed successor losing against De la Espriella in the recent elections. This “extreme” ideological shift will possibly exude an increase in economic indicators such as inflation and exchange rate, but it will most likely be minimal due to the data gathered above. In fact, the right-leaning ideology might benefit Colombia’s indicators heavily due to strategic alignments with their largest exporter. Nevertheless, given the current geopolitical conflict in which the United States has enmeshed itself, a devaluation/weakening of the strategic ally that the right-leaning ideology has could also prove to provide setbacks in De la Espriella’s first presidential term.

In the months following the transition, it is worth noting that Colombia has suffered some unconventional economic changes compared to our model. First, the predicted inflation rate from our model was similar to real life inflation in the country. Specifically it rose to 6.05%, very similar to that shown on our model (Banco de la Republica, 2026). The exchange rate, however, moved opposite to what was expected. Still, this doesn’t undermine the ideology-exchange rate relationship so much as exposes the limits during times of transition. Coming off of years with a high inflation rate and low productivity scores due to the past government, the Colombian Peso (COP) evaluation follows no correlation with its established metrics. This sudden change was not picked up by our model and proves to be an obscurity worth taking note of nearing the end of 2026. An additional step would be to bring investor confidence indexes alongside these ideology scores to compare the effect foreign investors might have on exchange rates. This could narrow down the large portion of the changes in both indicators that were accounted for as external shocks.

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