# B Addressing market failures in the resolution of non-performing loans in the euro area[115]

*The high stock of non-performing loans (NPLs) on the balance sheets of euro area banks continues to be an important cause for concern for policymakers. Efforts to resolve this problem have increased significantly in the course of 2016, by supervisors and macroprudential policymakers alike. To relieve capital constraints, these efforts, however, must be complemented with structural reforms to recover the value of NPLs in some countries. Against this background, this special feature focuses on impediments to the functioning of a market for NPL sales. It highlights sources of informational asymmetry and structural inefficiencies. Among indicators of market failure, it distinguishes between supply and demand factors that impede market functioning. In light of the identified externalities, public policy responses are warranted to reduce the cost and duration of debt recovery while also addressing information asymmetries between better-informed banks and potential investors. In certain circumstances the establishment of asset management companies (AMCs) may help to accelerate the value recovery process for banks, while avoiding adverse macroeconomic side effects. Constraints on and limitations of AMCs are also reviewed in this special feature.*

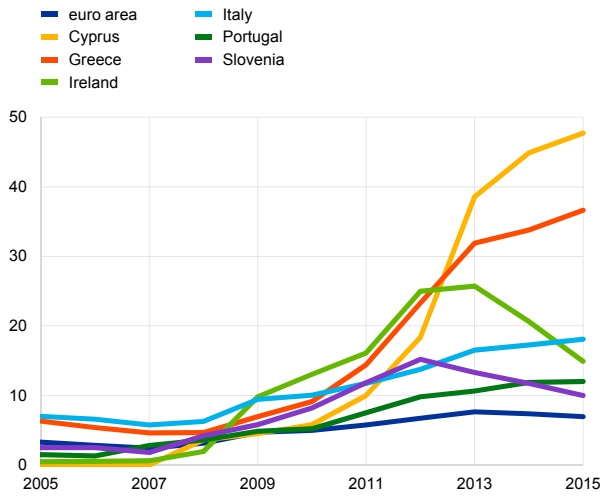
## Introduction

**Chart B.1**

NPLs in the euro area have increased since the global financial crisis but ratios vary greatly across countries

**Gross NPL ratios for the euro area and the six countries with the highest NPL ratios**

(percentage of total gross loans, year-end)




Sources: ECB and IMF Financial Soundness Indicators.
Note: Comparability of the data across countries may be limited due to the use of different NPL definitions and consolidation perimeters of national banking sectors.

**History has shown that financial crises and/or prolonged economic contractions often trigger a rapid and substantial increase in non-performing loans, as asset valuations decrease and borrowers become unable to service their debt**. In the euro area context, macro-financial stresses over recent years have resulted in the accumulation of significant stocks of NPLs. At the end of 2015, the 130 largest euro area banks held around €1 trillion of impaired assets, although NPL ratios are very unevenly distributed across euro area countries (see **Chart B.1**). Moreover, although over 60% of NPLs are related to various forms of corporate lending, the type of assets affected by the loan quality deterioration is quite heterogeneous. The size of the overall stock of NPLs in the euro area, the challenge it poses to bank profitability, and the financial and economic interlinkages between euro area countries give rise to area-wide financial stability and macroprudential concerns. It may also have an impact on the transmission of monetary policy, as bank resources are tied up by inefficient lending, and on fiscal risks.

[115] This special feature was prepared by John Fell, Maciej Grodzicki, Reiner Martin and Edward O'Brien.

**The ECB has been flagging the importance of the NPL problem in the euro area for some time already.** In its comprehensive assessment of 130 euro area banks in 2014, it applied for the first time a common NPL definition to identify the magnitude of the problem.[116] In 2015, it presented a first overview of the scale of the problem, highlighting key operational aspects that are critical for effectively resolving NPLs and outlining the advantages and disadvantages of different resolution strategies.[117] In September 2016, the ECB's Single Supervisory Mechanism (SSM) launched a public consultation on guidance to banks on how to tackle NPLs. The guidance document provides recommendations on a wide range of microprudential aspects related to NPLs.[118] Other international and European bodies such as the International Monetary Fund (IMF), the European Banking Authority (EBA) and the European Bank for Reconstruction and Development (EBRD) have also recently stepped up their analytical and policy work relating to NPLs.[119]

**A range of possible responses to address large-scale NPL stocks is available, often complementing one another within the same jurisdiction.** Internal workout by the bank originally holding the impaired asset marks one end of the spectrum of options and should always feature highly in any broader resolution scheme. Banks may require specialist third-party support to be effective in this regard. The direct sale of the impaired assets to an outside investor marks the opposite end, and while this is the most rapid option from a bank's perspective, it depends upon provisioning levels relative to market prices and the presence of liquid NPL markets. In between, there is a range of options such as asset protection schemes (APSs), securitisation and synthetic securitisation and the creation of asset management companies (AMCs).[120] Each of these options has different requirements, costs and benefits, presented in **Figure B.1**. AMCs are discussed later in this special feature, APSs have proven to be useful in situations where potential losses from declining asset valuation are large but the likelihood of the losses actually occurring is low, and securitisation provides a mechanism to transfer part of the risk related to the NPL portfolios to private investors and obtain stable funding. Such policy responses would likely require changes in the institutional and legal infrastructures of at least some euro area countries and are unlikely to deliver a rapid reduction in the stock of NPLs. Moreover, public support may be required, particularly for APSs and AMCs, but also for securitisation schemes, which may restrict their applicability.[121]

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116 For a harmonised definition of non-performing exposures, see the European Banking Authority's Implementing Technical Standards on supervisory reporting on forbearance and non-performing exposures under Article 99(4) of Regulation (EU) No 575/2013.

117 See Grodzicki et al., "Resolving the legacy of non-performing exposures in euro area banks", *Financial Stability Review*, ECB, May 2015, pp. 146-154.

118 See *Draft guidance to banks on non-performing loans*, ECB Banking Supervision, September 2016.

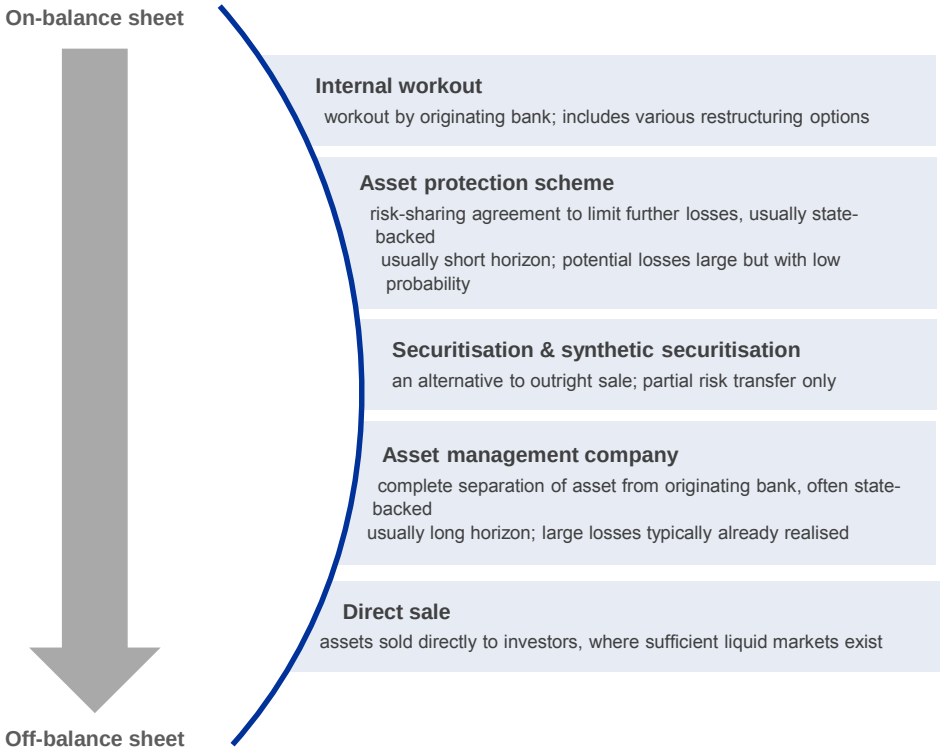
119 See, for example, *Global Financial Stability Review*, IMF, October 2016, and *Report on the dynamics and drivers of non-performing exposures in the EU banking sector*, EBA, July 2016.

120 According to Article 242(11) of the Capital Requirements Regulation, synthetic securitisation is defined as a securitisation where the transfer of risk is achieved by the use of credit derivatives or guarantees, and the exposures being securitised remain exposures of the originator institution.

121 As APSs normally rely on a sovereign guarantee, they are only a realistic option for jurisdictions with secure access to financial markets. For these reasons, APSs do not seem to be suitable for the resolution of legacy NPL stocks, which is the main focus of this special feature.

**Figure B.1**

A non-exhaustive taxonomy of options for addressing NPLs




Source: ECB.

**The remainder of this special feature utilises a micro-founded characterisation of the NPL problem, distinguishing between demand and supply-side impediments to the development of secondary NPL markets.** This is followed by a discussion of the policy actions that can be taken to mitigate these impediments. The potential role of AMCs, in particular public sector-backed AMCs, is also reviewed against the background of policy constraints resulting from, inter alia, the fiscal space of the country concerned and EU state-aid rules. The final section summarises the main conclusion and provides some policy recommendations. The special feature does not aim to cover other topics that have been extensively discussed elsewhere, such as supervisory and accounting policies that may affect the recognition of losses on NPLs by banks, or good practices in NPL management.

## Indicators of market failure

**Although NPL stocks have built up on euro area bank balance sheets since 2008, secondary markets for NPLs have not been very active across the region,** despite anecdotal evidence of considerable investor interest in acquiring bank-held NPLs. For example, Deloitte (2016) and KPMG (2016) highlight that notwithstanding a stock of some €2,000 billion in non-core assets on bank balance

sheets, of which approximately 50% are NPLs, transactions amount to slightly more than €100 billion.[122]

**A wide bid-ask spread, present for many impaired assets, is considered a significant obstacle to transactions.** The prices that investors are willing to offer are substantially lower than the price that would be at least neutral to the capital position of banks. This spread may be explained by at least three factors. First, many banks may not have fully incorporated the costs of working out impaired assets into their provisioning levels.[123] Second, differences in the contractual position between banks and investors may also contribute to this spread, as banks usually cannot adjust lending rates in line with deteriorating creditworthiness of the borrower, which however can be captured by investors through the acquisition of loans at a discount.[124] Finally, investors may face market frictions and asymmetric information challenges relative to better-informed banks, which would further increase their required return, and thus the fixed cost of executing the transaction.

**It is unsecured NPLs, including retail loans, credit card debt, etc., that have been most actively trading in the secondary market.** These assets are typically straightforward to work out and there is sufficient transparency for investors concerning their value. Due to the unsecured nature of these assets and the resultant high levels of provisioning, sales typically take place at very low prices relative to book value, making it easier for investors to achieve their targeted returns.

**The secondary market for more complex and secured NPLs in Europe could be characterised as a so-called market for "lemons".**[125] In contrast to unsecured retail loans, secured and more complex loans are more opaque and less granular, and are usually carried at much lower provisioning levels as banks attribute significant value to collateral. Secondary market activity in this segment is low. This suggests that an asymmetric information problem may exist, in particular for higher-quality, collateralised NPLs. In a classical *market for lemons* context, it is assumed that informational asymmetries arise as buyers know less about asset quality than sellers. Buyers would therefore fear that assets they are bidding for are of low quality, and bid at a correspondingly low price. The sellers, being able to distinguish between low and high-quality assets, trade only in the former type – the lemons – whereas the market for the remaining assets fails. Additionally, it may be the case that sellers of NPLs may not have *perfect* information concerning their own assets. The resultant problems associated with informational asymmetry remain, however, as buyers cannot know whether sellers are revealing all available information.

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122 *Deleveraging Europe 2015-2016*, Deloitte, 2016, and *European Debt Sales Report*, KPMG, 2016.

123 A number of recent country-specific diagnostic exercises as well as the ECB's 2014 comprehensive assessment for some 130 large euro area banks reviewed, in depth, asset quality and ensured that capital and provisioning levels amongst banks are robust and appropriate.

124 Investors in distressed debt would generally expect a higher return than the returns generated by banks, to be compensated for higher risk. Bank accounting rules require that future cash flows on NPLs are discounted using original lending rates, thus causing a discrepancy between book values and the prices investors would be prepared to pay for the NPL. See also Ciavoliello et al., "What is the value of NPLs?", Banca d'Italia Notes on Financial Stability and Supervision, 3/2016.

125 See, for example, Akerlof, G., "The Market for 'Lemons': Quality Uncertainty and the Market Mechanism", *Quarterly Journal of Economics*, Vol. 84(3), 1970, pp. 488-500.

**A key factor in this regard is the availability of high-quality data for the assets in question.** The absence of such data can compromise the results of valuation methods investors may use in due diligence, resulting in heightened uncertainty concerning asset values and additional costs associated with collecting sufficient data to facilitate workout, resulting in commensurately lower bid prices.

**Ineffective legal frameworks governing debt recovery and collateral enforcement can also create information challenges and curtail demand.** As the time for debt recovery may be inordinately long and unpredictable, steep discounting of future cash flows from NPLs may be needed. Lengthy delays resulting from legislation may also have an impact on credit discipline. Debtors that have fallen into arrears may be aware that collateral cannot easily or quickly be enforced for a significant period of time and may not cooperate with their creditor. Other performing debtors may strategically choose to default as no effective deterrent is present. Investors will factor in expected workout time in valuing assets, penalising assets in jurisdictions where legislation is least effective.

**Even when legislation is effective, the capacity to deal with a sudden rise in NPL stocks is often lacking.** Capacity bottlenecks arise in banks, but also in the judicial system, where specialist expertise in resolution of impaired credits may be very limited. The expertise gaps are particularly wide in the case of more complex credits, for example, to corporates and for commercial real estate. These capacity constraints can lengthen delays substantially. Moreover, uncertainty as a result of inconsistencies in the outcome of cases may act as a deterrent to investors and needs to be reflected in bid prices.

**Asymmetric information can also arise from banks' cherry-picking of assets for sale.** Banks may be incentivised to retain the best assets, along with the best client relationships. Prices offered by investors account for the adverse selection of the assets up for sale.

**A number of factors play a role in determining the supply of NPLs.** Capital constraints and provisioning levels will be a key factor, as will regulatory pressures. Concerns about realising a loss and the related impact on provisions and capital may also play a prominent role. For example, the sale of part of an NPL portfolio at a low price may lead to upward pressure on coverage ratios for the remaining portfolio, if supervisory measures or market discipline require that the remaining NPL portfolio be marked down to the achieved sales price, even though the residual asset quality has in fact improved on aggregate as a result of the sale. Banks may also be adversely affected by the recalibration of prudential models, including loss-given-default models, based on the data generated by the asset sales. They may prefer to wait for a possible upturn in asset values, instead of realising the loss through sale. These motivations for holding NPLs often overcome substantial pressure from investors in bank equity and debt to reduce non-performing assets when their stocks reach high levels, as uncertainty around the scale of future losses impacts perceptions of the bank's soundness. The high cost of debt recovery will also dampen supply through its effect on prices. In a number of euro area jurisdictions, debt recovery costs are very high (see **Chart B.2**), as a result of the long duration of the process, the large number of stakeholders involved and the fees that they

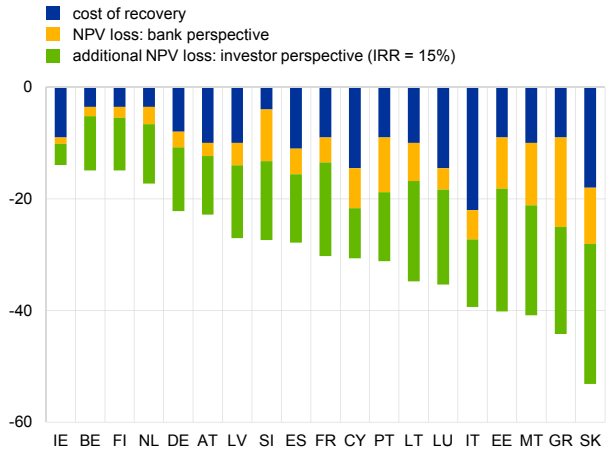
demand.[126] Another supply-side consideration related to banks' willingness to sell may stem from banks desire to avoid stigma and first-mover disadvantage effects, so for a given price, supply may be low.

**Chart B.2**

Long duration and high cost of legal procedures significantly reduce market value of NPLs

**Reduction in net present value of collateral related to cost of enforcement and duration of associated legal procedures**

(percentage of nominal value)




Sources: ECB calculations based on World Bank Doing Business 2016 data.
Notes: The cost of debt recovery includes court fees and government levies; fees of insolvency administrators, auctioneers, assessors and lawyers; and all other fees and costs. It does not include operational expenses incurred by the bank, such as wages and salaries of involved staff members, or the cost of IT infrastructure used to manage NPLs. Inclusion of these costs would reduce net present values even further.

**Structural inefficiencies and informational asymmetries drive a wedge between book values and market values of NPLs. Chart B.2** shows hypothetical NPV losses for NPLs across euro area countries based on the World Bank Doing Business database. In this illustration, market values of NPLs are estimated by discounting future cash flows from the sale of collateral, less the cost of recovery, using typical discount rates applied by banks and investors. The resulting gap between the notional gross book value (GBV) and net present value (NPV) of NPLs may be as high as 40-50% of the GBV, and can be broken down into three components. These components also determine the size of bid-ask spreads for NPLs. The blue segments of the bars in **Chart B.2** represent the average cost of enforcing a claim through the legal system, which can reach between 4% and 22% of the value of the claim according to the World Bank Doing Business database. As this cost, despite being part of the expected future cash flows associated with the NPL, may not be fully acknowledged in banks' provisioning policies, it contributes to reducing supply and to widening the bid-ask spread.[127] Both demand (see next section) and supply may be reduced by the long duration of recovery, taking up to four years on average in some countries, which depresses both the bid and ask prices. On the supply side, the net book value (NBV) of the claim for the bank, as required under IAS 39, is calculated as the NPV of future cash flows from the loan, using the original effective interest rate of the loan, often below 5%, as a discount rate. The yellow segments of the bars represent the resulting discount, which affects banks' ask prices. The discount rate applied by investors is related to their cost of capital, the premium demanded for the riskier nature of an NPL portfolio relative to a performing one, and an information asymmetry premium. Here it is based on an assumed internal rate of return (IRR) of 15% but, in reality, investors' IRR can be higher. In the chart, investors' NPV estimates (green segments of the bars) are shown as incremental to banks' NPV estimates. The longer the duration of recoveries, the stronger will be the effect on the investors' bid price. Total NPV losses are the sum of the three segments of each bar while the bid-ask spread can

[126] The IMF suggests that "reforms that speed up asset recovery in insolvency and otherwise reduce the risk of investing in bad loans could potentially boost the price that third-party investors would be willing to pay for them by about 20 percent on average"; see *Global Financial Stability Report*, October 2016, p. 15.

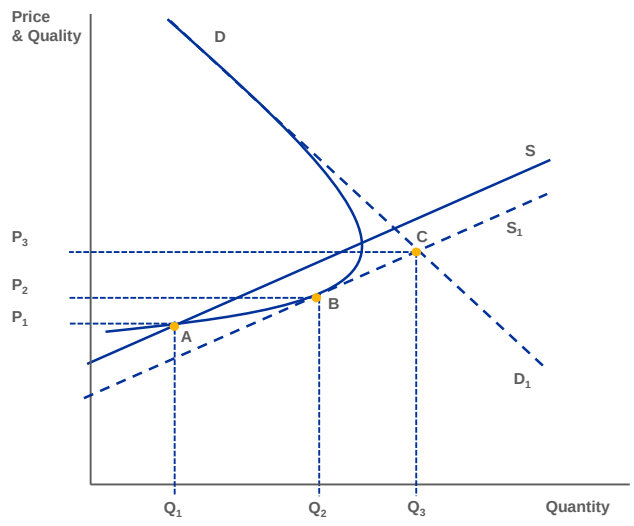
[127] In addition, the indirect cost of managing NPLs, such as the cost of staff and technical infrastructure, is generally not taken into account in provisioning models and further increases the gap between book values of NPLs and prices bid by investors. These additional costs are not included in this example.

be inferred, depending on the extent to which the costs of recovery are factored-in to the ask price. If banks fully factor-in these costs, the bid-ask spread could be as little as the difference between the NPV estimates of banks and investors (i.e. the green segments of the bars) or, if banks do not account for these costs at all, it could be as much as this gap plus the costs of recovery (i.e. the green segments plus the blue segments).

## A microeconomic characterisation of the NPL problem

**Akerlof (1970) showed that in a market for "lemons", demand is a function not only of price, but also of the average quality of the goods being traded.**[128] As a result, multiple equilibria can arise.[129] **Figure B.2** shows that the supply curve positively intercepts the price-quality axis, at a level commensurate with a banks' ability to dispose of NPLs at a given price – in effect, the intercept represents a bank's price floor. The "bad" market equilibrium depicted in **Figure B.2** (the left-most equilibrium, *A*) is consistent with currently observed market conditions, as in this equilibrium, only a small quantity of "lemons" – low-quality NPLs – is traded. For this sub-set of assets, the capital constraints of banks may also be lower, due to the higher prudential requirements, while bid-ask spreads may also be lower than average, due to the relatively close alignment of the actual and perceived quality of these NPLs. Indeed, banks may also be incentivised to sell assets that are highly provisioned, as no additional losses would be realised in the process.

**Figure B.2**
Equilibria in a market where asymmetric information exists




Sources: ECB and Hey (2003).

**In this framework, improving supply (i.e. a shift of the supply curve from S to S1) leads to an improved market equilibrium – B – although the overall gains remain limited and finite.** Indeed, efforts that only address supply-side constraints will offer limited relief to market functioning, given the unusual kinked shape of the demand curve D. In essence, additional supply will not be absorbed by the market. Overcoming informational asymmetries, however, has greater potential to address the market failure. As shown in Figure B.2, if these issues can be addressed, then, *ceteris paribus*, an improved equilibrium – *C* – can be achieved through improving demand, represented by the change in the shape of the demand curve from D to the more standard D1.

[128] Such a demand curve can be characterised as $d = 1 - p + \alpha q$, where $d$ is demand, $p$ is price, $q$ is average quality, and $\alpha > 0$ where $\alpha$ is a parameter that relates quality to demand.

[129] See, for example, Varian, H., *Microeconomic Analysis*, 3rd Edition, W. W. Norton & Co., 1992, and Hey, J., *Intermediate Microeconomics: People are Different*, McGraw-Hill, 2003.

## Removing impediments – mitigating asymmetry

**Removing the impediments to an effectively functioning secondary market for NPLs requires a comprehensive, multi-pronged approach,** although not all jurisdictions and banks are afflicted to the same extent by all impediments. As such, a thorough understanding of the particular market circumstances is required before framing the necessary response. Impediments can be resolved at various levels within the system.

**Supply-side problems may be related to a lack of willingness of banks to sell, a lack of adequate data, and cherry-picking behaviour.** The *willingness to sell* can be increased by regulatory pressure and supervisory guidance. In a euro area context, the SSM guidance to banks on NPLs will be critical in this regard. This should also hold for the lack of *high-quality data*, with banks being incentivised to upgrade their data infrastructures and reporting standards. There may be a complementary role for third parties in filling data gaps and providing assurances about the quality of that data. *Cherry-picking behaviour* may be partially remedied by higher transparency, but is still difficult to overcome, especially for more complex and bespoke assets. Possible solutions here are that banks consider portfolio sales combining performing and non-performing assets, or that banks retain an interest in the portfolio.[130] Given that investors may wish to build portfolios of NPLs by purchasing assets from multiple sources, investors and banks could also benefit from cooperation across the banking sector, so that costs to investors are minimised. The availability of local, specialised, independent service providers will be an important element also.

**By improving the legal frameworks governing the enforcement of claims, bid-ask spreads would narrow, preserving bank capital while improving investor demand for NPLs.** At the Member State level, structural reforms will be critical to success, regardless of the specific NPL resolution strategy, in addressing impediments to demand in the market that derive from informational asymmetries.[131] Legal reforms may be necessary to ensure that both the time and cost of recovery are lowered, substantially in some cases. Out-of-court workout schemes can be beneficial in avoiding lengthy court proceedings. Reforms should strive to achieve transparency in collateral enforcement and insolvency proceedings and consistency in court rulings, to provide investors with confidence in the outcomes of legal proceedings. Reforms must also be considered in areas such as licensing for asset servicing companies, to ensure the sufficient availability of such services. The relaxation of other licensing requirements, e.g. for investors in distressed debt, and codes of conduct should also be considered. Recently, several countries have enacted such reforms; however, it is still too early to judge whether the reforms have

130 In securitisations, the originator often retains a stake in the junior part of the transaction, which – insofar as it is not already fully provisioned at the time of the transaction – reduces the incentive to engage in cherry-picking.

131 For an overview of legal impediments and recent reforms undertaken in eight euro area countries, see *Stocktake of national supervisory practices and legal frameworks related to NPLs*, ECB Banking Supervision, September 2016.

translated into more efficient workouts. Capacity-building and practical implementation of the legislative changes often remain a challenge.

**Policies that stabilise the economy and deliver plausible economic prospects will also contribute positively to secondary market functioning,** since macro-financial conditions can have a direct impact on future cash flows from NPLs, both from operations of the borrower and from sales of collateral. This positive impact can accrue not only from potential increases in asset values and economic expansion, but also through reduced uncertainty. Such policies should be part of a credible, broad-based strategy, founded on political stability. Communicating the strategy coherently and consistently is equally crucial.

## A role for asset management companies in the light of state-aid rules and the BRRD?

**Government-sponsored AMCs have often played a role in resolving acute, systemic banking crises.**[132] This has usually been in the context of a credible, broad-based crisis management strategy where assets have been swiftly and transparently transferred to an AMC. In addition to contributing to a solution to NPL resolution, AMCs can offer substantial benefits to participating banks at times of stress, by reducing asset quality uncertainty and relieving funding pressures. While these benefits may not be so relevant in the current euro area context, AMCs may also help precipitate secondary NPL markets. Many of the impediments to the creation of secondary NPL markets outlined in the previous section, particularly those related to banks, can be alleviated by the establishment of a well-designed AMC.

**Beyond these considerations, a further argument for the establishment of an AMC relates to its ability to act as a market reservoir, which can soak up excess NPL stocks while impediments to NPL resolution are being addressed,** releasing them back into the market later. By doing so, the AMC prevents fire-sale pressures on banks and allows time for structural reforms to take effect. In the right context, asset values may rise, allowing the AMC to stagger its sales to the market and to achieve prices well above those prevailing at the time of its establishment. Previous ECB publications have highlighted some key guiding principles for establishing asset support schemes.[133] Beyond considerations concerning the institutional set-up, identifying the assets to be transferred and appropriate valuation methods will be essential factors in establishing a support vehicle, while ensuring its

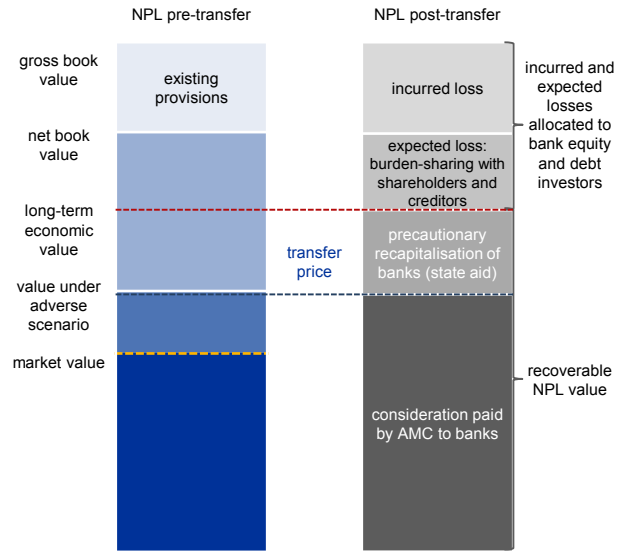
[132] These include, for example, Securum and Retrieva in Sweden in the 1990s, KAMCO in South Korea, also in the 1990s, and more recently, NAMA in Ireland (2009), SAREB in Spain (2012) and BAMC in Slovenia (2013). It should be noted, however, that these AMCs typically addressed the fallout from crises that stemmed from rapid credit expansions or real estate booms, rather than prolonged macroeconomic underperformance. Such asset management companies should not be confused with entities in the asset management industry, which manage capital market investments on behalf of their customers.

[133] See, for example, O'Brien, E. and Wezel, T., "Asset support schemes in the euro area", *Financial Stability Review*, ECB, May 2013, pp. 112-120, and *Guiding principles for bank asset support schemes*, ECB, February 2009.

adequate governance will be crucial. An AMC should be managed on commercial principles at arm's length from the state.

**Much has been made more recently, however, of the restrictions facing national authorities in establishing public sector-backed AMCs** as a result of the state-aid rules and the implementation of the Bank Recovery and Resolution Directive (BRRD). In particular, concerns have been expressed that transferring assets to an AMC at values above contemporary market prices – a key benefit and thus the rationale for an AMC – would constitute state aid and thus would result in resolution.[134]

**Figure B.3**
Example of an AMC transfer with state aid and precautionary recapitalisation and burden-sharing




Sources: ECB and Medina Cas and Peresa (2016).[135]
Notes: Long-term economic value reflects the underlying value of an asset on the basis of observable market inputs and realistic and prudent assumptions about future cash flows. Burden-sharing may involve capital raising from new investors, voluntary liability management exercises (e.g. debt-for-equity swaps) or non-voluntary forms of burden-sharing with junior creditors.

**The activation of resolution according to the BRRD may not be necessary, however, to establish a public sector-backed AMC, as state aid is feasible outside resolution in limited circumstances, albeit with private sector burden-sharing** (see **Figure B.3**). That public support may consist of indirect capital support in the form of: (i) transfers to an AMC at values above prevailing market values, but below real or long-term economic value; and (ii) if needed, precautionary recapitalisation that addresses the capital shortfall arising from NPL transfers and identified under an adverse scenario of a stress-test exercise carried out by a competent supervisory authority.[136] The latter condition means that only hypothetical future losses on NPLs, related to the unexpected and unlikely deterioration of their value posited in the stress test,[137] may qualify for precautionary recapitalisation of the bank participating in the AMC, while incurred and expected losses clearly cannot, and should be covered first from private sources. The stress test itself should realistically reflect the expected future evolution of NPL workouts. Beyond this public support, banks participating in an AMC must also engage in burden-sharing with junior debt-holders and may also raise capital from private sources, through liability management exercises and equity raising (see **Figure B.3**). Procedurally, public support would be conditional on obtaining prior approval from the European Commission, including a restructuring plan that would be executed by the institutions receiving state aid.

134 Details can be found in *Communication from the Commission on the Treatment of Impaired Assets in the Community Banking Sector*, European Commission, 5 February 2009. See in particular section 5.5 for details on the valuation of impaired assets.

135 See Medina Cas, S. and Peresa, I., "What Makes a Good 'Bad Bank'? The Irish, Spanish and German Experience", European Economy Discussion Paper 036, European Commission, September 2016.

136 For state aid to be adjudged compatible, transfer prices cannot exceed long-term economic value. Transfer prices are typically below long-term economic value, to reflect, amongst other factors, the carrying cost of the assets for the recipient.

137 This concept is also present in accounting standards. IAS 39 explicitly prohibits that future credit losses are recognised as impairment, making a clear distinction between incurred and unincurred losses.

The precise outcome of any given transfer depends on the factors highlighted in **Figure B.3**, including the net book value, real or long-term economic value and transfer price. Participating banks would face the stigma of state aid and associated restructuring conditions, and would be forced to burden-share with junior debt-holders. Precautionary recapitalisation can only meet unexpected losses, not losses that are expected to materialise. As such, it can be calibrated by the adverse scenario of a stress test, although the choice of scenario rests with the supervisory authority and not the competition authority or the resolution authority.[138]

## Are AMCs part of the solution set?

Given the feasibility of establishing an AMC outside resolution, and the fact that AMCs may improve secondary market functioning, their role in resolving large stocks of NPLs should be carefully considered.

**Historically, AMCs have been most successful when tasked with resolving real assets, typically commercial real estate, land and related exposures such as development loans.** Such assets are relatively straightforward to value and their prospective values are largely related to broad macro-financial outcomes. Specialist expertise – in terms of valuation, management, maintenance, etc. – tends to be readily available, meaning that an AMC can manage assets with a relatively thin staffing level, relying instead on third-party expertise. Furthermore, the AMC can specialise and aim to achieve economies of scale by holding relatively homogeneous exposures, and given that the average ticket size is usually large, an AMC can have a meaningful market impact without becoming overburdened with a very large number of assets.

**It is not clear, however, that an AMC could be an effective means of resolving corporate loans, which in some countries represent the bulk of NPL stocks at present.** First, such loans will be very heterogeneous, even bespoke in nature, and are likely to be numerous. This may overburden an AMC or require one that is so large and well-resourced that economies of scale could not be achieved. Second, the extent to which value can be recovered from corporate (in particular small and medium-sized enterprise) exposures tends to be more doubtful, regardless of macro-financial outcomes. Some firms may be unviable and may require orderly liquidation. An AMC may not be an appropriate vehicle through which to achieve this. Third-party expertise is less readily available to an AMC in dealing with these types of assets, at least on a sufficient scale. Finally, an AMC working out such assets could be subject to greater political pressures, regardless of its governance structure.

**The "costs" of establishing an AMC may be sufficiently high to render them highly unattractive to national authorities and banks that may be expected to participate.** The funding of an AMC, often requiring state guarantees, may be costly

[138] Figure B.3 excludes a case in which unexpected losses derived from an adverse stress-test scenario exceed long-term economic value. Were such a case to arise, bail-in would be required to cover such losses, which could not be covered by precautionary recapitalisation.

and difficult to arrange for non-investment-grade sovereigns. For the state, liabilities (direct or contingent) may be large relative to fiscal headroom. The minimum requirements for private participation in the equity of the AMC may prevent the classification of the AMC's liabilities outside the public debt perimeter. Complications for national authorities and banks may arise in burden-sharing arrangements, particularly where households may be impacted. For banks, the stigma of state aid may be sufficiently strong for banks to be disinclined to participate.

**So, while AMCs certainly have a role to play, it may only be in cases where certain conditions are met.** The first of these conditions is that the costs of establishment can be recovered and/or are deemed warranted. Suitable pools of impaired assets which can be successfully worked out within an AMC should also be identified in the banking system.

**More generally, a comprehensive set of structural reforms will need to be deployed to tackle all aspects of the NPL problem.** These reforms have the potential to lift long-term economic values and to narrow bid-ask spreads, making it feasible for banks to sell or transfer assets. The same structural reforms that would be a precondition for the successful operation of an AMC would be indispensable for any other workout option. Of particular note in the context of this special feature is that the direct asset sale channel will be constricted by the impediments outlined previously. At the other end of the taxonomy spectrum presented in **Figure B.1**, bank internal workout will always be an important channel, for a number of reasons. Banks should have the internal ability to manage a certain stock of NPLs. Even if all other channels are available and active, they are unlikely to relieve a bank entirely. Even if they could, moral hazard arguments may suggest that banks should be expected to deal with at least part of the stock that they have built up.

## Concluding remarks

Deep and liquid markets for NPLs in the euro area are not currently in evidence. Facilitating their development has the potential to alleviate pressures on banks and mitigate the financial stability risks associated with large stocks of NPLs. Externalities deriving from informational asymmetries may be a key factor that explains relatively low prices and wide bid-ask spreads in euro area markets for NPLs. Structural inefficiencies make a substantial contribution to lowering net present values, while driving a further wedge between bid and ask prices. Reducing the cost and duration of debt recovery while addressing information asymmetries between banks and potential investors may cost relatively little, but it would create the potential to recover substantial value. Importantly, both supply and demand-side impediments should be tackled since addressing only the supply-side frictions would not alleviate the "market for lemons" problem, leaving the market in a suboptimal equilibrium. Moreover, policy responses should be considered as part of a comprehensive strategy to address the challenges related to large stocks of NPLs on euro area banks' balance sheets. Such responses may include asset management companies, which in some circumstances do not need to be related to the resolution of participating banks. The same structural reforms that would be a precondition for

the successful operation of an AMC would be indispensable for any other NPL resolution option. Regardless of the specific NPL resolution options, the comprehensive strategy should focus on addressing those impediments which would have the biggest positive impact on the market.