Popova, Olga; See, Sarah Grace; Nikolova, Milena; Otrachshenko, Vladimir

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The societal costs of inflation and unemployment

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OLGA POPOVA

Leibniz Institute for East and Southeast European Studies (IOS);

CERGE-EI, a joint workplace of Charles University and the Czech Academy of Sciences;

IZA; and GLO

Address: Landshuter Str. 4, 93047 Regensburg, Germany

popova@ios-regensburg.de

SARAH GRACE SEE

University of Groningen and GLO

Address: Nettelbosje 2, 9747 AE Groningen, The Netherlands

s.g.see@rug.nl

MILENA NIKOLOVA

University of Groningen, Brookings Institution, IZA, and GLO

Address: Nettelbosje 2, 9747 AE Groningen, The Netherlands

m.v.nikolova@rug.nl

VLADIMIR OTRACHSHENKO

Center for International Development and Environmental Research (ZEU), Justus Liebig University Giessen

Address: Senckenbergstraße 3, 35390 Giessen, Germany

vladimir.otrachshenko@zeu.uni-giessen.de

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The societal costs of inflation and unemployment

Abstract

What are the broad societal implications of inflation and unemployment? Analyzing a dataset of over 1.9 million individuals from 156 countries via the Gallup World Poll spanning 2005 to 2021, alongside macroeconomic data at the national level, we find that both inflation and unemployment have a negative link with confidence in financial institutions. While inflation is generally unassociated with confidence in government and leadership approval, unemployment still has a strong negative association with these outcomes. While we find no gender differences in the consequences of inflation and unemployment for confidence in political and financial institutions, the associations we document are more substantial for the cohorts that are likely to bear a disproportionate burden from inflation and unemployment—the middle-aged, lower-educated, and unmarried individuals, and for those living in rural areas. Uncertainty about the country's economic performance and one's own economic situation are the primary channels behind the associations we identify. These findings hold significant implications for policymakers, Central Banks, and public discourse, necessitating targeted strategies to alleviate the social consequences of inflation and unemployment.

Keywords: inflation, unemployment, trust, confidence in institutions, Gallup World Poll

JEL Codes: D12; D83; E31; E58

"Without trust in governments, markets and institutions, support for necessary reforms is difficult to mobilise, particularly where short-term sacrifices are involved, and long-term gains might be less tangible."

OECD Report 2013 "Government at a Glance"

1. Introduction

This paper studies how inflation and unemployment influence two key sources of institutional trust – political trust (confidence in the national government and approval of the leader) and confidence in financial institutions. To explore this question, we investigate the trust answers of millions of individuals living in 156 countries worldwide combined with country-level information on inflation and unemployment.

Trust in government and approval of the leadership are critical markers of the functioning of democracy and the public's opinion of the government's work, which can influence people's acceptance of government policies and facilitate compliance. For example, during the first waves of the COVID-19 pandemic, European countries with high levels of trust in politicians had higher compliance with the lockdown measures, translating into lower mortality rates (Aksoy, Eichengreen, and Saka, 2020). Trust in government also influences support for policy reforms (Chanley, Rudolph, and Rahn, 2000; Gabriel and Trüdinger, 2013; OECD, 2013).[1]

Trust in financial institutions and banks is essential to ensure their smooth operations and the functioning of the economy. However, many individuals lack a sophisticated knowledge of financial products (van de Cruijsen, de Haan, and Roerink, 2020). Mistrust of financial institutions can destabilize the financial sector and the economy (Guiso, 2010; van der Cruijsen et al., 2021). Against this backdrop, understanding the determinants of financial and institutional trust is crucial to policymakers and economists.

While neoclassical economics predicts that inflation is not substantively harmful to individuals, evidence suggests that people strongly dislike inflation (Shiller, 1997), giving rise to a splintered view among economists about the actual economic, cognitive, and social costs

[1] Social trust is at the core of financial transactions and economic exchange (Arrow, 1972) and is linked with economic growth and prosperity (Akçomak and Ter Weel, 2009; Algan and Cahuc, 2010; Knack and Keefer, 1997; Tabellini, 2010). The determinants of social trust include genetic diversity, governance status, political affiliations, conflicts, and repressions, among others (Ashraf and Galor, 2013; Bai and Wu, 2020; Conzo and Salustri, 2019; Guiso et al., 2016; Nikolova, Popova, and Otrachshenko, 2022; Nunn and Wantchekon, 2011; Otrachshenko, Nikolova, and Popova, 2023).

of inflation (Blanchflower et al., 2014; Di Tella, MacCulloch, and Oswald, 2001; El-Jahel, MacCulloch, and Shafiee, 2022; Otrachshenko, Popova, and Tavares, 2016; Wolfers, 2003). Individuals seem to associate inflation with decreasing living standards, loss of national prestige, political instability, and exploitation (Shiller, 1997). Furthermore, ordinary people view rising inflation as the consequence of national politics and institutions, including the national central banks and the European Central Bank (ECB) (Shiller, 1997; van der Cruijsen, de Haan, and van Rooij, 2023; Wälti, 2012). Trust in the ECB also affects inflation expectations (Christelis et al., 2020), and individuals who trust the ECB have inflation expectations that align with the ECB's target (Brouwer and de Haan, 2022).

Central banks often view inflation and unemployment in terms of a tradeoff. Rising interest rates to curb inflation may reduce economic growth and cause unemployment in the short run. The interlinkages between inflation and unemployment and the associated tradeoffs are policy-relevant. Several studies evaluate the personal well-being costs of inflation and unemployment (e.g., Blanchflower et al., 2014; Di Tella et al., 2001; El-Jahel et al., 2022; Wolfers, 2003) and conclude that the psychological toll of unemployment is significantly greater than that of inflation.

Beyond the psychological well-being costs, economic uncertainty and volatility may also have socio-political costs, such as those related to trust, social cohesion, and social engagement. Consequently, a growing social science literature investigates the consequences of inflation and unemployment on trust in government and financial institutions (van der Cruijsen et al., 2023; Wälti, 2012). Most studies within that body of scholarship have focused on trust in the ECB using Eurobarometer data, showing conflicting results (Bursian and Fürth, 2015; Ehrmann, Soudan, and Stracca, 2013). At the same time, studies on the association between inflation and unemployment and trust in *other* institutions remain scarce, especially in economics. In a rare exception, Stevenson and Wolfers (2011) examine the correlation between the unemployment rate and trust of different institutions in the United States and countries in the Gallup World Poll (for 2005-2010). The results suggest that unemployment is strongly associated with a decline in trust in financial institutions and national governments worldwide, which is even stronger among the OECD countries. Meanwhile, rising unemployment is among the strongest predictors of confidence in banks in the United States. Unfortunately, Stevenson and Wolfers (2011) do not pit inflation and unemployment against each other. In another exception, Algan et al. (2017) use data from the European Social Survey 2000-2014 and document that regional unemployment in Europe is associated with lower trust in national parliaments, the European Parliament, and politicians. Again, the paper does not

include a focus on inflation together with unemployment. Finally, a paper from the political science literature based on Eurobarometer data from 1999 to 2011 for 15 European Union (EU) states demonstrates that while the inflation rate is generally unassociated with the trust of government and parliament, the unemployment rate is negatively linked with these political trust variables (Van Erkel and Van Der Meer, 2016).

Our paper makes several significant contributions that build on and expand the extant literature on the topic. First, we are the first to explore the consequences of both inflation and unemployment for confidence in the national government, confidence in financial institutions, and approval of the country's leader using a large global sample comprising 1.9 million individuals living in 156 countries. Second, we provide heterogeneity analyses by the country's level of economic development and individual socioeconomic characteristics, such as age groups, gender, education, income, marital status, immigration and employment status, presence of children, and rural/urban residence. By doing this, we consider that the socio-political costs of macroeconomic variables depend on the country's circumstances and people's characteristics. In addition, we conduct a series of simulations to explore the policy-relevant question of how the effects of inflation and unemployment on confidence in political and financial institutions would change in response to a global macroeconomic shock that raises inflation and unemployment for all countries in the sample. Finally, we document and empirically test the channels behind the relationship between inflation, unemployment, and confidence in political and financial institutions. Our analyses and main conclusions provide evidence that can aid national policymakers and Central Banks in decision-making and contribute to public debates about inflation and unemployment.

We document that both inflation and unemployment are associated with lower confidence in financial institutions. Furthermore, unemployment is associated with lower confidence in national governments and disapproval of the country's leader, even though inflation has no association with these outcomes. These patterns are similar in OECD and non-OECD countries, although smaller in magnitude in non-OECD countries. Furthermore, we find no gender differences in the consequences of inflation and unemployment for confidence in political and financial institutions. Notably, the associations we document are more substantial for the cohorts that are likely to bear a disproportionate burden from inflation and unemployment—the middle-aged, lower-educated, unmarried individuals, and those living in rural areas. Perceptions of the country's economic performance and own economic security are the primary channels behind the links between inflation and unemployment on the one hand,

and confidence in political and financial institutions on the other. Finally, corruption perceptions mediate the impact of unemployment on confidence in political institutions.

2. Related Literature

Several studies in the economics literature convincingly demonstrate that inflation and unemployment have substantial negative personal well-being costs (e.g., Di Tella et al., 2001; Wolfers, 2003). For example, based on a global sample of 1.5 million observations from 2005 to 2019, El-Jahel et al. (2022) find that the well-being costs of unemployment are about five times higher than those of inflation. However, studies on how inflation and unemployment are related to trust have remained relatively limited despite the strong correlation between subjective well-being and trust (Algan, 2018).

The extant literature exploring the consequences of inflation and unemployment on trust shows conflicting results, depending on the measure of trust, the sample of countries, and the length of the time series used. Several papers have studied how inflation and unemployment relate to trust in central banks and the ECB.[2] Using data on 12 European states for 1999-2010, Wälti (2012) finds that inflation negatively correlates with trust in the ECB, but unemployment is uncorrelated with it. Inflation and unemployment seem uncorrelated with trust in the European Commission, but unemployment negatively affects trust in the European Council (Wälti, 2012). In another contribution, Ehrmann et al. (2013) find that inflation and unemployment are uncorrelated with trust in the ECB during the 1999-2010 period.

Furthermore, using Eurobarometer data on 19 Euro-area countries from 1999 to 2015, Farvaque, Hayat, and Mihailov (2017) discover that inflation is unassociated with trust in the ECB. Unemployment does not feature among the covariates they study. Moreover, Bursian and Fürth (2015) use data from the Eurobarometer surveys from 1999 until 2010 and show that while inflation deviations from the target level are unassociated with trust in the ECB, the unemployment rate is negatively associated with it in the Euro area countries. A related study by Roth, Gros, and Nowak-Lehman (2014) relies on panel data for 12 Euro-area countries between 1999 and 2012. It documents a negative and significant relationship between

[2] Brouwer and de Haan (2022) utilize a survey of Dutch households to investigate the drivers and consequences of trust in the ECB. They did not find supporting evidence on the impact of individual characteristics such as age, education, income, and employment status on trust, but confirmed the relevance of political (right-wing) ideology and financial knowledge. They also find that those who were clients of a bank that received government support during the financial crisis tend to be more trusting of the ECB.

unemployment and trust during the financial crisis, which is driven by Spain, Ireland, Greece, and Portugal.[3]

The limited literature on the impact of inflation and unemployment on trust in government and political institutions has also produced conflicting results. For example, using data from the Eurobarometer from 1999 until 2010, Roth, Nowak-Lehmann, and Otter (2022) study how inflation and unemployment influence trust in national governments, parliaments, the European Commission, and the European Parliament. Both inflation and unemployment are negatively correlated with trust in national governments and parliaments in the 1999-2007 period in the EU15 and the EU27. In the 2008-2010 period, only unemployment was negatively correlated with trust in national institutions in the EU15. In the EU27, neither unemployment nor inflation is statistically significantly associated with trust in national politics. The results about trust in EU institutions are more nuanced. The authors' results imply that inflation negatively correlates with political trust when the economy is performing well and that citizens worry about jobs and (un)employment during periods of crisis. In another contribution based on Eurobarometer data from 1999 to 2011 for 15 EU states, van Erkel and van Der Meer (2016) demonstrate that while the inflation rate is generally unassociated with the trust of government and parliament, the unemployment rate is negatively linked with the political trust outcomes.[4]

In a related paper that also uses the Gallup World Poll, Stevenson and Wolfers (2011) examine the correlation between the unemployment rate and trust of different institutions in the United States (from 1972 to 2008) and countries in the Gallup World Poll (from 2005 to 2010). The results suggest that unemployment is strongly associated with declining confidence in financial institutions and national governments worldwide. Compared with the full analysis sample, the relationship among the OECD countries is even stronger. In the United States, rising unemployment influences trust in banks the most. Unfortunately, Stevenson and Wolfers (2011) only provide evidence up to 2010 and do not examine the association between inflation and the different confidence variables. Similarly, Algan et al. (2017) document regional unemployment's adverse influence on trust in European countries' political institutions. Unfortunately, the paper also does not account for inflation.

[3] Van der Cruijsen et al. (2023) show that inflation perceptions are negatively associated with trust of national politics, trust of the ECB, and trust of the Dutch central bank. Using a survey conducted in 2022, the authors also document that trust of national politics, the ECB, and the central bank is also lower among Dutch respondents who believe that the given institution's task is to keep inflation low. High levels of trust in the ECB are also associated with lower inflation expectations and higher certainty about future price stability (Christelis et al., 2020).

[4] Van Erkel and Van der Meer (2016, p. 180) summarize several previous contributions in political science on the relationship between political trust and macroeconomic performance that also produce mixed results. The authors underscore that many of the studies' results are a function of their "methodological choices and rigour."

Our paper builds on and extends the literature in several ways. First, while other papers have examined mainly the European context, our work focuses on a global sample of 156 countries. Second, our analysis looks beyond the average associations and shows results for respondents with different socio-demographic characteristics. Next, we also conduct a series of simulations to analyze how alternative scenarios comprising different inflation and unemployment levels would affect confidence in political and financial institutions. Finally, as discussed in the next section, we document and empirically test the channels behind the relationship between inflation, unemployment, and confidence in political and financial institutions.

3. Theoretical insights

Inflation and unemployment influence trust in political and financial institutions through several channels. First, individuals may associate high inflation with unpredictability and volatility (Friedman, 1977). Rising prices disproportionately affect low-income households, whose purchasing power declines (Friedman, 1977). Individuals may thus associate increasing prices and falling real incomes with the fact that the economy is not going in a good direction and that the government, politicians, and financial institutions cannot be trusted (Guiso et al., 2019; Margalit, 2019; Sanz, Sole-Olle, and Sorribas-Navarro, 2022; Van Erkel and Van der Meer, 2016). According to a survey by Shiller (1997), respondents think governments and politicians are morally obliged to keep inflation low. He writes: "To the extent that there is such a public perception, anyone who takes public office must feel that he or she is in a position of public trust, and is under pressure to live up to public expectations" (p. 56).

Second, high inflation may be linked with decreasing living standards and the perception that greedy or opportunistic people are "causing" inflation to rise (Shiller, 1997). This may also reduce confidence in banks and financial institutions.

Furthermore, respondents in Shiller's survey (1997) also associate inflation with a loss of national prestige and a potential cause for political instability, which may lead to decreased confidence in government and leadership. Similarly, unemployment is associated with greater corruption perceptions (Mocan, 2008). Exposed to corruption, individuals lose trust in politicians (Giommoni, 2021; Sole-Olle and Sorribas-Navarro, 2018), the private sector (Gillanders and Neselevska, 2018), and the International Monetary Fund and the World Bank (Breen and Gillanders, 2015). In addition, when facing aggregate unemployment and economic hardship, individuals are more likely to think that politicians are incapable of solving their country's economic problems (Sanz et al., 2022). As a result, people lose confidence in political

institutions and vote less for the current government officials, and corruption exacerbates this effect (Guiso et al., 2019; Margalit, 2019; Sanz et al., 2022).

Moreover, the inflation-unemployment tradeoff is not straightforward. Curbing the aggregate unemployment below a so-called Non-Accelerating Inflation Rate of Unemployment (NAIRU) is often viewed in terms of the risk of rising inflation (Ball and Mazumder, 2011, 2019; Blanchard, 2016; Gordon, 2013). Specifically, maintaining short-term aggregate unemployment at some (NAIRU) level is arguably necessary for low inflation since short-term unemployment creates an excess labor supply that reduces wage growth and curbs inflation (Ball and Mazumder, 2011, 2019; Gordon, 2013). Long-term unemployment has no such effect since long-term unemployment becomes unattractive in the labor market (Ball and Mazumder, 2019). At the same time, high national-level unemployment rates have high psychic costs, and aggregate unemployment becomes a proxy for fear of unemployment (Di Tella et al., 2001). This feeling of job insecurity may, in turn, be associated with lower trust in political institutions (Wroe, 2014).

Changes in inflation and unemployment translate into lower confidence in political and financial institutions if people clearly understand macroeconomic performance and its implications. However, the literature argues that public knowledge of macroeconomic performance is often biased and systematically differs from the official statistics and experts' forecasts (Blendon et al., 1997; Caplan, 2002; Van Erkel and Van der Meer, 2016). This happens for several reasons. First, individuals may have limited information regarding macroeconomic performance, often based on media reports (Caplan, 2002; Coibion et al., 2022). At the same time, the media tend to present a more pessimistic picture of economic performance than is actually the case, making individual perceptions of macroeconomic performance more pessimistic (Blendon et al., 1997). Moreover, individual knowledge and understanding of macroeconomic performance may also differ according to socio-demographic characteristics (Caplan, 2002). In addition, individual experiences with rising prices and unemployment may vary from the official inflation and unemployment figures (Blendon et al., 1997). As a result, the impact of inflation and unemployment on confidence in political and financial institutions may also differ with the individual circumstances. The public may correctly perceive unemployment as an important problem in their country but fail to perceive inflation similarly (Dolan et al., 2009; Van Erkel and Van der Meer, 2016). However, individuals who receive more information regarding inflation and macroeconomic performance are likely to adjust their spending decisions and beliefs regarding the economy (Coibion et al., 2021; Coibion, Gorodnichenko, and Weber, 2022).

To summarize, inflation and unemployment may affect individual confidence in political and financial institutions through three main channels: i) uncertainty regarding the country's economic performance, ii) perception of own economic insecurity, and iii) perceived greed and opportunism of the government officials or banks as proxied by corruption perceptions. Individuals are likely to associate inflation and unemployment with personal or country's instabilities and with low governmental performance, which affects their trust and confidence in political and financial institutions.

4. Data and variables

We construct our analysis sample by combining two main data sources – individual-level information from the Gallup World Poll (GWP) and country-level data on inflation and unemployment from the World Bank.

Starting in 2005/6, the Gallup organization has surveyed individuals aged 15 and older living in over 150 countries worldwide, representing 99% of the world's adult non-institutionalized population. Our analysis focuses on the 2005-2021 period, but we also provide analyses for 2009-2021, as income and employment status information is only available since 2009. Phone data collection takes place in countries and areas with widespread telephone coverage (i.e., Northern America, Western Europe, developed Asia, and Gulf Cooperation Council countries). Face-to-face interviews take place in Central and Eastern Europe, much of Latin America, former Soviet Union states, and nearly all of Asia, the Middle East, and Africa. Gallup interviewers interview different individuals during each survey wave, and as such, the dataset presents pooled cross-sections. Furthermore, not all countries feature in the data collection each year.

The GWP provides high-quality and rich information on confidence in different institutions, political leaders, and individual-level characteristics, which are the important building blocks in our analysis. Our main dependent variables include confidence in the national government, confidence in financial institutions or banks, and approval of the country's leader.

Confidence in the national government is measured using the question (with possible answers being “yes” and “no”): "*In (this country), do you have confidence in each of the following, or not? How about: National government."* This variable is available in our data for 148 countries from 2005 to 2021.

Confidence in financial institutions is measured using the question (with possible answers being “yes” and “no”): "*In (this country), do you have confidence in each of the*

following, or not? How about: Financial institutions or banks." This variable is available in our data for 156 countries from 2005 to 2021.

Approval of the country's leader is based on the following question (with possible answers being “approve” or “disapprove”): "*Do you approve or disapprove of the way [leader/head/president] of (country) is handling his/her job as [leader title]?"* This variable is available in our data for 137 countries for the 2011-2021 period.

Following related papers using the Gallup World Poll in similar contexts (e.g., Aksoy, Eichengreen, and Saka, 2020; El-Jahel et al., 2022; Stevenson and Wolfers, 2011), our control variables are age and age squared, a binary variable for biological sex, education level (tertiary education or primary/secondary education), having children below the age of 15 living in the household, immigrant and marital status. We do not include household size as a control because it is unavailable in all countries and years. We create a missing indicator for all variables reflecting the "do not know" (DK) and refusal responses. This additional "missing information" category for each variable has no interpretation but serves to keep the number of observations and avoid bias from dropping respondents with missing observations. The respondent's employment status and household income are only available starting in 2009. Hence, we do not include them in the baseline analyses but show additional results with these variables (see Table A2 in the appendix).

Data on inflation are based on the Consumer Price Index (CPI), with 2010 as the baseline, downloaded from the World Bank's World Development Indicators (WDI). The source is the International Monetary Fund, International Financial Statistics and data files. We calculate inflation as the rate of change of the CPI.

Data on unemployment are from the World Bank's WDI and reflect the unemployment rate as a percent of the total labor force, based on data and definitions from the International Labour Organization ("ILO Modelled Estimates and Projections Database (ILOEST)," ILOSTAT). The unemployment rate is the share of the number of people who are not working but looking for work as a proportion of the country's labor force.

Summary statistics about the key dependent and independent variables for our analysis sample are available in Table 1. Over half of the respondents in the sample are confident in the national government, 61.8% were confident in financial institutions and banks, and 58.6% showed approval for their country's leadership. About half of the sample are females, and the respondents' average age is 39 years. More than half are married (56.5%), have children below the age of 15 (52.9%), and are employed (54%); 5.4% are immigrants, 24.3% live in rural areas, and 12.3% have a college degree. Almost 40% of the sample belongs to the bottom tertile of

the within-country income distribution, while nearly 26% belongs to the top tertile. Average inflation was 30.8%, and the unemployment rate was about 7.5%. Figures 1-5 map the global patterns for the three dependent variables, as well as inflation and unemployment rates. Darker-colored shades in the maps indicate higher percentages.

5. Empirical approach

We estimate a regression whereby the political or financial trust level T of each individual i living in country c at time t is:

$$T_{ict}=\alpha+\beta Inflation_{ct}+\pi Unemployment_{ct}+\boldsymbol{X'_{ict}\gamma} + \boldsymbol{\eta_c} + \boldsymbol{\tau}_t + \varepsilon_{ic} \quad (1)$$

where *Inflation* is the rate of change of the CPI, *Unemployment* is the share of those without work but seeking work in the nation's labor force, and $\boldsymbol{X}$ captures individual socioeconomic characteristics (age and age squared, gender, marital and immigration status, education level, children in the home, and rural/urban place of residence). We also include country and year fixed effects, denoted by $\boldsymbol{\eta_c}$ and τ_t , respectively. These fixed effects capture differences in responding to questions related to trust and approval of the leaders, time-invariant cultural and geographic differences between the countries, as well as shocks that affected all countries in the sample at the same time way, e.g., the global COVID-19 pandemic or the 2008 financial crisis. The regression includes individual- and macro-level variables and refers to a one-step estimation method (DiTella, 2003). We estimate Equation (1) using a probit regression and cluster the standard errors at the country-by-year level. All reported coefficients we report are in terms of average marginal effects.

5.1. Econometric issues

Readers should interpret our estimates as conditional correlations rather than causal effects. First, there is the issue of reverse causality. While inflation and unemployment may affect individual confidence in institutions and approval of the leader, personal opinions of institutions and leaders may also influence inflation and unemployment. In theory, central banks that set monetary policies are independent and politically neutral, but central banks may be susceptible to political pressure (Waller, 1991). Therefore, people's perceptions of politics and politicians may influence inflation and other economic policies. We show specifications in Table 5, whereby we introduce lagged measures of inflation and unemployment, which mitigates this issue.

Second, individuals who are most displeased with and distrustful of their national institutions and leaders could choose to emigrate (e.g., Auer, Römer, and Tjaden, 2020; Dustmann and Okatenko, 2014; Lam, 2002). Those who choose to stay may be trustful or indifferent to the country's political leadership or financial institutions. Such self-selection into staying by individuals with particular characteristics that also tend to be high-trusting or disinterested in national politics would create a positive bias on the results we obtain.

Dealing with these econometric challenges is non-trivial. Plausible instruments for inflation and unemployment that do not directly influence political trust and leadership approval are challenging to find. Natural experiments in terms of random shocks to inflation and unemployment are also not feasible in a cross-country setting. While we follow the literature in specifying Equation (1) and provide a series of robustness tests, our goal is to provide descriptive results about the tradeoff between inflation and unemployment in different circumstances related to a broader set of political and financial trust measures.

6. Results

6.1. Main Results

Table 2 presents the main regression results (in terms of average marginal effects) based on the probit estimations. The dependent variable is confidence in the national government in column (1), confidence in financial institutions and banks in column (2), and approval of the country's leader in column (3). All models include individual controls, such as age and its square, gender, education, resident children, marital and immigration status, living in a rural or urban area, country, and year fixed effects. Full regression outputs are available in Appendix Table A1. Given that information on individual employment status and income is only available from 2009, Appendix Table A2 presents results estimations for 2009-2021 with and without controls for these individual characteristics. The coefficient estimates in models with and without controls for personal employment status and income in Table A2 are not substantially different from our main results. We, therefore, proceed with the main analyses using data from 2005-2021, without controls for individual employment status and income in our main regressions.

Table 2 demonstrates that country-level unemployment rates are associated with lower political trust and confidence in financial institutions across all specifications. A 1 percentage point (p.p.) increase in unemployment is associated with a 1.125 percentage point lower confidence in financial institutions and banks, a 1.006 percentage point lower confidence in

the national government, and a 1.062 percentage point lower approval of the national leader. Inflation is weakly negatively associated with the confidence of financial institutions, but not with political trust. Specifically, a 1 p.p. increase in the inflation rate lowers the probability of expressing confidence in financial institutions and banks by 0.003 p.p. These findings suggest that the societal costs of unemployment far exceed those of inflation. While Stevenson and Wolfers (2011) do not provide any results related to inflation, our global sample estimates related to unemployment have a similar magnitude as in their paper.

Next, we explore how the associations between inflation and unemployment and confidence in political and financial institutions would change in response to a hypothetical global macroeconomic shock that affects all countries simultaneously and with the same severity. We consider several hypothetical scenarios where we raise inflation and unemployment in all countries in our sample by one standard deviation using entropy balancing (Hainmueller, 2012).[5] Using the entropy balancing weights, all countries in the sample are assigned a new sample mean for their inflation and unemployment levels that are one standard deviation higher than the actual sample means.[6] Next, we compute weights for each observation based on the new means and use these weights in Equation (1). We conduct this exercise by increasing the means of (i) both inflation and unemployment simultaneously, (ii) only inflation, and (iii) only unemployment.

Table 3 shows the results from these simulations. Interestingly, the association between inflation and confidence in political institutions (columns (1) and (3)) remains similar to the baseline results in Table 2. At the same time, the influence of unemployment is reduced but remains statistically significant. The fact that the influence of unemployment changes in response to a global shock, but the influence of inflation remains the same confirms our previous findings that unemployment is a more crucial societal problem than inflation. An alternative explanation of our results is that individuals are less likely to blame political leadership for the consequences of global shocks that affect all countries similarly.

The results regarding confidence in financial institutions and banks differ from those related to political trust. In all simulations shown in Table 3, the effects of unemployment on the probability of expressing confidence in financial institutions and banks (column (2)) remain

[5] We use the *ebalance* command in the Stata software (Hainmueller & Xu, 2013).

[6] The mean of inflation increases from 0.3213238 to 2.2099818 and the mean of unemployment increase from 0.075501 to 0.1308447 in the model with the confidence in national government as a dependent variable, from 0.3084858 to 2.1056738 and from 0.0748253 to 0.1303066 in the model with confidence in financial institutions and banks, and from 0.4317042 to 2.3586992 and from 0.0760284 to 0.1323354 in the model with the leader approval. The difference in means of inflation and unemployment in different models is due to a number of observations and the studied periods in each model.

similar to the baseline results in Table 2, suggesting that individuals may potentially blame financial institutions and banks in their country even for the global macroeconomic shocks. These simulation results remain suggestive, necessitating further research on the topic.

6.2. Sensitivity checks

We provide several robustness checks for our results. First, we collapse the data at the country level and run panel regressions to show that our results are independent of the unit of analysis and to allow comparisons with the findings in the literature (Table 4). Using the country-level data allows for country and year fixed effects, alleviating endogeneity concerns, moreover. Existing studies analyze the effects of inflation and unemployment on well-being either solely at the individual level (Blanchflower et al. 2014; Di Tella and MacCulloch 2006, 2009; El-Jahel et al. 2022), solely at the country level (Di Tella et al. 2001), or at both country and individual levels (Wolfers, 2003). Stevenson and Wolfers (2011) examine the association between unemployment and institutional trust and present individual- and country-level analyses. The country panel results show similar patterns as our main results in Table 2, suggesting that our results are robust to this check.

Second, to alleviate concerns related to reverse causality, we provide a model in which we include the one-year lagged measures of inflation and unemployment instead of the contemporaneous measures (for a discussion of this approach, see Bellemare et al., 2017; Reed, 2015). The results are presented in Table 5 and are in line with the baseline estimates in Table 2. Alternatively, the lags can serve as instruments in a 2SLS regression. These results are presented in Table A3 in the appendix and qualitatively are similar to our main results in Table 2, though the impact of inflation becomes statistically insignificant.

Finally, inflation and unemployment levels may proxy for volatility and fluctuations. Volatility often goes hand in hand with uncertainty, which individuals dislike (Nikolova and Graham, 2022). To show that this is not the case, we include in Equation (1) the between-country standard deviations of inflation and unemployment as proxies for volatility.[7] The results in Table 6 suggest that both inflation and unemployment volatility are unassociated with the probability of expressing confidence in political and financial institutions. Meanwhile, the main effects of inflation and unemployment remain statistically significant and similar in magnitude to our main results in Table 2.

[7] We use the between-country standard deviation to capture the idea that individuals may compare inflation and unemployment in their country with that of their neighbors.

6.3. Mechanisms

Based on the theoretical insights in Section 3, we empirically explore three main mechanisms that could explain the effect of inflation and unemployment on confidence in political and financial institutions: (i) uncertainty about the country's economic state, (ii) worries and expectations about own economic situation, and (iii) corruption perceptions. We test the role played by each channel empirically by adding proxies for each mechanism to Equation (1) one by one and analyze how the coefficient estimates on inflation and unemployment change compared to the baseline results from Table 2.

We measure perceptions of a country's economic situation through an aggregate index constructed by the Gallup Organization based on individual answers to two survey questions: "*Right now, do you think that economic conditions in this country, as a whole, are getting better or getting worse?*" and "*How would you rate your economic conditions in this country today – as excellent, good, only fair, or poor?*" Perceptions of respondents' own economic situation are based on the survey question, "*Right now, do you feel your standard of living is getting better or getting worse?*" where possible answers include worse, the same, or better. Finally, corruption perception is an index constructed based on the two survey questions: "*Is corruption widespread within businesses located in (country), or not?*" and "*Is corruption widespread throughout the government in (country), or not?*" We present the summary statistics of these measures in the second panel of Table 1.

The results presented in Table 7 indicate that improvements in perceptions of one's own economic situation and the country's economic performance are both positively associated with all trust variables. In contrast, corruption perceptions attract a negative coefficient estimate in the trust regressions. Adding perceptions of the country's economic situation and respondents' own economic situation to the model makes the association between inflation and confidence in financial institutions and banks statistically insignificant, while adding corruption perception has no such influence. These results suggest that economic uncertainty and insecurity may indeed serve as a channel explaining, at least in part, the impact of inflation on the probability of expressing confidence in financial institutions. Meanwhile, corruption does not appear to be such a channel behind this relationship. Adding the perception of the country's economic performance also makes the negative association between inflation and confidence in political institutions marginally statistically significant, suggesting that the relationship between

inflation and confidence in politics may run through the perceptions of a worsening economic situation.

All three suggested mechanisms also reduce the magnitude of the association between unemployment and confidence in political and financial institutions. Specifically, adding perceptions of the country's economic performance to Equation (1) reduces the magnitude of the impact of unemployment on the probability of expressing confidence in the national government by half (-1.006 to -0.459) and fully explains the association between unemployment and the approval of a country's leader. Uncertainty about the economic situation mediates the relationship between unemployment and confidence in political institutions. The magnitude of the impact of unemployment on the probability of being confident in financial institutions and banks reduces by about a third (-1.125 to -0.769) when we add the perceptions of the country's economic performance. Adding perceptions of respondents' own economic situations has a similar impact on confidence probability in both financial and political institutions.

Finally, corruption perceptions partially explain the association between unemployment and confidence in political institutions. Adding corruption perceptions to the model reduces the magnitude of unemployment's coefficient estimate by about a third (-1.006 to -0.763) in the case of confidence in the national government and by one-fifth (-1.062 to –0.890) in the case of the leader's approval. The impact of unemployment on the probability of expressing confidence in financial institutions and banks remains similar (-1.125 to -1.016) when we add corruption perceptions to the model, suggesting that corruption cannot explain this impact.

6.4. Heterogeneity

We further explore heterogeneity results to understand how the relationship between trust, inflation, and unemployment varies with individual and country circumstances. Specifically, we split the main sample and estimate Equation (1) for respondents who live in countries with different levels of development and income (Tables 8 and A5 in the appendix) and for respondents with different socioeconomic characteristics (Tables 9a-9c). We consider heterogeneity according to gender, age, education, marital status, having children below 15 years old in the household, immigration status, urban or rural residence, employment status, and income.

Table 8 presents the results for respondents from the OECD and non-OECD countries, which reflect the global patterns we document in Table 2. However, in non-OECD countries,

the magnitude of the association between unemployment and political trust is smaller, which is in line with Stevenson and Wolfers (2011). In Table A5 in the appendix, we also present the results for country groups distinguished by income level, as defined by the World Bank.[8] The findings in Table A5 regarding the influence of unemployment in lower-middle-income, upper-middle-income, and high-income countries are similar to those in Table 2.[9] There are no statistically significant associations between unemployment and confidence in political institutions in low-income countries. The latter finding could be due to more difficulties distinguishing between unemployment and informal employment in countries with a lower income and, as a result, less clear-cut associations between unemployment and confidence in political institutions. In addition, we document a negative association between inflation and confidence in the national government in low- and high-income countries, and the magnitude of the coefficient estimate is larger in the high-income countries. One can potentially explain this finding with a relatively larger amount of savings depreciation encountered in the higher-income countries compared to lower-income countries, resulting in stronger dissatisfaction with the national government's actions. At the same time, we find a positive association between inflation and confidence in financial institutions and banks in high-income countries. One potential explanation for this is that inflation in this group of countries was mostly low post-2009, and rises in inflation may have been welcome, implying greater general returns on risks and investment. Other findings are mostly similar to those in Table 2.

We next turn to the heterogeneity results based on individual circumstances. The results for respondents with different socioeconomic characteristics are available in Tables 9a, 9b, and 9c for confidence in the national government, confidence in financial institutions and banks, and the approval of the country's leader, respectively. In each table, we also document the baseline result from Table 2 to facilitate comparisons.

Inflation is mostly unassociated with political trust across the different sample splits (see Tables 9a and 9c). Notable exceptions include inflation's negative association with

[8] This categorization of countries is updated every year and is available from the webpage of the World Bank: https://datatopics.worldbank.org/world-development-indicators/the-world-by-income-and-region.html. The groupings are not time-invariant as countries may be re-classified based on their income over time. For consistency, in our analysis we used the definition of country groups as provided by the World Bank for 2021 (see Table A4 for details).

[9] The effects of unemployment are not statistically significant in the case of confidence in financial institutions and banks in the lower-middle income countries (column 2 in Table A5), and in case of national government and leadership approval in upper-middle income countries (columns 1 and 3 in Table A5). In addition, we find that inflation is not associated with any of the three indicators of confidence in political institutions in the lower- and upper-middle income countries. One potential explanation for these findings is that in the middle-income countries, respondents may be more tolerant of inflation and unemployment as they may accompany the process of economic growth and may be a marker of progress.

immigrants' and rural residents' confidence in the national government and immigrants' and a middle-income group's probability of approval of a country's leader. These cohorts exhibit lower confidence in political institutions in response to increased inflation. In addition, an increase in inflation is negatively associated with confidence in the national government of different income groups, and the absolute magnitude of this effect is similar across the income quartiles.

There is no noteworthy heterogeneity in the results concerning confidence in financial institutions and banks (Table 9b), except for college graduates, immigrants, and middle- and top-income groups who experience a slight decline in trust (in absolute magnitude) due to increased inflation. These groups are more likely to be informed about the actions of financial institutions and banks in response to rising inflation. Therefore, they are more likely to lose their confidence in those institutions if their efforts are not successful in curbing inflation.

The association between unemployment and confidence in political and financial institutions varies substantially across socioeconomic groups. Specifically, compared to the baseline estimate in Table 2 column (1), unemployment seems to negatively influence the confidence in the national government among the middle-aged (45-59 years old), immigrants, those without children, and rural residents. The influence of unemployment on the leader's approval is relatively stronger for the youth (below age 25), immigrants, unmarried, and the lower income group. Also, the impact of unemployment on the probability of expressing confidence in political institutions is relatively smaller in absolute magnitude for college graduates, urban residents, and the top income group compared to the baseline estimates in Table 2 columns (1) and (3). Finally, compared with the baseline estimate in Table 2 column (2), unemployment's influence on confidence in financial institutions is stronger among the middle-aged (45-59 years old) and college graduates and relatively smaller for urban residents. For other socioeconomic groups, the impact of unemployment on confidence in political and financial institutions is similar to the baseline estimates in Table 2.

7. Discussion and conclusion

Based on a sample of over 1.9 million individuals living in 156 countries, this paper is the first global study to examine how inflation and unemployment influence trust in political and financial institutions. We find that political trust is generally not linked with inflation in the settings we explore. All in all, inflation is a relatively minor issue for trust in politics and financial institutions. Unemployment rates are, however, a different story. Specifically, there

is a strong negative association between unemployment and all trust variables we study and among all socio-demographic groups.

Our results dovetail with and complement a parallel literature on the global consequences of inflation and unemployment for subjective well-being (e.g., El-Jahel et al., 2022), which shows that inflation has relatively more minor psychological costs than unemployment. Nevertheless, this literature has not explored *why* individuals perceive the unemployment rate in their countries as a serious issue. We close this research gap by documenting and empirically testing the channels behind the impact of inflation and unemployment on confidence in institutions. Part of the explanations could be due to economic considerations at the national and individual levels. Our analyses suggest that individuals associate unemployment with poor economic performance and their own financial situation, for which they "blame" governments and financial institutions. Unemployment volatility, as proxied by the standard deviation of unemployment, does not seem to play a role, meanwhile. Unemployment creates a sense of bleakness and worry, which feeds into institutional trust. Taken together, the results from our study and those from the subjective well-being literature suggest that unemployment is a much more severe problem for individuals, the economy, and the political process than inflation. This implies that unemployment is a problem that politicians and national governments should prioritize.

The consequences of unemployment also seem more substantial for the most vulnerable groups, including middle-aged, lower-educated, unmarried individuals, and rural residents. Providing evidence of such differences across population groups is essential for guiding information campaigns and public debates, especially during macroeconomic instabilities. Our results suggest that, if not properly communicated, the adverse effects of macroeconomic fluctuations result in lower confidence in political and financial institutions that specific population groups might drive. As previous literature documents, lower confidence in institutions is also linked to voting behaviors and the prevalence of populists and right-wing parties (e.g., Algan et al., 2017).

Our analysis leaves several open questions and avenues for future research. First, future studies can uncover additional mechanisms underpinning the relationships we document, possibly with the help of survey data, as in Shiller (1997) or van der Crujsen et al. (2023). Second, revealing additional heterogeneities in the relationships and understanding the peculiarities of particular contexts and places can be a welcome addition. Finally, our analysis period does not include the recent spikes in inflation and the unemployment patterns related to

the post-COVID-19 realities and the war in Ukraine, which is another opportune extension of our work.

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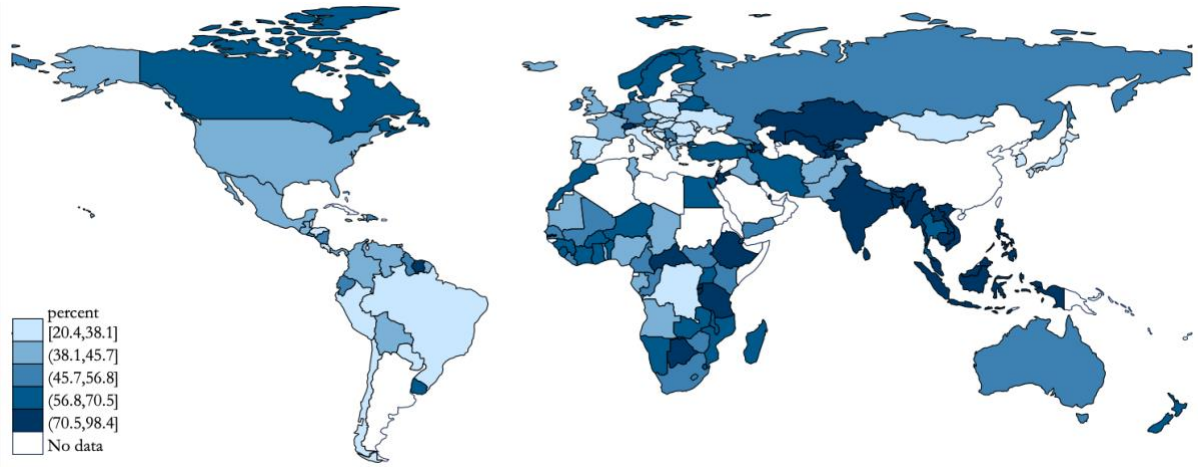
FIGURES

Figure 1: Percentage of respondents with confidence in the national government

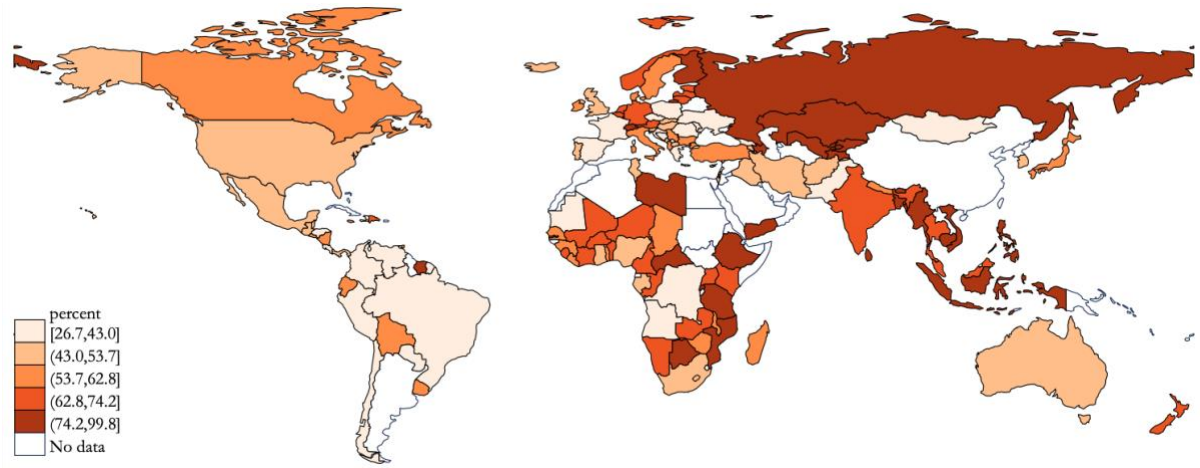


Source: Authors based on Gallup World Polls, 2005/6-2021.
Notes: The map depicts the percentage of respondents in the analysis sample from column (1) in Table 2 who have confidence in the national government. The percentages for each country are computed based on averaging all responses for all available years of data for each country between 2005/6 and 2021.

Figure 2: Percentage of respondents with confidence in financial institutions and banks

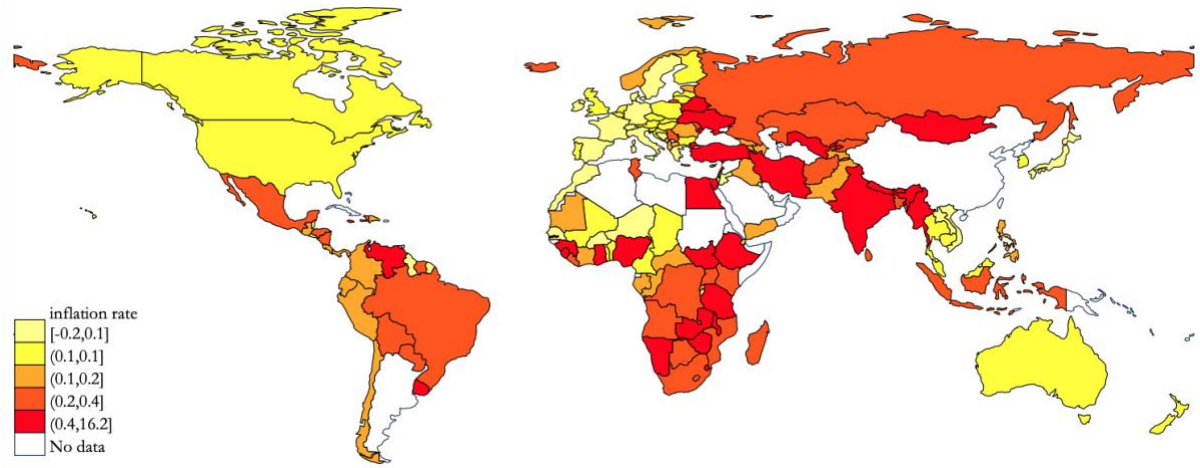
Source: Authors based on Gallup World Polls, 2005/6-2021.
Notes: The map depicts the percentage of respondents in the analysis sample from column (2) in Table 2 who have confidence in the financial institutions and banks. The percentages for each country are computed based on averaging all responses for all available years of data for each country between 2005/6 and 2021.

Figure 3: Percentage of respondents who approve of their country's leader



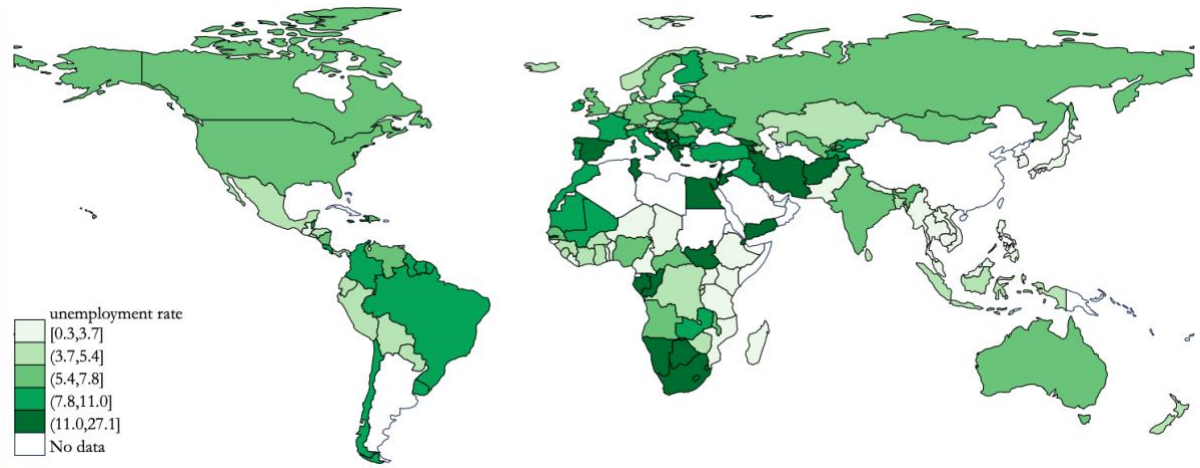
Source: Authors based on Gallup World Polls, 2005/6-2021.
Notes: The map depicts the percentage of respondents in the analysis sample from column (3) in Table 2 who reported approval of how the country's leader handles his/her job. The percentages for each country are computed based on averaging all responses for all available years of data for each country between 2005/6 and 2021.

Figure 4: Inflation rate



Source: Authors based on inflation data from the World Bank, merged with the Gallup World Poll, 2005/6-2021.
Notes: The map depicts the inflation rate faced by the respondents in the analysis sample from column (1) in Table 2. The average inflation rate is computed for all available years of data for each country between 2005/6 and 2021.

Figure 5: Unemployment rate



Source: Authors based on inflation data from the World Bank, merged with the Gallup World Poll, 2005/6-2021. *Notes:* The map depicts the unemployment rate that respondents in the analysis sample from column (1) in Table 2 face. The average unemployment rate is computed for all available years of data for each country between 2005/6 and 2021.

TABLES

Table 1. Summary statistics.

Variable	No. of observations	Mean	Std. deviation	Min	Max
Dependent variables					
Confidence in the national government	1,818,479	0.527	0.499	0	1
Confidence in financial institutions and banks	1,923,989	0.618	0.486	0	1
Approval of a country's leadership	1,139,295	0.586	0.492	0	1
Explanatory variables					
Inflation	1,923,989	0.308	1.797	-0.506	53.110
Unemployment	1,923,989	0.075	0.055	0.001	0.349
Age	1,923,989	39.254	17.320	15	99
Female (1=female, 0=male)	1,923,989	0.503	0.500	0	1
Immigration status					
immigrant	1,923,989	0.054	0.227	0	1
missing information	1,923,989	0.073	0.261	0	1
Place of residence (1=rural, 0=urban)					
rural	1,923,989	0.243	0.429	0	1
missing information	1,923,989	0.048	0.214	0	1
Marital status (0=unmarried, 1=married)					
married	1,923,989	0.565	0.496	0	1
missing information	1,923,989	0.010	0.097	0	1
Education (0=no college, 1=college)					
College degree	1,923,989	0.123	0.328	0	1
missing information	1,923,989	0.041	0.197	0	1
Children below age 15 (0=no, 1=yes)					
has children below the age of 15	1,923,989	0.529	0.499	0	1
missing information	1,923,989	0.033	0.179	0	1
Within-country income tertile					
bottom tertile	1,643,512	0.394	0.489	0	1
middle tertile	1,643,512	0.322	0.467	0	1
top tertile	1,643,512	0.256	0.436	0	1
missing information	1,643,512	0.027	0.163	0	1
Employment status					
employed	1,643,512	0.540	0.498	0	1
unemployed	1,643,512	0.068	0.252	0	1
not working	1,643,512	0.364	0.481	0	1
missing information	1,643,512	0.028	0.164	0	1
Mechanisms					
Perception of a country's economic situation	858,480	-3.822	70.817	-100	100
Perception of own economic situation	1,830,443	2.187	0.836	1	3
Corruption perception	1,739,892	67.695	41.626	0	100

Notes: The reported statistics are for 2005-2021 and are weighted using the survey weight. Data on employment status and income are from 2009-2021. Data on the approval of a country's leader are from 2011-2021.

Table 2. Inflation, unemployment, and confidence in political and financial institutions, 2005-2021.

	National government (1)	Financial institutions and banks (2)	Country's leader (3)
Inflation	-0.002	-0.003**	-0.001
	(0.002)	(0.001)	(0.002)
Unemployment	-1.006***	-1.125***	-1.062***
	(0.138)	(0.112)	(0.212)
The sample mean of the dependent variable	0.524	0.616	0.585
Pseudo-R^2	0.101	0.089	0.092
Observations	1,818,479	1,923,989	1,139,295

Notes: *** p<0.01, ** p<0.05, * p<0.1. Marginal effects of probit regressions are reported. Robust standard errors clustered at the country-by-year level are in parentheses. All regressions are weighted using the survey weight and include country fixed effects, year fixed effects, individual characteristics (age and its square, gender, education, marital status, having children, immigrant status, and living in a rural or urban area), and controls for missing values in individual characteristics. Given the data availability for the approval of a country's leader, regression in column (3) is estimated for 2011-2021.

Table 3. Simulations with increasing inflation and unemployment globally by one standard deviation, 2005-2021.

	National government (1)	Financial institutions and banks (2)	Country's leader (3)
	Increasing both inflation and unemployment		
Inflation	0.000	-0.001**	-0.000
	(0.001)	(0.001)	(0.001)
Unemployment	-0.782***	-1.075***	-0.497**
	(0.142)	(0.125)	(0.247)
Observations	1,818,479	1,923,989	1,139,295
	Increasing inflation		
Inflation	0.001	-0.001	0.000
	(0.001)	(0.001)	(0.001)
Unemployment	-1.023***	-1.152***	-1.061***
	(0.138)	(0.115)	(0.215)
Observations	1,818,479	1,923,989	1,139,295
	Increasing unemployment		
Inflation	-0.002	-0.004**	-0.001
	(0.002)	(0.001)	(0.002)
Unemployment	-0.781***	-1.059***	-0.526**
	(0.141)	(0.123)	(0.245)
Observations	1,818,479	1,923,989	1,139,295

Notes: *** p<0.01, ** p<0.05, * p<0.1. Marginal effects of probit regressions are reported. Robust standard errors clustered at the country-by-year level are in parentheses. All regressions are weighted using the survey weight and include country fixed effects, year fixed effects, individual characteristics (age and its square, gender, education, marital status, having children, immigrant status, and living in a rural or urban area), and controls for missing values in individual characteristics. Given the data availability for the approval of a country's leader, regression in column (3) is estimated for 2011-2021.

Table 4. Inflation, unemployment, and confidence in institutions, country-level regressions, 2005-2021.

	National government	Financial institutions and banks	Country's leader
	(1)	(2)	(3)
Inflation	-0.002	-0.003***	-0.002
	(0.003)	(0.001)	(0.002)
Unemployment	-1.032***	-1.183***	-1.056***
	(0.239)	(0.243)	(0.344)
R^2	0.121	0.156	0.071
No. of countries included	148	156	137
Observations	1,772	1,885	1,110

Notes: *** p<0.01, ** p<0.05, * p<0.1. Fixed effects regression results are reported based on all variables' country-level means. Means are calculated by country and year with the survey weights. Robust standard errors are in parentheses. All regressions include means of individual characteristics (age and its square, gender, education, marital status, having children, immigrant status, and living in a rural or urban area) and the year fixed effects. Given the data availability for the approval of the country's leader, regressions in column (3) are estimated for 2011-2021.

Table 5. Inflation, unemployment, and confidence in political and financial institutions, with lags, 2005-2021.

	National government	Financial institutions and banks	Country's leader
	(1)	(2)	(3)
Inflation $_{t-1}$	-0.005	-0.005**	-0.000
	(0.004)	(0.002)	(0.002)
Unemployment $_{t-1}$	-0.910***	-1.117***	-1.005***
	(0.133)	(0.114)	(0.209)
Pseudo-R^2	0.102	0.09	0.091
Observations	1,825,920	1,932,019	1,149,211

Notes: *** p<0.01, ** p<0.05, * p<0.1. Marginal effects of probit regressions are reported. Robust standard errors clustered at the country-by-year level are in parentheses. All regressions are weighted using the survey weight and include country fixed effects, year fixed effects, individual characteristics (age and its square, gender, education, marital status, having children, immigrant status, and living in a rural or urban area), and controls for missing values in individual characteristics. Given the data availability for the approval of a country's leader, regression in column (3) is estimated for 2011-2021.

Table 6. Inflation, unemployment, and confidence in political and financial institutions, the model with volatility, 2005-2021.

	National government	Financial institutions and banks	Country's leader
	(1)	(2)	(3)
Inflation	-0.002	-0.003**	-0.001
	(0.002)	(0.001)	(0.002)
Std. deviation of inflation	-0.006	0.004	0.008
	(0.012)	(0.009)	(0.016)
Unemployment	-1.006***	-1.125***	-1.062***
	(0.138)	(0.112)	(0.212)
Std. deviation of unemployment	2.440	-3.484	-9.135
	(3.484)	(2.742)	(10.036)
Pseudo-R^2	0.101	0.09	0.092
Observations	1,818,479	1,923,989	1,139,295

Notes: *** p<0.01, ** p<0.05, * p<0.1. Marginal effects of probit regressions are reported. Robust standard errors clustered at the country-by-year level are in parentheses. All regressions are weighted using the survey weight and include country fixed effects, year fixed effects, individual characteristics (age and its square, gender, education, marital status, having children, immigrant status, and living in a rural or urban area), and controls for missing values in individual characteristics. Given the data availability for the approval of a country's leader, regression in column (3) is estimated for 2011-2021.

Table 7. Channels through which inflation and unemployment influence confidence in political and financial institutions.

	National government (1)	Financial institutions and banks (2)	Country's leader (3)
	Perception of the country's economic performance		
Inflation	-0.004**	0.001	-0.004*
	(0.002)	(0.001)	(0.002)
Unemployment	-0.459**	-0.769***	0.281
	(0.226)	(0.248)	(0.417)
Perception of the country's economic performance	0.002***	0.001***	0.002***
	(0.000)	(0.000)	(0.000)
Pseudo-R^2	0.189	0.133	0.183
Observations	812,320	858,480	584,942
	Perception of own economic situation		
Inflation	-0.000	-0.002	-0.000
	(0.002)	(0.001)	(0.001)
Unemployment	-0.742***	-0.922***	-0.863***
	(0.135)	(0.112)	(0.210)
Perception of own economic situation	0.086***	0.073***	0.076***
	(0.001)	(0.001)	(0.002)
Pseudo-R^2	0.117	0.102	0.106
Observations	1,744,274	1,830,443	1,082,823
	Corruption perceptions		
Inflation	-0.001	-0.002*	-0.001
	(0.002)	(0.001)	(0.002)
Unemployment	-0.763***	-1.016***	-0.890***
	(0.120)	(0.109)	(0.202)
Corruption perceptions	-0.003***	-0.002***	-0.002***
	(0.000)	(0.000)	(0.000)
Pseudo-R^2	0.141	0.101	0.118
Observations	1,738,579	1,739,892	1,083,417

Notes: *** p<0.01, ** p<0.05, * p<0.1. Marginal effects of probit regressions are reported. Robust standard errors clustered at the country-by-year level are in parentheses. All regressions are weighted using the survey weight and include country fixed effects, year fixed effects, individual characteristics (age and its square, gender, education, marital status, having children, immigrant status, and living in a rural or urban area), and controls for missing values in individual characteristics.

Table 8. Inflation, unemployment, and confidence in institutions in OECD and non-OECD countries, 2005-2021.

	National government	Financial institutions and banks	Country's leader
	(1)	(2)	(3)
		OECD	
Inflation	-0.045*	-0.004	0.082
	(0.026)	(0.023)	(0.188)
Unemployment	-1.585***	-1.231***	-1.915***
	(0.232)	(0.179)	(0.414)
Pseudo-R^2	0.067	0.088	0.075
Observations	500,865	505,158	358,494
		Non-OECD	
Inflation	-0.001	-0.002*	-0.001
	(0.002)	(0.001)	(0.002)
Unemployment	-0.580***	-0.830***	-0.721***
	(0.175)	(0.145)	(0.276)
Pseudo-R^2	0.112	0.083	0.099
Observations	1,317,614	1,418,831	780,801

Notes: *** p<0.01, ** p<0.05, * p<0.1. Marginal effects of probit regressions are reported. Robust standard errors clustered at the country-by-year level are in parentheses. All regressions are weighted using the survey weight and include country fixed effects, year fixed effects, individual characteristics (age and its square, gender, education, marital status, having children, immigrant status, and living in a rural or urban area), and controls for missing values in individual characteristics. Given the data availability for the approval of a country's leader, regressions in column (3) are estimated for 2011-2021.

Table 9a. Heterogeneity by individual socioeconomic characteristics, confidence in the national government.

	Baseline from Table 2	Gender		Age				Education		Marital status	
		Male	Female	Below 25	25-44	45-59	60 and above	College	No college	Married	Unmarried
Inflation	-0.002	-0.001	-0.002	-0.001	-0.001	-0.004	-0.002	-0.006	-0.002	-0.001	-0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)	(0.004)	(0.002)	(0.002)	(0.002)
Unemployment	-1.006***	-1.019***	-0.990***	-1.052***	-0.911***	-1.128***	-1.033***	-0.807***	-0.966***	-0.964***	-1.046***
	(0.138)	(0.141)	(0.140)	(0.147)	(0.140)	(0.148)	(0.172)	(0.157)	(0.147)	(0.144)	(0.137)
Pseudo-R^2	0.101	0.097	0.107	0.103	0.11	0.108	0.092	0.099	0.103	0.108	0.095
Observations	1,818,479	853,059	965,420	418,572	713,415	347,946	338,467	294,245	1,451,222	1,025,078	776,122

	Children		Migration status		Place of residence		Employment status			Within-country income tertile		
	Has children below 15	Has no children below 15	Immigrant	Not immigrant	Urban	Rural	Employed	Unemployed	Out of the labor force	Bottom	Middle	Top
Inflation	-0.001	-0.005	-0.006**	-0.001	0.001	-0.004*	-0.002	-0.001	-0.002	-0.006**	-0.007*	-0.008***
	(0.002)	(0.003)	(0.003)	(0.002)	(0.001)	(0.003)	(0.002)	(0.002)	(0.002)	(0.003)	(0.004)	(0.002)
Unemployment	-1.022***	-1.126***	-1.191***	-1.064***	-0.599***	-1.073***	-0.863***	-0.765***	-0.745***	-0.934***	-0.869***	-0.656***
	(0.149)	(0.149)	(0.169)	(0.141)	(0.182)	(0.143)	(0.147)	(0.173)	(0.156)	(0.153)	(0.151)	(0.148)
Pseudo-R^2	0.103	0.098	0.1	0.103	0.113	0.096	0.106	0.098	0.093	0.109	0.103	0.096
Observations	908,917	845,144	79,750	1,589,460	431,525	1,298,514	845,750	99,411	560,167	520,168	500,295	479,998

Notes: *** p<0.01, ** p<0.05, * p<0.1. Marginal effects of probit regressions are reported. Each column corresponds to a separate regression. Robust standard errors clustered at the country-by-year level are in parentheses. All regressions are weighted using the survey weight and include country fixed effects, year fixed effects, individual characteristics (age and its square, gender, education, marital status, having children, immigrant status, and living in a rural or urban area), and controls for missing values in individual characteristics. Regressions with employment status and income use data from 2009-2021.

Table 9b. Heterogeneity by individual socioeconomic characteristics, confidence in financial institutions and banks.

	Baseline from Table 2	Gender		Age				Education		Marital status	
		Male	Female	Below 25	25-44	45-59	60 and above	College	No college	Married	Unmarried
Inflation	-0.003**	-0.003**	-0.003*	-0.002**	-0.003*	-0.004**	-0.003*	-0.011***	-0.002*	-0.003**	-0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)	(0.004)	(0.001)	(0.001)	(0.001)
Unemployment	-1.125***	-1.131***	-1.119***	-1.038***	-1.104***	-1.250***	-1.111***	-1.279***	-1.039***	-1.127***	-1.105***
	(0.112)	(0.115)	(0.115)	(0.125)	(0.117)	(0.122)	(0.133)	(0.159)	(0.115)	(0.118)	(0.113)
Pseudo-R^2	0.089	0.091	0.09	0.073	0.093	0.102	0.098	0.097	0.092	0.099	0.08
Observations	1,923,989	912,897	1,011,092	446,021	774,719	363,646	339,603	328,860	1,521,045	1,090,534	815,442
	Children		Migration status		Place of residence		Employment status			Within-country income tertile		
	Has children below 15	Has no children below 15	Immigrant	Not immigrant	Urban	Rural	Employed	Unemployed	Out of the labor force	Bottom	Middle	Top
Inflation	-0.002*	-0.004**	-0.012***	-0.003*	-0.001	-0.004**	-0.003*	-0.003*	-0.004***	-0.006***	-0.007***	-0.007***
	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)
Unemployment	-0.963***	-1.219***	-1.005***	-1.118***	-0.814***	-1.194***	-1.083***	-0.868***	-0.886***	-1.013***	-1.014***	-1.045***
	(0.119)	(0.122)	(0.155)	(0.114)	(0.147)	(0.119)	(0.121)	(0.156)	(0.132)	(0.121)	(0.130)	(0.140)
Pseudo-R^2	0.083	0.097	0.101	0.091	0.092	0.092	0.102	0.089	0.09	0.1	0.1	0.095
Observations	975,222	885,443	102,059	1,679,751	439,702	1,391,080	906,565	105,235	591,307	549,726	534,179	519,837

Notes: *** p<0.01, ** p<0.05, * p<0.1. Marginal effects of probit regressions are reported. Each column corresponds to a separate regression. Robust standard errors clustered at the country-by-year level are in parentheses. All regressions are weighted using the survey weight and include country fixed effects, year fixed effects, individual characteristics (age and its square, gender, education, marital status, having children, immigrant status, and living in a rural or urban area), and controls for missing values in individual characteristics. Regressions with employment status and income use data from 2009-2021.

Table 9c. Heterogeneity by individual socioeconomic characteristics and approval of the country's leader.

	Baseline from Table 2	Gender		Age				Education		Marital status	
		Male	Female	Below 25	25-44	45-59	60 and above	College	No college	Married	Unmarried
Inflation	-0.001	-0.000	-0.001	-0.000	-0.001	-0.003	-0.000	-0.000	-0.001	-0.000	-0.001
	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Unemployment	-1.062***	-1.024***	-1.099***	-1.233***	-0.979***	-1.124***	-0.908***	-0.887***	-1.076***	-0.972***	-1.154***
	(0.212)	(0.214)	(0.219)	(0.234)	(0.218)	(0.226)	(0.260)	(0.238)	(0.217)	(0.221)	(0.216)
Pseudo-R^2	0.092	0.087	0.098	0.095	0.097	0.094	0.088	0.096	0.093	0.094	0.091
Observations	1,139,295	535,906	603,389	248,050	435,163	221,030	234,122	210,415	923,503	637,661	494,115
	Children		Migration status		Place of residence		Employment status			Within-country income tertile		
	Has children below 15	Has no children below 15	Immigrant	Not immigrant	Urban	Rural	Employed	Unemployed	Out of labor force	Bottom	Middle	Top
Inflation	-0.001	-0.002	-0.007***	-0.001	0.001	-0.002	-0.001	-0.001	-0.000	-0.007	-0.010**	-0.007
	(0.001)	(0.002)	(0.003)	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.005)	(0.005)	(0.005)
Unemployment	-1.130***	-1.052***	-1.217***	-1.088***	-0.859***	-1.109***	-1.075***	-1.039***	-0.985***	-1.206***	-1.028***	-0.801***
	(0.232)	(0.225)	(0.260)	(0.220)	(0.278)	(0.214)	(0.219)	(0.265)	(0.232)	(0.220)	(0.223)	(0.221)
Pseudo-R^2	0.092	0.09	0.092	0.094	0.108	0.085	0.09	0.087	0.087	0.094	0.091	0.089
Observations	567,596	565,127	53,901	1,032,465	276,160	854,357	644,887	74,726	415,208	389,021	374,872	359,944

Notes: *** p<0.01, ** p<0.05, * p<0.1. Marginal effects of probit regressions are reported. Each column corresponds to a separate regression. Robust standard errors clustered at the country-by-year level are in parentheses. All regressions are weighted using the survey weight and include country fixed effects, year fixed effects, individual characteristics (age and its square, gender, education, marital status, having children, immigrant status, and living in a rural or urban area), and controls for missing values in individual characteristics. All regressions use data from 2011-2021.

Appendix

Table A1. Full estimation outputs for Table 2, 2005-2021.

	National government	Financial institutions and banks	Country's leader
	(1)	(2)	(3)
Inflation	-0.002	-0.003**	-0.001
	(0.002)	(0.001)	(0.002)
Unemployment	-1.006***	-1.125***	-1.062***
	(0.138)	(0.112)	(0.212)
Age	-0.007***	-0.008***	-0.004***
	(0.000)	(0.000)	(0.000)
Age squared	0.008***	0.008***	0.005***
	(0.000)	(0.000)	(0.000)
Male	0.012***	0.018***	0.014***
	(0.001)	(0.001)	(0.002)
Immigrant	0.057***	0.042***	0.040***
	(0.004)	(0.004)	(0.005)
Rural	-0.034***	-0.013***	-0.025***
	(0.003)	(0.002)	(0.003)
Married	0.025***	0.011***	0.024***
	(0.001)	(0.001)	(0.002)
College	-0.017***	0.005**	-0.006*
	(0.003)	(0.002)	(0.003)
Has children below 15	0.017***	0.009***	0.012***
	(0.002)	(0.001)	(0.002)
Pseudo-R^2	0.101	0.089	0.092
Observations	1,818,479	1,923,989	1,139,295

Notes: *** p<0.01, ** p<0.05, * p<0.1. Marginal effects of probit regressions are reported. Robust standard errors clustered at the country-by-year level are in parentheses. All regressions are weighted using the survey weight and include country fixed effects, year fixed effects, and missing values for individual characteristics (education, marital status, having children, immigrant status, and living in a rural or urban area). Given the data availability for the approval of a country's leader, regression in column (3) is estimated for 2011-2021.

Table A2. Inflation, unemployment, and confidence in political and financial institutions, 2009-2021.

	National government	Financial institutions and banks	Country's leadership	National government	Financial institutions and banks	Country's leader
	(1)	(2)	(3)	(4)	(5)	(6)
Inflation	-0.001	-0.003**	-0.001	-0.001	-0.003**	-0.000
	(0.002)	(0.001)	(0.002)	(0.002)	(0.001)	(0.002)
Unemployment	-0.875***	-1.016***	-1.062***	-0.860***	-1.006***	-1.047***
	(0.142)	(0.121)	(0.212)	(0.142)	(0.121)	(0.214)
Individual employment status and income	no	no	no	yes	yes	yes
Pseudo-R2	0.104	0.098	0.092	0.105	0.099	0.092
Observations	1,536,598	1,643,512	1,139,295	1,536,598	1,643,512	1,139,295

Notes: *** p<0.01, ** p<0.05, * p<0.1. Marginal effects of probit regressions are reported. Robust standard errors clustered at the country-by-year level are in parentheses. All regressions are weighted using the survey weight and include country fixed effects, year fixed effects, individual characteristics (age and its square, gender, education, marital status, having children, immigrant status, and living in a rural or urban area), and controls for missing values in individual characteristics. Columns (4)-(6) also include individual controls for employment status and income. Given the availability of data for the approval of the country's leader, regressions in columns (3) and (6) are estimated for 2011-2021.

Table A3. Inflation, unemployment, and confidence in institutions, IV results, 2005-2021.

	National government (1)	Financial institutions and banks (2)	Country's leader (3)
Inflation	-0.002	-0.002	0.001
	(0.002)	(0.001)	(0.001)
Unemployment	-1.107***	-1.405***	-1.238***
	(0.157)	(0.142)	(0.248)
1st stage F-statistics (inflation)	120.66	147.24	187.86
1st stage F-statistics (unemployment)	1115.08	1147.43	841.19
H0: inflation and unemployment are exogenous (p-value)	0.552	0.000	0.244
R^2	1,814,659	1,919,354	1,139,295
Observations	0.129	0.113	0.114

Notes: *** p<0.01, ** p<0.05, * p<0.1. 2SLS results are reported. One-year lags of inflation and unemployment are used as instrumental variables. Robust standard errors clustered at the country-by-year level are in parentheses. All regressions are weighted using the survey weight and include country fixed effects, year fixed effects, individual characteristics (age and its square, gender, education, marital status, having children, immigrant status, and living in a rural or urban area), and controls for missing values in individual characteristics. Given the data availability for the approval of the country's leader, regressions in column (3) are estimated for 2011-2021.

Table A4. Sample country groups by income level.

Country groups
Low income
Afghanistan, Burkina Faso, Burundi, Central African Republic, Chad, Congo Kinshasa, Ethiopia, Gambia, Guinea, Liberia, Madagascar, Malawi, Mali, Mozambique, Niger, Rwanda, Sierra Leone, South Sudan, Sudan, Syria, Togo, Uganda, Yemen, Zambia
Lower-middle income
Algeria, Angola, Bangladesh, Benin, Bhutan, Bolivia, Cambodia, Cameroon, Comoros, Congo Brazzaville, Djibouti, Egypt, El Salvador, Eswatini, Ghana, Haiti, Honduras, India, Indonesia, Iran, Ivory Coast, Kenya, Kyrgyzstan, Laos, Lebanon, Lesotho, Mauritania, Mongolia, Morocco, Myanmar, Nepal, Nicaragua, Nigeria, Pakistan, Philippines, Senegal, Sri Lanka, Tajikistan, Tanzania, Tunisia, Ukraine, Uzbekistan, Vietnam, Zimbabwe
Upper-middle income
Albania, Armenia, Azerbaijan, Belarus, Belize, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Colombia, Costa Rica, Dominican Republic, Ecuador, Gabon, Georgia, Guatemala, Iraq, Jamaica, Jordan, Kazakhstan, Libya, Malaysia, Maldives, Mauritius, Mexico, Moldova, Montenegro, Namibia, North Macedonia, Paraguay, Peru, Russia, Serbia, South Africa, Suriname, Thailand, Turkey
High income
Australia, Austria, Bahrain, Belgium, Canada, Chile, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Hungary, Iceland, Ireland, Israel, Italy, Japan, Kuwait, Latvia, Lithuania, Malta, the Netherlands, New Zealand, Norway, Panama, Poland, Portugal, Qatar, Romania, Saudi Arabia, Singapore, Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, Trinidad and Tobago, United Arab Emirates, United Kingdom, United States, Uruguay

Source: Authors' elaboration based on classifications from the World Bank (https://datatopics.worldbank.org/world-development-indicators/the-world-by-income-and-region.html).
The table reports country groups definitions used for estimations in Table A5.

Table A5. Inflation, unemployment, and confidence in institutions, by World Bank income groups, 2005-2021.

	National government	Financial institutions and banks	Country's leadership
	(1)	(2)	(3)
	Low income		
Inflation	-0.002**	-0.003**	0.023
	(0.001)	(0.001)	(0.025)
Unemployment	0.209	0.282	-0.886
	(0.964)	(0.664)	(1.561)
Pseudo-R^2	0.068	0.047	0.072
Observations	214,248	219,212	127,814
	Lower-middle income		
Inflation	0.000	-0.001	-0.000
	(0.001)	(0.001)	(0.001)
Unemployment	-1.640***	-0.575	-2.652***
	(0.416)	(0.376)	(0.806)
Pseudo-R^2	0.125	0.085	0.104
Observations	551,883	587,446	315,018
	Upper-middle income		
Inflation	-0.016	-0.007	0.108
	(0.011)	(0.011)	(0.122)
Unemployment	-0.109	-0.470***	-0.574
	(0.203)	(0.169)	(0.422)
Pseudo-R^2	0.086	0.061	0.093
Observations	429,300	433,021	268,732
	High income		
Inflation	-0.164***	0.112**	-0.009
	(0.057)	(0.044)	(0.068)
Unemployment	-1.606***	-1.441***	-1.780***
	(0.187)	(0.160)	(0.311)
Pseudo-R^2	0.090	0.109	0.083
Observations	602,114	661,111	414,892

Notes: *** p<0.01, ** p<0.05, * p<0.1. Marginal effects of probit regressions are reported. Robust standard errors clustered at the country-by-year level are in parentheses. All regressions are weighted using the survey weight and include country fixed effects, year fixed effects, individual characteristics (age and its square, gender, education, marital status, having children, immigrant status, and living in a rural or urban area), and controls for missing values in individual characteristics. Given the data availability for the approval of a country's leader, regressions in column (3) are estimated for 2011-2021.