



**MONETARY AND
CAPITAL MARKETS**

Macroprudential Policy: Countering Financial Amplification of Shocks

DECEMBER 12, 2025

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Overview

- Reducing financial amplification as objective of macroprudential policy
- The recent “preemptive turn” of macroprudential policy
 - ▶ Thinking through use of capital and BB-tools
- Evidence on effectiveness
- What is different in EMEs – and elements of the IPF
- How to address leakages to NBFIs?

The Objective: Reducing Financial Amplification

Objectives of Macroprudential Policy

Countering financial amplification of shocks is an important objective of macroprudential policy. Perhaps it is the main one.

Aligns with **intermediate objectives** as set out by the IMF (2013, 2014).

- Strengthen resilience of the financial system to reduce impact of adverse aggregate shocks.
- Lean against the procyclical feedback between asset prices and credit that generates stock vulnerabilities (e.g., leverage), which may amplify adverse aggregate shocks.
- Reduce the potential for a knock-on effect of the failure of individual systemically important financial institutions.

Advantages of this concept:

- Maps to the **ultimate objective**: reducing tail risks to GDP that arise from financial amplification.
 - ▶ Broader than alternative binary concept of preventing a financial crisis.
 - ▶ Avoids appealing to economic or financial “cycles” that may not exist.

The Preemptive Turn In Use of Macroprudential Policy

Preemptive Turn: Framework Involving Three Decision Points

GFC: macroprudential tools need *tightening* in periods of exuberance, and *relaxation* when risks abated or crystallized.

- In line with idea of a financial cycle.

COVID-19: shocks need not follow a period of excessive credit but can arise exogenously.

- Premium on preemptive (early action) as insurance against shocks.

Emerging framework involves **three decision points**:

- Early or preemptive **activation** to increase resilience.
- **Tightening** in response to increases in cyclical vulnerabilities.
- **Relaxation** in response to adverse shocks, when shocks lead to macroprudential settings becoming binding.

Activation—To Increase Resilience

- Early activation of tools can put the tool in place at a ‘neutral’ calibration that forms the basis for further variation in response to changing financial conditions.
- Gaining ground for releasable capital buffers, with positive neutral settings in place across several countries within the EU and elsewhere (Miettinen and Nier 2025).
 - ▶ e.g., Armenia, Australia, Chile, Hong Kong SAR, Iceland, Georgia, New Zealand, South Africa, United Arab Emirates, United Kingdom (since 2016).
- Putting BBMs in place at a neutral setting can also be useful:
 - ▶ BBMs apply at origination and take time to reduce leverage in the stock.
 - ▶ Some BBMs work as automatic stabilizers, putting a break on build-up of vulnerabilities as asset prices rise (UK LTI limit).
 - ▶ Putting BBMs in place when house prices are not yet elevated reduces costs and eases political economy constraints (e.g., Ireland’s loan-to-income cap of 3.5 introduced in 2015).

Tightening—To Counter Cyclical Increase in Risks

- Capital tools can be tightened to lean against easing of financial conditions,
 - ▶ Based on a range of indicators beyond the credit gap, e.g., differenced relative credit ([Kauko and Tölö, 2019](#)).
- Tightening can also be considered for BBMs when an uplift in asset prices makes existing policy settings less binding:
 - ▶ For buyers that already own real estate (movers, second-home buyers, buy-to-let investors), an increase in asset prices bolsters balance sheets.
 - ◆ Provides rationale to tightening LTV for these buyers.
 - ▶ For first time buyers (FTBs), an increase in asset prices leads to larger (not smaller) required downpayments under unchanged LTV constraints, reducing need for tighter settings.
- Income-based tools (LTI, DSTI) tend to become more binding (not less) when growth of asset prices outstrips growth in income, reducing the need for adjustments.
 - ▶ But a stressed DSTI is needed when interest rates are low.

Relaxation — When Settings Become Binding

- Capital buffers should be released to offset pressure on capital that would otherwise curtail banks' provision of credit to the economy.
 - ▶ The ability to release the buffer is central to avoid amplification of shocks.
- When BBMs have contained leverage in the stock of debt, this already increases resilience to shocks,
 - ▶ By reducing increases in default risk or cutbacks in consumption.
- Some relaxation of BBMs can be considered when shocks make existing settings overly binding on new borrowers, squeezing demand for real estate.
 - ▶ A sharp fall in asset prices reduces home equity for existing owners, making tight LTV settings binding on movers (STBs).
 - ◆ No need for relief for FTBs though, who gain from the fall in prices.
 - ▶ Sharp increases in interest rates can call for the removal of the “stressed” component in the DSTI calculation (e.g., Estonia).

Evidence on Effectiveness

Release of Buffers Can Counter Retrenchment

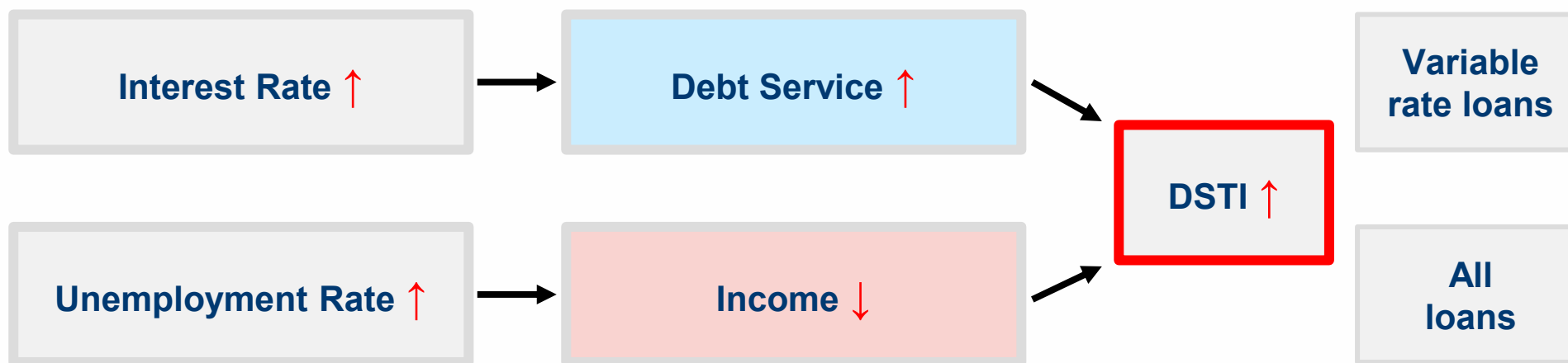
- Evidence based on COVID episode consistent with idea that ability to release is central to reducing amplification of shocks.
 - ▶ Encouraging banks to “use” non-releasable buffers was not effective, in any of the euro area, the UK or the US [Couaillier et al. \(2022 a\)](#), [Mathur and others \(2023\)](#), [Berrospide et al. \(2021\)](#).
 - ▶ Releases were effective, with larger effects on lending for banks close to minima.
 - ◆ Hong Kong SAR [Wong and others \(2022\)](#),
 - ◆ UK [Mathur and others \(2023\)](#),
 - ◆ Euro area [Couaillier and others \(2022b\)](#),
 - ◆ EU countries [Dursun-de Neef et al. \(2023\)](#), [Bedayo and Galan \(2024\)](#).

BBMs Can Increase Resilience to Shocks

- Evidence consistent with the idea that BBMs can reduce leverage and thereby reduce amplification of shocks from defaults or cutbacks in consumption.
- Early studies find that BBMs reduce defaults in **loan level data**.
 - ▶ Nier, Popa, Shamloo and Voinea (2019): **defaults** increase when the (actual) DSTI ratio moves beyond certain thresholds (e.g., 50 per cent for mortgages).
- Recent studies find BBMs have effects on **loan losses** in **bank-level panel data**
 - ▶ Bouis, Mirza and Nier (2025): BBMs cushion the effect of interest hikes on loan losses.
- Emerging evidence that BBMs affects macro-outcomes in **aggregate data**:
 - ▶ Brandao and others (2020): effects on **tail risks to GDP growth**.
 - ▶ Banerjee and others (2025): effects on **volatility of output**.
 - ▶ These studies do not make strong assumptions on the transmission of BBMs
 - Capture both reductions in default and in propensity for cutbacks in consumption.

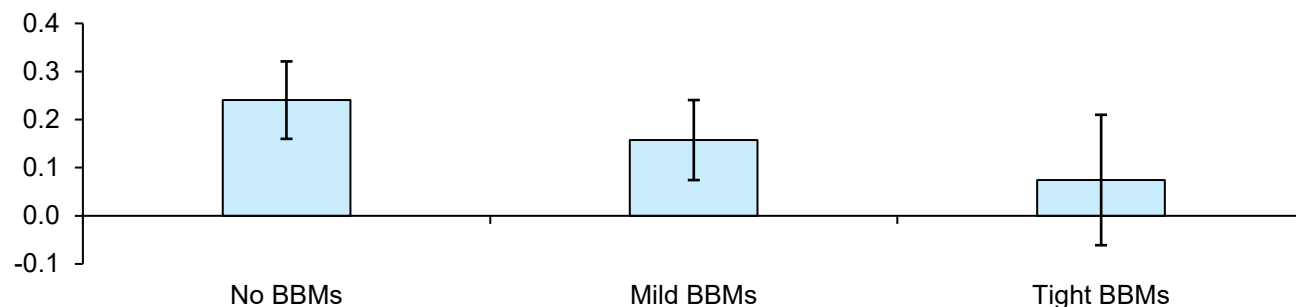
Bouis, Mirza and Nier (2025): Can BBMs Shield Banks from Losses as Interest Rates Rise?

- Bouis, Mirza and Nier (2025) examine the effect of prevailing BBMs in mitigating loan losses as interest rates rise.
- Consider **two channels** through which higher interest rates affect **debt service to income** and borrower defaults.

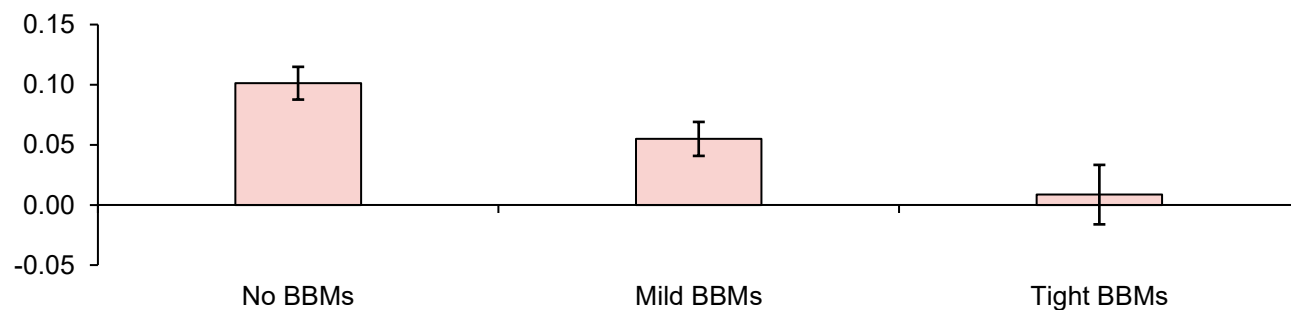


BBMs Cushion Impact of Shocks on Loan Losses

Effect of a one-SD increase of the interest rate (3.5 p.p.) on bank loan loss provisions – for banks with high share of flexible rate loans
(percentage points)



Effect of a one-SD increase of the unemployment rate change (1.0 p.p.) on bank loan loss provisions
(percentage points)



Estimation based on a panel of more than 2,000 banks from 31 countries over the period 1995 to 2023.

Chart at the top uses a dummy indicating whether a bank has a high share of variable-rate loans.

Both charts use a new index of the tightness of BBMs (0, 0.5, 1) that moves at the country level.

Source: Bouis, Mirza, and Nier (2025).

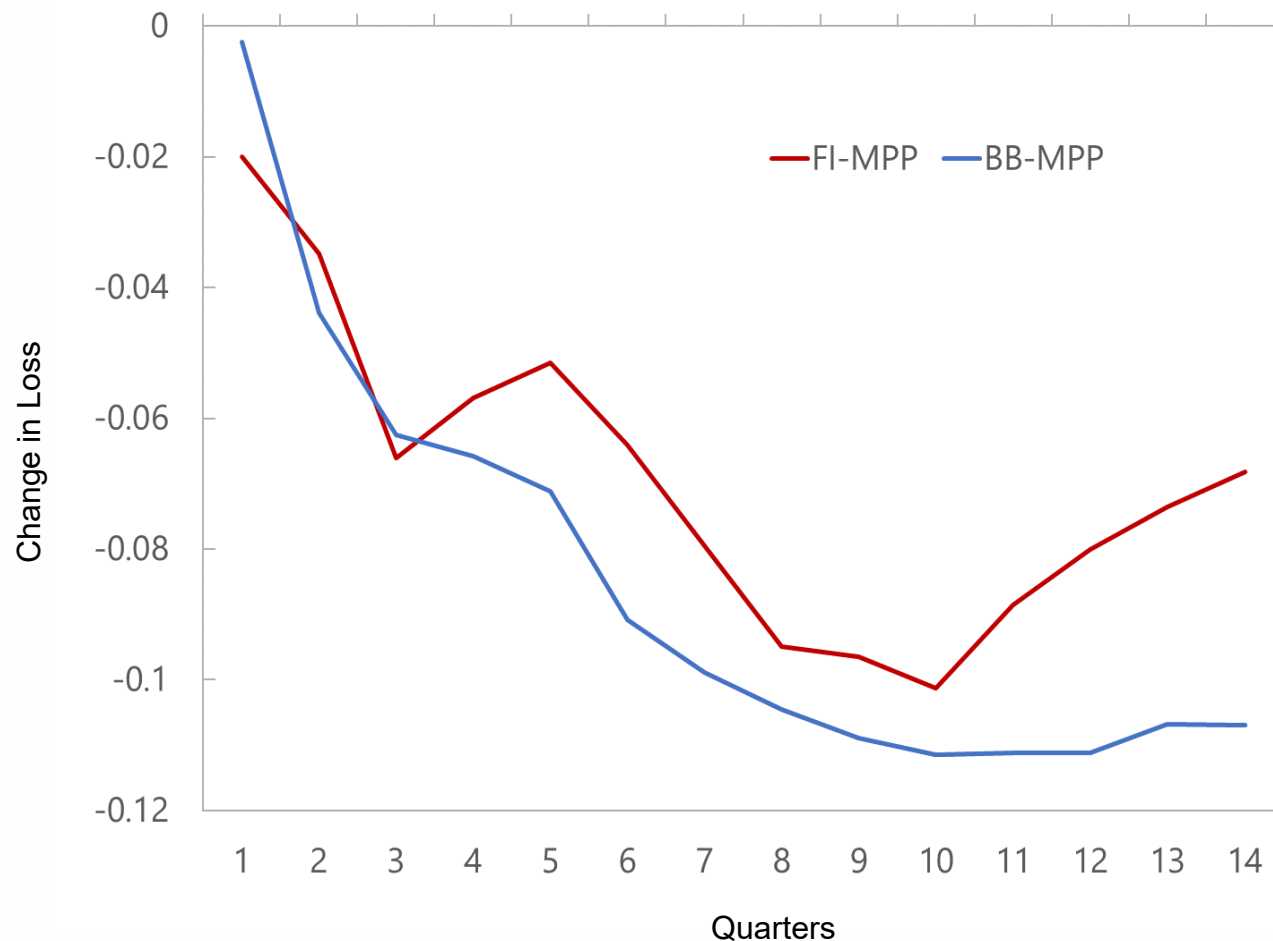
Brandao et al (2020): Using Loss Functions to Summarize Effect of MPMs on the full Output Distribution

- Brandao-Marquez, Gelos, Narita and Nier (2020) consider evolution of the entire distribution of output growth conditional on positive shock in financial conditions.
 - ▶ Conduct quantile regressions at intervals of 5 per cent, i.e. $q=0.05, \dots, q=0.95$.
 - ▶ Estimate quadratic loss functions using the moments of the distribution.
- Estimate policy shocks—for MPMs and other policies—as the deviation of actual policy from its expectation conditional on observables,
 - ▶ Using data on policy from Alam et al, 2019, 2025.

- Compare loss functions with and without policy:

$$L_1 = \sum_{h=0}^H \beta^h \hat{E}_t \left((y_{t+h} - \bar{y})^2 \mid MPM_t = 1 \right) \quad \text{vs} \quad L_0 = \sum_{h=0}^H \beta^h \hat{E}_t \left((y_{t+h} - \bar{y})^2 \mid MPM_t = 0 \right)$$

Reduction in Loss Function from Use of MPP

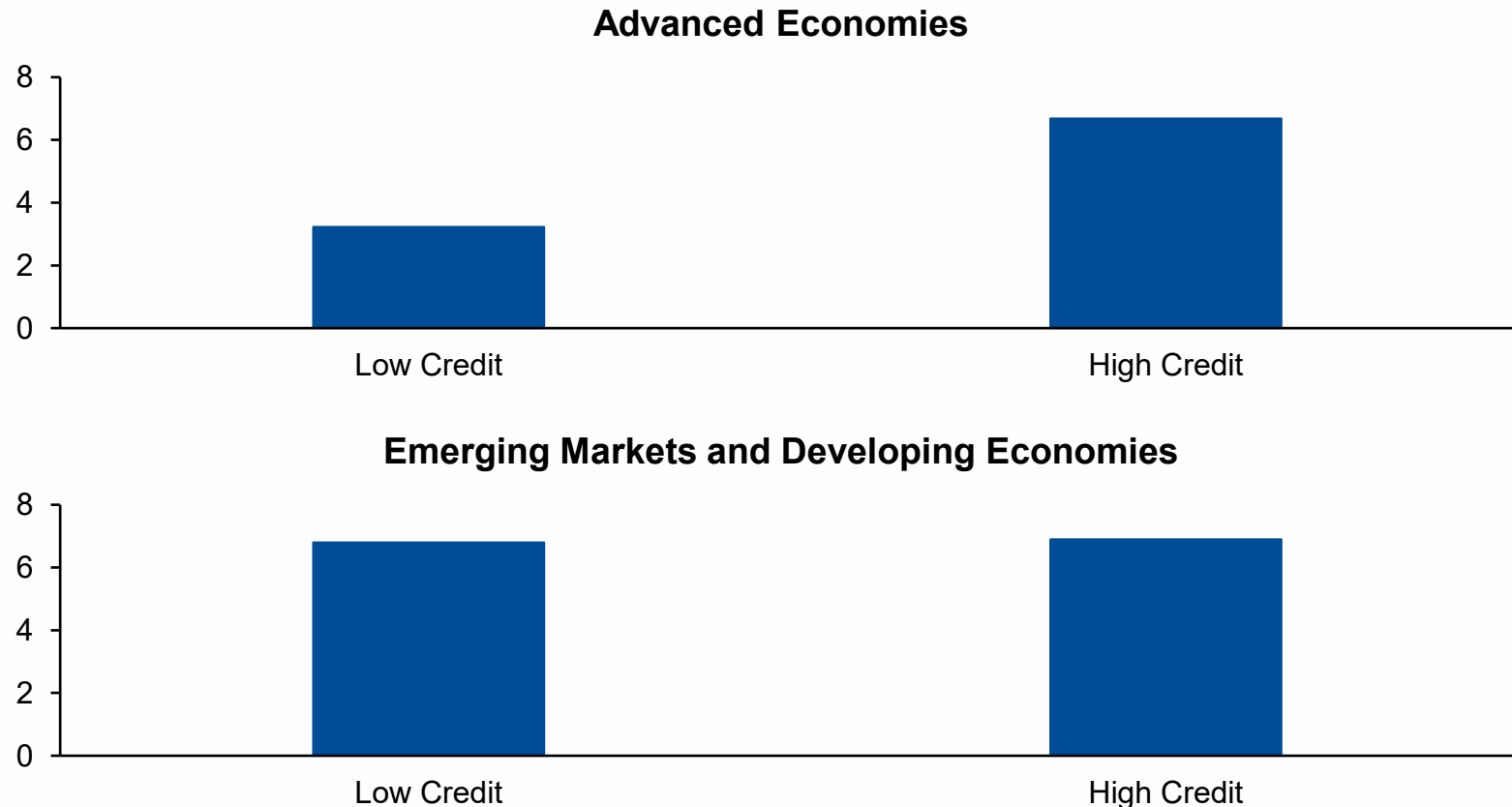


Source: Brandao-Marques and others (2020).

Note: The figure shows the cumulated change in the loss function when comparing a scenario of loose financial conditions without policy tightening to one where policy is tightened. BB-MPP = borrower-based macroprudential policy; FI-MPP = financial-institutions-based macroprudential policy. The horizontal axis shows the number of quarters since the time of the loosening shock of financial conditions and macroprudential tightening.

What is Different in EMEs?

Miettinen and Nier (2025): Systemic Banking Crises: Peak Losses as a Share of RWA



Sources: IMF Financial Soundness Indicator; Laeven and Valencia (2020)

Note: Peak losses as a share of RWA are calculated as $(\text{Peak NPL} \times \text{Average Share of Total Gross Loans to RWA})$. The Average Share of Total Gross Loans to RWA is calculated as $(\text{Total Gross Loans} \times 15\%) / \text{RWA}$ for AEs and $(\text{Total Gross Loans} \times 25\%) / \text{RWA}$ for EMDEs. Latest observations for Total Gross Loans and RWA are used. Peak NPL is from Laeven and Valencia (2020). Total Gross Loans and RWA are from the IMF FSI. Countries are divided into low or high credit based on their maximum credit growth 1 to 5 years before the crisis.

Elements of the Integrated Policy Framework

Emerging framework for the Fund's policy advice to open economies ([IMF 2020](#)),

- Considers the use of CFMs, FXI as well as MPMs in addition to traditional macro policies.

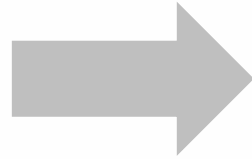
Recognizes **frictions** that are common in emerging markets and small open economies:

- A. exposure to volatile capital flows in the context of shallow markets;
- B. FX mismatches in the financial, household and corporate sectors;
- C. potential for inflation de-anchoring from less than fully credible monetary policy.

New work considers how macroprudential policy can reduce financial stability impact when these frictions interact with **external shocks**.

Implications of Frictions for Financial Stability

Case A



- Capital flows lead to volatile financial conditions.
 - Inflows compress spreads and push up asset prices.
 - Outflows widen spreads and depress asset prices.
- Outflows can lead to liquidity stress, increasing rollover risks.

Case B



- Depreciation can expose FX mismatches (between assets and liabilities and across maturities), leading to
 - Valuation losses for banks.
 - Market-wide FX liquidity squeezes.
 - Defaults on FX debt by households and firms.

Case C



- Sharp monetary policy hikes to lean against depreciation can
 - Increase debt service and defaults on LC debt.
 - Increase banks' cost of funding or expose duration gaps.

What about NBFIs?

Migration of Credit Provision to NBFIs

Migration of credit to NBFIs can arise from leakage (e.g., [Cizel and others](#)), financial innovation, and increased demand for non-deposit savings products.

Objective of **capital** (and liquidity) tools is the resilience of credit services under stress.

- This can be attained even after some leakage to NBFIs, provided tools cover both banks and affiliated NBFIs at the consolidated level.

Objective of **BBMs** is to contain externalities from overborrowing of households and firms.

- BBMs must be applied to banks as well as significant non-bank providers of credit (e.g., Korea, Romania).

Additional tools may be needed to increase the **resilience of non-bank finance**

- e.g., limits on leverage ratios, and/or maturity mismatches at real estate investment funds (Ireland), or for providers of credit to corporates (India).

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