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BANCO DE MÉXICO

Macro Prudential Policy Calibration

- Mexico is a country that has experienced **relevant banking crisis** (1994 Peso Crisis)
- Since then a **strong regulatory framework** has been gradually put in place (Basel 3 compliant in 2016).
- This framework has promoted **resilience** of individual banking institutions under conditions of **uncertainty** and volatility such as the **2008** crisis and the **2016** US election (reflected as high volatility of risk factors such as FX, Interest rate).
- However, **indirect** channels of contagion have in the past generated systemic vulnerabilities (fire sales, illiquidity of securities markets and interbank market, etc.) that had led to the development of **macroprudential policy tools** that can be separated into two groups:
  - **Preventive**: Promote cycle attenuation (systemic “Going concern”)
  - **Mitigating**: Promote cycle reduction (systemic “Gone concern”)

Macro Prudential Policy Calibration

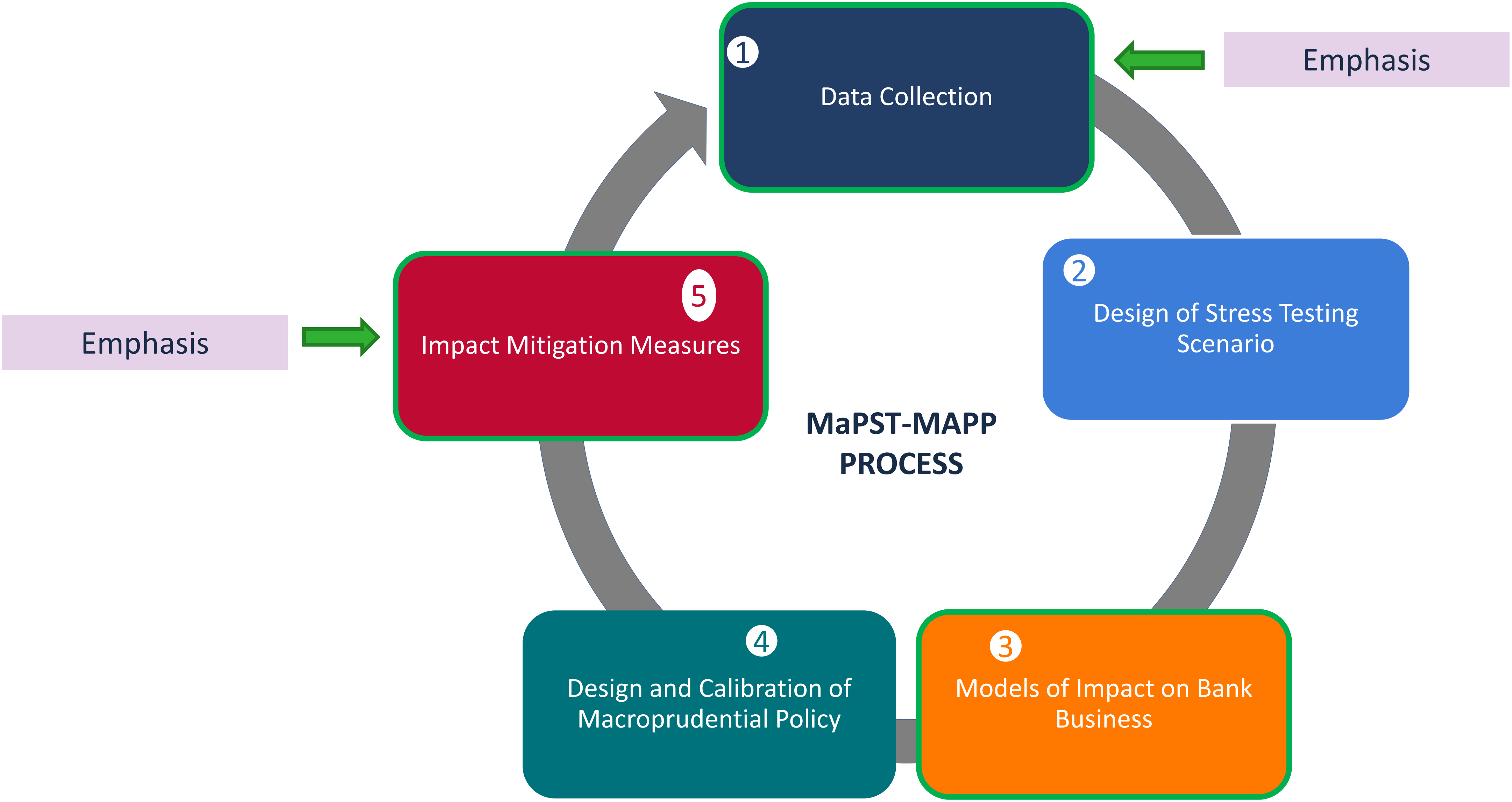
- “**Preventive**” Macroprudential policy[/1] has taken the form of capital **buffers** (countercyclical and locally systemic bank buffer) and **loan loss provisioning** requirements that are forward looking and take into account **systemic risk variables** as arguments for accumulation or disaccumulation of loan loss provisions (global indebtedness of counterparts, labour mobility, etc.).

- **“Mitigating”** Macroprudential policy has been the field of **most learning** and effort and has been conducted gradually by **observation** during times of crisis **across** the entire **financial system**.

Both policies depend on a substantial **infrastructure of granular data** that has been constructed through the years since the 1994 crisis. (see annex 1)

1/ Capital buffers are amply treated in the LSE/IMF paper and no significant difference has been developed in Mexico as compared to Basel 3 recommendations hence not mentioned further in what follows.

Macro Prudential Policy Calibration



Mitigating Macro Prudential Policy

We interpret:

- **“Mitigating”** Macroprudential policy as the **regulatory body** set in place **previous** to the **ocurrence** of a **systemic event** that allows authorities to **contain** and **interrupt** systemic risk amplifiers (SRA).

Mexican experience shows that **emphasis** should be given to segments of the financial system outside the banking system.

2008 Mortgage crisis Mexican case:

High volatility in risk factors did not generate by itself a systemic event within the banking system but manifested outside the banking system:

i) AAA corporate debt defaults due to idiosyncratic imbalances,

ii) illiquidity of overall private debt markets,

iii) mutual fund runs and pension fund losses and fire sales,

iv) illiquidity of interbank markets and long term government debt.

Mitigating Macro Prudential Policy Measures

Pension Funds

- **Deactivation of fire sales caused by investment regime triggers**: Whenever a pension fund exceeds investment limits due to exogenous variations of the quality of assets, it can now request the authority permission to keep such excess temporarily while stress conditions prevail.

- **Deactivation of procyclical Value at Risk (VaR) limits:** Pension funds incurred into VaR breaches when faced to volatile market conditions that promoted fire sales further enhancing volatile conditions. VaR limits are no longer cyclical.

Mutual funds

- **Mutual funds redemption facilities**: Mutual funds are now able to create "side pockets" that separate liquid assets from illiquid assets and hence provide to investors equal conditions for redemption. This measure is meant to reduce the spread of panic due to full cancellation of redemptions as observed in 2008 that in the end generated loss of confidence in the system.

Mitigating Macroprudential policy measures

Banking system

- **Bond swap facilities provided by the Central Bank:** In October 2008 Mexican authorities announced the possibility of operating interest rate swaps with domestic credit institutions (up to MXN 50,000 millions).
  - These operations allowed to modify the interest rate term risk structure preventing fire sales that could have worsened the effects of the crisis. Five auctions took place where Banco de México received a fixed 10-year period rate and in exchange paid 28-days Mexican interbank rate (TIIE).

- **Lender of last resort liquidity facilities:** Readily available with clear pre defined rules and contracts. Banks are required to monitor and report periodically potential collateral.

Development Banks

- **Credit guaranty support:** To solvent corporations that face illiquid debt markets, (Sofoms and corporates 2008)
- **Market making facilities**. Improve price discovery and overall liquidity in markets (Securitization markets 2008)
- **Continued financing to hailing sectors:** house construction industry 2013, mortgages 2008, SMEs 2008, etc.

Going Forward

- These regulatory policies have generated a **structural break** from operating conditions that **prevailed previous to the 2008 crisis**.

- **Macro prudential stress testing** is needed to calibrate “preventive” MAPP however it would be **incomplete** if the **transmission** of stress conditions on the behaviour of markets is **not modelled differently.**

- The final **recommendation**, hence, is to use **MaPST**, among other objectives, as an **exploratory tool** for detection and measurement of Systemic Risk Amplifiers and most importantly **enact in times of peace** appropriate regulatory policy that mitigates its effects.

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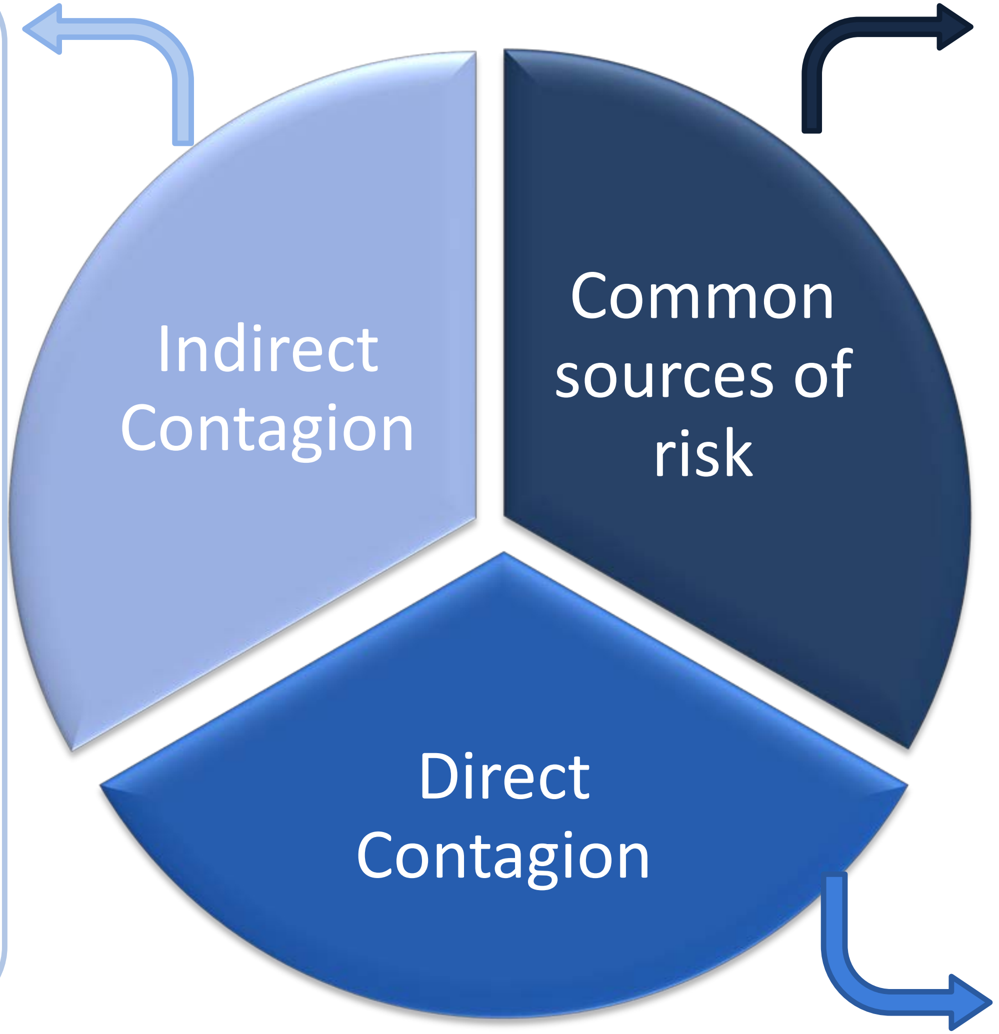
Annex 1. Data Collection by Mexican authorities

Data collection map

Granular information of Loans by type.

- Corporate and SMEs Loans
- Credit Card
- Financial Entities
- Non-Revolving Consumer
- States & Municipalities
- Mortgage

Layout that includes information related to: Loan characteristics, payment behavior, collateral, loan rating, PD, LGD.



Data representative of the entire banking, financial, or economic system:

- National Statistics Bureau
- Banco de Mexico surveys
- Financial reports from the markets

Domino effects along a chain of institutions or markets within the system.
Granular information on:

- Derivative positions (Futures, Forwards, Options, Swaps).
- Securities positions
- FX positions
- Repo transactions
- Debt issuance

Data collection insight: PEMEX

- Banco de México requested the national oil producer Company (PEMEX) the list of unique identifiers of suppliers of the company so as to identify all loans granted to them by banking institutions.
- Due to availability of granular data by financial authorities the impact of a hypothetical disruption of the producing chain of PEMEX allowed for a timely estimation of the banking capital ratio of Banks.

Capital ratio "what if" analysis