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July 16, 2025

Approved By
African Department

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THE ECONOMIC IMPACT OF UNCERTAINTY IN MALI[1]

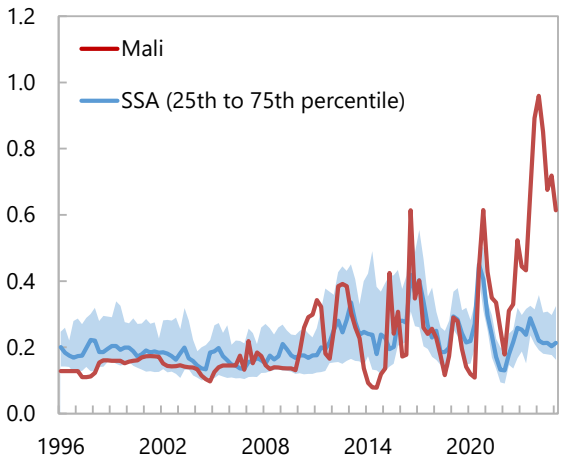
This paper shows how multiple challenges facing Mali over a number of years have increased economic uncertainty. Specifically, economic agents have less confidence about predicting the future and see an increased risk of negative outcomes. Part of that uncertainty is the unavoidable result of exogenous shocks and global economic developments, but some is also due to policy decisions made by the authorities. Heightened policy uncertainty is expected to weigh on GDP growth in Mali by reducing the ability of businesses and households to plan ahead with confidence, which typically results in lower investment and consumption. This paper highlights some ways the authorities in Mali could reduce policy uncertainty, which would create the conditions for stronger GDP growth.

A. Evidence of Heightened Uncertainty in Mali

Uncertainty Has Been Elevated in Mali since 2012…

1. One leading empirical measure of uncertainty in Mali has been elevated for some time, reflecting the multiple challenges over that period. Researchers have constructed an indicator of economic uncertainty by counting the number of references to 'uncertainty' and related terms in economic reports (Ahir and others, 2018). Between 2012 and 2022 this index was over 50 percent higher on average than the previous decade (Figure 1). This heightened uncertainty reflects longstanding security challenges in particular, including multiple coups d'état. Mali ranks fourth globally in a list of countries most affected by terrorism and has the lowest score of all countries for perceptions of safety (Institute for Economics and Peace, 2023 and 2024). Extreme weather and natural disasters have become more prevalent over time. This is a particular concern given that agriculture is the main source of employment and income for 60 percent of the active population.

Figure 1. Mentions of Uncertainty in Mali
(Index level)



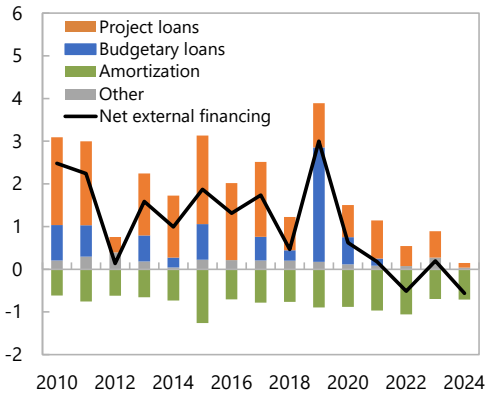
Sources: World Uncertainty Index and IMF staff calculations.
Note: Based on the numbers of references to 'uncertainty' and related words in Economist Intelligence Unit Reports. Three-quarter rolling averages excluding observations of zero.

[1] Prepared by Luc Tucker.

2. The available survey evidence suggests that reducing uncertainty has long been a top priority for businesses in Mali. Researchers have typically used surveys to measure businesses' perceived uncertainty, but this is more difficult in low-income countries (LICs) such as Mali (Avalos and others, 2022). Surveys of firms in Mali are usually conducted on an ad hoc basis, so it is difficult to compare responses over time. Many companies in Mali are small, operating in the informal sector, so samples which focus on formal-sector firms may not fully capture wider sentiment. Nonetheless, existing survey evidence shows how reducing uncertainty is important for businesses in Mali. In surveys by the Conseil National du Patronat du Mali (CNPM) businesses consistently report that the lack of security, the general economic climate and the social and political situation all have a negative impact on their performance. In the latest survey, the share of businesses seeing a negative effect was over 70 percent for each of these categories, well above any other option.

3. Relations with some traditional development partners have become strained over time, adding to perceived risks. Budgetary loans to Mali have fallen to zero since 2022 (Figure 2). Project loans are also much lower than in the past, while amortization costs continue. Businesses and households in Mali face greater uncertainty as a result, both because of additional fiscal pressures today and because deteriorating relations with international partners could affect future economic prosperity, for example through trade restrictions.

Figure 2. External Financing to Mali
(Percent of GDP)



Sources: Malian authorities and IMF staff calculations.
Note: 'Other' includes debt relief and any changes in external arrears.

A Range of Indicators Show That Policy Announcements Have Pushed Uncertainty Even Higher since Mid-2023…

4. Policy announcements by the Malian authorities over recent years will affect the economic, political and social environment for businesses and households. In mid-2023, Mali requested the withdrawal of UN peacekeeping forces (MINUSMA). Mali has also exited the G5 Sahel Alliance and Algiers Peace Accord. In January 2024, Mali, Burkina Faso and Niger announced they would leave the ECOWAS trading bloc. Presidential elections, originally scheduled for February 2024, were cancelled. Some of these announcements were unexpected, in which case it takes time for businesses and households to fully understand the changes, observe implementation, and make any necessary adjustments.

5. Evidence suggests that recent policy announcements have pushed uncertainty in Mali to even higher levels than before. The number of mentions of uncertainty in published economic reports more than doubled in the second half of 2023 and then rose further still at the start of 2024 (Figure 1). The series fell back somewhat during the rest of 2024 but remains elevated relative to the past. The level of measured uncertainty at the start of 2025 is comparable to 2020, when Mali experienced a coup d'etat as well as the COVID pandemic. Recent policy announcements therefore appear to have added to uncertainty in Mali.

…and Some of that Higher Uncertainty Appears to Be Mali-Specific.

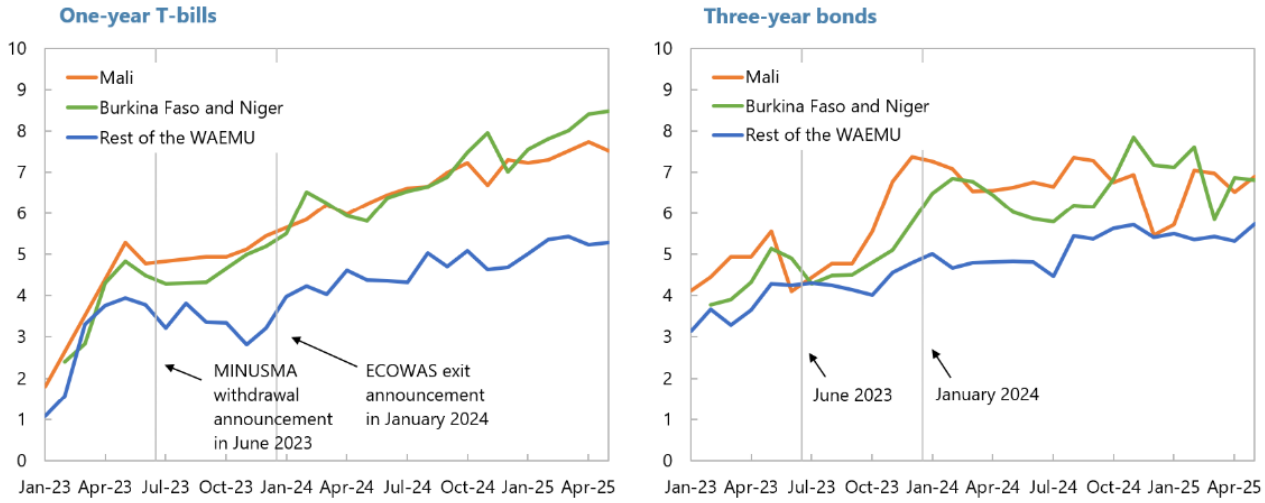
6. While uncertainty is typically correlated across neighboring countries, the recent increase in Mali has not been mirrored elsewhere, suggesting that domestic policy choices explain some of the rise. In the past, uncertainty in Mali has been highly correlated with other countries in the region, especially Burkina Faso and Niger. All three countries have suffered from ongoing conflicts and coups, and evidence suggests that such conflicts can have significant spillover effects (Abdel-Latif and others, 2024). In recent quarters, however, measured uncertainty in the other countries has not risen in the same way as for Mali. In Burkina Faso and Niger, the number of references to uncertainty in economic reports were only a little above their averages over the past decade during 2024. Ongoing IMF-supported programs in Burkina Faso and Niger may have had some role in reducing uncertainty in both countries (see Annex I for further details of these uncertainty measures across the three countries).

7. Financial market indicators show that Mali, Burkina Faso and Niger have all paid higher interest rates on debt issuances than other countries in the region over recent years. While financial markets in sub-Saharan Africa are generally not large enough to produce detailed indicators of uncertainty such as volatility indices, comparisons of bond yields on the regional market suggest uncertainty is higher in Mali, Burkina Faso and Niger than elsewhere. While interest rate spreads for most WAEMU countries relative to the euro area have only risen modestly since the start of 2023, the equivalent spreads for those three countries have increased by more (Figure 3).

8. Mali paid the highest interest premia of all those countries during the second half of 2023. Interest spreads can be influenced by a number of factors, including the expected path of fiscal policy, but uncertainty may also be playing a role in this case. Three-year spreads in Mali rose by more than in Burkina Faso during the second half of 2023, which may in part reflect the MINUSMA withdrawal announcement in June 2023.[2] Since the start of 2024, interest spreads Mali, Burkina Faso and Niger have been at broadly similar levels, well above those in the rest of the WAEMU. The ECOWAS exit announcement is likely to have increased perceived uncertainty in all three countries, which could explain some of the additional interest premia, although the announcement may also have affected uncertainty in the wider region to some extent. By May 2025, the interest yield on one-year T-bills in Mali was 2.2 percentage points higher than in the rest of the WAEMU, while the interest rate premium on three-year bonds was 1.2 percentage points higher.

[2] Comparisons of interest rate premia between Mali and Niger are not possible for the second half of 2023 because Niger was under economic sanctions during that period and therefore did not issue debt on the regional market.

Figure 3. Interest Premia over Equivalent Euro-Area Rates in Mali and the Rest of the WAEMU
(Percentage points)



Sources: UMOA Titres, Haver Analytics and IMF Staff calculations.
Note: Spreads are calculated as the difference between the yield to maturity on debt issuances on the primary market and the euro-area interbank rate at the equivalent maturity. Data for grouped countries are weighted by the realized amounts issued by each country over the month.

B. The Impact of Uncertainty on Businesses and Households in Mali

Heightened Uncertainty Affects Business Investment and Trade…

9. Potentially the largest and most immediate impact of uncertainty will be to reduce firms' capital spending. Investment decisions typically involve weighing potential benefits over long time horizons, which in turn will depend on the size of future markets and the outlook for the business environment. Additional uncertainty makes it difficult to plan ahead. Rather than invest today, businesses may prefer to wait and see how uncertainty evolves before taking decisions, retaining cash on their balance sheets instead (Dixit and Pindyck, 1994, and Miescu, 2023). This 'option value of waiting' may be especially high for irreversible investment decisions which involve large up-front costs.

10. Delaying business investment reduces total spending in the economy today, but also lowers future growth by reducing the size of the capital stock. Buildings and machinery depreciate over time, so some investment is required just to maintain existing capital, but public and private investment in Mali have been extremely low for a number of years. Any further reduction in investment caused by heightened uncertainty would be expected to reduce the size of the already-diminished capital stock, which in turn would weigh on future growth prospects via lower productivity (World Bank, 2017).

11. Businesses may also reduce their cross-border trade as a result of lower investment, which can have additional effects on productivity and growth. Firms which trade internationally are found to be more productive (Shu and Steinwender, 2019). This could be because they are able

to exploit economies of scale in the supply chain, adopt global best practices or minimize costs due to increased competition. Uncertainty may prevent firms from seeing those productivity benefits, however, because it disincentivizes the investment that would be required for them to expand into new export markets (Handley and Limão, 2022).

12. Uncertainty around tariffs and alignment of product and service regulations would be expected to affect trade by more than other more general forms of economic uncertainty. The decision by Mali, Burkina Faso and Niger to leave the ECOWAS trading bloc would be expected to affect trade with non-WAEMU ECOWAS countries by more than the impact on investment alone. The share of Mali's trade that would be affected by the ECOWAS exit is estimated to be relatively small, but any lack of clarity about future tariffs and regulations could also deter potential future trading partners (see Annex VI of the May 2025 Staff Report on the potential implications of the ECOWAS exit). Uncertainty around the implementation of the revised mining code could discourage future investment in a sector which makes up a large share of Mali's GDP.

…While Households and the Government May Also Cut Back on Spending.

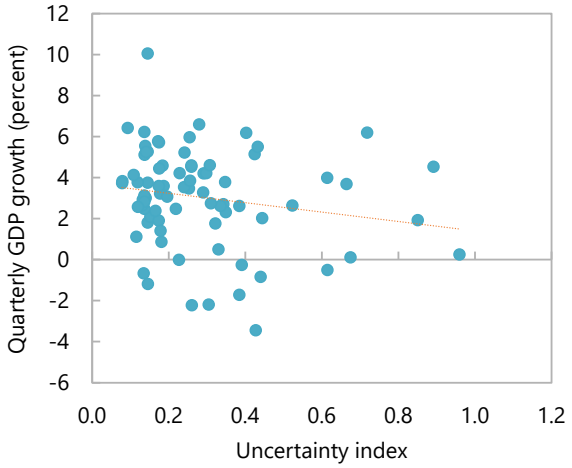
13. Households facing greater uncertainty are likely to reduce consumption where possible, although many households in Mali are already near subsistence levels. Households facing uncertainty are found to undertake precautionary saving to provide a buffer against future events and smooth their expected consumption over time (Deaton, 1989). The fear of unemployment could increase, for example, if there is a risk of lower growth in the future. Similarly, households employed in the informal sector may worry about their future incomes due to reduced demand for their output. As a result, households would be expected to reduce their consumption, to the extent that is possible. The largest effect is likely to be on durable goods such as household appliances. These large items are typically used over many years, so similar to businesses making investment decisions, households may opt to wait and see rather than making large purchases during times of heightened uncertainty.

14. If uncertainty increases interest premia or lowers the availability of credit, that could further reduce spending in other areas. Businesses and households that are forced to pay higher borrowing costs as a result of economic uncertainty will have fewer resources available for other spending. The public sector could also be affected in a similar way. In extreme cases, this could create difficulties in financing the fiscal deficit. Where financial markets are less developed, credit constraints may prevent businesses, households and the government from borrowing altogether, hindering their ability to smooth the impact of shocks. Empirical research based on data from developing countries supports that theory, suggesting that uncertainty has a larger impact on investment and consumption when financial markets are less developed (Cespedes, 2013).

Uncertainty Would Therefore Be Expected to Result in Lower GDP Growth…

15. As a result of these multiple downward effects on different areas of expenditure, additional uncertainty would be expected to result in lower GDP growth in Mali. Research over recent years shows that across many countries, heightened economic uncertainty coincides with lower growth and recessions. Similarly, in Mali, a two-standard deviation increase in uncertainty is associated with a 0.9 percentage point fall in GDP growth in the following quarter (Figure 4). These results do not necessarily imply a causal relationship but some recent studies using data from other LICs have shown that heightened uncertainty does appear to influence output growth (e.g. Baker and others, 2020).

Figure 4. Correlation Between Uncertainty and GDP Growth in Mali

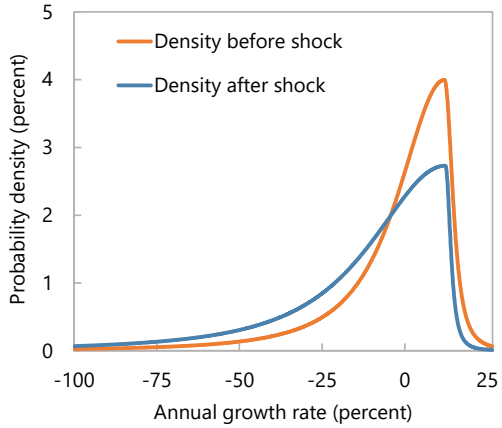


Sources: World Uncertainty Index, Mali authorities and IMF staff calculations.
Note: GDP data are moving averages over the previous three quarters, which match the calculation of the uncertainty score, lagged by one quarter.

…and a Widening of the Distribution of Possible GDP Outcomes.

16. As well as reducing the central forecast for GDP growth, heightened uncertainty also widens the range of possible growth outcomes. Using a growth-at-risk model based on annual data since 1968, it is possible to estimate the predicted distribution of future growth for Mali for different levels of uncertainty. The model is based on a quantile regression with annual GDP as the dependent variable and the number of references to uncertainty in published reports over the year as the explanatory variable of interest. A number of regressors are also included to control for the effects of gold and cotton prices, the money supply, inflation, and coups d'état. (see Annex II for a more detailed description of the growth-at-risk model specification). This analysis shows that if some shock such as heightened insecurity or an unexpected policy announcement increases measured uncertainty by two standard deviations it

Figure 5. Distribution of GDP Growth Forecasts According to a Growth-at-Risk Model



Sources: World Uncertainty Index, Malian authorities and IMF staff calculations.
Note: Distribution of growth forecasts based on a quantile regression model with the number of uncertainty citations as an explanatory variable.

would widen the distribution of predicted growth outcomes (Figure 5). In particular, higher uncertainty is found to increase the likelihood of low growth. For example, the model suggests that the probability of a recession (defined as negative annual growth) increases by just under 20 percentage points when uncertainty rises by two standard deviations.

C. Conclusion

Economic Uncertainty in Mali is High, Which is Weighing on GDP Growth…

17. Ongoing uncertainty would be expected to reduce growth in Mali, with private capital spending particularly affected. Mali has faced a number of crises over recent years, so some uncertainty is unavoidable, but unexpected policy announcements have made it more difficult for businesses and households to plan ahead. Potential new investors may also have been deterred. Evidence shows that economic uncertainty has been associated with lower growth in the past, and there are reasons to think that the effect could be even greater in the future. Low levels of existing investment and lack of access to credit could exacerbate the impact, for example. It is also true, however, that Mali has been facing heightened uncertainty for many years, so businesses and households may have adapted to this environment to some extent.

…although There Are a Number of Ways in Which the Authorities Could Reduce the Different Forms of Uncertainty.

18. To resolve the longstanding uncertainty facing Mali, it is necessary to address the many sources of fragility. Fragile and conflict-affected states (FCSs) such as Mali typically exhibit both structural fragility in that they are unable to capitalize on positive developments and fragility to stress in that they are less resilient to negative shocks. To improve the situation in Mali it will be crucial to remove constraints to good policy decision-making, including increasing transparency and ensuring that accurate statistics are available. It will also be important to remove other constraints to growth, for example by raising education levels and improving governance. Mitigating stressors such as climate risks and protecting the most vulnerable segments of the population can also help Mali to exit the fragility trap (see Country Engagement Strategy in the 2023 Staff Report for Mali for more details on these recommendations).

19. The authorities could reduce policy uncertainty by setting out medium-term economic plans and demonstrating their commitment to announced reforms. A transparent and detailed medium-term policy framework would provide the basis for strong and sustainable economic growth in Mali and would help households and businesses to plan ahead. For example, setting out expected future corporate tax rates would help businesses to prepare their budgets. Effective and timely communication of policy changes will also help to avoid unwanted responses and speculation around other possible announcements. If the ECOWAS exit leads to changes in tariff rates or product regulations, the authorities could communicate these changes well in advance to avoid costly disruption.

20. Sustainable and growth-friendly fiscal policy can also help to reduce policy uncertainty by creating a buffer to deal with future shocks. Building fiscal buffers can help to ensure that the authorities have sufficient resources to respond to negative shocks when they occur. Any fiscal consolidation should be achieved in a sustainable way, however, with an emphasis on revenue mobilization as opposed to cutting growth-enhancing capital spending. Rebuilding relationships with international development partners would also help in that regard, particularly if it led to a resumption of external budget support.

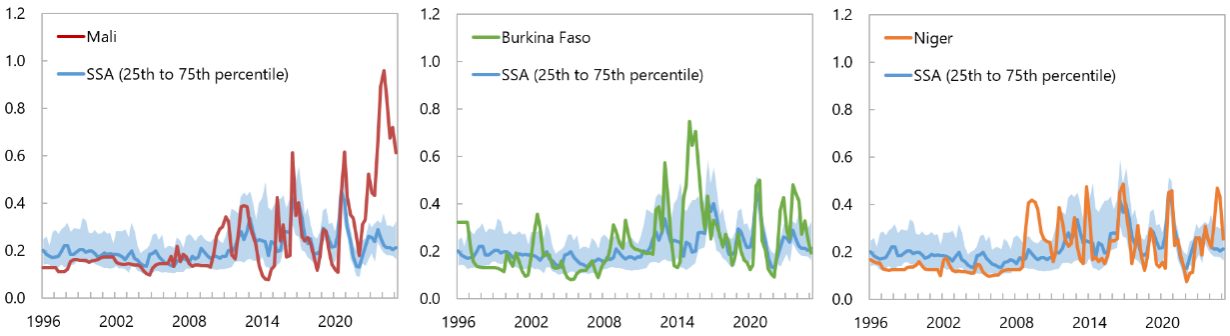
Annex I. Measuring Uncertainty Using Economic Reports and Global News Coverage

1. Uncertainty is known to influence economic performance and researchers have tried to capture it in a number of ways. One prominent indicator uses the number of references to 'uncertainty' in economic reports (Ahir and others, 2018). This measure is useful for constructing cross-country comparisons in a consistent way. The series are available on a quarterly basis, although the producers recommend using the three-quarter rolling average due to the volatility of the underlying data.

2. Based on the number of references to uncertainty in published reports, uncertainty has risen by much more in Mali than in Burkina Faso or Niger over recent quarters. The spikes in uncertainty across all three countries generally coincide with the most high-profile periods of instability, although in recent years Burkina Faso and Niger have not seen a large increase, despite unexpected policy announcements and coups d'état in both countries.

Annex I Figure 1. References to Uncertainty in Economic Reports Across Mali, Burkina Faso and Niger

(Index level)



Sources: World Uncertainty Index and IMF staff calculations.
Note: Based on the numbers of references to 'uncertainty' and related words in Economist Intelligence Unit Reports. Three-quarter rolling averages excluding observations of zero.

3. It is also possible to construct similar uncertainty measures for individual countries based on the number of references to uncertainty in the global press. For Mali, Burkina Faso and Niger, one approach is to record the number of times that 'uncertainty' is mentioned within ten words of the country name. The number of references is then divided by the total number of news articles across all countries, to control for the increasing number of articles available over time:[1]

[1] In all cases the searches are adapted to include related terms, such as different variations of the word 'uncertainty' in both English and French. For Niger, references related to 'Nigeria' are removed. News articles with fewer than ninety-nine words are also excluded.

$$U_{t,i} = \frac{R_{t,i}}{A_t}$$

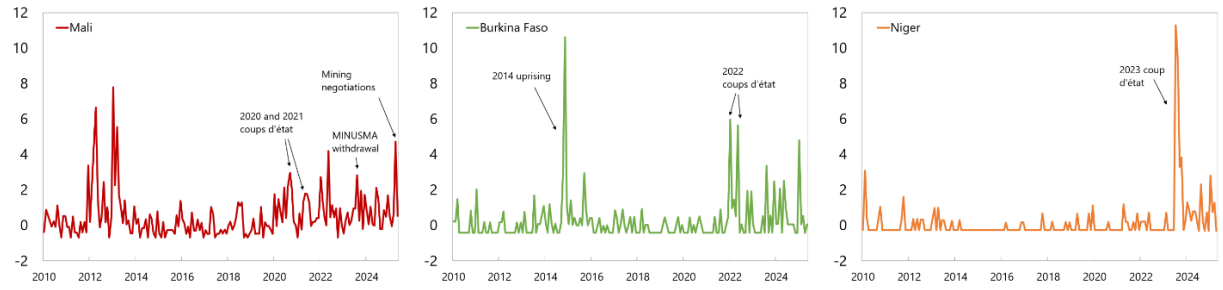
Where $R_{t,i}$ is the number of references to uncertainty in country i during period t and A_t is the number of articles produced in period t. The result is then standardized to give a z-score $Z_{t,i}$.

4. The number of references to uncertainty in the written press is a useful compliment to existing measures of uncertainty, and results are generally intuitive. The indicator is based on a wider range of sources than economic reports alone. It can also be produced at a monthly frequency, which makes it possible to attribute any rise in uncertainty to individual events. The large spikes in all three countries appear to correspond reasonably well with coups d'état and episodes of wider political instability in each country.

5. There are some limitations to these news-based indicators. While the data are available at a high frequency, they are volatile and for Burkina Faso and Niger in particular there are many observations of zero. It is also questionable whether these measures are truly consistent over time. For example, an unexpected coup in a country that had previously not been considered prone to such incidents may elicit more coverage than a similar event in a country which has experienced political uncertainty over a sustained period. The number of references to these countries in the global press will also be influenced by the number of other prominent global events taking place in the same period.

Annex I Figure 2. References to Uncertainty in Written News Articles Across Mali, Burkina Faso and Niger

(Z-scores)



Sources: Factiva and IMF staff calculations.
Note: Based on the numbers of joint references to 'uncertainty' and the country names in global news articles.

Annex II. Methodology for the Growth-at-Risk Model for Mali

1. The growth-at-risk model for Mali uses a single-equation quantile regression methodology based on Koenker and Machado, 1999 and Koenker, 2005. Letting $\Delta_h Y_{t+h}$ denote the log change in real GDP (henceforth referred to as GDP growth) *h* periods ahead, and letting X_t denote a vector of key determinants, including past log changes in real GDP, you have:

$$\Delta_h \Delta Y_{t+h,q} = \alpha_{h,q} + b_{x,h,q} X_t + e_{t,h,q} \qquad (1)$$

2. A linear programming algorithm is used to estimate the quantile regression coefficients, which are represented by the vector $\boldsymbol{\beta(q)}$). The algorithm minimizes the deviation of the response variable $\Delta_h \Delta Y_{t+h,q}$ for the q-th conditional quantile and for given values of the vector of explanatory variables *X*. The latter includes a quantile-specific intercept. The conditional quantile regression estimator $\beta(q)$ will therefore solve the following minimization problem:

$$\hat{\beta}(q) = argmin_{\beta(q)} \left\{ \sum_i \rho_q (\Delta_h \Delta Y_{t+h} - X_t' \beta(q)) \right\} \qquad (2)$$

where $\rho_q(u)$ is a check function which weighs positive and negative values asymmetrically. Under mild regularity conditions, quantile regression coefficients appear to be asymptotically normally distributed (Koenker, 2005) with different forms of the asymptotic covariance matrix depending on the model assumptions. A bootstrap resampling technique is used to generate a distribution of sample statistics. Estimation of the extreme quantiles (5 percent and 95 percent) can be inaccurate, leading to large confidence error bands, which could result in an inconsistent distribution fit in the tails. Therefore, following Adrian and others, 2018, a parametric t-skew distribution is used to fit the conditional quantiles. Student t-distributions have been used extensively in other studies to represent this type of distribution more accurately. The skewed version of the t-distribution (as in Azzalini, 2003) has been found to be particularly useful in modelling such tail events.

3. For a given output determinant x and a given quantile q of the future GDP distribution, the sequence of $b_{x,h,q}$ coefficients estimated at different horizons h shows how an increase in x changes the q^{th} quantile of future GDP growth at those forecasting horizons, thus providing a "term structure" of growth-at-risk.

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