



# Journal of Politics in Latin America

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Arce, Moisés E., and Julio F. Carrión (2010),  
Presidential Support in a Context of Crisis and Recovery in Peru, 1985-2008, in:  
*Journal of Politics in Latin America*, 2, 1, 31-51.  
ISSN: 1868-4890 (online), ISSN: 1866-802X (print)

The online version of this article can be found at: <[www.jpla.org](http://www.jpla.org)>

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Published by  
GIGA German Institute of Global and Area Studies, Institute of Latin American Studies  
and Hamburg University Press.

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# Presidential Support in a Context of Crisis and Recovery in Peru, 1985-2008

Moisés E. Arce and Julio F. Carrión

**Abstract:** Largely due to the theoretical weight given to the role of economic crisis, the existing literature on presidential approval in Peru offers a variety of competing explanations about the factors that account for presidential support. These competing explanations share one bond: they emphasize the absence of traditional economic voting. We argue here that the diversity of interpretations and empirical findings stem from the high degree of volatility experienced by economic indicators, and the failure of existing research to account for the time-dependent variance of presidential popularity. We analyze the impact of economic performance and key political events on the determination of presidential approval in Peru for the period 1985-2008 using an Exponential Generalized Autoregressive Conditional Heteroskedasticity (EGARCH) model. Our findings suggest that the effects of economic conditions on presidential approval approximate more traditional economic voting postures than previously thought. To the extent that crisis-ridden economic conditions in Peru have helped to theorize the alleged departures from traditional economic voting, the country is an ideal case to revisit standing propositions in the literature, particularly in a moment when those crisis-ridden economic conditions have disappeared.

■ Manuscript received May 5, 2009; accepted January 8, 2010

**Keywords:** Peru, presidential approval, economic voting, crisis conditions, economic recovery

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## Introduction

Economic crisis in emerging democracies has led to a variety of competing explanations about the factors that account for presidential support. In the presence of economic crisis, some studies call attention to postures that deviate from traditional economic voting. Voters may interpret bad economic news as the prelude of good economic conditions and would accordingly rally behind rather than punish the incumbent. This is what Stokes (1996, 2001) identified as an “intertemporal” posture. Other studies suggest that in the presence of high inflation voters simply become “dazed,” temporarily ignoring economic conditions that are considered uncontrollable (Reynolds, Palmer, and Nordstrom 2001). Further arguing in favor of this deviation from traditional economic voting, some studies have shown that during periods of economic upheaval in Latin America economic conditions play a minimal role in the determination of presidential popularity (e.g., Carrión 1998; Echegaray and Elordi 2001). As Echegaray (2005: 146) writes, “even under conditions of financial distress” voters “may escape from simple economic-content reactions.” Largely due to the theoretical weight given to crisis, much of this literature expects something beyond the ordinary in voters’ assessments of presidential performance.

In this paper, we revisit the existing debates of economic voting in emerging democracies for three important reasons. First, while the existing literature underscores the effects of crisis-ridden economic situations on presidential performance and postulates attitudes that deviate from traditional economic voting, the impact of economic variables in the evaluation of chief executives in the long run, particularly when crisis conditions have subsided, remains unclear. Are the factors that drive presidential support modified or suspended across crisis and non-crisis economic periods? Second, following recent contributions from the issue salience literature (Edwards, Mitchell, and Welch 1995; Wolf and Holian 2006), it is theoretically and substantively important to balance periods of crisis with periods of non-crisis to determine if the effects of economic conditions follow or not similar patterns in different contexts. Seen in the light of the issue salience literature, it is conceivable that in times of crisis when inflation is high, inflation will drive presidential approval levels at the expense of other economic or political indicators. During hard economic times, monthly inflation rates become front-page material, providing a very salient cue of economic performance. Although real wages decline as a consequence of rising inflation, nominal salaries tend to go up, and thus offer voters a less clear picture of the condition of the economy compared to inflation. When crisis situations subside and inflation is quite low, however, these other factors – especially real wages – are likely to weigh in more heavily when assessing political leadership. Finally, given that existing

research has largely ignored the unequal variance of presidential popularity, it is also important to use an estimation technique that accounts for the heteroskedastic nature of the dependent variable. To date, the bulk of existing studies has been primarily concerned with correcting the effects of serial autocorrelation, ignoring the time-dependent variance of presidential popularity.

This paper examines the presence of economic voting in the Peruvian case, which is an archetypical case of economic crisis (and recovery). While the Peruvian case has received considerable attention by students of economic voting in Latin America (Stokes 1996; Carrión 1999; Weyland 2000; Arce 2003; Kelly 2003), these studies' findings were heavily influenced by information that reflected the protracted and severe crisis conditions of the late 1980s and early 1990s. As such, these works help us understand to a certain degree one particular episode in Peruvian politics, and not others. More importantly, since the presence of crisis-ridden economic conditions in Peru helped to theorize the alleged departures from traditional economic voting, the country is the ideal case to revisit standing propositions in the literature, particularly in a time when those crisis-ridden economic conditions have now faded. Likewise, since Peru's economic conditions are illustrative of similar problems in other developing democracies like those found in Latin America, our results can also inform our understanding of presidential approval in these states more generally.

The central question this paper seeks to answer is whether the departures from traditional economic voting identified in Peru by the existing literature are the result of short-lived and specific forces brought about by crisis-ridden economic situations, or alternatively, long-lasting and widespread characteristics of the Peruvian electorate. Utilizing the most comprehensive time series presidential approval data over a 24-year period (1985-2008), and covering four major presidencies in Peru, we are now in the position to reassess existing arguments about the effects of economic and political variables on presidential support. Our central findings suggest that traditional economic voting postures are more prevalent than commonly acknowledged. Moreover, we do not find that the conditional variance of presidential popularity is significantly higher during crisis periods than during non-crisis situations. Thus, in contrast to the conventional wisdom that advocates alternative postures to traditional economic voting in moments of crisis, our central findings largely support traditional economic voting postures, even while controlling for unusual periods of economic upheaval.

After reviewing the existing literature, the paper provides succinct contextual information on Peru. The paper then presents our research design, where we justify the importance of using an estimation technique that takes into account the greater volatility of presidential approval typical of emerg-

ing democracies, such as Peru. The next section discusses the empirical results. The last section concludes.

## Review of the Literature

Mainstream theories of economic voting tend to debate whether voters use retrospective or prospective considerations when evaluating incumbents (Erickson, MacKuen, and Stimson 2000; Fiorina 1981; Kiewit and Rivers 1985; Lewis-Beck 1988; MacKuen, Erickson, and Stimson 1992), but all assume that economic conditions play a significant role in such evaluation. When economic conditions worsen, the incumbent's political support declines; when the economy improves, the incumbent is rewarded. This is what is known as normal or traditional economic voting. In a recent review article of economic voting on transitional societies, Lewis-Beck and Stegmaier find that in both advanced and transitional democracies "governments are being held accountable for bad economic policies, at least to some degree" (2008: 320). The microfoundation of this attitude, however, is open to debate. Some scholars stress utility-maximization mechanisms and other scholars emphasize information effects in the determination of policy choices (Duch and Stevenson 2005), yet in the end the essential finding that the situation of the economy affects incumbent's support remains unchallenged.

The growing literature on presidential approval and voting behavior in the developing world also dwells on the economic conditions that shape voters' evaluations of presidential performance. In Latin America, for instance, several works (e.g., Benton 2005; Echegaray 2005; Remmer 1991; Roberts and Wibbels 1999; Weyland 2003) have found supportive evidence for the main arguments of the economic voting literature even though they employ different research designs.

An important departure to this established literature has been a number of studies emphasizing the presence of alternative economic voting postures. Analogously, other works have emphasized the presence of issue salience effects insofar as voters focus on economic performance during crisis periods but move on to other issues once the crisis is resolved. Peru has been a prime example of crisis-ridden economic conditions that are atypical of advanced industrial democracies, where incidentally the bulk of the evidence in support of economic voting has been accumulated. Thus Peru's atypical economic conditions served well to formulate atypical voting behaviors. We review some of these works in turn.

Advocates of alternative postures to economic voting argue that in moments of economic crisis, traditional economic voting is suspended or modified. Stokes (1996, 2001) has led much of this debate, positing alterna-

tives to the so-called traditional voting model. In Stokes' view (1996, 2001), the political rhetoric espoused by political leaders during periods of economic crisis may influence voters, resulting either in "exonerating" or "intertemporal" postures. If the public has taken these postures, deteriorating economic conditions may result in improvements in presidential approval as the public either blames the previous government ("exonerating" the current government), or accepts the hardships of adjustment as a necessary and temporary, yet positive, sign of future economic recovery (adopting an "intertemporal" posture). Describing Stokes' research, Weyland writes, "the political judgments concerning responsibility and blame mediate the impact of [these] economic" conditions (2003: 823). In short, whereas the essential observable implications of traditional voting are its retrospective nature and the negative relationship between declining economic conditions and approval, Stokes' (1996, 2001) "exonerating" and "intertemporal" postures are characterized by an essentially prospective calculus and improvements in approval in response to poor economic performance.

Other scholars agree that political context is important when examining economic voting, but tend to draw different conclusions about how economic voting works during crisis periods. Reynolds, Palmer, and Nordstrom (2001), for instance, suggest that voters may adopt either a "dazed" or "sophisticated" posture in response to worsening crisis situations. "Dazed" voters will temporarily ignore economic conditions that are considered uncontrollable and will roughly adopt what Stokes (1996, 2001) calls an "exonerating" posture. By contrast, "sophisticated" voters will adjust their evaluations according to particular contexts. Similar to Stokes' (1996, 2001) "intertemporal" posture, "sophisticated" voting reflects an adjusted calculus that accounts for signs that conditions are improving or deteriorating.

Support for alternative postures to traditional economic voting is mixed. With few exceptions (e.g., Carrión 1999: 241; Echegaray and Elordi 2001: 209; Kelly 2003: 874), inflation has largely conformed to traditional expectations. The effects of other economic indicators, such as wages and employment, however, have been somewhat inconsistent. Stokes (1996: 559) originally found support for an "intertemporal" attitude toward wages, but in a subsequent study (Stokes 1999: 215) and with additional data points, these "intertemporal" expectations disappeared. In contrast, the alleged "exonerating" postures regarding employment have always been strong (e.g., Stokes 1996: 559; Carrión 1999: 241, 1998: 67), even during periods prior to the radical pro-market restructuring of the early 1990s (e.g., Arce 2003: 581).

Paralleling Stokes' work on alternative voting postures, Weyland (2000) was the first scholar to articulate the possibility of issue salience effects in the study of presidential approval in Peru. More generally, the literature on

issue salience suggests that voters generally do not react in the same way during major events (e.g., a war or a severe economic crisis) as under more normal conditions (Edwards, Mitchell, and Welch 1995; Wolf and Holian 2006). Edwards, Mitchell, and Welch (1995) have shown for the US case, issues do change their salience over time, and consequently, they vary in the way they impact presidential approval at different periods.<sup>1</sup>

Weyland (2000) suggested that voters fixate their concerns on certain economic indicators (such as high inflation) during crisis conditions, but move on to other issues once the crisis has subsided. Moreover, the political dividends that may result from quelling such a crisis are short-lived, thus voters do not display enduring gratitude for past accomplishments. The position that inflation is more important during times of crisis but loses relevance during traditional times is the substance of Weyland's (2000) "paradox of success." Although the central argument of Weyland (2000) is more about the diminishing political payoff of controlling rampant political violence than overcoming hyperinflationary crises, his analysis offers an important clue to determine if voters' assessments of presidential performance differ significantly when balancing different economic contexts of crisis and non-crisis.<sup>2</sup> It is plausible that the relationship between inflation – arguably the most pressing issue during periods of economic crisis – and other indicators of economic performance, and their impact on presidential support, has been misspecified. Rising inflation may potentially dwarf other indicators to the point that these become non-relevant during times of crisis. However, there is little reason to expect that inflation or other indicators – like real wages – will continue to lack influence in non-crisis periods.

A more general statement of Weyland's (2000) argument, also rooted in the psychology of loss aversion, comes from the work of Nannestad and Paldam who assert that "it costs votes to rule" (2002: 17). Along these lines, Stevenson (2002) has expanded this "cost of ruling" finding by arguing that the longer a government remains in office, the less popular it becomes, and subsequently, the more votes it loses. This view harks back to Mueller's (1970) contention that US presidents lose support over time due to the "coalition of minorities" effect. This effect suggests that a president's electoral coalition is unstable because it represents varying minority-voter blocs rather than a steady majority mandate.

To sum up, the existing literature advocates the presence of alternative postures to traditional economic voting due to the high degree of volatility

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1 For an analysis of the role of media priming on issue salience, see Kelleher and Wolak (2006).

2 As the significance of guerrilla violence as a political issue weakens, Weyland writes, "the intensity of popular appreciation for the president's success fades away" (2000: 484).

of economic conditions, which are more characteristic of developing countries vis-à-vis stable, industrialized democracies (Stokes 1996, 2001). However, even if these catastrophic economic conditions were to be successfully managed, the popular appreciation of this accomplishment provides merely a short-term boost to incumbents as voters begin to pay attention to other unresolved issues (Weyland 2000). Thus crisis-ridden contexts can push voters to adopt alternative economic voting postures (following Stokes) or lead them to pay less attention to economic variables (such as inflation) once their salience diminishes as the result of economic recovery. All together, traditional economic voting postures are not to be expected. With this background in place, the following section discusses the context under which Peruvian voters emitted their judgment regarding presidential performance.

## The Context

The 1980s in Peru were a period of economic upheaval, marked with rising inflation, declining real wages and widespread unemployment and informalization of the workforce. GDP dropped about 25 percent in the late 1980s and annual inflation reached an historical record of 7,649 percent in 1990. The emergence of guerrilla groups, such as the Shining Path (Sendero Luminoso) and the Movimiento Revolucionario Tupac Amaru (MRTA) also posed a serious threat to civilian rule, which was restored in 1980. Despite these economic and social conditions, democratic rule remained uninterrupted as the popularly elected governments of Fernando Belaúnde (1980-1985) and Alan García (1985-1990) successfully completed their five-year electoral mandates. Yet these economic and social hardships were ultimately capitalized by Alberto Fujimori, a reform-minded politician who took over the presidency in August 1990.

As it has been amply documented elsewhere (e.g., Cameron and Maurceri 1997; Carrión 2006; Conaghan 2005), Fujimori was a political outsider who successfully stabilized the economy by implementing market-oriented economic policies. GDP grew on average by 3.8 percent throughout the 1990s and annual inflation dropped to single digits since 1997. Fujimori also controlled rampant political violence by engaging in select repression and unleashing the military and intelligence service to defeat the ongoing insurgency (Obando 1998). By many different accounts, Fujimori was a very popular – albeit authoritarian and corrupt – president. His average monthly approval ratings were 60 and 50 percent during his first and second presidential terms, respectively. Including the first four months of Fujimori's



highly questionable third term in office, his overall average approval rating was 55 percent.<sup>3</sup>

The period following the Fujimori regime was characterized by remarkable stable economic conditions, and on December 2008, the economy accumulated 90 months of continuous growth. In 2005 and 2006, the country's GDP grew by 6.7 and 7.6 percent, respectively. Paradoxically, these economic conditions did not boost the approval of President Alejandro Toledo. Between August 2001 and July 2006, the period of his entire presidency, his average monthly approval was 18.5 percent, dropping into single digits during the first half of 2004. At that time, the editorial of *El Comercio* – the leading newspaper in Peru, went so far as to suggest that he “step aside” from the presidency and assume a more ceremonial role.<sup>4</sup> And although his ratings improved in the last four months of his presidency, Toledo's standing in the polls remained quite low in 2005 and early 2006. Curiously, the Toledo government was more unpopular than García's first administration (1985-1990), whose economic policies were much to blame for the deteriorating economic conditions of the 1980s. In fact, the average monthly approval of García's first administration was 44.3 percent.

To the astonishment of many observers, Alan García was reelected in July of 2006 and started with a very strong “honeymoon” period. His average approval rate for his first five months in office was 61 percent, quite a contrast with the 43 percent received by Alejandro Toledo in a similar period. But García could not prevent the steady decline of his popularity in the subsequent months, even as economic growth remained steady. While the Peruvian economy rose by 9.8 percent of GDP in 2008 – turning the country into one of the best-performing economies in the Latin American region – García's approval rate barely reached an average of 33 percent that year. In several ways, the current volatility of García's approval ratings mirrors that of his first term in office, though under starkly different economic conditions of non-crisis and crisis, respectively.

Understandably, these unusual economic conditions, particularly during the late 1980s and early 1990s, helped to articulate alternative postures to traditional economic voting. By extension, much of the existing research on presidential popularity has been dedicated to the Fujimori presidency (1990-

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3 On November 2000, Fujimori resigned from office in disgrace because of mounting evidence of corruption and gross criminality. After Fujimori's resignation, Valentín Paniagua, the then president of Peru's unicameral Congress, was appointed as a caretaker president. Paniagua called for new presidential elections to be held in April 2001. On April 2009, Fujimori was found guilty of human rights abuses by the Peruvian court system.

4 In Spanish, the wording was “hacerse a un lado,” in: *El Comercio*, February 11, 2004.

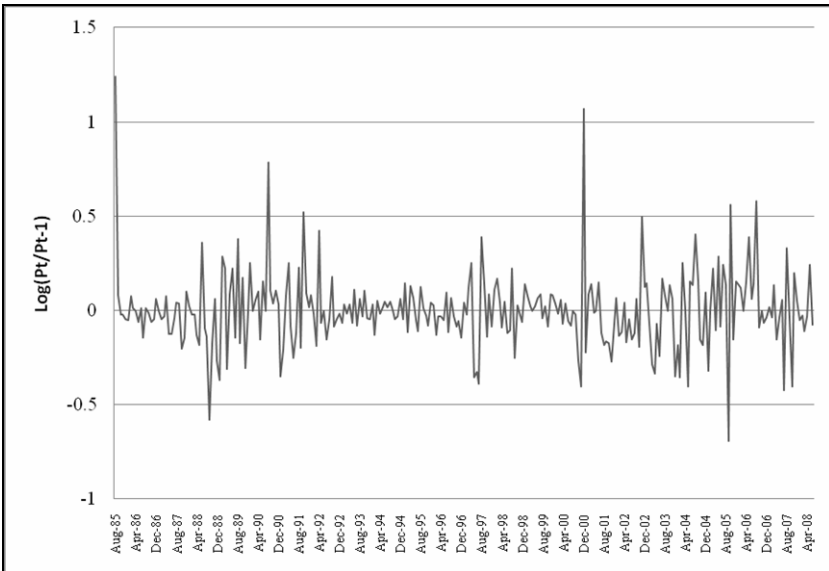
2000). Rather than examining the popularity of an individual president as has been commonly done in existing research, we explore the variation in presidential support across four major presidencies (García, Fujimori, Toledo, and García) over a 24-year period (1985-2008). We explore how crisis conditions based on the presence of high inflation shape presidential approval levels. Following Stokes (1996, 2001), if voters do deviate from traditional economic voting patterns in the context of economic reform, when economic performance is poor, then it is very likely that these voters will revert to traditional retrospective postures in the post-reform period, when economic performance is much better. Alternatively, as countries move from moments of crisis to non-crisis, presidents may not reap the political benefits from good economic performance, as voters come to expect them to maintain the good times (Weyland 2000). Instead, voters may simply punish their presidents if they fail to manage the economy properly. This asymmetry in voters' responses would be consistent with both Stokes' (2001) and Weyland's (2000) views that voters assess their chief executives differently under dissimilar economic conditions. In short, we examine how the factors that shape presidential approval vary across crisis and non-crisis situations, and whether or not voters react to bad and good economic performance in the same way.

## Data and Methods

Studies of presidential popularity in Peru have displayed a surprising diversity of estimation choices. Among others, authors have employed Box-Tiao Intervention Analysis (Kelly 2003), as well as Ordinary Least Squares (OLS) (Arce 2003; Weyland 2000), Autoregressive (Carrión 1998, 1999), Multinomial Logistic (Stokes 1996), and Seemingly Unrelated (Stokes 2001) regressions. All these methodologies model the conditional mean of presidential popularity, and some of them correct for serial autocorrelation, a frequent occurrence in time series. As far as we know, none of the studies of presidential popularity in Peru has employed estimation techniques that model the conditional variance of the dependent variable. This estimation improvement is important because in the presence of heteroskedasticity in time series, coefficients and standard errors estimated from mean models are not very reliable (Maestas and Preuhs 2000), and thus can produce misleading results. In this paper, we employ an estimation technique, an Exponential Generalized Autoregressive Conditional Heteroskedasticity (EGARCH) model that accounts for the time-dependent variance of presidential popularity and tests for the asymmetric effect of information "news" (Nelson 1991). While Autoregressive Conditional Heteroskedasticity (ARCH) and General-

ized Autoregressive Conditional Heteroskedasticity (GARCH) models (Engle 1982; Nelson 1991) have become increasingly common to study popularity functions (e.g., Maestas and Preuhs 2000; Gronke and Brehm 2002), Siokis and Kapopoulos argue that EGARCH models perform better than GARCH models on at least two accounts. First, EGARCH models can accommodate asymmetric volatility, “where increases in volatility are associated more often with large negative returns than with equally large positive returns;” and, second, “by modeling the logarithm of the conditional variance, it is not necessary to restrict parameter values to avoid negative variance” (2007: 127-128). In other words, EGARCH models improve our ability to model presidential approval over ARCH and GARCH models by accommodating both volatility clustering and asymmetrical volatility, and by allowing us the use of unrestricted parameter values.

Figure 1: The Volatility of Presidential Popularity in Peru, August 1985-June 2008



Source: Apoyo Opinión y Mercado, *Informe de Opinión* (various years).

Figure 1 plots the log of *presidential approval* divided by its immediate lag value. Plotting the data in this way allows us to visualize the volatility of presidential popularity over time. If the popularity rate in month  $t$  is equal to its lag value ( $t-1$ ), then the log of their ratio will be equal to 0. Departures from 0 indicate the extent to which popularity rates fluctuate. Confirming that an EGARCH model is the appropriate choice to model the series of presidential support in

Peru, this figure clearly illustrates frequent periods of high volatility of the presidential approval series, especially between 1989 and 1992, and then again between 2003 and 2008. The first corresponds to a period of economic crisis, characterized by high inflation, and therefore, it is understandable why presidential approval became so unstable. The second volatility phase, on the other hand, corresponds to a period of significant economic growth. This is an indication that the volatility of presidential approval is affected not only by harsh economic conditions but also by booming economic times – likely due to voter’s high expectations of improved social conditions.

The EGARCH estimation allows us to model for both the conditional mean and the conditional variance of the dependent variable and the asymmetric impact of new information. Following standard models of *presidential approval*, we model its conditional mean (approval) as a function of lagged *presidential approval* (at month  $t-1$ ) along with the lagged values of a set of exogenous variables  $\mathbf{X}$ .

$$\text{Approval}_t = \lambda + \beta_1 \text{Approval}_{t-1} + \beta_2 \mathbf{X}_{t-1} + \varepsilon_t$$

We model the variance as follows:

$$\text{Log}(\sigma_t^2) = \lambda_0 + \lambda \mathbf{X} + \alpha \tilde{\varepsilon}_{t-1} + \gamma (|\tilde{\varepsilon}_{t-1} / \sigma_{t-1}^2 - \sqrt{2/\pi}|) + \delta \log(\sigma_{t-1}^2)$$

Where  $\lambda_0$  is a constant term,  $\lambda \mathbf{X}$  is a set of some exogenous variables (in this case, *election years* and *crisis conditions*),  $\alpha \tilde{\varepsilon}_{t-1}$  is the lagged errors divided by the variance (the leverage effect),  $\gamma (|\tilde{\varepsilon}_{t-1} / \sigma_{t-1}^2 - \sqrt{2/\pi}|)$  is the symmetric effect, and  $\delta \log(\sigma_{t-1}^2)$  is the EGARCH term (log of lagged variance). If  $\alpha > 0$ , then a leverage effect exists. If  $\gamma > \alpha$ , then the symmetric effect is more important than the leverage effect.

## Conditional mean model

The dependent variable – *presidential approval* – is the percentage of respondents endorsing the following presidents: Alan García (August 1985-July 1990), Alberto Fujimori (August 1990-November 2000), Valentín Paniagua (December 2000-July 2001), Alejandro Toledo (August 2001-July 2006), and Alan García (August 2006-June 2008). The main explanatory variables are *inflation* and the index of real *wages*.<sup>5</sup> We add a couple of dummy variables to

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5 Inflation is the variation in the monthly consumer price index. Data for real wages are the values of their monthly indices. When the published data had different baseline years, the entire monthly series was recalculated using the most recent baseline year. In this way, we achieved backward comparability. The data were taken from <<http://www.inci.gob.pe/>> (accessed: June 2008).

account for periods of economic crisis based on the presence of high inflation. Specifically, *high inflation*  $\geq 10$  controls for periods when the monthly inflation rate is 10 percent or higher. This period runs from January 1988 through January 1991, and represents the second half of García’s first term in office and the first six months of Fujimori’s first time as president. And *high inflation*  $\geq 20$  is a dummy variable for periods when the monthly inflation rate is 20 percent or higher. This period of economic crisis runs from September 1988 through August 1990; basically the last two years of García’s first term in office. Every month during this period is assigned a value of 1, and 0 for the other months. We also include the monthly number of terrorist acts – hereafter, *political violence* – to account for the impact of guerrilla insurgency on presidential approval. All observations are monthly. Table 1 presents the summary statistics of these variables.

Table 1: Summary Statistics

August 1985-June 2008	Mean	Std. Dev.	Min.	Max.
Presidential approval	44.38	21.96	6	90
Inflation $t-1$	6.80	26.52	-52	397
Wages $t-1$	106.10	45.08	43.7	248.6
Political violence	105.26	98.73	2	404
Observations	275	275	275	275

Source: Apoyo Opinión y Mercado, *Informe de Opinión* (various years), and Instituto Nacional de Estadística e Informática, online: <<http://www.inei.gob.pe/>>.

Restricting the use of control dummy variables to those that are strictly necessary, we employ three dummy variables that have been widely used in prior presidential approval research in Peru (e.g., Stokes 1996; Weyland 2000; Arce 2003; Kelly 2003). Accordingly, *shock* is a dummy coded for the first month after the enactment of the harsh economic stabilization package of August 1988. *Self-coup* is a dummy variable with a value of 1 for the first observation following the April 1992 coup d’état, 0 otherwise. *Guzmán capture* is a dummy coded for the first data point after the September 1992 capture of the leader of the Shining Path, Abimael Guzmán, 0 otherwise. *Honeymoon* is a dummy variable with a value of 1 for the first six months in office, and 0 for the other months. There are several honeymoon variables, each one corresponding to the beginning of a presidential term. The only exception to this rule is provided by Fujimori’s third term, which started in August 2000 and ended abruptly in November of that year. Therefore, we do not include a honeymoon dummy variable for this term. We also include a time-trend variable to account for the “cost of ruling hypothesis” or the “coalition of minorities” effect that argue that presidential support declines

over time, regardless of the policies adopted or the conditions of the economy. We reset that trend variable at the beginning of each presidency.

## Conditional variance model

For our conditional variance model, admittedly not the main concern of this paper, we include a dummy variable for several *election years*, as we expect, following Gronke and Brehm that the underlying variance of presidential approval should be more narrow in election years than in non-election years (2002: 437). The *election year 1990* corresponds to the first election of Fujimori, the *election year 2001* corresponds to the election of Toledo, and the *election year 2006* corresponds to the second election of Alan García (he was first elected in 1985). This logic also applies to immediate reelection years, as it was the case for Fujimori in 1995 (*reelection year 1995*) and 2000 (*reelection year 2000*). We assign a value of 1 for each of the six preceding months before the end of a presidential term, and 0 for the other months. We also include in one model a proxy variable for economic crisis ( $\text{inflation} \geq 10$ ) to see whether this condition affects the volatility of presidential popularity.

## Discussion of Results

Table 2 presents our main findings. Model 1 through 4 provide the estimates of the predictors of *presidential approval* for the whole period for which data are available, starting in August of 1985, when Alan García took office for the first time, and ending in June 2008, 23 months after he was inaugurated for his second term in office. Compared to Model 1, Models 2 through 4 analyze how periods of economic crisis based on the presence of inflation, which is examined by including the dummy variables *high inflation*  $\geq 10$  and *high inflation*  $\geq 20$ , affects presidential popularity.

Contrary to the conventional wisdom advocating atypical voting postures due to Peru's atypical economic conditions, Model 1 clearly shows that Peruvian voters largely resemble the traditional retrospective voting pattern. Voters are sensitive to a general increase in *inflation*. The negative sign associated with inflation indicates a decline in incumbent support when consumer prices go up. Presidential approval also responds in a positive, linear fashion to changes in the index of real *wages*, though the effect is not very strong. This result can be explained by the fact that the value of wages declined and remained stagnant for most of the period under consideration, even though there was another period during the mid-1980s when real

wages grew while inflation was also rising.<sup>6</sup> For the whole 1985-2008 period, we find that a gain of 10 points in the index of real wages produces a 0.03 percent increase in the level of presidential approval.

In Table 2, Model 1, almost all of the control dummy variables representing dramatic political events as well as most of the “honeymoon” periods are statistically significant and in the hypothesized direction. One exception is provided by the “honeymoon” effect for Toledo, which emerges with a negative sign and achieves statistical significance. This also goes to confirm the peculiar condition of this presidency, which endured low popularity ratings throughout its entire term. The other exceptions are given by the honeymoon effects for the second administrations of both Fujimori and García which turn out with the right sign in Model 1 but fail to achieve statistical significance.

Turning to the analysis of how economic crisis (defined based on the presence of high inflation) affects *presidential approval*, Models 2 and 3 add the dummy variable *high inflation*  $\geq 10$  to the variance and mean models, respectively. In the mean model (Model 3), this crisis dummy variable emerges as statistically significant and in the expected direction. The addition of this dummy variable, however, does not affect the substantive results for the other key variables of interest, such as *inflation* and real *wages*. Similarly, when the dummy variable *high inflation*  $\geq 10$  is added to the variance model (Model 2), the results show that periods of economic crisis neither increase the volatility of *presidential approval* nor affect the other substantive results from Model 1.

In Model 4, we included a dummy variable for periods when the monthly inflation rate was 20 percent or higher (*high inflation*  $\geq 20$ ) in the mean model. In an additional model (not shown), we added this dummy variable to the variance model. As noted previously, this crisis dummy variable represents the last two years of García’s first term in office. In both the mean and variance models, however, this dummy variable did not emerge as statistically significant or altered the substantive results for the key variables of interest, such as *inflation* and real *wages* from Model 1. These results suggest that the inclusion of a dummy variable for the hyperinflationary period (when monthly inflation rates exceeded 20 percent) does not add substantial explanatory power to our model. Voters do not wait until inflation is out of control to punish incumbents.

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6 This was true for the first two years of García’s first administration. Between September 1985 and July 1987, the index of real wages went from 164 to 248 while the monthly inflation rate for the similar period went from 3.5 to 21.7 percent.

Table 2: Determinants of Presidential Approval in Peru, 1985-2008

Independent Variables	Model 1	Model 2	Model 3	Model 4
<b>Mean Models</b>				
Inflation $t-1$	-0.015*	-0.048***	-0.017**	-0.018***
	(0.008)	(0.006)	(0.008)	(0.005)
High inflation $\geq 10$			-1.157*	
			(0.613)	
High inflation $\geq 20$				-0.700
				(0.655)
Wages $t-1$	0.003***	0.005***	0.004***	0.003***
	(5.64e-04)	(3.11e-04)	(6.44e-04)	(4.64e-04)
Political violence	-7.54e-04***	0.001***	0.002***	7.39 e-04***
	(2.91e-04)	(1.65e-04)	(3.63e-04)	(2.16e-04)
Shock	-8.594***	-6.955**	-8.075***	-7.927**
	(3.335)	(3.469)	(3.132)	(3.347)
Self-coup	29.744***	29.614***	29.482***	29.574***
	(0.241)	(0.304)	(0.275)	(0.259)
Guzmán capture	13.795***	13.833***	13.921***	13.818***
	(0.067)	(0.092)	(0.074)	(0.063)
Honeymoon García (1)	37.345***	37.626***	37.269***	37.343***
	(4.446)	(4.617)	(4.378)	(4.419)
Honeymoon Fujimori (1)	21.533***	20.435***	23.091***	22.791***
	(2.857)	(2.618)	(2.622)	(2.146)
Honeymoon Fujimori (2)	2.806	3.428	3.540	3.101
	(2.400)	(2.348)	(2.469)	(2.430)
Honeymoon Paniagua	10.698***	14.656**	11.384***	10.859***
	(4.047)	(6.661)	(3.973)	(3.938)
Honeymoon Toledo	-4.662**	-4.233*	-4.243*	-4.573**
	(2.300)	(2.408)	(2.203)	(2.256)
Honeymoon García (2)	6.205	6.910	6.818	6.486
	(4.284)	(4.587)	(4.376)	(4.400)
Time-trend	0.034***	0.039***	0.043***	0.037***
	(0.002)	(7.94e-04)	(1.51e-04)	(1.70e-04)
Presidential approval $t-1$	0.961***	0.954***	0.951***	0.955***
	(0.001)	(4.25e-04)	(9.77e-04)	(8.58e-04)
Constant	-0.388***	-0.557***	-0.753***	-0.342***
	(0.075)	(0.024)	(0.053)	(0.057)



Independent Variables	Model 1	Model 2	Model 3	Model 4
<b>Variance Models</b>				
High inflation $\geq 10$		0.0558 (0.163)		
Election year 1990	-0.336 (0.440)	-0.194 (0.634)	-0.468 (0.494)	-0.444 (0.464)
Reelection year 1995	0.222 (0.371)	0.206 (0.364)	0.237 (0.378)	0.237 (0.379)
Reelection year 2000	-0.377 (0.384)	-0.384 (0.376)	-0.430 (0.380)	-0.413 (0.385)
Election year 2001	0.0190 (0.497)	-0.0328 (0.526)	0.0346 (0.510)	0.0365 (0.506)
Election year 2006	0.978*** (0.359)	0.918** (0.362)	0.999*** (0.375)	0.995*** (0.374)
Constant	0.889*** (0.257)	0.849*** (0.273)	0.967*** (0.274)	0.944*** (0.263)
Leverage effect ( $\alpha$ )	-0.131 (0.080)	-0.0774 (0.086)	-0.160** (0.081)	-0.145* (0.080)
Symmetric effect ( $\gamma$ )	0.739*** (0.119)	0.717*** (0.118)	0.735*** (0.118)	0.745*** (0.118)
Log of lagged variance ( $\delta$ )	0.754*** (0.069)	0.764*** (0.074)	0.734*** (0.074)	0.740*** (0.071)
Log likelihood	-881.160	-883.245	-881.051	-881.216
Observations	275	275	275	275

Note: Entries are EGARCH regression coefficients; standard errors in parentheses.  
\* $p \leq 0.01$ ; \*\*  $p \leq 0.05$ ; \*\*\*  $p \leq 0.001$

Source: Apoyo Opinión y Mercado, *Informe de Opinión* (various years), and Instituto Nacional de Estadística e Informática, online: <<http://www.inei.gob.pe/>>.

Jointly, Models 3 and 4 show the prevalence of traditional economic voting attitudes, even while controlling for severe and protracted periods of crisis. Interestingly, the variable measuring political violence is the only (non-economic) variable that is affected by the presence of crisis situations. In Model 1, *political violence* emerges as a negative and statistically significant predictor of *presidential approval*, suggesting that Peruvian voters punished their presidents when terrorist activities increased. However, the introduction of crisis variables (in Models 2 through 4) reveals the most likely consequence of political violence on presidential approval over the long term, that is, a rallying effect, with upticks in political violence generating greater support for the incumbent (although the total effect is small).

With regards to the variance models, the results of Model 1 through 4 show that symmetric effects are larger than leverage effects. Moreover, the value for the leverage effect ( $\alpha$ ) fails to achieve statistical significance in two of the models, whereas the value for the symmetric effect ( $\gamma$ ) is not only larger than that of the leverage effect but it is also statistically significant in all the models. This suggests that unanticipated good economic performance affects the volatility of presidential approval as much as unanticipated bad performance does. This is consistent with traditional economic voting. Tellingly, presidential approval levels showed little volatility between 1992 and 1996 in Peru. These were not only times of important economic recovery but also pacification. The country's GDP grew 12.8 percent in 1994 and 8.6 percent in 1995, and political violence declined significantly. Voters rewarded the incumbent accordingly. Fujimori capitalized on these achievements, making his reelection a foregone conclusion.

## Conclusion

The bulk of existing research seeks to explain how crisis-ridden economic conditions affect presidential support in emerging democracies. Traditionally, these studies have emphasized attitudes that deviate from normal retrospective economic voting. Other studies associate crisis-ridden economic contexts with issue salience effects as the gains from successfully managing catastrophic crises are always short-lived. Over the sample period from 1985 to 2008, our central findings suggest that the effects of economic conditions on presidential approval approximate more traditional economic postures than previously thought. Rising inflation depresses presidential approval. Rising wages boost presidential support.

A couple of additional observations can be drawn from our study. First, it appears that the alleged departures from traditional economic voting identified in Peru by the existing literature are the result of specific crisis-ridden economic situations. As such, these propositions help us understand one specific presidency (Fujimori's) during a particular period of time (the early 1990s) to some degree. However, by taking into account a larger temporal domain (24 years from 1985 to 2008) and four major presidencies in Peru, our findings reveal that in the long run Peruvian voters largely stick to traditional economic voting patterns. Therefore, the alleged departures from traditional economic voting identified by the existing literature cannot be generalized beyond the specific crisis situations that motivated these works. Second, the extent to which the solution of crisis-ridden conditions diminishes the impact of economic variables on presidential popularity remains unclear. Over the time span of our study, we find that both inflation and

wages behave consistently with traditional economic voting postures. There was little evidence for changes in issue salience for these two indicators in the long term.

In closing, our study uncovers the overall importance of economic factors in the determination of presidential popularity. This is consistent with findings in other transitional democracies (e.g., Buendía 1996; Remmer and Gélineau 2003; Mishler and Willerton 2003). It remains to be seen whether or not this dynamic also plays out in other transitional countries such as Poland and Argentina, which like Peru, have undergone radical pro-market adjustment and a cycle of severe crisis followed by recovery, and at the same time, have served as the basis for much of the public opinion research in developing democracies.

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### **Aprobación presidencial en tiempos de crisis y de recuperación económica en el Perú, 1985-2008**

**Resumen:** Debido fundamentalmente al peso teórico asignado al papel de la crisis económica, la literatura existente sobre la aprobación presidencial en el Perú ofrece una distinta variedad de explicaciones sobre los diversos factores que afectan el apoyo presidencial. Estas distintas explicaciones comparten una cosa en común: enfatizan la ausencia de un voto económico tradicional. Nosotros sostenemos aquí que la diversidad de interpretaciones y de hallazgos empíricos surge del alto grado de volatilidad de los indicadores económicos y de la falla de las investigaciones actuales en considerar la varianza temporal de la popularidad presidencial. Analizamos el impacto del desempeño económico y eventos políticos significativos en la determinación de la popularidad presidencial en el Perú para el período 1985-2008 usando un modelo de heteroscedasticidad condicional autorregresivo generalizado exponencial (EGARCH). Nuestros hallazgos sugieren que los efectos de las condiciones económicas en la popularidad presidencial se aproximan más a las posturas del voto económico tradicional de lo que se creía previamente. En la medida que las condiciones de crisis en el Perú ayudaron a la teorización de las alegadas desviaciones del voto económico tradicional, este país es un caso ideal para revisar las proposiciones existentes en la literatura, particularmente en un momento cuando esas condiciones de crisis han desaparecido.

**Palabras clave:** Perú, aprobación presidencial, voto económico, crisis económica, recuperación económica