

Central Bank Transparency and the Persistence of 'Very High' Inflation

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Abstract

We study the determinants of persistently high inflation episodes using duration models. We find that central bank transparency significantly shortens the length of these periods. Using monthly data for 180 countries from 1998 to 2023, we define “very high inflation” as year-over-year inflation exceeding the 95th percentile of a country’s recent historical distribution. The duration analysis indicates that transparent central banks reduce inflation persistence by anchoring expectations and reinforcing credibility. These findings emphasize that clear communication and openness serve as key complements to formal policy frameworks, particularly when the goal is to mitigate persistently high inflation.

Keywords: Central bank transparency; inflation persistence; hazard models; inflation targeting.

JEL Classification: E31; E52; E58.

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Content

1. Introduction	4
2. Methodology and data	4
3. Results	6
3.1. Non-parametric survivorship functions of very high inflation	6
3.2. Semi-parametric regression model results	8
4. Conclusions	11
References	12

1. Introduction

The post-pandemic resurgence of inflation has renewed attention on its persistence and the role of central banks in maintaining credibility. Conventional explanations emphasize fiscal discipline, exchange rate regimes, or inflation targeting. However, these factors do not fully explain why some countries return rapidly to price stability while others experience prolonged inflationary episodes. We argue that central bank transparency—the clarity of communication regarding objectives, policy decisions, and macroeconomic forecasts—is a key determinant of inflation persistence.

Over the past two decades, transparency has become central to modern monetary policy (Dincer et al., 2022). Central banks increasingly publish inflation targets, forward guidance, and macroeconomic forecasts, a “transparency revolution” widely credited with enhancing credibility, reducing forecast errors, and anchoring expectations (Crowe, 2010; Baranowski et al., 2021). Despite extensive evidence on the effects of transparency on expectations and volatility, its influence on the duration of high-inflation episodes remains underexplored.

This study addresses that gap by examining whether transparency shortens episodes of “very high inflation,” defined relative to each country’s inflation history. By focusing on persistence rather than levels, we capture the speed at which economies return to stability following inflation surges. Hazard duration models, commonly used in survival analysis, allow us to estimate how institutional and macroeconomic factors affect the length of high-inflation spells.

Our principal finding is that greater transparency is associated with significantly shorter episodes of high inflation. This relationship remains robust after controlling for traditional features of modern monetary frameworks, including inflation targeting, fiscal rules, financial integration, and different exchange rate regimes. These results suggest that credibility—strengthened through transparent communication—serves as a powerful complement to formal institutional arrangements in reducing inflation persistence.

The remainder of the paper outlines the empirical approach, data, and main results.

2. Methodology and data

We define episodes of “very high inflation” as periods in which year-over-year monthly inflation exceeds the 95th percentile of the previous five years of each country’s inflation distribution. This country-specific thresh-

hold facilitates meaningful comparisons across diverse inflation regimes. Episodes lasting at least two consecutive months above this threshold are treated as single high-inflation spells.

To model the duration of these episodes, we employ non-parametric Kaplan–Meier estimators and semi-parametric Cox proportional hazards regressions (Kaplan and Meier, 1958; Cox, 1972). The dependent variable is the number of consecutive months an episode persists before inflation falls below the 95th percentile threshold. Right-censored observations, corresponding to ongoing episodes at the end of the sample, are appropriately handled in the likelihood functions.

The Cox proportional hazards model is specified as:

$$h_i(t) = h_0(t) \exp(\beta' X_i),$$

where $h_i(t)$ is the hazard rate that a high-inflation episode ends at time t in country i , $h_0(t)$ is the baseline hazard, and X_i includes transparency, fiscal, and openness variables. A positive coefficient implies a higher probability of inflation returning to normal sooner.

As a robustness check, we also estimate an Accelerated Failure Time (AFT) model:

$$\ln(T_i) = \alpha + \beta' X_i + \varepsilon_i,$$

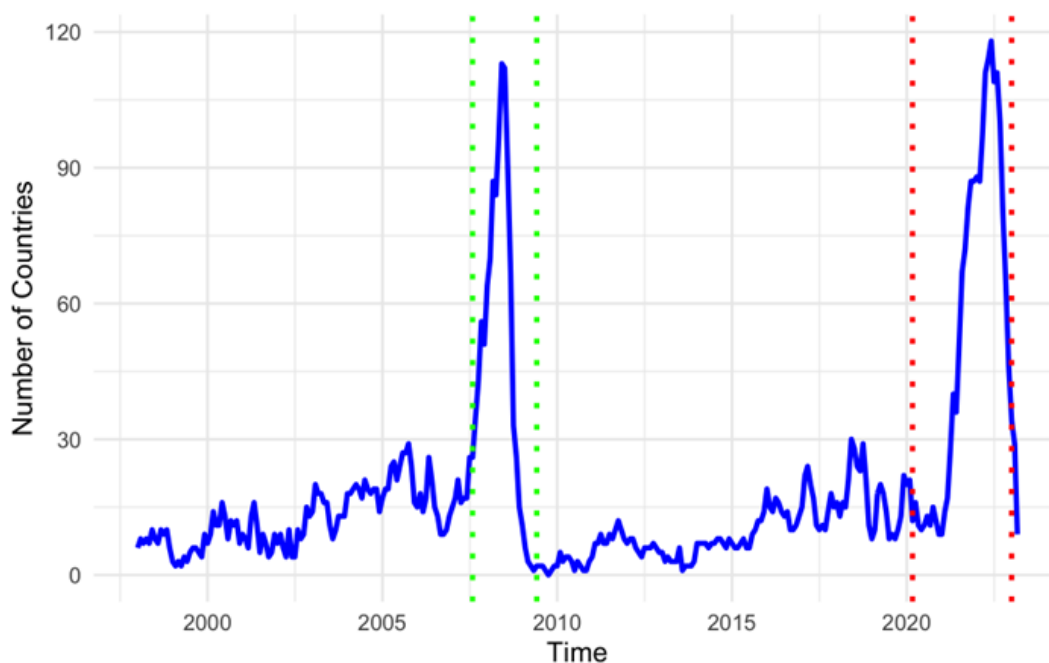
where T_i denotes the duration (in months) of the episode, and ε_i follows a Weibull or log-normal distribution. In this specification, a negative β indicates that higher transparency accelerates the return to price stability.

The dataset encompasses 180 countries from January 1998 to March 2023, combining inflation data from the IMF (Ha et al., 2023) with institutional and macroeconomic indicators. The main explanatory variable is the Central Bank Transparency Index developed by Dincer et al. (2022), which aggregates information disclosure, policy formulation, and communication practices for over 100 central banks.

We identify 896 distinct high-inflation episodes, ranging from brief two-month spikes to protracted 40-month cases, such as Venezuela (2013–2016).

Two peaks of global synchronization appear in 2008 and 2022, corresponding to the Global Financial Crisis and the post-pandemic inflation surge, when around two-thirds of all countries experienced “very high” inflation simultaneously. This underscores the importance of credible monetary policy communication in an interconnected global economy.

Figure 1. Number of Countries with Inflation Above 95th Percentile January 1998- March 2023



Note: The figure plots, monthly from Jan 1998 to Mar 2023, the number of countries whose inflation exceeded the 95th percentile of a rolling 60-month window. Each country counts once per month above this threshold.

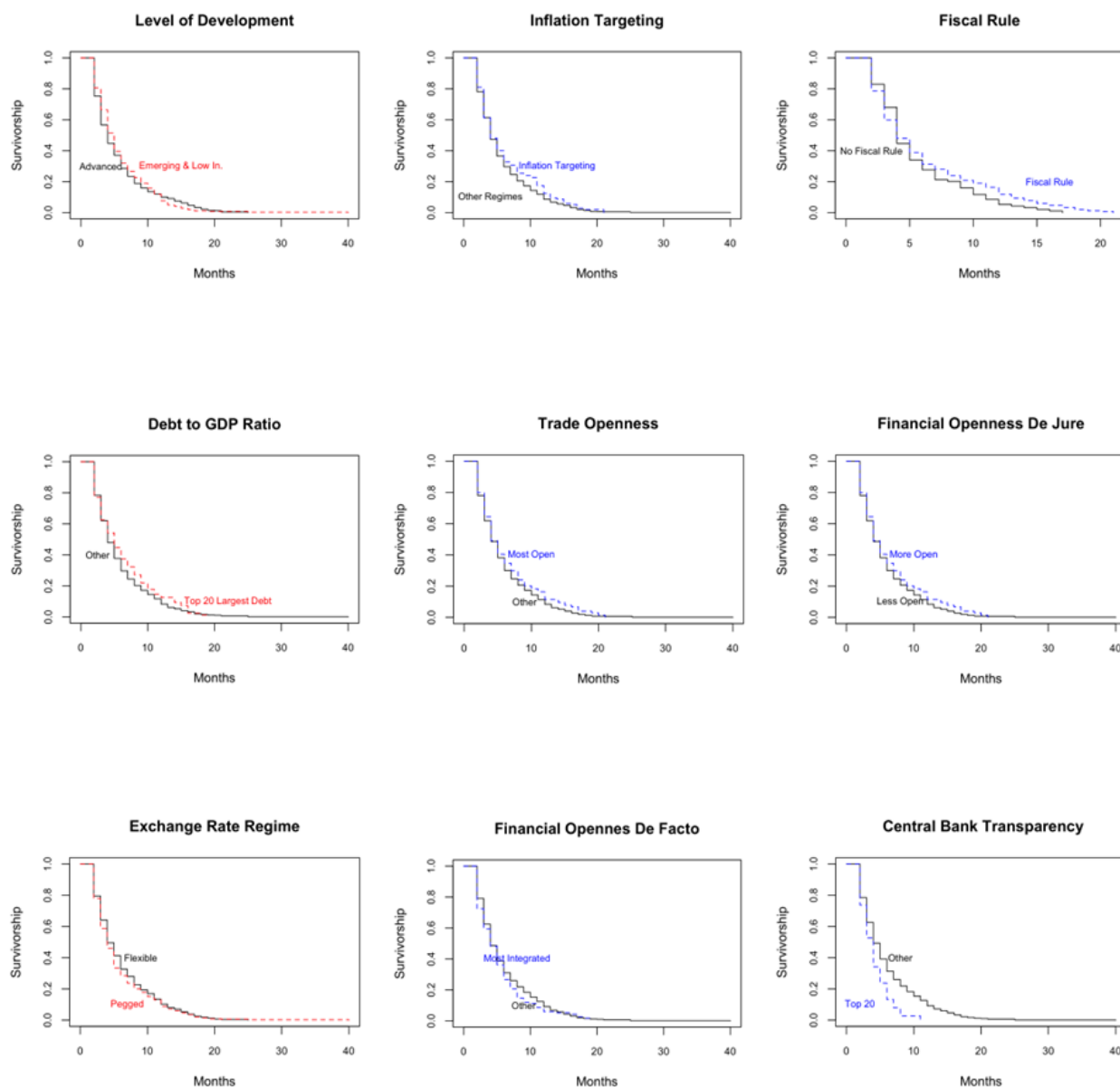
3. Methodology

3.1. Non-parametric survivorship functions of very high inflation

Figure 2 presents the Kaplan–Meier survival function for all 896 episodes. The median duration of high inflation is four months, but episodes in countries with high transparency conclude substantially faster. The log-rank test confirms this difference is statistically significant ($p < 0.01$), whereas survival probabilities across fiscal rules, openness, exchange rate regimes, or inflation-targeting status are indistinguishable.

This evidence indicates that transparency, rather than structural or policy design, determines the persistence of high inflation. Clear and consistent communication allows inflation expectations to realign more quickly, facilitating faster stabilization.

Figure 2. Survivorship Function Conditioning on Distinct Country Categories



Note: The figure shows survivorship by country categories. Base categories: Advanced, No IT, No Fiscal Rule, Flexible Exchange Rate. Top-20 dummies apply to Debt-to-GDP, Trade Openness, and Central Bank Transparency; Financial Openness <0.5 forms the base.

3.2. Semi-parametric regression model results

Table 1 reports the semi-parametric Cox regression estimates. Transparency has a positive and statistically significant effect on the hazard rate, indicating that higher transparency increases the probability of a high-inflation episode ending sooner. Quantitatively, moving from the lowest to highest quintile of transparency roughly halves the expected duration of an episode.

Other institutional variables exhibit limited explanatory power. Fiscal rules, public debt ratios, and exchange rate regimes do not significantly affect inflation persistence once the effect of transparency is considered. Similarly occurs with trade and financial openness and even inflation-targeting, which do not guarantee shorter episodes. By contrast, transparency consistently exhibits a robust effect across all Cox and AFT specifications, including alternative tie-handling methods (Breslow, 1974; Efron, 1977).

The mechanism is intuitive. Transparent central banks clearly communicate intentions, assumptions, and objectives, enabling private agents to update expectations in line with official goals (Van der Cruijsen and Demertzis, 2007; Ehrmann et al., 2012). Opaque communication fosters uncertainty and prolongs adaptive expectations, sustaining inflationary inertia.

Transparency also enhances accountability and mitigates time-inconsistency problems. By publicizing decisions and rationales, central banks constrain discretionary behavior, ensuring consistency between stated objectives and actions. In periods of heightened uncertainty, such as after the COVID-19 shock, transparent communication helps the public distinguish temporary price shocks from structural inflation, accelerating adjustment.

Table 1. Regression Results Cox Model

	COX 1	COX 2	COX 3	COX 4	COX 5	COX 6	COX 7	COX 8
<i>Predictors</i>	<i>Effect</i>	<i>Effect</i>	<i>Effect</i>	<i>Effect</i>	<i>Effect</i>	<i>Effect</i>	<i>Effect</i>	<i>Effect</i>
	0.16	0.03	0.03	0.02	0.13	0.11	0.11	0.09
Emerging Market	(-0.06 – 0.38)	(-0.24 – 0.30)	(-0.23 – 0.30)	(-0.25 – 0.30)	(-0.15 – 0.41)	(-0.17 – 0.39)	(-0.17 – 0.39)	(-0.21 – 0.40)
		-0.24	-0.22	-0.22	-0.25	-0.23	-0.22	-0.21
Financial Openness		(-0.51 – 0.04)	(-0.50 – 0.06)	(-0.50 – 0.06)	(-0.53 – 0.03)	(-0.51 – 0.06)	(-0.51 – 0.06)	(-0.50 – 0.07)
			-0.14	-0.14	-0.29 ⁺	-0.33 ⁺	-0.31 ⁺	-0.33 ⁺
Inflation Targeting			(-0.39 – 0.11)	(-0.39 – 0.12)	(-0.56 – 0.02)	(-0.61 – 0.06)	(-0.61 – 0.01)	(-0.63 – 0.03)
				-0.06	-0.03	-0.03	-0.04	-0.05
Fiscal Rule				(-0.35 – 0.23)	(-0.32 – 0.26)	(-0.32 – 0.26)	(-0.33 – 0.26)	(-0.35 – 0.24)
					1.08 ^{***}	1.12 ^{***}	1.12 ^{***}	1.07 ^{***}
Central Bank Transparency					(0.60 – 1.57)	(0.63 – 1.60)	(0.63 – 1.61)	(0.57 – 1.56)
						-0.28	-0.27	-0.29
Debt to GDP ratio						(-0.64 – 0.08)	(-0.63 – 0.09)	(-0.65 – 0.08)
							0.05	0.04
Exchange Rate Regime Float							(-0.21 – 0.30)	(-0.22 – 0.29)
								0.07
Financial Integration								(-0.25 – 0.39)
								-0.19
Trade Openness								(-0.52 – 0.14)
Observations	421	421	421	421	421	421	421	421
AIC	1986.283	1985.493	1986.218	1988.074	1972.348	1971.941	1973.816	1976.425
log-Likelihood	-992.142	-990.746	-990.109	-990.037	-981.174	-979.971	-979.908	-979.212

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Note: The table shows the regression results of 8 Proportional Hazards specifications.

Results remain robust across Cox and AFT models and alternative tie-handling methods (Breslow, 1974; Efron, 1977) (see tables 2 and 3).

Table 2. Log Rank Tests

	<i>Level of Development</i>	<i>Inflation Targeting</i>	<i>Fiscal Rule</i>
Category Base	397	600	94
Category 1	499	137	373
Statistic	0.279	1.808	1.864
p value	0.598	0.179	0.172

	<i>Debt to GDP</i>	<i>Trade Openness</i>	<i>Financial Openness De Jure</i>
<i>Category Base</i>	800	792	334
<i>Category 1</i>	96	104	388
<i>Statistic</i>	1.269	1.791	2.201
<i>p value</i>	0.260	0.181	0.138

	<i>Exchange Rate Regime</i>	<i>Financial Openness De Facto</i>	<i>Central Bank Transparency</i>
<i>Category Base</i>	371	780	858
<i>Category 1</i>	338	116	38
<i>Statistic</i>	1.152	1.045	9.114
<i>p value</i>	0.283	0.307	0.003

Note: Event counts vary by sample size. For top-20 variables, all 896 events are included, with missing data assigned to the base category; for others, only available cases are counted.

Table 3. Comparison of Different Methods for Constructing the Standard Errors

<i>Predictors</i>	baseline <i>Effect</i>	breslow <i>Effect</i>	efron <i>Effect</i>
	0.09	0.08	0.08
Emerging Market	(-0.21 – 0.40)	(-0.20 – 0.35)	(-0.19 – 0.36)
	-0.21	-0.17	-0.19
Financial Openness	(-0.50 – 0.07)	(-0.42 – 0.08)	(-0.44 – 0.07)
	-0.33 *	-0.26	-0.29 *
Inflation Targeting	(-0.63 – -0.03)	(-0.53 – 0.01)	(-0.56 – -0.02)
	-0.05	-0.04	-0.05
Fiscal Rule	(-0.35 – 0.24)	(-0.30 – 0.22)	(-0.31 – 0.22)
	1.07 ***	0.81 ***	0.92 ***
Central Bank Transparency	(0.57 – 1.56)	(0.39 – 1.22)	(0.51 – 1.34)
	-0.29	-0.23	-0.26
Debt to GDP ratio	(-0.65 – 0.08)	(-0.56 – 0.10)	(-0.59 – 0.07)
	0.04	0.03	0.04
Exchange Rate Regime Float	(-0.22 – 0.29)	(-0.20 – 0.26)	(-0.19 – 0.27)
	0.07	0.06	0.06
Financial Integration	(-0.25 – 0.39)	(-0.23 – 0.34)	(-0.23 – 0.34)
	-0.19	-0.15	-0.17
Trade Openness	(-0.52 – 0.14)	(-0.45 – 0.14)	(-0.46 – 0.13)
Observations	421	421	421
AIC	1976.425	4333.87	4237.354
log-Likelihood	-979.212	-2157.935	-2109.677
* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$			

Note: The table shows the regression results of 3 Proportional Hazards specifications using exact, Breslow and Efron to construct the errors.

Overall, the evidence demonstrates that transparency significantly reduces inflation persistence, whereas fiscal, structural, and policy regime variables do not. This conclusion holds across alternative model specifications and transparency measures (Dincer and Eichengreen, 2014; Acosta, 2023).

4. Conclusions

This study provides the first quantitative evidence that central bank transparency reduces the persistence of very high inflation. Using hazard duration models for 180 countries between 1998 and 2023, we show that transparent central banks restore price stability more rapidly than opaque ones, even after accounting for fiscal, structural, and policy characteristics.

The findings complement conventional wisdom in two key ways. First, once transparency is taken into account, fiscal discipline, economic openness, and exchange rate regimes appear to have limited effectiveness in reducing inflation persistence. Second, adopting an inflation-targeting framework alone does not guarantee shorter inflation episodes; it must be complemented by credibility rooted in transparency which, for this particular aspect of inflation—its persistence in very high states—plays a more decisive role than traditional formal policy design.

For policymakers, the implication is clear: enhancing transparency through clearer communication of objectives, forecasts, and policy rationales can substantially reduce inflation persistence. Transparent communication fosters trust, anchors expectations, and enables faster recovery from inflationary shocks, whereas opacity prolongs adjustment.

Future research could further investigate the channels through which transparency affects inflation dynamics, including the role of public expectations and media dissemination of policy information.

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