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Impact of Institutional Quality on the Effectiveness of Monetary and Fiscal Policies in Peru Between 2005 and 2020

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Abstract

This study examines how institutional quality (measured by the ICRG and POLCON indices) impacts the effectiveness of monetary and fiscal policies in Peru between 2005 and 2020. Specifically, a Taylor-style monetary policy rule and a fiscal reaction function are jointly estimated, each augmented with an interaction between the output gap and the institutional quality measures. Moreover, the models incorporate inflation, exchange rate, and terms-of-trade gaps, alongside instrument lags and dummy variables. Monthly financial data come from the Central Reserve Bank of Peru, whereas ICRG and POLCON are annualized via Ecotrim. The equations are then estimated using the Generalized Method of Moments (GMM) to address potential endogeneity through lagged instruments. As a result, critical quality thresholds emerge (POLCON ≈ 0.86 for both rules, ICRG ≈ 72 in the Taylor framework, and ICRG ≈ 68 in the fiscal model) that distinguish procyclical from countercyclical regimes. Additionally, the interest-rate gap exhibits high persistence (exceeding 0.93), while the real-expenditure gap persists around 0.30. Furthermore, inflation, exchange rate, and terms-of-trade gaps significantly influence both policy instruments, and dummy variables capture the structural impacts of banking and fiscal reforms. In conclusion, strong institutional quality enhances the autonomy and credibility of both the Central Bank and fiscal authorities, thereby enabling countercyclical measures that stabilize economic fluctuations; conversely, periods of weak institutional frameworks in the 1980s and 1990s constrained such policy effectiveness. Finally, deepening institutional independence, transparency, and oversight is recommended to strengthen countercyclical policy, reduce macroeconomic volatility, and bolster economic agents' confidence.

Keywords: Fiscal policy, GMM estimation, institutional quality, monetary policy, terms of trade.

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1. Introduction

Institutional quality, understood as the set of norms, rules, and procedures governing the functioning of public and private institutions in a country, plays a crucial role in economic and social development. It is a determining factor in a country's economic and social development, influencing political stability, the confidence of economic agents, and the effectiveness of public policies. It directly impacts the ability of economic policymakers to adopt countercyclical or procyclical measures, depending on the robustness of the institutions. Various authors have analyzed how the strength of public and private institutions influences the implementation and outcomes of economic policies. It has been observed that a threshold of institutional quality determines contexts of acyclicality, procyclicality, or countercyclicality of monetary and fiscal policies, making it essential to strengthen institutions to ensure greater stability and better responsiveness to economic fluctuations.

Regarding the above, institutional quality influences the implementation of countercyclical macroeconomic policies, highlighting that countries with strong institutions tend to adopt countercyclical monetary and fiscal policies to stabilize the economy during economic cycles [1]. In contrast, good institutions, especially those that protect property rights, are fundamental for economic growth and the effectiveness of monetary and fiscal policies [2]. On the other hand, weak institutions can lead to greater economic volatility and slower growth, making it necessary to have strong institutions to achieve higher economic growth and stability [3]. From another perspective, the quality of political institutions significantly impacts policy choices and economic outcomes [4]. Consistent with the above, political stability, the confidence of economic agents, and the capacity to implement effective policies are affected by a country's institutional quality: strong institutions are associated with greater stability and better economic outcomes, while weak institutions can create uncertainty and lower policy effectiveness, hindering the implementation of effective and transparent policies.

In the realm of monetary policy, it is highlighted that higher institutional quality can improve the credibility of the central bank and the effectiveness of measures to control inflation and maintain economic stability. Regarding fiscal policy, institutional quality plays a crucial role in the implementation of effective and transparent fiscal measures, impacting economic stabilization and long-term growth. It should be noted that procyclical monetary or fiscal policies can be associated with a country's institutional quality, where weak institutions tend to favor such policies.

In this context, the present study proposes to analyze the effect of institutional quality on the effectiveness of monetary and fiscal policies in Peru between 2005 and 2020; it seeks to identify how institutional quality affects the implementation and outcomes of economic policies in Peru. The analysis will focus on key variables such as the interest rate (a monetary policy instrument), the non-financial expenditure of the general government (a fiscal policy instrument), the Institutional Quality Index (ICRG), and the Political Constraint Index (POLCON), among other influential factors.

2. Literature Review

Regarding policy actions, maintaining the credibility of economic policies in monetary and fiscal decision-making is important to improve economic performance [5, 6] although institutional quality is not directly addressed, it can be inferred that the author considers that policy rules have advantages over discretion in improving economic performance, which implies the importance of having strong and credible institutions to effectively implement and maintain these rules. On the other hand, for open economies, the classification of monetary policy regimes often depends on the degree of instrument adjustment and the degree of wage persistence, two often overlooked factors [7]. From another perspective, fiscal policy is often procyclical in many developing countries due to the political agency problem; the institutional environment is important for economic growth [8].

In contrast, weak institutions can lead to greater economic volatility and slower growth; distorted macroeconomic policies, such as high inflation rates and overvalued exchange rates, are more symptoms of underlying institutional problems than the main causes of economic volatility [3]. Similarly, institutional quality, such as transparency and accountability, can affect the effectiveness of economic policies: higher institutional quality can improve the credibility of the central bank and, therefore, increase the effectiveness of the tools used to control inflation and the money supply; higher institutional quality can enhance the efficiency of public spending and reduce corruption [9]. In the same vein, in emerging and developing economies, there is a tendency to have procyclical or, at best, acyclical monetary policies and greater volatility in output and interest rates, which may be related to the institutional quality of these countries: institutional quality is related to how central banks design and implement their monetary policies; countries with weaker institutional quality tend to have procyclical monetary policies, meaning that monetary authorities tend to raise interest rates during economic expansions and lower them during recessions (this can contribute to greater volatility in output and interest rates); countries with stronger institutional quality tend to have more countercyclical monetary policies and less volatility in output and interest rates [10]. Similarly, institutional quality influences the cyclicality of macroeconomic intervention policies, with its impact being more pronounced in monetary policy and less pronounced in fiscal policy [11].

From another perspective, both monetary and fiscal policy tend to be countercyclical in countries with high institutional quality and are used to stabilize economic cycle fluctuations, but tend to be procyclical in countries with low institutional quality, amplifying economic cycle fluctuations [12]. Similarly, there is a relationship between institutional quality and the ability to implement countercyclical macroeconomic policies: countries with stronger institutions are more likely to implement countercyclical monetary or fiscal policies (seeking to stabilize the economy during periods of recession or expansion), but those with weaker institutions tend to adopt procyclical policies (amplifying economic fluctuations); strong institutions provide a stable and reliable framework that allows policymakers to make countercyclical decisions, while weak institutions limit their ability to do so [1].

From another perspective, institutional quality drives economic progress by creating a conducive environment for technological change and the adoption of innovations [13]. Good institutions, particularly those that protect property rights,

limit the power of politicians, and promote equal opportunities, are fundamental for economic growth; moreover, institutional quality can affect the effectiveness of monetary and fiscal policies, making them more effective in countries with strong and reliable institutions [2]. In the same perspective, institutions play a crucial role in economic development, but their impact is not uniform across countries and contexts; endogenous institutions (those that emerge internally in a given context) are fundamental to understanding how institutions form and evolve and how they influence the behavior of economic agents; inclusive institutions (those that promote cooperation and participation by all) are usually associated with higher long-term growth [14].

From another approach, economic institutions tend to be better in countries that are more open to trade, investment, and financial flows and that do not have significant natural resources; stronger economic institutions (regarding the rule of law and a favorable business climate) enable countries to attract investment and participate in trade more efficiently, which can, in turn, have a positive impact on fiscal policies [15]. Similarly, institutional quality positively affects economic growth by improving both the capital-output ratio and the average level of human capital; moreover, a certain level of development is necessary for poor countries to improve their institutions [16]. From a similar perspective, institutional quality matters in the implementation of countercyclical policies, where strong institutions can help reduce the procyclicality of fiscal policies and thus promote countercyclical policies; additionally, the effectiveness of fiscal rules and autonomy depends on the constitutional structure of the government [17]. In contrast, democracy can improve the quality of economic institutions, and this positive effect is greater in countries with a higher level of human capital; the transition from autocracy to democracy is associated with an improvement in the quality of economic institutions [18].

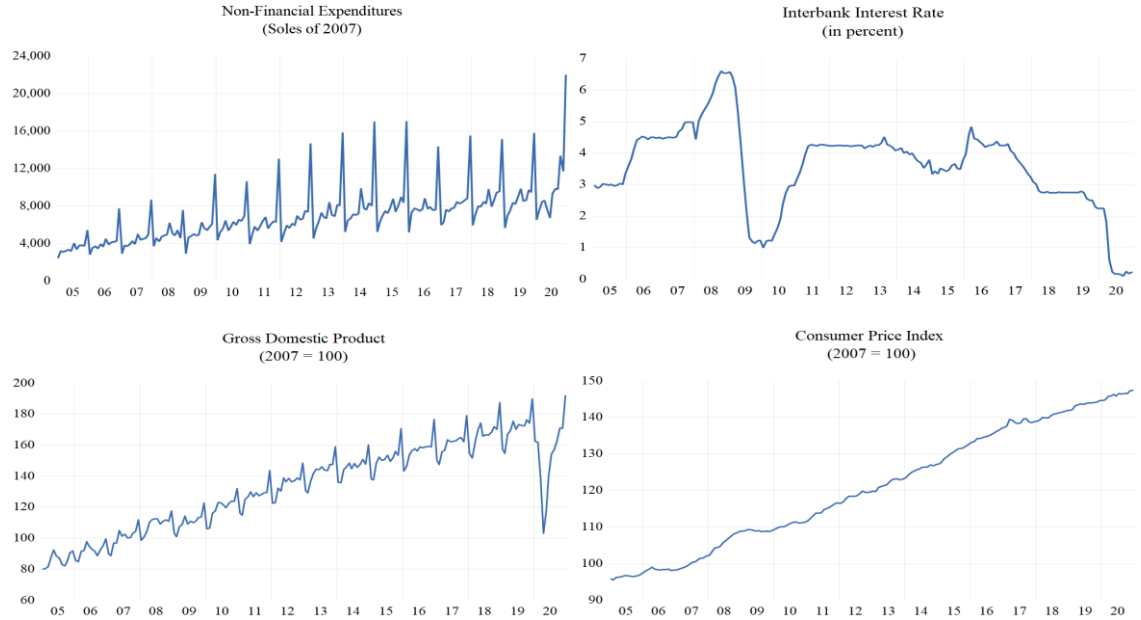
In another context, institutional quality has a significant impact on growth in these low-income and lower-middle-income countries, but there is no clear causal relationship between institutional quality and government spending; institutional quality is a key factor for growth in those countries, and institutional reforms are needed to improve governance and the effectiveness of public spending [19]. Likewise, transitioning countries show the impact of institutional quality on their public debt [20].

3. Data, Model and Estimation Technique

3.1. Data

3.1.1. Measurement of Variables

In the analysis carried out, information on non-financial expenditures (g_t), interbank interest rate (r_t, similar to the policy rule rate), gross domestic product (y_t, GDP), consumer price index (p_t, CPI), interbank exchange rate in dollars (e_t), inflation (π_t, in monthly variation), ICRG (I_t) and POLCON (I_t), as well as terms of trade (τ_t), corresponding to the period from 2005 to 2020, have been used. It is important to note that the data on non-financial expenditures, interbank interest rate, GDP, CPI, interbank exchange rate, inflation, and terms of trade are monthly and come from the Central Reserve Bank of Peru (CRBP), while ICRG and POLCON are annual (monthly using Ecotrim) and from international sources. The macroeconomic variables (non-financial expenditure, interbank interest rate, GDP, CPI, exchange rate, inflation, and terms of trade) and the institutional quality indicators (ICRG and POLCON) are presented together in Figure 1.



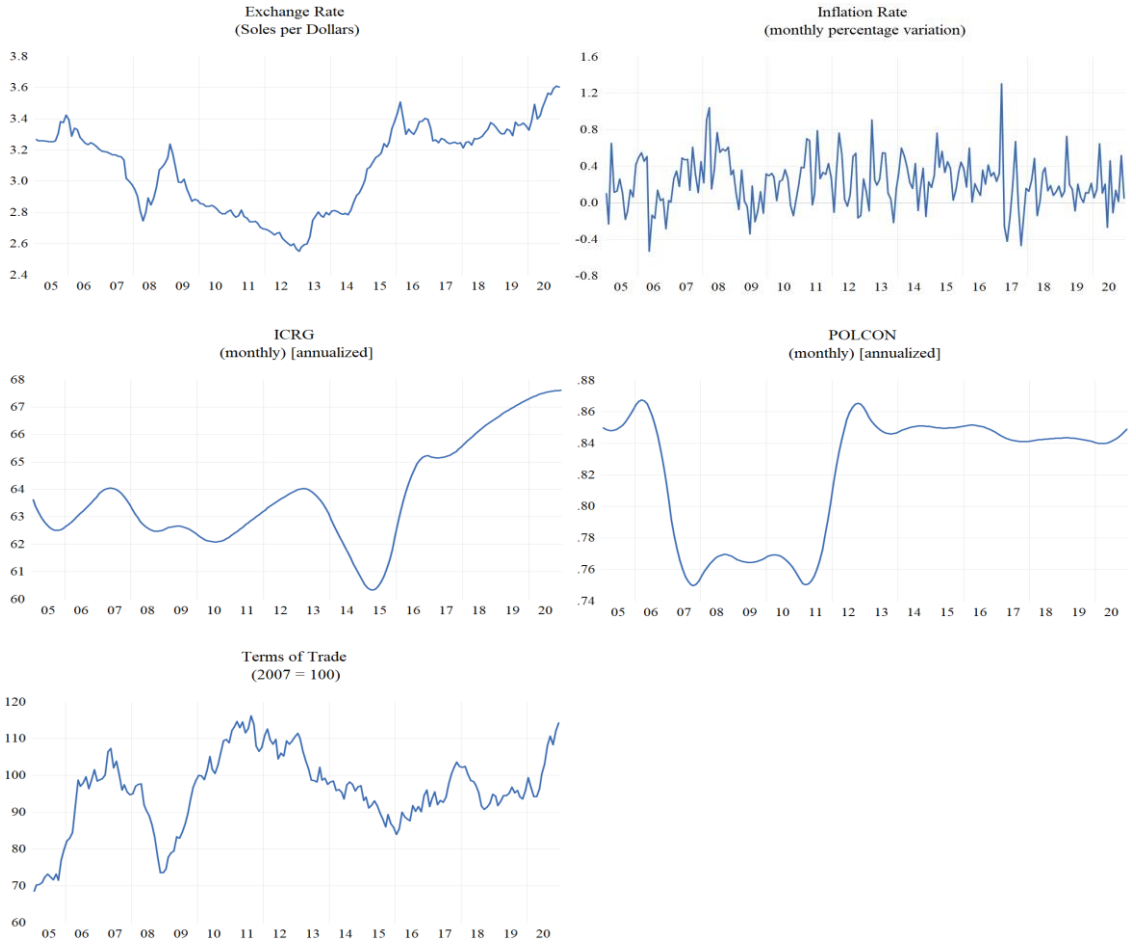


Figure 1.
Macroeconomic and institutional quality variables (2005-2020).
Source: Actual data (not seasonally adjusted) from CRBP, PRS Group and Henisz data set.

3.1.1.1. Control Variables

For control variables, a transformation in terms of gaps (observed value relative to its trend) is performed, which is calculated alternatively and equivalently as $\tilde{x}_t = \ln\left(\frac{x_t}{x_t^*}\right)$, $\tilde{x}_t = \ln\left(1 + \frac{x_t - x_t^*}{100}\right)$ and $\tilde{x}_t = \frac{x_t - x_t^*}{100}$. The first method is used for GDP, the interbank exchange rate (or its depreciation), non-financial expenditures, CPI (prices), and terms of trade; the second, for inflation; the third, for the interbank interest rate and, alternatively, for inflation.

The measurement of various economic gaps is fundamental for decision-making in monetary and fiscal policies. In the Taylor rule and the fiscal reaction function, measuring the gaps in the involved variables is key to determining policy actions through their respective instruments: in monetary policy, the optimal interest rate allows achieving economic stability and controlling inflation; in fiscal policy, the spending indicator is crucial for governments to respond effectively and ensure stability and sustainable economic growth. The interest rate gap (the difference between nominal/real interest rates and equilibrium/neutral interest rates) allows evaluating whether monetary policy is expansionary or contractionary; the output gap helps identify if the economy is operating above or below its maximum capacity (if negative, the central bank can implement expansionary monetary policies to stimulate economic growth, such as lowering interest rates or buying financial assets; if positive, it can implement contractionary monetary policies to control inflation, such as raising interest rates or selling financial assets); the inflation gap serves to evaluate whether the economy is experiencing inflationary pressure above or below the desired level (if negative, prices are below the target and the central bank may consider implementing measures to stimulate the economy and increase inflation; if positive, prices are above the target and the monetary authority could take restrictive measures to control inflation); the exchange rate gap is an important indicator of external competitiveness (if negative, it indicates that the national currency is overvalued relative to other currencies, and the central bank could intervene in the foreign exchange market to depreciate it and increase export competitiveness; if positive, it indicates that the national currency is undervalued, and the monetary authority could intervene to strengthen it and protect import competitiveness); the spending gap can reveal inequalities in public spending distribution and help identify areas where adjustments can be made to improve equity and efficiency in the use of public resources (if negative, the government may decide to increase spending to stimulate the economy; if positive, it may choose to reduce spending to avoid the risk of uncontrolled inflation); the output gap helps policymakers make decisions about stimulating production and controlling unemployment (if negative, the government can implement expansionary fiscal policies to stimulate production and employment; if positive, it can choose restrictive policies to avoid overheating the economy); the price gap can help policymakers adjust their strategies and measures to address potential deviations in the inflation rate and contribute to maintaining economic and financial stability

in a country (if negative, the fiscal authority can implement expansionary policies to stimulate the economy and increase domestic demand, which may include tax reductions, increased public spending, or implementation of economic incentive programs). Additionally, in both cases, the terms of trade gap indicates whether the economy is improving its position in international trade or losing competitiveness (if negative, the central bank can intervene to stabilize the economy by increasing international reserves or devaluing the currency to favor exports, while the fiscal authority can implement policies to reduce the trade deficit, such as increasing import taxes or export subsidies, as well as encouraging domestic production and reducing dependence on foreign goods; if positive, the monetary authority can take measures to avoid excessive currency appreciation, such as reducing international reserves or intervening in the foreign exchange market, while the fiscal policymaker could use the surpluses to strengthen the internal economy and maintain a balance in the trade balance). In this regard, Figure 2 shows the macroeconomic variables expressed in terms of gaps.

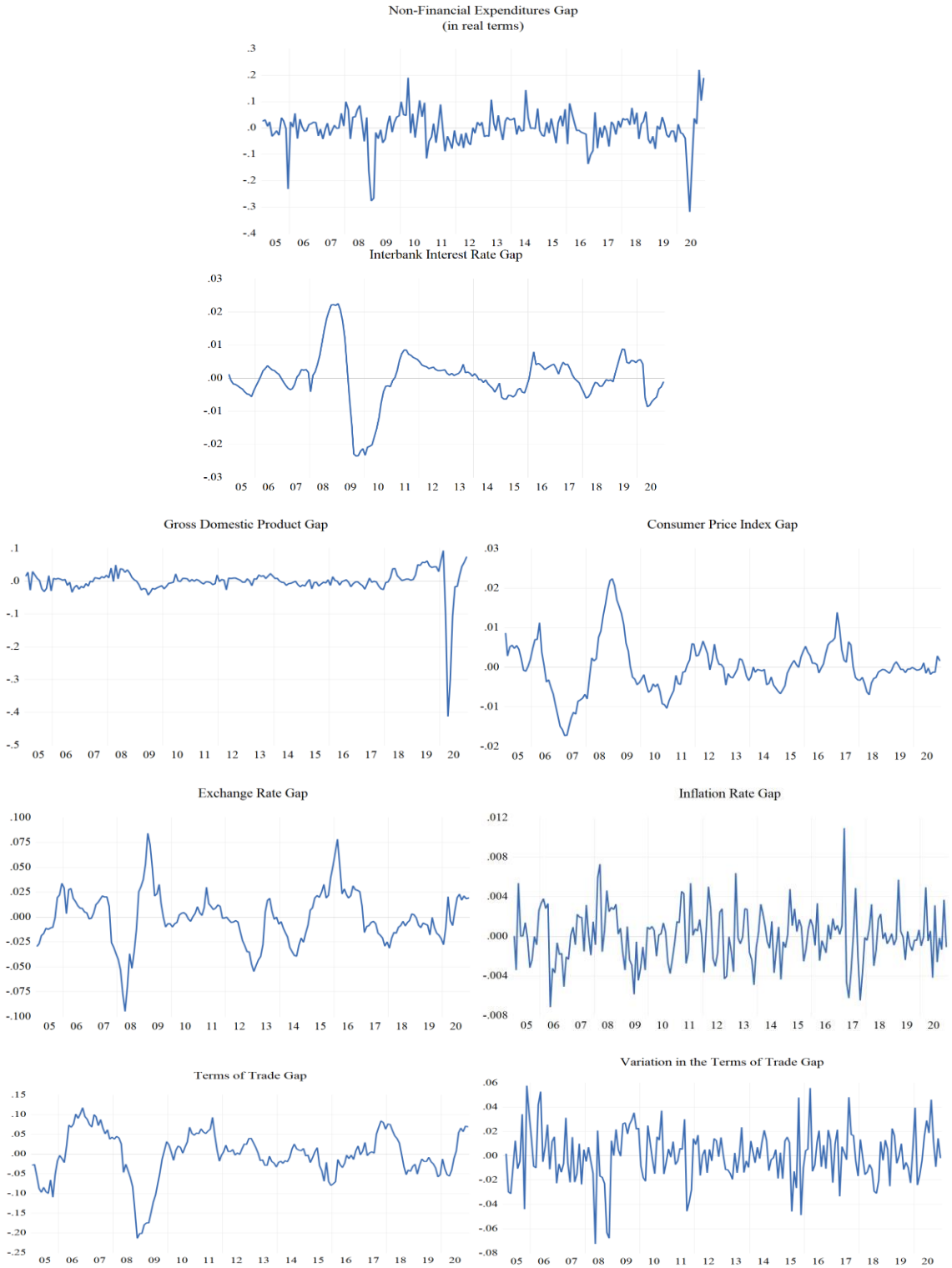


Figure 2.
Macroeconomic variables expressed in terms of gaps (2005-2020).
Source: Data transformed by the author in terms of gaps using E-Views 13 (data were seasonally adjusted and the Hodrick and Prescott filter was used to obtain the trends of the series).

3.1.1.2. Institutional Quality and Political Constraint

Based on the ICRG guide (from zero to one hundred points), institutional quality is measured considering aspects such as stability (12), socioeconomic conditions (12), investment profile (12), internal conflict (12), external conflict (12), corruption (6), military intervention in politics (6), religious tensions (6), law and order (6), ethnic tensions (6), democratic accountability (6), and bureaucratic quality (4) [21]. On the other hand, Henisz designed the Political Constraint Index (POLCON), as a proxy variable for the degree of arbitrariness of political decisions, with the purpose of measuring policy limitation of institutions and estimating the degree of political constraint, analyzing political risk in investment decisions, and more generally predicting political variability; its scale ranges from 0 (higher risk) to 1 (higher security) [22, 23]. In this regard, a measure of "political constraints" is introduced based on the number of formal veto points (executive, legislative chambers, subnationals, judiciary) [24]. In particular, the index can be used to analyze how institutional fragmentation and veto points modulate the relationship between macroeconomic crises and trade openness policies, concluding that a higher number of veto points implies a lower sensitivity of trade policy to economic pressures [25]. It should be added that it contributes to the comparative analysis of political systems by means of a structural and quantitative index [26].

It should be noted that both ICRG and POLCON are annual, but for the purpose of a more precise and timely assessment of the country's political situation, both were monthly using the Ecotrim program. To maintain their annual character, each monthly value was multiplied by twelve (12), so that the average of the twelve months equals the observed annual value of each index (see Figure 3).

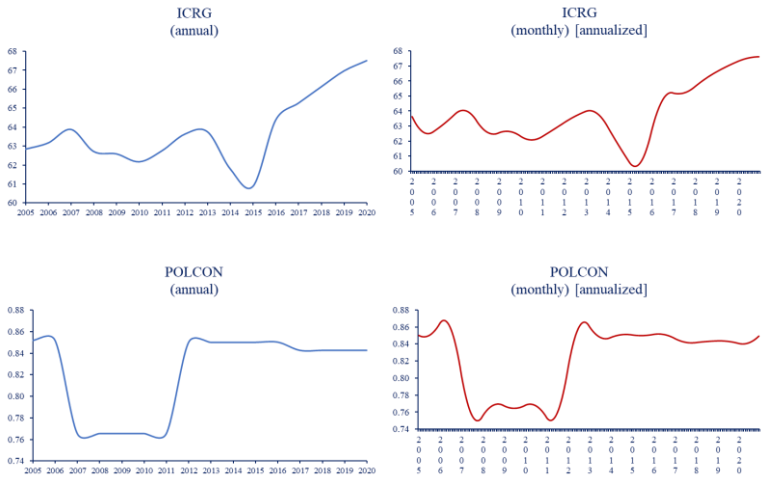


Figure 3.
Annual and annualized-monthly ICRG and POLCON indices (2005-2020).
Source: Author's graphs prepared using Excel 2016 from annual data from ICRG and POLCON and their corresponding monthly series annualized using Ecotrim.

3.2. Model

3.2.1. Monetary Policy Rule and Fiscal Policy Reaction Function

Regarding monetary policy, the policy rule links the interest rate that central banks would apply to deviations of inflation from its target (inflation gap) and output from its potential level (output gap) [5] the specification can incorporate the lag of the monetary policy instrument [27, 28] as well as the nominal exchange rate or its depreciation [5, 7, 28-32]. Regarding fiscal policy, the fiscal authority reacts through a function that links output deviations from its potential level (output gap) and real expenditure from its trend (expenditure gap) [8, 33-39] the specification of the fiscal policy reaction function can incorporate the lag of the fiscal indicator [8, 40-42] as well as unconventional variables such as inflation or a similar measure [8, 40, 41, 43]. It should be noted that the political constraints of the country can lead to different results to the extent that it is flexible or rigid. Developing countries cannot adopt countercyclical monetary or fiscal policies due to financial conditions and unfavorable political economy conditions [1]. Practically, the stronger a country's political institutions, the better the outcome related to the adoption of countercyclical policies. Accordingly, it is possible to specify both a Taylor rule and a fiscal reaction function with "political constraint."

$$\tilde{r}_t = c + \rho\tilde{r}_{t-1} + \beta\tilde{y}_t + \psi\tilde{y}_t \mathrm{I}_t + \alpha\tilde{\pi}_t + \lambda\tilde{e}_t + \omega\Omega_t + \varepsilon_t^m$$

Where $\tilde{r}_t$ is the nominal policy interest rate gap, $\tilde{y}_t$ is the output gap, $\tilde{\pi}_t$ is the inflation gap, $\tilde{e}_t$ is the exchange rate or depreciation gap, and I_t is the institutional quality or political constraint index; additionally, Ω_t is a matrix of other variables. So, we define $\frac{\partial\tilde{r}_t}{\partial\tilde{y}_t} \coloneqq \beta + \psi\mathrm{I}_t$ such that $\mathrm{I}_t^* = -\frac{\beta}{\psi}$ if $\frac{\partial\tilde{r}_t}{\partial\tilde{y}_t} = 0$, with I_t^* being the transition level of institutional quality or the critical value of political constraint, as the case may be; we would expect $\beta < 0$ and $\psi > 0$ for the countercyclical nature of monetary policy. Thus, if $\mathrm{I}_t > \mathrm{I}_t^* \Rightarrow \frac{\partial\tilde{r}_t}{\partial\tilde{y}_t} > 0$, the regime is countercyclical; if $\mathrm{I}_t < \mathrm{I}_t^* \Rightarrow \frac{\partial\tilde{r}_t}{\partial\tilde{y}_t} < 0$, procyclical; if $\mathrm{I}_t = \mathrm{I}_t^* \Rightarrow \frac{\partial\tilde{r}_t}{\partial\tilde{y}_t} = 0$, acyclical.

$$\tilde{g}_t = k + \upsilon\tilde{g}_{t-1} + \theta\tilde{y}_t + \phi\tilde{y}_t \mathrm{I}_t + \mu\tilde{p}_t + \varphi\Gamma_t + \varepsilon_t^f$$

Where $\tilde{g}_t$ is the spending gap, $\tilde{y}_t$ is the output gap, $\tilde{p}_t$ is the price gap, and I_t is the institutional quality or political constraint index; Γ_t is a matrix of other variables. So we define $\frac{\partial \tilde{g}_t}{\partial \tilde{y}_t} \coloneqq \theta + \phi I_t$ such that $I_t^* = -\frac{\theta}{\phi}$ if $\frac{\partial \tilde{g}_t}{\partial \tilde{y}_t} = 0$, with I_t^* being the transition level of institutional quality or the critical value of political constraint, as the case may be; we would expect $\theta > 0$ and $\phi < 0$ for the countercyclical nature of fiscal policy. Therefore, if $I_t > I_t^* \Rightarrow \frac{\partial \tilde{g}_t}{\partial \tilde{y}_t} < 0$, the regime is countercyclical; if $I_t < I_t^* \Rightarrow \frac{\partial \tilde{g}_t}{\partial \tilde{y}_t} > 0$, procyclical; if $I_t = I_t^* \Rightarrow \frac{\partial \tilde{g}_t}{\partial \tilde{y}_t} = 0$, acyclical.

3.2.2. Extensions with Terms of Trade

It is worth noting that Peru, being an emerging and developing country, could have greater economic vulnerability due to its dependence on the export of raw materials and the volatility of international prices, which could be influenced by terms of trade. Considering the above, terms of trade influence the volatility of monetary policy rules [44-46]. In particular, governments may apply restrictive monetary policies, thus affecting levels of economic activity [47]. On the other hand, external price shocks are more important than restrictive monetary policy in explaining levels of activity [48].

Similarly, a fiscal rule expressed as meeting a target measured through a fiscal performance indicator aims to limit the government's bias towards spending to ensure fiscal sustainability [33]. It should be noted that in the medium term, an expansion/contraction in the competitiveness indicator is expected, which in terms of productivity would mean a positive/negative effect if the terms of trade increase/decrease [49]. Moreover, the expansion/contraction in terms of trade could imply an increase/reduction in the product, so that monetary policy actions on the interest rate would require it to increase/decrease.

However, under the fiscal rule where the government maintains a debt level around its target, the expansion or contraction of the terms of trade leads to acquiring a higher or lower debt level, which would generate higher or reduced spending.

3.3. Estimation Technique

The generalized method of moments (GMM) is an econometric estimation technique used when there are potential endogeneity problems in the regressors, meaning that the explanatory variables are correlated with the error term of the model; it is particularly useful in time series models. The method uses instruments, which are variables correlated with the endogenous variables but not with the error term; in the analysis models, lags of the explanatory variables and other exogenous variables can act as instruments.

4. Results

4.1. Main Results

Table 1 presents the impacts of institutional quality indicators on the monetary policy instrument within the Taylor rule. In all cases, the parameter associated with the effect of the output gap is positive, while the one related to the interaction of the output gap with the institutional quality indicator is negative, signs that were in the reverse order of expectations [1] which can be explained by two reasons. First, during García's first administration (1985-1990), Peru experienced a severe economic crisis characterized by hyperinflation, fiscal deficits, and a significant deterioration in institutional confidence; institutional quality was low, reflected in populist economic policies, lack of independence of the Central Bank, and issues of corruption and governance. During Fujimori's period, market-oriented economic reforms stabilized the economy, but his government was also marked by increasing authoritarianism, human rights violations, and corruption; although macroeconomic stability improved, institutional quality remained low due to centralization of power, manipulation of institutions, and corruption. In summary, during the García and Fujimori periods, these indices reflected very low institutional quality, negatively affecting confidence in economic policies. Second, after the crises of the 80s and 90s, Peru implemented reforms to strengthen the independence of the CRBP (1993 CRBP Autonomy Law, a key milestone in this process), which allowed the Bank to operate with greater autonomy, reducing political influence and increasing its credibility in monetary policy management. In this context, improvements in transparency, the rule of law, and governmental effectiveness have contributed to a more robust institutional environment, strengthening the Bank's reputation and public confidence in its decisions. Currently, institutional quality has improved, and the values of POLCON and ICRG are above 0.5 and 50, respectively, indicating that the country's institutions have improved in transparency, effectiveness, and governance; furthermore, the strong autonomy of the CRBP allows it to act with certain ranges of procyclical or countercyclical action in cases where the reaction should be countercyclical or procyclical, respectively. Additionally, according to the table, the critical values of POLCON and ICRG, for which monetary policy action is acyclical in each case, are above 0.85 and 72, respectively.

On the other hand, it is observed that, in the absence of other factors, the neutral interest rate gap would be slightly negative, which is uncommon and could suggest some structural adjustment in the economy or a bias in monetary policy towards stimulus; furthermore, there would be high persistence in the interest rate gap, reflecting inertia in monetary policy decisions, while both the inflation gap and the exchange rate gap imply actions to reduce or increase the interest rate in the same direction as their sign to control inflation, stabilize the exchange rate, and manage imported inflation, respectively. Similarly, the negative sign in the external variable implies an action of control or stimulus through the interest rate in respective scenarios of deterioration or bonanza in the terms of trade.

Table 1.
Impact of Institutional Quality on the Monetary Policy Instrument.

Interest Rate Gap				
	(1)	**(2)**	**(3)**	**(4)**
	POLCON	ICRG	POLCON	ICRG
Constant	-0.002871*** [-12.692546]	-0.004214*** [-19.331137]	-0.002939*** [-15.970397]	-0.004039*** [-26.934874]
Lag of Interest Rate Gap	0.941824*** [269.511739]	0.938255*** [223.807469]	0.939906*** [211.588508]	0.935549*** [262.117286]
Output Gap	1.036482*** [18.775327]	0.317773*** [4.629363]	1.030212*** [20.366162]	0.280223*** [5.674358]
Output Gap × Institutional Quality Indicator	-1.205731*** [-18.326082]	-0.004390*** [-4.300946]	-1.198138*** [-19.885892]	-0.003823*** [-5.200692]
Inflation Gap	0.091147*** [4.060129]	0.092557*** [4.596399]	0.083644*** [4.966385]	0.078794*** [4.688963]
Exchange Rate Gap	0.011933*** [7.925695]	0.018466*** [12.672474]	0.010524*** [8.149794]	0.016849*** [14.241556]
Terms of Trade Gap			-0.001335** [-2.192562]	-0.001454** [-2.466860]
Dummy 1	0.003169*** [16.849518]	0.004180*** [20.135947]	0.003192*** [22.961211]	0.004106*** [26.856544]
Dummy 2	0.002908*** [15.649085]	0.002698*** [18.151859]	0.003019*** [18.344580]	0.002890*** [21.716662]
Critical quality indicator	0.859630	72.388711	0.859844	73.299241
R^2	0.989343	0.988983	0.989359	0.989595
R^2_{ad}	0.988910	0.988534	0.988858	0.989108
Durbin-Watson Statistic	1.732571	1.737519	1.778686	1.864215
Jarque-Bera Statistic	5.321999##	4.437278#	5.871779##	4.438809#
J-Statistic	31.292286#	31.021116#	32.590260#	32.904696#

Source: Author's E-Views 13 estimates.
Notes: t-statistic in brackets. ***p < 0.01, **p < 0.05, *p < 0.1; ###p > 0.01, ##p > 0.05, #p > 0.1.

Table 2 presents the impacts of institutional quality indicators on the fiscal policy instrument within its reaction function. In all cases, the parameter associated with the effect of the output gap is negative, while the one related to the interaction of the output gap with the institutional quality indicator is positive, signs that were in the expected order [1]. First, the output gap alone implies a variation in the spending gap in the same direction as its sign, leading to a procyclical reaction by the fiscal authority; however, second, the interaction of the output gap with institutional quality moderates that effect with a countercyclical reaction. Overall, the combined effect, depending on whether the quality index is below or above the critical value, implies a procyclical or countercyclical action on the real spending gap, as the case may be. Additionally, according to the table, the critical values of POLCON and ICRG, for which fiscal policy action is acyclical in each case, are above 0.85 and 68, respectively. On the other hand, it is observed that, in the absence of other factors, the real spending gap would tend to be slightly negative, which could reflect a general trend towards fiscal adjustment or consolidation; furthermore, there would be low persistence in the real spending gap, reflecting moderate inertia in fiscal policy decisions, while the inflation gap implies actions to reduce or increase the real spending gap in the opposite direction of its sign (which is consistent with fiscal policy seeking to counteract inflation). Similarly, the positive sign in the external variable implies that spending is higher/lower due to higher/lower fiscal revenues from foreign trade, depending on better/worse trade conditions.

Table 2.
Impact of Institutional Quality on the Fiscal Policy Instrument.

Non-Financial Expenditure Gap				
	(1)	**(2)**	**(3)**	**(4)**
	POLCON	ICRG	POLCON	ICRG
Constant	-0.117511*** [-15.003284]	-0.120078*** [-28.236886]	-0.117736*** [-31.063125]	-0.123129*** [-27.704976]
Lag of Non-Financial Expenditure Gap	0.292843*** [16.432858]	0.289899*** [21.082079]	0.303873*** [17.928337]	0.301744*** [22.041950]
Output Gap	3.678630*** [4.921838]	8.307974*** [8.110090]	5.374586*** [7.261731]	11.008494*** [11.762035]
Output Gap × Institutional Quality Indicator	-4.238226*** [-4.755375]	-0.121542*** [-7.942414]	-6.249973*** [-7.102295]	-0.161668*** [-11.608863]
Price Gap	-0.691364*** [-5.264710]	-0.751480*** [-6.016423]	-0.596457*** [-4.446098]	-0.684103*** [-7.309071]
Variation in Terms of Trade Gap			0.338690*** [7.104939]	0.456739*** [8.727379]
Dummy 1	0.120497*** [35.064461]	0.116376*** [29.403879]	0.119944*** [30.447709]	0.118504*** [27.293830]
Dummy 2	0.099084*** [49.42150]	0.095766*** [40.546691]	0.099401*** [41.763600]	0.099927*** [34.109558]
Critical quality indicator	0.867964	68.354587	0.859938	68.093154
R^2	0.754097	0.769882	0.763573	0.776493
R^2_{ad}	0.744933	0.761306	0.753230	0.766714
Durbin-Watson Statistic	2.072009	2.068589	2.089590	2.064030
Jarque-Bera Statistic	4.780350##	4.246897#	2.774425#	2.055374#
J-Statistic	33.374516#	32.370918#	33.341595#	31.677135#

Notes: t-statistic in brackets. ***p < 0.01, **p < 0.05, *p < 0.1; ###p > 0.01, ##p > 0.05, #p > 0.1.

5. Conclusions

The document emphasizes the crucial importance of strong institutions for the effective implementation of economic policies. Institutional quality influences the adoption of countercyclical or procyclical policies, depending on its strength. Currently, with improved institutional quality, reflected in POLCON and ICRG values above 0.5 and 50, respectively, Peruvian institutions have advanced in transparency, efficiency, and governance, allowing for more robust and effective implementation of economic policies.

The analysis of the Taylor rule shows that the output gap and the interaction of the output gap with the institutional quality indicator have opposite signs to those expected. This could be explained by the governmental conditions during the García and Fujimori periods, which limited the Central Bank's capacity at the time. However, monetary authority reforms strengthened its autonomy, enabling the adoption of more effective monetary policy measures with greater flexibility to even have procyclical/countercyclical action spaces in scenarios where the reaction should be countercyclical/procyclical.

The analysis of the fiscal reaction function reveals that the output gap alone leads to a procyclical variation in the real spending gap. However, the interaction of this gap with institutional quality moderates this effect, promoting a countercyclical response in contexts of high institutional quality. This suggests that better institutions enable more prudent and stabilizing fiscal management, where fiscal policies are adjusted to avoid overheating during boom times and to stimulate the economy during recessions.

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