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## Lessons from Three Decades of Banking Crisis Resolution: Overstating Moral Hazard?

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### 2.1 Introduction

Banking crises are commonly caused by over-extended loan books and high leverage ratios that stress bank balance sheets when the economic cycle contracts (Geanakoplos 2009, 2010). When an economy expands, credit standards tend to be relaxed, causing asset prices to increase above so-called fundamental values. Default risk rises and banks tighten credit standards, which increases the cost of credit. Borrowers with high credit default risk are forced to deleverage by selling assets, which places downward pressure on asset prices (Brunnermeier et al. 2009). If asset sales are widespread, this will trigger fire sales and bank defaults preceding a financial crisis (Kiyotaki and Moore 1997).<sup>1</sup>

Over-extended loan books transform into high levels of nonperforming loans (NPLs) and the ensuing debt overhang dampens growth while the credit cycle stalls when demand for credit is greatest (Avgouleas 2015). As the economy enters recession, banks must manage balance sheet and liquidity stress, and potential insolvency.<sup>2</sup>

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<sup>1</sup> Naturally, causality is reciprocal.

<sup>2</sup> Minsky (1992) and Board of Governors of the US Federal Reserve System (Federal Reserve 1970).

The measure of bank losses from NPLs is reflected on the balance sheet—normally the difference between an asset’s book value (i.e., net present value plus provisions) and the ultimate recovery amount (i.e., loss given default).<sup>3</sup> The recovery amount is contingent on the borrower restructuring its debt contract, or the market, if the distressed asset or collateral is liquidated. Loss given default is minimized where the legal system is functioning in a pro-creditor environment (including judicial and extra judicial proceedings) and loan recovery or asset disposal procedures are not burdensome or obstructive.

If the bank adopts prudent loss-provisioning policies prior to an NPL disposal or writing-off an exposure, any loss will be absorbed by the bank’s capital base. Inadequate loan-loss provisioning will hurt bank profitability because a portion of the bank’s assets will become contra assets or an expense, eroding its capital reserves. High NPLs weigh on bank liquidity and, in the extreme solvency, can disrupt financial stability and economic growth (Avgouleas 2020).

In this environment, central banks can dampen credit demand by *inter alia* tightening monetary policy, raising countercyclical and other prudential requirements to restrict balance sheet growth, and place caps on loan-to-value ratios and debt-to-income limits—the core of macroprudential policy (Claessens 2014). At the same time, to understand the potential solvency risks for financial institutions and, if necessary, to take appropriate actions to stabilize bank balance sheets, regulators need the tools and expertise to identify NPLs. Ideally, regulators—in normal times—should compel banks to take preventive measures comprising: (i) high loan pre-provisioning, (ii) appropriate loan-to-income and loan-to-value ratios, (iii) macroprudential capital buffers, (iv) bail-in tools andailable capital instruments, (v) debt service coverage ratios, (vi) NPL ratios, and (vii) limits on NPL volumes.<sup>4</sup>

<sup>3</sup> In the simplest terms: “Net present value is the present value of the cash flows at the required rate of return of your project compared to your initial investment, or ROI [return on investment], for a project or expenditure” (Gallo 2014).

$$NPV = \sum_{t=1}^N \frac{Cash\ flow_t}{(1+i)^t} - initial\ investment$$

Where “N” is the total number of time periods for the cash flow being discounted, “t” is the duration of the cash flow period, and “i” is the discount or interest rate.

<sup>4</sup> This chapter uses NPL ratios primarily sourced from the World Bank.

In addition to reducing the likelihood of banking failures, managing NPLs stabilizes balance sheets that will enable banks to extend new credit, which is crucial for economic activity and restoring profitability. Bank recapitalizations become tenable, reducing the likelihood of taxpayers being ultimately liable, while strengthening financial stability and reducing systemic risk. Arguably, the most effective approach to stabilizing a banking system inundated with high NPL ratios is to realize a legal transfer of NPLs to an asset management company (AMC) under a framework that is sufficiently transparent to ameliorate information asymmetries and properly structured to minimize seller's long-term loss without giving rise to egregious moral hazard. This chapter analyzes empirical evidence from three major banking crises to explain why restructuring banks' balance sheets is the most effective approach for rescuing a banking system. Examples and empirical evidence are drawn from countries most affected by banking crises in Asia, the European Union (EU), and the United States (US).

The importance of these findings cannot be underestimated, especially during the COVID-19 pandemic and its economic fallout. In the current global environment of pandemic-driven lockdowns coupled with unprecedented supply and demand shocks, a surge of NPLs is widely expected that will greatly impair the functionality of banking systems in developed and developing economies. The analysis and identification of the most effective bank stabilization remedy, the structured use of AMCs despite moral hazard risk, is of cardinal importance and at the forefront of the global financial stability debate as well as the post-pandemic economic recovery.

This chapter is divided into six sections following the introduction. Section 2.2 defines and discusses the regulatory treatment, causes, and consequences of NPLs. Section 2.3 discusses systemic bank resolution standards and moral hazard. Section 2.4 analyzes the 1997 Asian financial crisis, focusing on the resolution approaches used in Indonesia, Malaysia, the Republic of Korea, and Thailand. This includes a study of AMCs and recent resolution measures in the People's Republic of China (PRC). Section 2.5 examines the bailout of UBS, Royal Bank of Scotland (RBS), and Citigroup during the 2008 global financial crisis. Section 2.6 analyzes the 2010 eurozone debt crisis in Greece, Ireland, Italy, and Spain. Section 2.7 concludes.

## 2.2 Identification, Treatment, Causes, and Consequences of Nonperforming Loans

The first step in rescuing a banking system is prevention, although historically prevention alone has proved insufficient. Significant work over the past 20 years has led to the development of additional mechanisms, although there is no consensus among regulators (Weber et al. 2014). For example, views vary on the most effective approach to resolve systemically important banks (Arner and Norton 2009). When prevention is unsuccessful and NPLs increase, defining and identifying NPLs is an obvious starting point and critical for mitigating banking system weakness, but one where there is often a surprising lack of clarity.

### 2.2.1 Nonperforming Loans: Definition, Regulatory Issues, and Accounting Treatment

Systemizing an NPL definition is problematic because the extent of nonperformance varies, resulting in different types of delinquent loans. The Basel Committee on Banking Supervision (BCBS) focuses on exposures' delinquency status and, thus, it defines a nonperforming exposure as loans and debt securities (i) that have defaulted under the Basel II framework, (ii) are credit impaired according to the applicable accounting framework, and (iii) are more than 90 days past due (BCBS 2017). A Basel II default uses a similar definition to the International Monetary Fund (IMF)—a default on principal and interest that lasts more than 90 days.<sup>5</sup> In the EU, the definition is more expansive, being implemented in the post-eurozone crisis environment, which was important for harmonizing supervision across member states. The definition used by the European Banking Authority (EBA) includes the realization of collateral—(i) material exposures which are more than 90 days past due, and (ii) the debtor is assessed as unlikely to pay its credit obligations in full without realization of collateral, regardless of existence of any past-due amount or number of days past due (EBA 2014, Annex 5 [35]).

Adopting internationally accepted nonperforming exposure/nonperforming loan classifications promotes confidence in banks' financial position, credit risk, and solvency (World Bank 2002, 3). NPL classification is the most universally accepted method to identify credit exposures. Flaws in the methodology have been identified by the BCBS, notably when NPL

<sup>5</sup> The term “nonperforming loans” is not uniform among jurisdictions. This chapter adopts the IMF definition of Bloem and Freeman (2005, 8).

definitions are determined only by *ex post* collectability—i.e., 90 days past due. Jurisdictions rarely share the same definition of NPLs (Bholat et al. 2016, 22–23), the exception being the EU. This is explained by the uniqueness of each jurisdiction’s banking system and stylized qualitative factors to measure NPLs.

International Financial Reporting Standard 9 (IFRS 9) provides an internationally accepted accounting treatment for impaired assets based on forward-looking or expected credit losses. This approach comprises quantitative and qualitative measures—the timing of recording a loan loss provision and when to move NPLs and nonperforming exposures off balance sheet (Bholat et al. 2016, 36–37). Expected credit losses account for performing loans when credit risk increases, which affects bank balance sheets when credit growth and credit risk expectations increase—i.e., at the top of the credit cycle heading into a contraction.

IFRS 9 can influence capital buffers and trigger bail-in debt instruments—for example, contingent convertibles. As NPL recognition under IFRS 9 is subject to banks’ discretion, incentive exists to procrastinate to avoid bail-in triggering events. The IMF recognizes this and recommends incentives to accelerate the transfer of NPLs and nonperforming exposures off balance sheet (IMF 2015). It is unclear how this will materialize in practice. For developed markets, application of IFRS 9 officially commenced in 2018, with the exception of the US, and developing markets from 2025. The introduction of IFRS 9 in Asia has been aperiodic. Hong Kong, China; Indonesia; Malaysia; the Philippines; the PRC; the Republic of Korea; Singapore; and Taipei, China are the only Asian jurisdictions to have introduced adaptations or equivalents of IFRS 9 (Deloitte 2020).

In April 2017, the BCBS released guidelines—Prudential Treatment of Problem Assets—Definitions of Nonperforming Exposures and Forbearance—to harmonize quantitative and qualitative criteria used for credit categorization and for countries with no nonperforming exposure definition. The guidelines identify criteria to upgrade an exposure from nonperforming to performing status, and the interaction between nonperforming and forbearance (BCBS 2017, 1; Bank for International Settlements [BIS] 2016, 6). This is complemented by the Standards – Regulatory Treatment of Accounting Provisions, which focus on the timing of a credit loss or when an NPL or nonperforming exposure is recorded. To overcome the problem in which IFRS 9 NPL and nonperforming exposure recognition is subject to banks’ discretion, the BCBS supports the early recognition of credit losses. This approach harmonizes accounting

provisions with the Basel III capital requirements, with any shortfalls deducted from Common Equity Tier 1 (BIS 2017, 1, 6–7).

Accounting classifications are important because NPLs and nonperforming exposures recorded at fair value are attributable to credit risk and therefore affect the level of loan-loss provisions and when NPLs and nonperforming exposures are written off. Valuations are procyclical because they are overstated during rapid economic expansions and understated in downturns (Bholat et al. 2016, 21). Thus, the expected credit loss seeks to smooth valuation volatility and strengthen banks' capital positions. In the EU, the Commission Regulation (EU) No 2016/2067 of 22 November 2016—amending Regulation (EC) No 1126/2008 adopting certain international accounting standards in accordance with Regulation (EC) No 1606/2002 of the European Parliament and of the Council as regards IFRS 9—gives effect to expected credit loss in IFRS 9 and recognizes the BCBS requirements.

In July 2015, the BCBS released its Guidelines for Identifying and Dealing with Weak Banks. Guidance is given on asset quality: negotiating agreements with debtors, taking possession of collateral, writing off long-term NPLs, and selling and transferring assets to AMCs. Asset recovery is to be economic, fair, expeditious, and on a net-present-value basis. The transfer of assets off balance sheet is for bank viability, management to address problems and strategies, and AMCs to maximize recovery value (BCBS 2015, 38 and 49).

### 2.2.2 Causes and Consequences of Nonperforming Loans

History has shown that excessive NPLs arise from a number of bad practices such as connected banking transactions (sometimes called “crony banking”), fraud, or relaxed underwriting standards. NPLs are also caused by contracting macroeconomic cycles that impact borrowers' ability to repay the loan and devalue collateral. Contracting macroeconomic cycles pose the greatest challenge since the prudential framework is not sufficient to prevent a crisis. For example, Spain was one of the worst-affected countries during the eurozone debt crisis, despite banks having sound pre-provisioning lending.<sup>6</sup> Spanish real estate and the economy were disproportionately inflated by the low interest rate policies of the European Central Bank (ECB), rendering dynamic provisioning measures ineffective (Jiménez et al. 2014). This provides an important moral hazard lesson for two reasons. Spain highlights the limitations of the moral hazard argument

<sup>6</sup> On the mechanics and effects of the Spanish dynamic pre-provisioning system adopted in the mid-2000s as a macroprudential measure, see Jiménez et al. (2012).

and that prudential legislation is much less potent when the macroeconomic cycle and monetary policy, rather than bank mismanagement, have inflated an NPL crisis.

An insightful econometric methodology pioneered by Klein (2013) differentiates between bank-specific and macroeconomic factors using dynamic panel regressions (see Chapter 5 for an additional literature review on the determinants of NPLs). This method was adopted by the IMF to study Italian NPLs (Weber, Kopp, and Garrido 2016). The authors ran fixed effects and “generalized method of moments” regressions of NPLs on common macroeconomic bank variables and bank-specific variables, to determine the role each played in the buildup of NPLs. The authors found that macroeconomic variables play a significant role in the accumulation of NPLs, concluding that both bank-level and macroeconomic factors have affected Italian banks’ asset quality. Lower bank profitability is associated with higher NPL levels and a rapid loan book expansion due to high growth rates or low interest rates which, on average, results in lower asset quality:

Overall, the results show that the recession, which was of exceptional duration and intensity, had a profound impact on banks’ asset quality, and this was exacerbated by bank-specific factors.<sup>7</sup>

### **2.2.3 Economic Consequences of Nonperforming Loans and Moral Hazard Legislation**

A significant and credible body of research suggests that banking sector NPL levels can be important for credit extension and growth, an issue that is further developed in Part 2 of this book.<sup>8</sup> Weak bank balance sheets can dampen economic activity, especially in economies like the EU, which rely on bank financing. Studies have found that banking systems characterized by high NPLs are associated with declining credit-to-GDP ratios and GDP growth, and with increasing unemployment. A 2015 IMF study of EU bank data sourced over 5 years was consistent with these findings (Aiyar et al. 2015).

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<sup>7</sup> In particular, Weber, Kopp, and Garrido (2016, 9) note: “The prolonged recession led to higher default risk for large corporates and banks, which are typically low-default portfolios.”

<sup>8</sup> The literature on financial dependence and growth is well established: Rajan and Zingales (1998); Kashyap, Lamont, and Stein (1994). Several recent studies have looked specifically at the feedback effects of NPLs on macroeconomic performance and have reached similar conclusions (Klein 2013; Nkusu 2011; Prasad and Espinoza 2010; Bergthaler et al. 2015).

Aiyar et al. also found that high NPL ratios constrain bank capital that could otherwise be used to increase lending, reduce bank profitability, and raise funding costs—thereby stifling the supply of credit (Aiyar, Ilyina, and Jobst 2015). Reducing NPLs expeditiously is crucial to support credit growth. For this reason, the view of the European Stability Mechanism (ESM)—sole reliance on GDP growth will not lead to a substantial decline in NPL levels—is justifiable (ESM 2016, 42–43). An IMF report notes that reducing NPL levels is required for a long-term recovery following a financial crisis (World Bank et al. 2012). While the IMF has made the NPL ratio a key measurement of financial strength,<sup>9</sup> there is no explanation or definition of an acceptable NPL ratio. The rationale being, based on the IMF report, that NPLs on banks' balance sheets create uncertainty and weigh on the ability to resume lending, and therefore aggregate demand and investment (ESM 2016, 4).

This uncertainty relates to a bank's solvency<sup>10</sup>—not writing down the true value of NPLs—because the market presumes that the accounting value of capital is overstated. Regardless of how well a bank appears to be capitalized, NPLs reduce bank profitability, which is associated with illiquidity or insolvency.<sup>11</sup>

The explosion of NPL ratios in the aftermath of the eurozone debt crisis has been a significant cause of the anemic economic recovery. Reduced lending and the persistent impression of bank fragility weakened monetary transmission and contributed to undershooting of the ECB's inflation target, which necessitated unconventional liquidity boosting policies. NPLs suppress economic activity as overextended borrowers try to deleverage<sup>12</sup> and can trap resources into unproductive activities. Resolving impaired loans is tantamount to tackling debt overhang, stimulating viable firms' demand for new loans, while encouraging unviable firms to wind down (Jassaud and Kang 2015, 17; Aiyar, Ilyina, and Jobst 2015). Unclogging the bank lending channels will augment the transmission of monetary policy to the real economy.

<sup>9</sup> The IMF employs a “nonperforming loans net of provisions to capital” ratio as an indication of the extent to which losses can be absorbed before the sector becomes technically insolvent (IMF, Financial Soundness Indicators and the IMF, last updated November 2015 and referring to IMF's “Financial Soundness Indicators: Compilation Guide”. 2006. Part II, [6.15]).

<sup>10</sup> In fact, if a separate set of variables to what the European Banking Authority uses for its stress tests is employed, the impression of vulnerability is even stronger (Acharya, Pieret, and Steffen 2016).

<sup>11</sup> Acharya, Pieret, and Steffen (2016). Indicatively, the authors note that: “Since the start of the Banking Union in November 2014, European banks lost nearly half their market capitalization.”

<sup>12</sup> For example, 80% of NPLs in Italy are loans to corporates (see Jassaud and Kang 2015, 6).



These findings raise the critical question of how NPLs should be managed. A concentration of unresolved legacy loans and restricted credit supply impact on economic growth, innovation, and the Schumpeterian cycle. In the longer term, this induces the growth of unregulated or under-regulated parallel financing that can increase overall lending rather than decrease the supply of credit. A good example is the PRC, where most legacy loans are held by state-owned enterprises operating in the manufacturing sector, in contrast to technology companies that access ingenious and riskier forms of finance (from a financial stability perspective). This is especially valid for NPLs generated from gyrations in the macroeconomic cycle rather than loose underwriting standards, crony banking, or fraud. Thus, taking a too-rigid stance vis-à-vis moral hazard in relation to NPL resolution is overwhelmingly counterproductive.

Loss recognition pursuant to IFRS 9 can influence capital buffers and trigger bail-in events. Thus, bank management is incentivized to avoid triggering bail-in events (IMF 2015) and “window dress” the quality of their balance sheet. The regulator’s response in such circumstances is uncertain, in contrast to resolving a single bank that has failed for idiosyncratic reasons (Avgouleas and Goodhart 2016). This is because triggering contingent convertibles or other bail-in instruments *en masse*, in a jurisdiction where issuance has been prolific (e.g., Italy), could prove disruptive in a systemic crisis or a banking system excessively burdened with NPLs (Avgouleas and Goodhart 2016).

The IMF suggested in 2015 that Italian bank managers face a number of obstacles which disincentivize the timely resolution of NPLs (Jassaud and Kang 2015). Motivated bank management coupled with timely and effective NPL resolution is key to the resumption of bank lending, tackling debt overhang, the duration and rate of NPL recovery, and mitigating bank losses. The IMF states:

The delays depreciate the value of the NPLs, and the prices buyers are ready to pay, after discounting the delays, are not attractive for the banks. A reduction in the time to recover loans would have a positive impact in the price of NPLs (Garrido 2016).

From this framework, a series of case studies is considered that involves managing major banking crises over the past 20 years.

## 2.3 Systemic Bank Resolution Standards and Moral Hazard

### 2.3.1 International approach

Banks facing large-scale NPLs may experience a severe capital reduction. Capital write-offs can push an ailing bank into resolution. Resolution regimes, analogous to the US Orderly Liquidation Authority<sup>13</sup> and the EU Bank Recovery and Resolution Directive<sup>14</sup> (BRRD), are designed to facilitate orderly bank failures to preserve systemic stability. These regimes aim to eliminate the too-big-to-fail subsidy,<sup>15</sup> by curbing shareholders and managers propensity to select riskier assets.<sup>16</sup> Resolution regimes can utilize *ex-post* mechanisms to secure adequate funds to cover bank losses (Avgouleas and Goodhart 2015, 2016).

Publicly funded bank rescues are historically associated with moral hazard because senior unsecured creditors are typically unaffected, at the expense of the taxpayer.<sup>17</sup> For this reason, public bailouts are regarded as a major source of excessive risk-taking or moral hazard that represents weak monitoring by creditors. There is a widely held belief that contemporary resolution regimes can overcome this problem by eliminating public assistance or by severely curtailing access to public funds (Avgouleas and Goodhart 2019). This chapter argues that, unlike the US, and to a large extent the EU BRRD, bank resolution and NPL standards should take a less doctrinal approach by offering a pragmatic view of this problem and of temporary public funding to resolve high NPL ratios.

The Financial Stability Board Key Attributes Assessment Methodology for the Banking Sector (Key Attributes) sets out a bank resolution framework

<sup>13</sup> Title II of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Act (Pub L 111–203, HR 4173)).

<sup>14</sup> Directive 2014/59/EU establishing a framework for the recovery and resolution of credit institutions and investment firms OJ L 2014 173/190 or BRRD.

<sup>15</sup> Santos (2014); Ueda and Weder Di Mauro (2011); Li, Qu, and Zhang (2011); Morgan and Stiroh (2005).

<sup>16</sup> Alfonso, Santos, and Traina (2014); Brandao-Marques, Correa, and Saprizza (2013); Gadanetz, Tsatsaronis, and Altunbas (2012).

<sup>17</sup> Yet, bailout costs may not be accurately measured unless the cost of the alternative—instability—is also considered (Dewaripont 2014, 34). With the US Troubled Asset Relief Program, public intervention may be recovered in the long term, which makes calculating the cost of public bailouts even more complex.

for global systemically important banks, subject to preconditions.<sup>18</sup> As cross-border cooperation is a key component of these resolution powers, the Financial Stability Board (FSB) issued the Principles for Cross-border Effectiveness of Resolution Actions.<sup>19</sup>

Critically, the Key Attributes state that the purpose of an effective resolution regime:

is to make feasible the resolution of financial institutions without severe systemic disruption and without exposing taxpayers to loss, while protecting vital economic functions through mechanisms which make it possible for shareholders and unsecured and uninsured creditors to absorb losses in a manner that respects the hierarchy of claims in liquidation (FSB 2011).

The options to resolve an unviable bank are stabilization and liquidation, which are underpinned by resolution powers:

- (i) removing and replacing senior management and directors;
- (ii) appointing an administrator;
- (iii) powers to terminate, continue, or assign contracts;
- (iv) power to purchase or sell assets;
- (v) writing down debt and restructuring bank operations;
- (vi) continuity of essential services;
- (vii) overriding shareholder rights to facilitate a merger, takeover, sale of business operations, recapitalization, or other measures to restructure or dispose of the bank's business, liabilities, or assets;
- (viii) establishing a separate bridge institution or asset management vehicle to transfer run-down NPLs or difficult to value assets;
- (ix) carrying out a bail-in within resolution;

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<sup>18</sup> Preconditions include:

- (i) an established framework for financial stability, surveillance, and policy formulation;
- (ii) an effective system of supervision, regulation, and the oversight of banks;
- (iii) an effective protection schemes for depositors and other protected clients or customers, and clear rules on the treatment of client assets;
- (iv) a robust accounting, auditing, and disclosure regime; and
- (v) a developed legal framework and judicial system (FSB 2016a, 13).

<sup>19</sup> These cover (i) statutory approaches, (ii) contractual recognition, (iii) temporary stays and early termination rights, and (iv) a bail-in tool. Contractual recognition supports cross-border resolution enforceability, for example the write down, cancellation, or conversion of debt instruments. Where bail-in instruments are governed by foreign law, bail-in recognition clauses are to support debt instruments for home resolutions (FSB 2015a, 7–8).

- (x) imposing a moratorium to suspend payments to unsecured creditors and customers; and
- (xi) effecting the closure and orderly wind down (FSB 2011, 7–8).

When bail-in tools are used to transfer impaired assets, the resolution authority's powers encompass: (i) a write-down that respects the hierarchy of claims in liquidation, equity, or other instruments to absorb losses; (ii) converting into equity or bank-under-resolution ownership instruments that respect the hierarchy of claims in liquidation; and (iii) upon entry into resolution, convert or write down any contingent convertibles or contractual bail-in instruments where terms have not been triggered (FSB 2011, 9).

All of these resolution approaches explicitly provide the public resolution authority with the power to sell or transfer bank assets and liabilities. This includes a transfer to a bridge bank or a third-party private sector buyer without requiring the consent of interested parties or creditors, nor constituting a contractual default or termination event (FSB 2011, 8). The AMC approach of selling or transferring NPLs can be an effective resolution option but requires strengthening the regulatory powers to overcome resistance from shareholders and, especially creditors, given that this will inevitably crystallize bank losses.

The FSB mandates that the private sector is the first funding choice for bank resolutions. Private and government funding conditions are designed to mitigate moral hazard and any losses incurred by the government must be recovered (FSB 2016b). It is entirely plausible that AMCs can limit the use of a public subsidy, with the Swedish AMC an excellent example. Using a fiscal contribution to cover AMC losses may be necessary when a crisis is systemic and triggered by macroeconomic developments and exogenous factors such as the inevitable surge in new NPLs from the COVID-19 economic fallout.

Conversely, bank failures can be caused by idiosyncratic factors such as management's focus on return-on-equity and bonuses, which can induce relaxed lending standards. In these circumstances, bailouts should be precluded because of moral hazard concerns. Creditors should also bear the full cost of bank losses once shareholder funds have been exhausted.<sup>20</sup>

From the standpoint of potential sources of funding, numerous related tools are available to reduce systemic risk. For example, global systemically important banks, which have been compared to "super polluters" that spread

<sup>20</sup> On the distinction between applying bail-in to a bank that has failed for idiosyncratic reasons and a bank resolved due to systemic upheaval, see Avgouleas and Goodhart (2015, 2019).

risk due to implicit government guarantees (Haldane 2010),<sup>21</sup> are subject to higher going-concern loss absorbency requirements (BCBS 2013, 3).

In addition to higher capital requirements (going-concern loss absorbency) global systemically important banks are required to hold total loss-absorbing capacity, which also captures Tier 2 capital and long-term unsecured debt. This is to ensure funds are available only for loss-absorbency and recapitalization for an orderly resolution to minimize financial instability, to ensure the continuity of critical functions, and to avoid exposing taxpayers to losses (FSB 2015b, 5). First, total loss-absorbing capacity is a precautionary measure which supports market confidence that a global systemically important bank has adequate capital and liabilities to readily absorb losses without imposing losses on depositors and secured creditors. Second, total loss-absorbing capacity can stabilize the banking system *ex post*, since designated liabilities can be bailed in to absorb bank losses while minimizing the risk of a deposit and secured creditor flight, which could certainly trigger, rather than contain, a systemic banking crisis.<sup>22</sup>

Minimum total loss-absorbing capacity must be at least 16% of the resolution group's risk-weighted assets, which will increase to at least 18% by 2022 (FSB 2015b, 10). These requirements are in addition to the Basel III capital requirements (BCBS 2011). Presuming regulatory capital reflects a bank's approach to offsetting lending and structural reforms, including ring-fencing adopted by the United Kingdom (UK), this will render difficulties in containing moral hazard with a bail-in resolution and no public funding.

### **2.3.2 European Union Standards and the Single Resolution Mechanism**

The main aims of the European Banking Union are to secure the safety and soundness of the EU banking system, increase financial integration and stability, and ensure consistent supervision. Centralization of prudential supervision in the EU is the first pillar of the European Banking Union; it is exercised by the ECB via the Single Supervision Mechanism. The mechanism is responsible for (i) reviews, inspections, and investigations; (ii) licensing; (iii) assessing qualifying holdings; (iv) compliance; and (v) setting countercyclical capital buffers.<sup>23</sup>

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<sup>21</sup> See also Haldane and Madouros (2012).

<sup>22</sup> On the latter, see Avgouleas and Goodhart (2015).

<sup>23</sup> See the European Central Bank's Single Supervisory Mechanism at <https://www.bankingsupervision.europa.eu/about/thessm/html/index.en.html>.

Furthermore, in 2014, the EU enacted the BRRD to deal with failing banks beyond national regimes while conforming with the Key Attributes (European Commission 2014). The paramount purpose of the BRRD is to eliminate public bailouts and thus contain the “doom loop” that bound together sovereign and banking sector solvency. This avoids the mutualization of bank risk in the EU by mitigating the fiscal burden-sharing of bank losses among EU members (Avgouleas and Goodhart 2015, 13 and 26). A BRRD resolution must satisfy a number of objectives: (i) safeguarding the continuity of essential banking operations; (ii) protecting deposits, client assets, and public funds; (iii) minimizing risks to financial stability; and (iv) avoiding unnecessary destruction of value (European Commission 2014, 3).

Part IV of the BRRD specifies four resolution tools: (i) the sale-of-business tool; (ii) the bridge-institution tool; (iii) the asset-separation tool (i.e., AMCs); and (iv) the bail-in tool.<sup>24</sup> Bail-in tools are viewed as important to mitigating moral hazard when there is a strong reliance on bailouts. The BRRD bail-in tool allows the resolution authority to write down or convert to equity the claims of creditors in accordance with a predetermined hierarchy. This reduces the extent of a capital injection, the taxpayer burden and, in principle, acts as an additional capital buffer (ECB 2016). What is proving problematic is the BRRD requirement for banks in resolution to effect a minimum bail-in of 8% of liabilities before any contribution of public funds or from the resolution fund.<sup>25</sup>

The Single Supervisory Mechanism run by a Single Resolution Board is tasked with the execution of the EU’s resolution regime (Avgouleas and Arner 2017). However, so far, the Single Resolution Board has used its powers only once, in the case of the resolution of the Spanish Banco Popular, which was effectively taken over by another Spanish bank wiping out the shareholders but without using the bail-in tool. This shows how difficult it is politically to use the BRRD toolbox and the Single Resolution Board resolution powers.

The ECB released guidelines aimed at reducing the exposure of systemically important banks with high NPL levels over realistic and ambitious time horizons. Although the guidance is nonbinding, regulators can opt for a “comply or explain” regime. Similar to the BCBS Guidelines: Prudential Treatment of Problem Assets—Definitions of Nonperforming Exposures and Forbearance, the ECB guidelines focus on NPLs and forbearance. In 2018,

<sup>24</sup> Chapter IV, articles 2–5, BRRD.

<sup>25</sup> Art. 37(10(a)) and Recs 73, 75, BRRD. For the advantages and disadvantages of this approach, see Avgouleas and Goodhart (2014).

the European Banking Authority (EBA) released Guidelines on Management of Non-Performing and Forborne Exposures. The ECB guidance and EBA guidelines limit nonperforming exposure to reporting requirements (ECB 2017; EBA 2018 6, 8, and 47). Definitions in ECB, EBA, and BCBS documents are analogous, as is the link between nonperforming exposures and forbearance. The ECB guidance and EBA guidelines provide short- and long-term options for consistent prudential treatment of distressed assets and the application of IFRS 9 and expected credit losses.

In July 2017, the EU Economic and Financial Affairs Council issued an action plan to address the problem of NPLs in the banking sector (Council of the European Union 2017).<sup>26</sup> NPLs were at the time almost euro (€) 1 trillion, with the highest exposure in small and medium-sized enterprises.<sup>27</sup>

## 2.4 The Asian Financial Crisis and Bank Restructuring

Asia experienced its most significant modern financial crisis in 1997–1998. Severe economic and structural imbalances leading into the crisis destabilized banking systems. This section examines the severe effects and the regulatory approaches of Thailand, Indonesia, the Republic of Korea, and Malaysia, followed by the approach of the PRC banking system restructuring. These case studies reveal that weak credit and bank governance regimes, coupled with endemically lax supervision, are rooted in a variety of causes rather than solely being a consequence of moral hazard arising from the prospect of a bailout. Radical balance sheet restructuring supported by public funds minimized taxpayer exposure and *ex-post* bank losses, which led to a resumption of lending.

### 2.4.1 Thailand

The easing of foreign exchange restrictions in the early 1990s enabled Thai banks to source funds internationally. Credit and reporting standards were lax. By 1996, the NPL ratio was 13% (Corsetti, Presenti, and Roubini 1998),<sup>28</sup> with banks holding baht (B) 487 billion of NPLs (13% of GDP) (Kawai and Takayasu 1999). The banking system rapidly unwound due to rising NPLs and a credit shortage (Nimmanahaeminda 1998).

<sup>26</sup> For more details, see also Chapter 7.

<sup>27</sup> Exposure in small and medium-sized enterprises was 16.7%, 7.5% in large companies, and 4.7% in households (Council of the European Union 2017, 13 and 21).

<sup>28</sup> Lending by financial companies equated to about a third of all commercial bank lending. Nonbank financial companies realized similar NPL ratios.

On 5 August 1997, the IMF provided standby support of \$17.2 billion to restructure the financial sector by:

- (i) identifying and closing insolvent institutions,
- (ii) applying blanket government depositor and creditor guarantees, and
- (iii) implementing structural and regulatory reforms (Berg 1999).

In August 1997, the Financial Restructuring Package prompted the development of a private AMC framework.<sup>29</sup> NPLs transferred to state-owned AMCs from state-owned banks were guaranteed by the Financial Institutions Development Fund, which sustained losses.<sup>30</sup> In 1999, the Bank of Thailand was tasked with supervising state-owned AMCs.<sup>31</sup> The central bank also supported NPL transfers to private AMCs. In accordance with the Emergency Decree on Asset Management Company (1998), AMCs managed distressed assets and resolved bad debts through asset restructurings, asset sales, foreclosures, or other legal actions. Distressed debt resolution was facilitated by revised rules—NPLs were recognized after 6 months rather than 12 months and provisions were made for NPLs during bank restructurings (BOT 2000, 5 and 17).<sup>32</sup>

To accelerate debt restructuring, a dispute resolution mechanism was established to assist with voluntary out-of-court restructurings and to spread the debt burden between debtors and creditors. Thailand's NPL ratio reached 42.9% (1998) and NPLs rose to about B2.73 trillion in 1999—47.7% of total credit.<sup>33</sup> NPLs took until 2005 to fall below 10% and to 2010 to reach 3.9%.<sup>34</sup> Borrowings to bail out financial institutions amounted to B1.40 trillion. Emergency legislation enabled the government to issue bonds to fund the bailouts.<sup>35</sup>

<sup>29</sup> Bank of Thailand. Supervision Report 2001–2002, 12.

<sup>30</sup> Bank of Thailand. Supervision Report 2001–2002, 20.

<sup>31</sup> Bank of Thailand. Supervision Report 2000, 6.

<sup>32</sup> Bank of Thailand. Supervision Report 2000, 5 and 17.

<sup>33</sup> Bank of Thailand. Supervision Report 2001–2002, 32.

<sup>34</sup> World Bank. Bank Nonperforming Loans to Gross Loans. Data. <http://www.data.worldbank.org/indicator/FB.AST.NPER.ZS?page=2>.

<sup>35</sup> Bank of Thailand. Financial Institutions Development Fund. [https://www.bot.or.th/English/BOTStoryTelling/Pages/FIDF\\_StoryTelling\\_FI.aspx](https://www.bot.or.th/English/BOTStoryTelling/Pages/FIDF_StoryTelling_FI.aspx).



## 2.4.2 Indonesia

Contagion spread from Thailand throughout Asia, with Indonesia experiencing a rapid currency devaluation (Sherlock 1998). The banking system was vulnerable from crony lending, fraud, and loose underwriting standards. On 31 October 1997, Bank Indonesia and the IMF announced a resolution package whereby performing assets were transferred from insolvent to solvent banks (Lindgren et al. 1999). The remaining banks were subject to the following conditions: (i) new investors would inject capital to cover some losses, (ii) NPLs would be restructured over 20 years, (iii) new investors pledged collateral for restructured NPLs, and (iv) investor NPL losses were covered by a Bank Indonesia loan (Enoch et al. 2001).

With NPLs remaining on-balance sheet, restructuring insolvent banks was futile (Enoch et al. 2001). On 5 November 1997, the IMF approved a \$10 billion standby facility to support financial stability and banking reforms, and announced a second IMF program on 15 January 1998. This was followed by a government emergency plan involving (i) a blanket depositor and creditor guarantee, (ii) establishing the Indonesia Bank Restructuring Agency (IBRA) to rehabilitate weak banks and NPLs, and (iii) a corporate restructuring plan (Lindgren et al 1999).

The IBRA had three management functions over NPLs, investments, and a bank restructuring unit (Fung et al. 2004). This enabled the IBRA to legally sell insolvent banks' NPLs without needing approval from borrowers or bank owners (Enoch et al. 2001). In April 1998, IBRA closed 7 banks, another 7 were taken over (management was replaced in 6), and 16 banks came under IBRA control (Enoch et al 2001). Bank audits revealed widespread connected lending and 6 banks with NPL ratios approaching 55%, with one exceeding 90% (Lindgren et al. 1999, Enoch et al. 2001).

The Indonesian Debt Restructuring Agency was established to reduce short-term funding pressures and to design a distressed debt restructuring framework. Advice and mediation services were offered by the Jakarta Initiative Task Force, which eventually oversaw one-third of all voluntary corporate debt restructuring agreements (Enoch et al. 2001, 37 and 40).

Over rupiah (Rp) 400 trillion of government-issued bonds, or 35% of GDP, were issued to fund the bank recapitalization program.<sup>36</sup> Bank numbers halved following state closures and takeovers (Lindgren et al. 1999, 65).

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<sup>36</sup> Authors' calculations referring to Enoch et al. (2001, 107).

The IBRA was responsible for Rp234 trillion of NPLs, representing 19% of GDP.<sup>37</sup> NPL ratios peaked in 1998 at 48.6%, before falling to 31.9% in 2001, and 6.8% by 2003 (footnote 34).

### 2.4.3 Republic of Korea

In 1997, the Republic of Korea's financial sector was underdeveloped, NPLs stood at 5.8%, and the banking system was heavily exposed to short-term foreign debt (footnote 34). Following a sharp drop in the won (W), the country experienced capital flight because it lacked sufficient foreign currency liquidity to meet maturing liabilities.<sup>38</sup> To absorb rapidly increasing NPLs, a fund was established with W3.5 trillion under the supervision of the Korean Asset Management Corporation (KAMCO).<sup>39</sup>

The Korea Deposit Insurance Corporation was established to resolve and restructure banks, and provided supervisors with legal control over failing banks' capital.<sup>40</sup> The Financial Supervisory Service<sup>41</sup> and the banking supervisor—the Financial Supervisory Commission—were empowered to enforce write-offs, mergers, and closures.<sup>42</sup> A corporate restructuring coordination committee acted as a voluntary mediator for debt restructuring (Kang 2004). The Korea Deposit Insurance Corporation supervised bank recapitalizations and KAMCO managed NPLs, with the Financial Supervisory Commission coordinating.

Viable or solvent banks' NPLs were purchased by the KAMCO fund on the condition of merger, management replacement, and downsizing.<sup>43</sup> This was supported by government capital injections and financed with bond issues (Kim 2006, 14–15). Banks with high NPL ratios were closed and weak banks had to submit rehabilitation plans.<sup>44</sup>

<sup>37</sup> Authors' calculations referring to Enoch et al. (2001, 39.)

<sup>38</sup> Bank of Korea. Annual Report: 1997, pp. 4 and 17. <https://www.bok.or.kr/eng/bbs/E0000740/list.do?menuNo=400221>.

<sup>39</sup> Bank of Korea. Annual Report: 1997, pp. 17, 27, and 29. <https://www.bok.or.kr/eng/bbs/E0000740/list.do?menuNo=400221>.

<sup>40</sup> Bank of Korea. Annual Report: 1997, p. 28. <https://www.bok.or.kr/eng/bbs/E0000740/list.do?menuNo=400221>.

<sup>41</sup> The administrative arm of the Financial Supervisory Commission.

<sup>42</sup> Bank of Korea. Annual Report: 1997, pp. 28–29. <https://www.bok.or.kr/eng/bbs/E0000740/list.do?menuNo=400221>; also Kim (2006) and Organisation for Economic Co-operation and Development (2001).

<sup>43</sup> Bank of Korea. Annual Report: 1998, pp. 38–39. See <https://www.bok.or.kr/eng/bbs/E0000740/list.do?menuNo=400221>.

<sup>44</sup> Bank of Korea. Annual Report: 1998, p. 38. <https://www.bok.or.kr/eng/bbs/E0000740/list.do?menuNo=400221>.

On 4 December 1997, the IMF granted the Republic of Korea \$21 billion of standby credit and \$36 billion on completion of the program.<sup>45</sup> The first IMF restructuring exercise focused on distressed banks. Legislation changed the definition of bank capital to reduce leverage and debt-to-equity ratios. The classification of assets and the BCBS capital adequacy requirements were tightened.<sup>46</sup> Loan-loss provisioning was abandoned and forward-looking NPL classifications adopted (Kim 2006, 16).

Financial Supervisory Commission assessments of 12 banks revealed inadequate capital adequacy ratios.<sup>47</sup> Between 1998 and 2002, 9 banks merged, and bank numbers fell from 33 to 19.<sup>48</sup> The Korea Deposit Insurance Corporation ceased operations in 2001 with recapitalizations of over W128 trillion.<sup>49</sup> NPL ratios peaked at 8.9% (2000) before falling to 3.4% in 2001 (footnote 34).

## 2.4.4 Malaysia

Malaysia's loan growth averaged 25% per annum between 1994 and 1997. Banks held 43.6% of total assets and property sector loans accounted for one-third of all loans.<sup>50</sup> Loan-loss provisions surged 190% to ringgit (RM) 3.96 billion during 1997, from RM1.37 billion.<sup>51</sup> Prior to the crisis, NPLs had been 4.1% before peaking at 18.60% in 1998 (footnote 34).

A pre-emptive crisis program was introduced to address structural weaknesses. NPLs were reclassified closer to international standards by reducing the period in arrears from 6 months to 3 months and improving detection, identification, and monitoring.<sup>52</sup> Exchange controls were applied to stem capital outflows.<sup>53</sup>

<sup>45</sup> Bank of Korea. Annual Report: 1997. p. 17. <https://www.bok.or.kr/eng/bbs/E0000740/list.do?menuNo=400221>.

<sup>46</sup> Bank of Korea. Annual Report: 1998. pp. 39, 45, and 46. <https://www.bok.or.kr/eng/bbs/E0000740/list.do?menuNo=400221>.

<sup>47</sup> Bank of Korea. Annual Report: 1998. p. 39. <https://www.bok.or.kr/eng/bbs/E0000740/list.do?menuNo=400221>.

<sup>48</sup> Bank of Korea. Annual Report: 2003. p. 58. <https://www.bok.or.kr/eng/bbs/E0000740/list.do?menuNo=400221>.

<sup>49</sup> Authors' calculations based on Bank of Korea. Annual Reports 2001 (p. 51) and 2002 (p. 49). <https://www.bok.or.kr/eng/bbs/E0000740/list.do?menuNo=400221>.

<sup>50</sup> Bank Negara Malaysia. Bank Negara Malaysia Annual Report-1997. Chapter 4, pp. 9 and 13.

<sup>51</sup> Authors' calculations based on Bank Negara Malaysia. Bank Negara Malaysia Annual Report-1997. Chapter 4, 3, and 9. Loan loss reserves amounted to 92% of NPLs.

<sup>52</sup> Bank Negara Malaysia. Bank Negara Malaysia Annual Report-1997. Chapter 4, pp. 4-5.

<sup>53</sup> Bank Negara Malaysia. Bank Negara Malaysia Annual Report-1998. Chapter 1, p. 4. After the depreciation of the ringgit by 40%, the government introduced exchange control measures to stabilize short-term capital flows.

In contrast to other countries in Asia at the time, Malaysia only accepted IMF technical assistance. A restructuring plan created (i) a merger plan, (ii) an AMC—Danaharta—to manage NPLs, (iii) a special purpose vehicle—Danamodal, and (iv) a Corporate Debt Restructuring Committee.<sup>54</sup>

Danaharta was a limited liability company owned by the central bank with the objective of maximizing NPL recovery values and purchasing unmanageable NPLs as a form of capital injection. Banks sold NPLs to Danaharta if their gross NPL ratio exceeded 10%, with the residual written down and restructured. Recapitalized banks sold NPLs to Danaharta at fair market value, funded by the government and, when market conditions allowed, the sale of bonds.<sup>55</sup>

Danaharta ceased purchasing NPLs in 2001 having dealt with RM52.4 billion, an expected recovery rate of 59%, and bonds totaling RM11.1 billion.<sup>56</sup> This fiscal backstop and NPL portfolio restructuring proved successful. By 2005, RM29 billion, or 94% of RM30.8 billion of outstanding NPLs, had been recovered, with NPL ratios dropping to 9.4%.<sup>57</sup>

Danamodal was responsible for bank recapitalizations. Existing bank shareholders were decimated because all losses were absorbed prior to recapitalization. In contrast to Danaharta, the central bank enforced Danamodal's powers whereby capital was only injected into viable banks on commercial terms (footnote 55) amounting to RM7.6 billion for 10 institutions.<sup>58</sup> Danamodal recovered RM6.6 billion by 2003 before being wound down.<sup>59</sup>

The Corporate Debt Restructuring Committee facilitated the voluntary restructuring of corporate debt. Recovery proceeds consisted of cash, redeemable instruments, and rescheduled debts.<sup>60</sup> The Corporate Debt Restructuring Committee was closed on 15 August 2002, ending Malaysia's debt restructuring program.

<sup>54</sup> Bank Negara Malaysia, Annual Report-1998, Chapter 4, p. 11. These were independent bodies.

<sup>55</sup> Bank Negara Malaysia, Annual Report-1998, Chapter 4, p. 12.

<sup>56</sup> Bank Negara Malaysia. Bank Negara Malaysia Annual Report-2000. Chapter 4, 14; Bank Negara Malaysia. Bank Negara Malaysia Annual Report-2002. Chapter 4, p. 116.

<sup>57</sup> Bank Negara Malaysia. Bank Negara Malaysia Annual Report-2004. Chapter 4, 108; World Bank. Bank Nonperforming Loans to Gross Loans. Data: <http://www.data.worldbank.org/indicator/FB.AST.NPER.ZS?page=2>.

<sup>58</sup> Bank Negara Malaysia. Bank Negara Malaysia Annual Report-2001. Chapter 4, pp. 12 and 134.

<sup>59</sup> Bank Negara Malaysia. Bank Negara Malaysia Annual Report-2003. Chapter 4, p. 107. Danamodal expected to recover the outstanding RM1 billion from one institution.

<sup>60</sup> Bank Negara Malaysia. Bank Negara Malaysia Annual Report-2002. Chapter 4, p. 115.

## 2.4.5 People's Republic of China

### ***Asset Management Companies: 1998–2008***

The PRC was insulated from the Asian financial crisis because its financial markets were closed, currency convertibility controlled, and GDP growth was strong. The banking system and its supervision were in transition during the crisis. Dominating the banking sector were four state-owned banks accounting for nearly two-thirds of total banking system assets.

Despite strong GDP growth, the banking system was characterized by structural weaknesses, nascent prudential supervision, and lax underwriting standards. In 1997, the NPL ratio was 20% (BIS 1999, Mo 2016). Reforms to address NPLs included (i) recapitalizing of state-owned banks, (ii) adopting international NPL classification standards, (iii) enforcing commercially viable loans, and (iv) banning local governments from influencing lending decisions (BIS 1999, 93). The last two reforms centered on strengthening credit standards and quashing connected lending. Bank recapitalizations were funded by yuan (CNY) 270 billion in government bonds (BIS 1999, 93–96).

In 1999, four state-owned AMCs were established to transfer NPLs from corresponding state-owned banks (Hsu, Arner, and Wan 2007). Transfers of NPLs in 1999–2000 amounted to CNY1.4 trillion, about 20% of the banks' combined loan book, or 18% of GDP. One estimation maintains that this was less than half of total NPLs (Ma and Fung 2002, 2).

NPLs were purchased by state-owned AMCs issuing bonds, with credit supplied by the central bank. Disposals were slow, and the recovery rate was 21% (Ma and Fung 2002, 4 and 11–12). The government decided to list two state-owned banks in Hong Kong, China and the central bank transferred CNY320 billion in NPLs to their AMCs at approximately 35% of book value (Ma 2006). To offset the banks' NPLs, \$45 billion was injected to boost capital adequacy ratios and new lending (The Economist 2004). Although NPLs eventually fell to 2.4% in 2008, this reduction was attributed to very strong GDP growth, rather than AMC transfers (footnote 34).

### ***Managing Nonperforming Loans Post-2008: An Increasing Concern***

As growth rates have decelerated and levels of indebtedness have risen, NPLs have substantially increased, reaching \$1.5 trillion or CNY10.5 trillion in June 2019 (PwC 2020). Yet, between 2016 and 2018, banks disposed of CNY4.4 trillion of NPLs (McMahon 2019a). As of mid-2018, the Organisation for Economic Co-operation and Development (OECD) estimated that state-owned enterprises accounted for 82% of all corporate debt (Molnar and Lu 2019, 8).

Regulatory reforms were implemented to accelerate NPL recognition. In 2018, the China Banking and Insurance Regulatory Commission introduced 90-day NPL recognition rules. It issued “window guidance” to request that the six largest banks recognize NPLs which are 60 days overdue. Reports suggest that some banks began using more stringent NPL recognition practices, for example 30 days due (Xiaomeng and Xiao 2019, Lee 2019, Leng and Zhang 2019). Nonetheless, NPL disposals have been prolonged because of understated NPL levels (McMahon 2019a).

The commission relaxed NPL recognition rules in February 2020 when the economic ramifications from the COVID-19 pandemic became apparent (Bloomberg 2020). This is contrary to the IMF policy to preserve financial stability, maintain banking system soundness, and sustain economic activity during the pandemic: “Loan classification and provisioning rules should not be eased, and it is critical to measure NPLs and potential losses as accurately as possible” (IMF 2020). The China Banking and Insurance Regulatory Commission has stated, however, that: “Saving corporates now is saving banks themselves” (Bloomberg 2020).

The PRC’s NPL ecosystem is quite different to 20 years ago. There is a developed NPL market and the “Big Four” banks are not the primary source of NPLs and systemic risk. Small- and medium-sized banks (i.e., local and rural) are the biggest potential source of systemic risk because collectively they form a large segment of the banking system and have high levels of poor-quality NPLs (Xiaomeng and Xiao 2019). The “Big Four” banks have established asset investment corporations to manage the NPLs, which reduces supply and supports prices. Consequently, AMCs are managing lower-quality NPLs (McMahon 2019b).

Provincial and local governments have become involved in bank restructurings, established AMCs (more than 50) and financial asset

exchanges, and have introduced credit risk regulations (Yue and Jia 2019). This is beneficial because local governments can order local state-owned banks to sell NPLs (Liu and Wu 2016).

Until May 2019, bank bailouts were rare. This changed when the People's Bank of China and the China Banking and Insurance Regulatory Commission decided to nationalize the Bank of Baoshang, the Shandong Provincial Government restructured Heng Feng Bank, and the Industrial and Commercial Bank of China and Cinda Asset Management provided the Bank of Jinzhou with a large capital injection. In contrast to bailouts being funded by the Ministry of Finance or the central bank, these bailouts were funded by the PRC's sovereign wealth fund and public AMCs (McMahon 2019c). In September 2019, the central bank stated that shareholders would be primarily responsible for future bank failures (Mitchell and Yang 2019).

#### **2.4.6 Lessons from the East and Southeast Asian Experiences**

During banking crises, balance sheets are placed under extreme stress that require restructuring through capital injections, renegotiating credit terms, and transferring distressed assets off-balance sheet. Effective bank resolution regimes require legal and regulatory frameworks, and supervision to address: (i) risk management, (ii) capital and liquidity buffers, (iii) large exposure restrictions, (iv) transparent credit standards, (v) bank restructuring frameworks, and (vi) distressed debt transfer mechanisms.

Capital adequacy ratios of up to 10% that satisfied the Basel recommendations proved insufficient to absorb high NPLs during the Asian financial crisis. When banks required balance sheet and business model restructuring to remain solvent, NPL and resolution regimes were either underdeveloped or non-existent. Indonesia, the Republic of Korea, and Thailand were forced to accept IMF support to bail out and recapitalize their banking systems.

The IMF bank resolution policies focused on closing and liquidating insolvent institutions and government guarantees. Capital restructuring was a last resort. Indonesia epitomizes the policy of closing rather than restructuring banks, with numbers halving within a few years. Bank closures reduced Indonesia's NPL ratio, yet this is attributable to closing a few banks with particularly high NPL ratios. A concentration of bank closures in Thailand did not correlate with a drop in NPL ratios in the short term. Indonesia

and Thailand had the highest closures and experienced the deepest and longest disruptions to their banking systems and the most extensive use of public funds.

Resolving systemic banking crises by focusing on closures weakens confidence. Paradoxically, this was a condition of the IMF support program. To contrast, Malaysia neither requested an IMF bailout nor embarked on widespread bank closures. Instead it relied on an NPL transfer mechanism. This resulted in a more effective banking system restructuring program that maintained confidence throughout the crisis.

Indonesia's reluctance to implement reforms and promulgate legislation intensified its banking crisis and hindered NPL resolution. In contrast, the Republic of Korea's existing framework was expeditiously modified, which proved effective at mitigating rising NPLs. All jurisdictions experienced a significant reduction in NPLs and banking system stabilization following bank consolidations and debt restructuring arrangements. The timing of the responses offers a valuable lesson. For example, Thailand was slow to respond, and Indonesia was reluctant to implement reforms, which maintained banking system fragility as NPLs continued to surge.

Experience from East and Southeast Asia shows that expeditious debt restructuring and legal frameworks, rather than bank closures, proved most effective. All resolution programs involved public funding, although approaches to restructuring varied. Government guarantees were critical for stabilizing banking systems and a condition of the IMF bailouts.

The use of AMC's was instrumental in cleansing balance sheets of NPLs, strengthening capital ratios, and restarting lending to aid the economic recovery. This finding is further discussed and supported by empirical evidence provided in Chapter 5. AMC's were funded either by government capital injections or the sale of bonds. Legal and regulatory infrastructure was a prerequisite for the expeditious transfer and sale of NPLs.

There is no clear evidence of whether state-owned or private AMC's are more effective. Debt overhang from Thailand's NPL program is an ongoing problem. The PRC's state-owned AMC performance cannot be duly assessed around the time of the state-owned bank privatizations because of distortions from the extensive bank recapitalizations. More recently, the PRC has been struggling to reduce the volume of NPLs, despite the introduction of asset investment corporations and provincial AMC's.



The Korean Asset Management Corporation (KAMCO) is a good example of how a pre-existing AMC can promptly abate a potential banking crisis (from a surge in NPLs) and purchasing NPLs can be profitable despite reliance on taxpayer funding. In our view, this is an important finding. Banks need to be equipped with the tools to manage NPLs promptly to avoid distressed assets festering and balance sheets destabilizing, impairing confidence, which is apparent in some EU countries.

## **2.5 Bank Rescue Case Studies from the Global Financial Crisis**

This section focuses on the approaches adopted during the global financial crisis in Switzerland, the UK, and the US to restructure UBS, Royal Bank of Scotland (RBS), and Citigroup. Switzerland and the UK managed guarantee-based programs rather than asset sales. The US opted for a guarantee and the Troubled Asset Relief Program (TARP) to purchase distressed assets.<sup>61</sup>

### **2.5.1 UBS**

On 1 October 2007, UBS announced a write down of Swiss francs (SwF) 4 billion from investments in asset-backed securities and collateralized debt obligations (Securities and Exchange Commission 2007, Swiss Federal Banking Commission 2008).<sup>62</sup> Performance of these instruments was linked to NPLs—US subprime mortgages.<sup>63</sup>

UBS received a government capital injection of SwF6 billion, consisting of mandatory convertible notes (i.e., converting into equity) and the sale of NPLs and NPL-linked instruments, from the central bank, the Swiss National Bank (SNB 2013a). These distressed assets were then transferred to a special purpose vehicle (SPV), the StabFund.<sup>64</sup> The StabFund was designed to absorb UBS distressed assets and produce a return on its investments. Distressed asset purchases were financed by SNB loans and UBS equity contributions—a maximum of 10% of assets purchased up to \$6 billion or

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<sup>61</sup> Board of Governors of the Federal Reserve System, Troubled Asset Relief Program (TARP) Information, at <http://www.federalreserve.gov/bankinginfo/tarpinfo.htm>.

<sup>62</sup> The subsidiary was Dillon Read Capital Management.

<sup>63</sup> For a description of securitization, see Wood (2007).

<sup>64</sup> StabFund or Stabilisation Fund.

SwF7.2 billion. Equity contributions were designed to absorb the first 10% of losses (SNB 2013a, 2013b, 2013c).<sup>65</sup>

Distressed assets totaling \$38.7 billion or SwF45.3 billion were sold to the StabFund between December 2008 and April 2009.<sup>66</sup> Asset sales amounted to \$15.8 billion or SwF18.5 billion, which were used to repay SNB loans (footnote 66). The Swiss government realized a profit of SwF1.2 billion by selling its SwF6 billion UBS equity stake. UBS made the final SNB loan repayment in August 2013 and it purchased the StabFund in September 2013.

### 2.5.2 Royal Bank of Scotland

RBS grew dubiously through a series of aggressive acquisitions, notably the 2007 partial purchase of ABN AMRO (House of Commons Treasury Committee 2012). Following the failure of Lehman Brothers, the capital and liquidity of RBS became severely strained and NPLs rose dramatically, reaching 9% by 2013 (European Commission 2009a, Moody's Investor Services 2016).

On 8 October 2008, the UK government announced that RBS would be recapitalized. The European Commission approved the Bank of England's plan which included a guarantee under EU State Aid Rules (European Commission 2009a, 2009b). An initial sale of RBS shares (pound sterling [£] 15 billion), underwritten by the government, attracted virtually no subscribers. This forced the government to purchase most of RBS' shares—effectively a capital injection and nationalization. Bank of England emergency loans provided an additional £20 billion recapitalization (European Commission 2009b), with the government holding 90.6 billion RBS shares, or 84% of its capital (UK Financial Investments [UKFI] 2010).

On 3 November 2008, the government established UKFI to manage RBS' recapitalization and the government's investment. A condition of the RBS capital injection was participation in the Asset Protection Scheme, established to protect banks against losses on distressed assets (Asset Protection Agency [APA] 2010). RBS sought protection for £282

<sup>65</sup> The StabFund was a limited partnership consisting of two partners solely owned by the SNB: an unlimited liability partner managing the SPV, and a limited liability partner. For the SwF/\$ exchange rate, see Board of Governors of the Federal Reserve, 'Historical Rates for the Swiss Franc', at [https://www.federalreserve.gov/releases/h10/dat00\\_sz.htm](https://www.federalreserve.gov/releases/h10/dat00_sz.htm).

<sup>66</sup> SwF/\$ exchange rate averaged to 1.17:1. See Board of Governors of the Federal Reserve. Historical Rates for the Swiss Franc.

billion in assets (e.g., NPLs). The government provided a guarantee against 90% of losses above the first £60 billion (IMF 2011).

The Asset Protection Scheme operated analogous to a state-owned AMC managing bank NPLs, except that asset ownership was retained by the bank. This arrangement was quicker to implement and did not require capital injections to purchase distressed assets. There were disadvantages, however, in retaining distressed assets on-balance sheet and the bank not receiving any NPL sale proceeds. Government capital injections were required to maintain bank solvency until NPL returns were realized (National Audit Office 2010). RBS exited the Asset Protection Scheme on 18 October 2012 after removing over £1 trillion in assets from its balance sheet (HM Treasury 2015). The Asset Protection Scheme ceased operations with a £5 billion profit (APA 2012).

On 3 November 2009, the government announced that RBS would be restructured, among other things, including raising its Common Equity Tier 1 ratio above 8% (compared to 4% in 2008) and disposing noncore assets (European Commission 2009b). RBS struggled and, in July 2017, agreed with the European Commission in satisfaction of State Aid Rules to commit £835 million in new lending instead of closing branches (European Commission 2017).

In March 2020, the Office of Budget Responsibility estimated that taxpayers would incur a loss of £32 billion on the government's £45 billion bailout. At the time of writing, the UK Treasury still holds a 55% stake in RBS.

### 2.5.3 Citigroup

The \$700 billion TARP was designed to stabilize the US financial system by purchasing distressed assets (Federal Reserve 2008).<sup>67</sup> TARP consisted of subprograms including the Capital Purchase Program to strengthen bank capital, among other things.<sup>68</sup>

Citigroup was a recipient, receiving \$25 billion, and on 23 November 2008 agreed to a government bailout which included a \$301 billion government guarantee on a pool of distressed assets under the Asset Guarantee Program. Distressed assets were retained on Citigroup's balance sheet.

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<sup>67</sup> And the Emergency Economic Stabilization Act 2008, s 102.

<sup>68</sup> Federal Deposit Insurance Corporation (FDIC). 2008 Annual Report 2008. Part I, Supervision and Consumer Protection.

The terms of Asset Guarantee Program rendered Citigroup liable for the first \$39.5 billion in losses. TARP and Citigroup would then absorb \$5.0 billion and \$0.6 billion, respectively. Subsequent losses were absorbed at \$10.0 billion by the Federal Deposit Insurance Corporation and \$1.1 billion by Citigroup. Losses thereafter would be serviced by the Federal Reserve Bank of New York securing a loan over the remaining guaranteed assets at 90% collateral value.<sup>69</sup>

To strengthen Citigroup's balance sheet, a TARP capital injection of \$20 billion was exchanged for Citigroup preferred shares. This approach, the Targeted Investment Program, was adopted because standard TARP funding was insufficient to stabilize Citigroup.<sup>70</sup>

Citigroup's share price continued to decline precipitously, undermining the Targeted Investment Program capital injection. In July 2009, \$25 billion in preferred equity obtained through TARP was exchanged for common stock. Citigroup had become partially nationalized.

In September 2009, Citigroup notified the US Treasury that it intended to repay the Targeted Investment Program and terminate the Asset Guarantee Program. Conditions included maintaining sufficient capital levels, the ability to access long-term debt markets without government assistance and raising common equity by 50% of the Treasury's redeemable equity. On 23 December 2009, Citigroup increased its capital levels by issuing 5.4 billion common shares for \$17 billion and tangible equity units for \$3.5 billion. The Treasury unwound its position in Citigroup's TARP, Asset Guarantee Program, and Targeted Investment Program programs on 10 December 2010, selling 7.7 billion common shares for a \$12 billion profit.<sup>71</sup>

## 2.5.4 Analysis and Evaluation

In the early stages of the global financial crisis, bailouts of systemic banks were preferred to closure and liquidation, perhaps because of the lack of legally viable bail-in tools. The approach taken in the UBS, RBS, and Citigroup rescues was the antithesis of the IMF approach during the Asian financial crisis. In the global financial crisis, governments provided massive capital injections, effecting bank nationalizations, albeit structured, and importantly to avoid distressed assets being transferred onto government balance sheets.

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<sup>69</sup> FDIC (2008), pp. 19–21.

<sup>70</sup> FDIC (2008), p. 18.

<sup>71</sup> 171 FDIC (2008), pp. 9, 34, 38, and 40.

Global systemically important banks became fragile from an overexposure to NPLs and/or NPL-linked financial instruments. This complicated bailouts and AMCs' capacity to sequester distressed assets from banks. RBS and Citigroup were subject to government guarantees and retaining distressed assets on-balance sheet. UBS transferred distressed assets to an AMC—a similar process to that adopted in the Asian financial crisis. Both approaches strengthened bank balance sheets and stabilized banking systems, eventually enabling banks to resume lending. Nevertheless, both programs exposed governments to bailout liability.

Rescue frameworks were sourced from existing legislation to aid prompt implementation. Participating banks signed contractual agreements with regulators to facilitate restructuring and uphold obligations. Hesitation in the UK forced the government to purchase equity in RBS after its share issue failed. This hesitation is analogous to that of Indonesia and Thailand, which undermined confidence and the success of their bailout programs.

Switzerland injected capital and took an ownership position in UBS at the beginning of its program. This restructuring approach highlights the advantage of loss control when using an AMC as opposed to a state guarantee. Regulators can control the timing of the sale of NPLs until favorable market conditions prevail, effectively mitigating losses and government liability.

In contrast, RBS and Citigroup retained distressed assets on-balance sheet, necessitating larger capital injections to strengthen balance sheets and therefore increasing state ownership, heightening potential taxpayer risk. Bank liability from the disposal of distressed assets under the UK and US asset protection (guarantee) schemes compelled banks to absorb initial losses. Distressed asset sales under a guarantee scheme are usually implemented when market conditions will not mitigate losses. Thus, an asset protection scheme guarantee approach can create inefficiencies since the risk of government liability is elevated by depressed asset markets. This can necessitate further capital injections.

The global financial crisis guarantee schemes were profitable and relatively short-lived. Despite substantial taxpayer risk, the asset protection schemes, i.e., asset price guarantee programs, were effective and efficient in managing distressed assets, stabilizing global systemically important banks, stemming creditor runs, and maintaining banking system stability.

Switzerland's central bank had a far greater exposure to potential losses than those from the UK and US guarantee schemes. Since the SNB was the AMC creditor and equity holder, if the AMC failed, the SNB would be exposed to unlimited liability. If UBS' losses were substantial, the exposure of SNB and, ultimately, the taxpayer, would shield UBS from liability. While this approach risks compromising a central bank's credibility and credit standing, there is no realistic solvency risk because central bank losses in its issued currency can be inflated and absorbed in the long run. Conversely, Switzerland's approach is more effective in strengthening banks' capital bases and more efficient since further capital raising is not necessary. For these reasons, this approach is preferable to an asset protection scheme guarantee.

## **2.6 The Eurozone Debt Crisis and Banking Sector Restructuring**

### **2.6.1 The Post-2018 Regime for Bank Debt Restructuring**

Before analyzing the impact of the eurozone debt crisis on the banking systems of Greece, Ireland, Italy, and Spain, the post-2018 EU bank debt restructuring regime is examined. From our analysis, one point stands out: stricken EU countries were more proactive in tackling banks' distressed debt before the implementation of the Bank Recovery and Resolution Directive (BRRD), even though the EU state aid regime has remained largely unaltered.

Once the EU, and especially the European Monetary Union, moved toward a more centralized policy for tackling NPLs, state-backed AMCs were abandoned in favor of private sector AMCs.<sup>72</sup> The European Council agreed in July 2017 on an NPL action plan outlining:

- (i) more intensive supervision for banks with high NPLs,
- (ii) reform of domestic insolvency and debt recovery frameworks,
- (iii) development of secondary markets for NPLs (i.e., distressed debt or assets), and
- (iv) restructuring of the banking industry (European Council 2017).

A blueprint for member state AMCs was proposed by the end of 2017, consistent with the EU legislative framework and State Aid Rules for asset relief measures and the use of AMCs. This blueprint sets out common principles for asset, valuation and participation parameters and thresholds,

<sup>72</sup> Section IV.A. draws on Avgouleas (2020).

capital structures, and governance and operational procedures. These are applicable for private and public AMCs. In March 2018, the EU Commission submitted a package of measures together with the Second Progress Report on the Reduction of Nonperforming Loans (European Commission 2018a). The European Parliament and Council endorsed the 2018 NPL proposals by agreeing in June 2019 to pass the “banking package” into EU law with the promulgation of the Capital Requirements Regulation (CRR II)<sup>73</sup> and the Capital Requirements Directive. In April 2019, amendments to CRR II created a statutory prudential “backstop” which is designed to prevent under-provisioning for expected-loss NPLs.<sup>74</sup>

The objective of these measures is to reduce NPL ratios and future excessive NPL accumulations. These measures can be taxonomized as follows:

- (i) Augmenting market-based solutions for the massive disposal of NPLs through legal and regulatory reforms and EU-wide infrastructure that facilitates the disclosure and pooling of buyer interest and liquidity, including initiatives for pan-EU NPL platforms (European Commission 2018b).
- (ii) Introducing measures to build a liquid market for distressed debt, at the domestic and EU level, including the recent initiatives by EU bodies for disclosure and transparency standardization.<sup>75</sup>
- (iii) Expanding the microprudential framework through supervisory requirements imposed by the Single Supervisory Mechanism. First, requiring EU banks to build capability for the timely detection and effective management of NPLs. Second, establishing quantitative NPL reduction targets over the short, medium, and long terms (ECB 2017, 12–13). To achieve these targets, banks should improve NPL governance and use NPL reduction approaches as described in the ECB’s Guidance to Banks on Non-performing Loans (ECB 2017, 12). Banks should go beyond strategies (i), (ii), and

<sup>73</sup> Regulation (EU) 2019/876 of The European Parliament and of the Council of 20 May 2019 amending Regulation (EU) No 575/2013 as regards the leverage ratio, net stable funding ratio, requirements for own funds and eligible liabilities, counterparty credit risk, market risk, exposures to central counterparties, exposures to collective investment undertakings, large exposures, reporting and disclosure requirements, and Regulation (EU) No 648/2012 (CRR II); and Directive (EU) 2019/878 of the European Parliament and of the Council of 20 May 2019 amending Directive 2013/36/EU as regards exempted entities, financial holding companies, mixed financial holding companies, remuneration, supervisory measures and powers, and capital conservation measures (Capital Requirements Directive).

<sup>74</sup> Regulation (EU) 2019/630 of the European Parliament and of the Council of 17 April 2019 amending Regulation (EU) No 575/2013 as regards minimum loss coverage for nonperforming exposures.

<sup>75</sup> For example, EBA (2018) and NPL transaction templates: <https://eba.europa.eu/risk-analysis-and-data/eba-work-on-npls>.

- (iii) outlined in this taxonomy, by introducing (ECB 2017, 8–17):<sup>76</sup>
- (a) a hold/forbearance strategy that, depending on borrower capability and expertise, can lead to workouts;
  - (b) active portfolio reductions, through sales and by writing off provisioned NPL exposures deemed unrecoverable;
  - (c) a change of exposure type, including foreclosure, debt-to-equity swaps, debt-to-asset swaps, or collateral substitution; and
  - (d) legal options involving insolvency proceedings or out-of-court solutions;
- (iv) Strengthening prudential backstops to compel banks to provision for NPLs *ex ante* and thus have adequate capital reserves when writing off NPLs.<sup>77</sup> This is a proactive measure that targets future accumulation of NPLs by incentivizing banks to take *ex ante* action against NPL accumulation.<sup>78</sup> Hopefully, the backstop will provide a strong incentive for banks to strengthen underwriting standards and provide a disincentive against lax loan underwriting practices.

Nevertheless, with the economic impact of the COVID-19 pandemic on EU economies forecast to be severe, the European Commission sanctioned the temporary suspension of state aid restrictions.<sup>79</sup> This has resulted in a direct recapitalization of private sector firms by the state (Espinoza 2020). Relaxing EU State Aid Rules will inevitably be extended to the financial sector in the near future.<sup>80</sup> Of course, the European Commission, European Council, EBA, and ECB developed the AMC Blueprint on how to set up public and private sector AMCs, based on the four areas identified in the 2017 Action Plan (European Commission 2018c, 3), and on a liquid pan-European market for distressed bank debt exclusive of state support (European Commission 2018d). These market-based solutions are expected

<sup>76</sup> For the full articulation of the NPL reduction, governance, and write-off techniques into EU supervisory standards, see EBA (2018).

<sup>77</sup> For the most recent EU pronouncement of this policy, see European Council (2018).

<sup>78</sup> By building-up capital buffers *ex ante*, banks will reduce the provision of credit, thereby reducing credit growth in the event of a credit bubble. However, these measures will affect credit growth in other times, which will make prudential backstops a very blunt regulatory instrument.

<sup>79</sup> On 19 March 2020, EU Competition Commissioner Margrethe Vestager introduced the “Temporary Framework for State Aid Measures” to assist businesses accessing the liquidity and financial support to maintain viability during the COVID-19 economic downturn. The framework provides measures that do not qualify as state aid, such as financial support given *directly to consumers* and support measures under the rules for rescue and restructuring aid to meet acute liquidity needs and support undertakings facing financial difficulties. See European Commission (2020a).

<sup>80</sup> European Commission (2020b and 2020c), European Banking Authority (2020), and European Parliament (2020) for further details.



to be supported by the future introduction of legislation, in accordance with the EU 2019 “banking package” on the liquidation of collateral.

In the reality of the COVID-19 pandemic, the utilization of state-backed AMC's will depend on the bargaining power of member states and the volume of new NPLs. EU members with fragile banking systems, such as Greece, will introduce state-backed AMC's to manage the fresh supply of NPLs. This prediction is relevant given the survey below of AMC performance in the EU during the early stages of the global financial crisis and the eurozone debt crisis.

## 2.6.2 Spain

Spain experienced a property bubble prior to the eurozone debt crisis. After the bubble burst in January 2009, Spain entered recession, at which point NPLs exceeded 4% (footnote 34).

The government established the Fund for Orderly Bank Restructuring (FROB) to restructure banks. FROB was capitalized with €9 billion to takeover nonviable banks, subscribe convertible instruments to merge viable banks, and subscribe ordinary shares to recapitalize viable banks (FROB 2012, 7). The banking system reform strategy was implemented in three phases: consolidation, solvency improvement, and cleaning up balance sheets (FROB 2012, 8).

Following a second recession in 2012, Spain sought a banking system bailout of €100 billion from the European Stability Mechanism. Financial assistance was implemented through FROB in accordance with the EU State Aid Rules. Conditions included diagnosing bank capital requirements based on asset quality, transferring distressed assets to an AMC, recapitalizing and restructuring viable banks, and an orderly resolution of nonviable banks involving burden-sharing with the private sector.<sup>81</sup> The bailout program consisted of early intervention, restructuring, and resolution.

Banking system stress tests identified additional capital requirements which resulted in partial bank nationalizations for €38.9 billion and €2.5 billion to establish the Asset Management Company for Assets Arising from Bank Restructuring (SAREB).<sup>82</sup>

<sup>81</sup> European Commission. Post-Programme Surveillance for Spain. Available at [http://www.ec.europa.eu/economy\\_finance/assistance\\_eu\\_ms/spain/index\\_en.htm](http://www.ec.europa.eu/economy_finance/assistance_eu_ms/spain/index_en.htm) (visited on 31 January 2016).

<sup>82</sup> Bank of Spain. Financial Stability Report 11/2012. p. 40.

SAREB's purpose is to receive, manage, and dispose of distressed assets from banks in receipt of government assistance.<sup>83</sup> FROB has the power to transfer distressed assets from banks to SAREB for independent management.<sup>84</sup> Systemically important banks own 55% of SAREB, while FROB (i.e., the government) owns 45%. In exchange for distressed assets, SAREB issues government guaranteed bonds that can be used as collateral for financing (IMF 2013). Banking system NPLs at the time were about €330 billion (Bank of Spain 2013, 22). From January 2013, banks were required to hold a capital ratio of 9% (Bank of Spain 2013, 13). Spain exited the EU financial assistance program in January 2014. The NPL ratio rose to 8.4% in 2014 before dropping to 5.5% in 2016, and 3.2% in 2019 (footnote 34).

Although SAREB has reduced banks NPL ratios to manageable levels, it has posted losses for every financial year since its inception in 2014. Losses can be attributed to accounting rules imposed by the Bank of Spain on the valuation of assets. These rules require an assessment of assets individually to reflect changes in market prices. Nonperforming loan sales are not as profitable because the sale price must be above the valuation price, which has been greatly reduced by the accounting rules. SAREB subsequently slowed the sales of NPLs to stem losses (Cas and Peresa 2016, 24). The recovery of Spain's real estate sector has been critical for SAREB's profitability because 100% of its assets are held in Spain and are collateralized in real estate. Exogenous market forces and competition have contributed to SAREB's losses. Half of Spain's banking sector entities did not participate in SAREB, and thus competed with the AMC in running down exposures.

Lessons drawn from the unprofitability of SAREB suggest that the efficient use of public resources by an AMC is contingent on: (i) development of the market for NPL collateral, (ii) government policy including accounting treatments, (iii) AMC business model assumptions, and (iv) NPL supply factors.

### 2.6.3 Ireland

Ireland is one of the best examples of a successful implementation of a state-backed AMC which held large proportions of assets in its home market and overseas. The National Asset Management Agency (NAMA), established in December 2009, fully repaid €31.8 billion of total debt by March 2020 and

<sup>83</sup> SAREB. Half Year Report. H1 2013. SAREB is a public limited company with a 15-year lifespan to liquidate assets.

<sup>84</sup> See generally Bank of Spain (2012).

is expected to post a €4 billion surplus.<sup>85</sup> This was achieved even though NAMA bought the bulk of its NPLs at a premium over market price, based on the principle of so-called long-term economic value. This approach is analogous to that of SAREB. NPL sales were enhanced through bundling with performing loans and the number of debtors being very small. The chronicle of NAMA unfolded as follows. Ireland experienced a credit boom typified by connected lending and low credit standards that produced a highly levered banking system heavily exposed to the property market (Commission of Investigation into the Banking Sector in Ireland 2011). Illiquid wholesale funding markets coincided with a downturn in the credit and property cycles, and a collapse in the banking system (Honohan 2010). NAMA was empowered to provide capital, credit, and restructurings or reorganizations to manage asset exposures.<sup>86</sup> The purpose of NAMA was to address serious economic threats, and the stability of banks and the finance sector by, among other things, (i) producing an expeditious and efficient economic recovery, (ii) protecting state and taxpayer interests, (iii) restructuring banks, and (iv) restoring banking system confidence.<sup>87</sup>

In December 2010, Ireland accepted an IMF/EU €85 billion bailout. Key objectives of the rescue program were to identify viable banks and implement strengthening measures (i.e., downsizing and reorganization), recapitalize banks, encourage bank deposit inflows and market-based funding, strengthen banking supervision, and introduce a bank resolution framework (IMF 2010).

NAMA acquired bank NPLs prior to the IMF/EU program secured on real estate amounting to €74 billion in gross book value terms, involving 800 debtor business plans and 11,000 loans collateralized on 16,000 properties (NAMA 2011, 6). NPLs were acquired at a 57% discount over face value and below book value, yet above market value due to the long-term economic value premium. NAMA paid €31.8 billion by issuing government-guaranteed senior notes and €1.6 billion in subordinated debt securities.<sup>88</sup> Delays in restructuring distressed debt included legal obstacles, such as a 1-year foreclosure moratorium on defaults (IMF 2015). In October 2017, all

<sup>85</sup> NAMA. 2020. Press Statement – NAMA Redeems Last Remaining €1.064 Billion of Outstanding Debt. 2 March. <https://www.nama.ie/news/press-statement-nama-redeems-outstanding-1-064-million-in-subordinated-debt>.

<sup>86</sup> See ss12(2)(a) and (d), NAMA Act 2009.

<sup>87</sup> See ss2 (a) and (b), NAMA Act 2009.

<sup>88</sup> NAMA. Section 227 Review. (July 2014), 12.

senior debt had been redeemed (3 years ahead of schedule) and in March 2020, all subordinated debt was redeemed.<sup>89</sup>

Ireland exited the IMF/EU bailout in December 2013. Nonetheless, Irish banks still held a substantial volume of NPLs on-balance sheet because NAMA only purchased selective assets and NPLs kept rising. The IMF attributed this to weak accounting standards (IMF 2015), notably IAS 39—a backward-looking provisioning approach for loss accruals. Mortgage arrear resolution targets were introduced, forcing banks to sustain short-term forbearance which reduced arrears (Doherty 2016). NPLs peaked in 2013 at 31.8%, more than 2 years after transfers to NAMA began (Central Bank of Ireland 2017). This NPL peak included asset classes that were not transferred to NAMA. For context, in 2014 the NPL ratios for the three largest banks were 17%, 33%, and 45% (Fitch Ratings 2014).

The reason for establishing an AMC, which is in accordance with the BRRD, is to cleanse bank balance sheets of distressed assets.<sup>90</sup> NAMA had an additional requirement to redeem senior debt, which it achieved with efficiency.<sup>91</sup>

From 2013 to 2017, the volume of NPLs on bank balance sheet, nonetheless, fell from €80 to €30 billion. This reduction is not attributable to NAMA. Two-thirds of 2017 NPLs were derived for house purchases. Banks' mortgage books have experienced a "self-cure" because of improved economic conditions and loan restructuring efforts made by banks, supported by supervisory targets (Donnery et al. 2018). Ireland's NPL ratio fell from 11.5% in 2017 to 5.7% in 2018 (footnote 34).

## 2.6.4 Italy

The Italian economy prior to 2008 experienced a prolonged low-growth period because of structural economic imbalances and an inert public sector. This low-growth environment was accentuated by the eurozone debt crisis and contributed to Italy's very high sovereign indebtedness, which has hovered around 135% of GDP since 2014.

With the onset of the eurozone debt crisis in early 2010, credit conditions tightened when wholesale funding markets became illiquid and credit risk

<sup>89</sup> NAMA. NAMA Bonds': available at <https://www.nama.ie/financial/nama-bonds/>.

<sup>90</sup> Art 42(5) (b) and (c), BRRD.

<sup>91</sup> ss10(2) and 11(d), NAMA Act 2009.

intensified. By the end of 2011, the Italian banking system's Common Equity Tier 1 averaged 9.3% and leverage was lower than comparable European banks.<sup>92</sup> Italy's NPL ratio was 11.7% with over half of gross NPLs being bad debts (footnote 34).

The government introduced a number of reforms:

- (i) pre-bankruptcy creditor agreements to facilitate full or partial company sales,
- (ii) out-of-court dispute procedures,
- (iii) frivolous cases were discouraged, and
- (iv) summary proceedings were enforced.<sup>93</sup>

One-third of procedures lasted between 3 to 5 years.<sup>94</sup> Italy's high NPL levels were maintained because of prolonged credit recovery procedures.<sup>95</sup>

The government introduced amendments in August 2015 to increase creditor recovery rates by promoting out-of-court restructuring agreements, and forced collateral sales were simplified and shortened.<sup>96</sup> Tax treatments of loan-loss provisions allowed for full and immediate tax deductibility of loan write-downs and write-offs. These reforms resulted in bankruptcy and enforcement procedures being expedited.<sup>97</sup>

To circumvent inefficient procedures, large banks, hedge funds, private equity, and turnaround management firms have formed special purpose vehicle (SPV) partnerships targeting corporate loans. These partnerships restructure companies with for example, debt-to-equity swaps and capital injections (Jassaud and Kang 2015, 18).<sup>98</sup> Large banks set up internal workout units to dispose of NPLs. Progress was initially slow because Italy's NPL market was virtually non-existent prior to 2013 (Jassaud and Kang 2015, 17).

<sup>92</sup> Bank of Italy. Annual Report for 2011, 2012. pp. 143 and 144.

<sup>93</sup> Bank of Italy. Annual Report for 2014, 2015. pp. 110–111.

<sup>94</sup> Bank of Italy. Financial Stability Report No. 1 / 2016. pp. 34 and 35.

<sup>95</sup> Bank of Italy. Annual Report for 2014, 2015. p. 118.

<sup>96</sup> Bank of Italy. Financial Stability Report No. 2 / 2015. p. 38.

<sup>97</sup> Bank of Italy. Financial Stability Report No. 2 / 2015.

<sup>98</sup> For example, UniCredit, Intesa, KKR, and Alvarez & Marsal.

The banking system comprises of many small banks that are inexperienced in managing NPLs (footnote 95). In November 2015, four unviable small banks were recapitalized by the central bank's AMC and resolution fund, the National Resolution Fund, with €3.6 billion financing from the three largest banks.<sup>99</sup> Existing shareholders and subordinated debt absorbed losses (European Commission 2015). All four banks were restructured into bridge banks with bad debts transferred to an AMC.<sup>100</sup> In May 2017, the EU approved the sale of three bridge banks to UBI Banca for nominal consideration—€1. The bridge banks were burdened with high NPLs, requiring €450 million of capital (Reuters 2017). A condition of the sale obliged the National Resolution Fund to inject €810 million of capital and grant risk guarantees.

One obstacle under the BRRD bail-in rules is when NPL restructuring results in substantial losses, which require a recapitalization. Before a failing bank receives a capital injection, creditors (i.e., bondholders) must be bailed-in to the equivalent of 8% of liabilities. With retail investors constituting one-third of bondholders, any bail-in will affect a large proportion of the population and have potentially adverse consequences for the banking system and the economy (IMF 2016).<sup>101</sup>

After failing to raise €5 billion in capital in December 2016, the European Commission approved a precautionary recapitalization of Monte dei Paschi di Siena (Italy's third-largest bank).<sup>102</sup> Although the recapitalization was designed as a bail-in, in effect it was a bailout. Retail equity investors were fully compensated with new senior-ranking bonds issued by the Italian Ministry of Economics and Finance (Dipartimento del Tesoro 2016, Bank of Italy 2016).

In May 2017, two banks were liquidated under Italian insolvency law and not under the BRRD as the Single Resolution Board decided that the “public interest” criterion under the BRRD was not satisfied. A decree issued by the Italian government in June 2017 provided the legal framework for the liquidations, including public support to guarantee an orderly exit from the

<sup>99</sup> On 16 November 2015, the EU Bank Recovery and Resolution Directive was transposed into national legislation.

<sup>100</sup> Nuova Banca delle Marche, Nuova Banca dell'Emilia e del Lazio, Nuova Cassa di Risparmio di Chieti, and Nuova Cassa di Risparmio di Ferrara.

<sup>101</sup> See pp. 1, 24, 25, 27, 33, 34, 79, and 82 of IMF 2016.

<sup>102</sup> In 2017, the Bank of Italy identified Intesa Sanpaolo and Banca Monte dei Paschi di Siena as domestic systemically important banks, with UniCredit also being a global systemically important bank. Bank of Italy. Financial Stability Report No. 1 / 2017.

banking system. Shareholders and junior bondholders shared losses and no bail-in mechanism was used.<sup>103</sup>

The EU approved a further €8.1 billion (€5.4 billion net public funding) recapitalization of Monte dei Paschi di Siena in July 2017 after the bank agreed to transfer NPLs to an AMC and cap executive pay. Concerns were raised by the ECB over Monte dei Paschi di Siena's ability to maintain capital buffers. The government underwrote a €3.9 billion capital injection and converted €4.2 billion of subordinated bonds to equity which has resulted in the state acquiring a 70% ownership stake (Bank of Italy 2017, 33; Visco 2017).

Private equity funds participated in the process. KKR Credit launched Pillarstone Italy in October 2015. Pillarstone has two functions, NPL resolution and corporate restructuring (The Economist 2016). Pillarstone took on the debts of five companies including paper maker Burgo and Lediberg, theme park manager Alfa Park, telecommunications group Sirti, and the shipping company Premuda (Landini and Gaia 2016). The companies are being relaunched after Pillarstone injects capital and absorbs distressed debt sourced from Italian banks (Quarati 2016).

In February 2016, the Ministry of Economics and Finance issued a securitization guarantee (GACS) for senior notes issued by SPVs that are recipients of NPLs (see also Chapter 6). Banks access the facility for a fee. Banks are incentivized to transfer NPLs off-balance sheet because the guarantee effects a true sale, reduces risk and uncertainty, and ameliorates price discovery. Initial NPL transfers were relatively low until 2017 when a number of enormous NPL sales were finalized by Italy's largest banks. Italy's NPL ratio dropped sharply from 16% in 2017 to 8% in 2019.<sup>104</sup>

## 2.6.5 Greece

Doubts concerning the sustainability of Greek debt became apparent in the second half of 2009 as the economy entered recession and a sovereign debt crisis unfolded. Investors began to lose confidence in Greece's ability to service its bonds. In April 2010, the Greek government requested an IMF/EU bailout.

<sup>103</sup> Veneto Banca and Banca Popolare di Vicenza—both banks lacked sufficient resources to cover future losses (Visco 2017). Some retail junior bondholders were compensated for losses.

<sup>104</sup> World Bank. Data. Bank Nonperforming Loans to Gross Loans. <http://www.data.worldbank.org/indicator/FB.AST.NPER.ZS?page=2>; and CEIC. Italy Non Performing Loans Ratio. <https://www.ceicdata.com/en/indicator/italy/non-performing-loans-ratio>.

Conditions of the €110 billion package included reining in fiscal spending, structural reforms to rebalance the economy, and stabilizing the banking system by among other things, establishing the Hellenic Financial Stability Fund—a private entity. Banks maintained liquidity from the Bank of Greece’s Emergency Liquidity Assistance and were recapitalized through injections of fresh capital via the Hellenic Financial Stability Fund and a novel instrument called deferred tax credits (Hellenic Financial Stability Fund 2016).<sup>105</sup>

Twelve banks were placed into liquidation or resolved in 2013 (Bank of Greece 2014). NPLs were retained on-balance sheet, as a distressed debt legal framework did not become operational until November 2015. By 2016, the NPL ratio reached 47%, where it has remained, the second highest in the EU (EBA 2016, 12).

A number of legal framework weaknesses identified by the Hellenic Financial Stability Fund has led to the introduction of out-of-court mechanisms to facilitate negotiations between debtors, creditors, and banks, and an out-of-court workout procedure. Judicial impediments persisted because most judges lacked debt restructuring experience and there were delays in court hearings due to the volume of cases and inefficient procedural rules. The 2016 NPL law and subsequent legal amendments addressed some of these flaws, although impediments persist (Hellenic Stability Fund 2016, 2017).

On 17 May 2016, following the recapitalizations of two of the largest banks, Alpha Bank and Eurobank, KKR Credit reached an agreement to assign and manage credit and equity exposures through Pillarstone (KKR 2016). KKR utilized a similar arrangement as in Italy. In contrast to Pillarstone Italy, the European Bank for Reconstruction and Development provided a capital injection up to €50 million and Pillarstone Greece offers corporate governance advice (Reiser 2017). Pillarstone Greece was the first entity to be licensed by the Bank of Greece to manage nonperforming exposures.

In late 2019, the Greek government launched the Hercules Asset Protection Scheme (guarantee scheme) analogous to the Italian GACS; in it, banks pay a fee for a securitization guarantee of senior notes issued by SPVs that are recipients of their NPLs. The Hercules Asset Protection Scheme differs from GACS as the senior notes are not investment grade. Hercules is designed to remove €30 billion of NPLs from banks’ balance sheets (European Commission 2019). Whether the bank NPL reduction targets will be achieved is doubtful considering that Greece is one of the worse-

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<sup>105</sup> Also see Hellenic Financial Stability Fund. What We Do. <https://hfsf.gr/en/what-we-do/>.



affected economies in the EU from the COVID-19 pandemic (European Commission 2020d).

## 2.6.6 Analysis and Evaluation

The EU/IMF bailout programs prescribe consolidation, capital injections, government guarantees and, where possible, using AMCs to cleanse balance sheets of distressed assets. Consolidation involves mergers and downsizing rather than closures.

Ireland nationalized (i.e., recapitalized), and Spain merged and nationalized banks prior to establishing AMCs. Closure and liquidation is the last resort, in contrast to the IMF approach during the Asian financial crisis. Capital injections have been critical in maintaining bank solvency and stability.

When the property markets in Spain and Ireland collapsed, NPL ratios rose significantly, mirroring those of Indonesia and Thailand. The surge in NPLs during the eurozone and Asian crises highlights that satisfying international standards does not necessarily reflect banking system strength.

The 2006 NPL ratios in Ireland and Spain were less than 1% (footnote 34) because of the 2005 adoption of incurred loss accounting standards and securitization, which allowed banks to reduce loss provisioning (OECD 2011, 77). Italy, which used the same standard, had an NPL ratio of 6.6% in 2006, higher than the Republic of Korea and Malaysia, but significantly lower than Indonesia and Thailand (OECD 2011). This is alarming because NPLs were clearly understated. For this reason, incurred loss accounting should be avoided.

Ireland established an AMC prior to its EU/IMF bailout, similar to Malaysia in the 1990s, which has assisted in stabilizing the banking system. The favorable economic conditions that, in conjunction with restructuring efforts, led to a “self-cure” of NPLs on Irish bank balance sheets have since reverted as a result of the COVID-19 recession, causing modest increase in NPLs. Spain established an AMC, as an EU bailout condition, which has significantly reduced NPLs.

Following successive bank recapitalizations and the promulgation of NPL laws to facilitate NPL sales, Greece and Italy have achieved NPL reductions through sales to private sector investors. Delays in establishing legal frameworks to facilitate efficient NPL transfers destabilized the Greek and

Italian banking systems. Recurring delays in dealing with high NPL ratios on banks' balance sheets intensified potential insolvencies and perpetuated a vicious cycle of recession, illiquidity, and debt overhang. The subsequent introduction of GACS in Italy has been instrumental in transferring large volumes of NPLs off-balance sheet and has significantly reduced banks' NPL ratios.

In the Asian and eurozone crises, legal frameworks were severely underdeveloped. Laws were required to establish AMC and effect efficient NPL transfers off-balance sheet. Legislation per se is not sufficient, as viable AMCs require well-functioning distressed asset markets. Deficiencies in legal frameworks and underdeveloped distressed debt markets are the most severe obstacles (Aiyar et al. 2015, 14). Successful distressed asset markets are, in turn, characterized by short legal processes (Altman 2013). Evidence suggests that domestic markets for distressed assets grow in tandem with the level of NPLs, viable AMCs (Jassaud and Kang 2015, 19), and expeditious transfer and sale mechanisms.

For structural reasons, the EU market for distressed debt is relatively illiquid. Eliminating or diminishing the profit incentive for NPL purchases produces a disincentive for private investors to participate in distressed asset markets, which constrains market development and liquidity.

Bond issues funded the purchases of NPLs from banks in Greece, Ireland, Italy, and Spain. The ownership structure and the *raison d'être* of the schemes in Ireland and Spain are similar. Both AMCs were set up with a majority private and minority government equity stakes, and both received government guarantees on senior bond funding. After paying back its debt and shrinking its balance sheet to a negligible size, thereby mitigating taxpayer exposure, Ireland's AMC reverted to 100% government ownership.<sup>106</sup> Spain's AMC (SAREB) is partially privatized, with Spanish taxpayers exposed to the government's 45% equity share and potential losses on the guaranteed senior bonds. The use of private sector investors in Italy is proving to be profitable and effective, with strong market growth. Greece's scheme will be tested by low bond ratings and the global COVID-19 recession which has increased NPLs.

Italy's GACS incentivizes banks to transfer NPLs because the guarantee increases prices. Banks are incentivized to securitize Italian NPLs because

<sup>106</sup> From inception, NAMA was 51% privately owned and 49% publicly owned through an SPV to limit liability. NAMA has reverted to 100% publicly owned following the final investor payment on 26 May 2020.

securitized notes are guaranteed at investment grade, lowering their funding costs and enabling a more favorable capital treatment for originating banks. Government guarantees therefore require calibration to balance the competing incentives of NPL transfers off-balance sheet and the NPL purchases by AMCs, SPVs, and private investors.

## 2.7 Conclusion

The IMF approach to banking crises has evolved from closing down banks to aligning with the Financial Stability Board Key Attributes: strengthening bank balance sheets. This resolution approach is designed around an orderly banking system and the continuity of vital economic functions while mitigating taxpayer exposure. Evidence from major banking crises over the past 3 decades (and bank restructuring in the PRC) supports the use of public funds where the bank rescue program focuses on the effective restructuring of balance sheets that is cost-saving in the long term rather than outright bank closures. When the threat of a banking crisis or a surge of NPLs is identified, balance sheet restructuring can be very effective in maintaining banking system stability. Reluctance or hesitation to implement reforms can intensify banking crises and undermine long-term bank solvency.

Robust capital, leverage, and liquidity buffers reduce the risk of bank failures. However, regulators can misjudge banking system strength by relying on compliance with international standards especially in the face of adverse macroeconomic conditions. Banks that are fully compliant (*ex ante*) with international standards can experience a rapid deterioration of their capital position from exogenous and endogenous shocks, including contagion from a financial crisis in another economy. When capital buffers are under stress and private funding is unavailable, the government should be allowed to make a capital injection for systemic or macroeconomic stability into a viable yet failing bank, thereby inciting market confidence. When a bank is under severe stress from systemic and macroeconomic factors, the argument against public support for fear of giving rise to moral hazard is untenable. In limited cases, state injections of capital will result in the government taking an ownership position in a systemically important bank, which may be necessary to restore market confidence. Idiosyncratic lending, however, should be avoided.

Banks need the tools to manage balance sheets promptly and to avoid NPLs undermining capital adequacy and banking system confidence. Bail-in tools can provide additional capital to strengthen bank balance sheets by

converting creditor claims to equity when there is no danger of contagion, especially when the key cause of bank failure is idiosyncratic—for example, fraud (Avgouleas and Goodhart 2015). In a financial crisis, an anti-bailout bias can cause the collapse of credit markets and, the banking system, leading to widespread economic disruption. A consistent bailout approach, including cross-border cooperation, instils confidence and stability in a banking system.

It is advisable that regulators adopt a broad and uniform definition of NPLs and nonperforming exposures, for example, the Basel Committee on Banking Supervision (BCBS) definition, to capture the widest range of distressed assets. Accounting treatments should avoid fair value and incurred loss accounting which underestimate banking system vulnerability. Expected credit losses and accounting treatments, which harmonize with the nonperforming exposure definition (BCBS) provide a more accurate financial position.

A public authority must be designated to coordinate management of an NPL resolution program. This can greatly reduce information asymmetries and conflicts of interest between creditors attempting to optimize restructuring outcomes (Avgouleas and Goodhart 2017). A public authority could also supervise private sector AMCs and be tasked with the implementation of legal and infrastructural changes designed to boost secondary NPL market liquidity.

AMCs are effective at strengthening bank capital without the need for ongoing capital injections, and the timing of distressed asset sales can be controlled until more favorable market conditions prevail. Using private sector AMCs is preferable to government bailouts since government ownership and taxpayer liability is absent (or the level is significantly lower). The same may be said about AMCs with a measure of government investment that is fully recoverable. In contrast, public AMCs that do not cap public support nor incorporate a clear path to recovery of public funds can expose the government to unlimited liability, burdening the taxpayer.

A key *raison d'être* in the use of AMCs during crisis is asset valuation. Moreover, where asset classes are clearly identified for valuation and transfer to an AMC, the prospects for profitability are enhanced. From an accounting perspective, bad debts are considered uncollectable. Thus, the chances of AMC profitability are low unless bad debts are bought with a discount on the holding and transfer costs, and the selling price. This benefits the AMC at the expense of the bank when the discount is excessive.

To contrast, a guarantee places liability on the government, primarily for the bank's benefit and can assist in sustaining AMC viability. A public AMC is unlikely to satisfy the objective of ensuring the most efficient use of public resources, although in the long run this may prove to be a more efficient solution than other bailout options.

Government guarantees can be critical for banking system stability. Large exposures to NPL-linked financial instruments can complicate the design of AMCs to sequester banks from distressed assets. In these circumstances, retaining distressed assets on-balance sheet supported by government guarantees may be the preferred option. Government guarantees that retain distressed assets on-balance sheet can lack control over the timing of sales, exposing governments to substantive liability and extensive capital injections. Guarantees should only be used when banks can be returned to viability and NPL sales can be controlled.

Debt restructuring requires legislative frameworks and infrastructure. If NPL legislation or infrastructure is absent or deficient, a program should be designed that is expeditious and ideally takes an *ex ante* approach. Delays in promulgating legal support or infrastructure destabilizes banking systems by maintaining and intensifying high NPL ratios on-balance sheet.

Effective and expeditious NPL transfers depend on passing NPL legislation that builds suitable bankruptcy, arbitration, and civil procedures. These requirements should not depress NPL sales, values, or distressed asset markets. Legal infrastructure should enable all banks regardless of size to participate in the restructuring program.

To incentivize NPL transfers, government guarantees can be placed on NPL sales to private AMCs and AMC bond issues. The efficiency of NPL transfers is heightened in a market-based system because government guarantees require calibration to balance the competing incentives of transferring NPLs off-balance sheet and minimizing AMC losses from NPL sales. As guarantees expose taxpayers to liability and increase the cost of a program, fees can be charged to offset costs.

An AMC must be capable of maximizing discretionary NPL sales. Ideally, NPLs are sold when market conditions yield profit and an efficient transfer. Deficiencies in legal frameworks and underdeveloped distressed debt markets are the most severe obstacles. If the market is underdeveloped or obstructed, the government needs to design policies to create investment incentives or remove legal and regulatory obstacles. In general, legal and

regulatory obstacles are those that penalize or act as a disincentive for NPL transfers, purchases, and the development of liquid secondary markets for distressed debt. The optimum market-based restructuring solution for NPLs utilizes private sector AMCs, a tax regime that promotes distressed asset markets, and a legal system that ensures the efficient and effective transfer of NPLs.

Assuming these conditions are fulfilled, AMCs can effectively cleanse bank balance sheets of NPLs, strengthen capital ratios in the long term, and enhance banks' capacity to restart lending. Where the majority of funding is sourced from the private sector (i.e., bond issues), this will act as a countercyclical relief mechanism that stabilizes a banking system overly burdened with NPLs, while mitigating taxpayer expenditure.

This is an important lesson for EU members and other policy planners, notably in Asia. Experience from past banking crises (and the PRC) suggests that when regulating NPLs and bank restructurings, a shift to balance-sheet strengthening is of the utmost importance rather than obsessing over mitigating moral hazard. Bailing out a banking system should not overestimate the latter where the causes of a crisis are systemic.

Today, given the widespread financial turbulence and surge of NPLs forecast for the global economy from the COVID-19 pandemic, focusing on balance-sheet strengthening will be paramount in the years ahead for both developed and developing countries.

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