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## CCAMTAC - Regional Research Seminar Series

## "The Nexus of Climate and Monetary Policy: Evidence from the Middle East and Central Asia"

## November 22, 2024

Introduction:

**Mr. Norbert Funke,** Director, CCAMTAC

Moderation:

**Mr. Nurdaulet Abilov**, Economist, CCAMTAC

Presenters:

**Mr. Nordine Abidi,** Economist, Middle East and Central Asia Department (MCD), International Monetary Fund (IMF)

Interventions:

**Ms. Lilia Aleksanyan,** Regional Economist, Asian Development Bank (ADB)

**Mr. Nurbulat Mukanov,** Advisor to Governor, National Bank of Kazakhstan

Climate shocks, such as floods and droughts, have been disrupting economic growth in many countries, leading to significant consequences for inequality and food security. Therefore, understanding the impact of these shocks on the economy is crucial for policymakers to design effective, preemptive policy actions.

The current research seminar focuses on the interaction between climate shocks and monetary policy, specifically analyzing their effect on inflation in the Middle East and Central Asia (MECA) region. Mr. Nordine Abidi presented the mechanisms through which climate shocks could affect inflation. First, agricultural disruptions caused by extreme weather events, such as floods and droughts, result in substantial crop yield losses, which constrain food supply and drive up prices. Secondly, climate change increases production costs as farmers need to use more sophisticated, climate-adapted inputs. This adaptation raises production costs, leading to higher inflation, which central banks must counteract by increasing policy rates.

The presenter emphasized the importance of this research for the MECA region, which is highly vulnerable to climate shocks due to its reliance on agriculture and limited water availability. The speaker also presented some empirical observations for the MECA region. He showed that food inflation contributes some 40% to CPI on average in the MECA and demonstrated food inflation was the main driver of headline inflation during the last episode of global inflation surge.

To analyze the consequences of climate shocks on monetary policy and inflation, the authors utilized a theoretical model and supplemented it with a local projections method to estimate impulse response functions (IRFs) to contractionary monetary policy in the presence of climate shocks over different time horizons. Mr. Nordine Abidi demonstrated that the theoretical model suggests monetary policy is less effective in combating inflation when negative climate shocks impact food prices. Consequently, achieving an inflation target requires a higher interest rate in the presence of such shocks.

Using a local projections method and the data for the MECA region, the research also showed that monetary policy effectively lowers headline inflation in environments with high rainfall and low temperatures. However, it is completely ineffective in reducing inflation in low rainfall and high temperature conditions. This finding underscores the importance of enhancing climate resilience in the MECA region by investing in sustainable agriculture and improving climate-related policies, because monetary policy alone is insufficient to lower food price inflatiocn, which constitutes a significant portion of the consumer basket.

Ms. Lilia Aleksanyan provided insightful comments during the discussion on the integration of climate change into monetary policy. She noted that this area of discourse is relatively new, highlighting the evolving nature of the relationship between climate risks and economic stability. Lilia suggested several areas for further research. These include studying countries with high food import dependency and considering climate shocks in trading partner countries. She also recommended disentangling the effects of supply-side drivers of food inflation, such as climate shocks, supply-chain shocks, trade restrictions, and logistics issues. Additionally, including more control variables to assess monetary policy effectiveness, such as exchange rate pass-through and monetary policy credibility can help deepen the analysis. Lilia also highlighted the need to extend the analysis to climate-induced energy price hikes and their impact on monetary policy effectiveness, as well as estimating the impact on other areas of central bank competence, including financial stability and banking supervision..

Mr. Nurbulat Mukanov highlighted the importance of understanding the broader implications of inevitable climate shocks, not only on inflation but also on economic growth and stability. He urged for a comprehensive view that integrates climate risks not only into the monetary policy discussion, but also into broader long-term government strategies to adapt to these changes.