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ECONOMIC AND MONETARY AFFAIRS

STATE AID CRISIS RULES FOR THE FINANCIAL SECTOR AND THE REAL ECONOMY

STUDY

Abstract

The financial crisis has given rise to substantial government support in the form of State aid primarily to the financial sector. To facilitate that this support was given in accordance with EU State aid rules, the European Commission adopted a special framework for crisis State aid in the form of five communications forming its own basis for assessing Member State action.

In this context, the study addresses three basic questions:

- Has the temporary framework for State aid and the actual use of State aid during the crisis been effective in terms of providing stability to the economy?
- Has it been done in an efficient manner and with the least costs to the functioning of the internal market?
- Which lessons have been learnt that can help improve the design of EU's State aid rules?

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LIST OF ABBREVIATIONS

ACEA	European Automobile Manufacturers' Association
CDS	Credit Default Swap
CoCo	Contingent Convertible Bond
EBF	European Banking Federation
ECB	European Central Bank
ECOFIN	Economic and Financial Affairs (Council)
EONIA	Euro OverNight Index Average
EU	European Union
EUREPO	Euro Repurchase Agreement
EURIBOR	Euro Interbank Offered Rate
IMF	International Monetary Fund
LIBOR	London Interbank Offered Rate
OECD	Organisation for Economic Cooperation and Development
PSA	Peugeot Société Anonyme
R&D	Research and Development
RDI	Research, Development and Innovation
SIFI	Systemically Important Financial Institution
SONIA	Sterling OverNight Index Average
SME	Small and Medium-sized Enterprises

GLOSSARY

BASEL III The newest international regulatory framework for banks designed to strengthen the regulation, supervision and risk management of the bank sector. The reforms envisaged in the framework include improving the resilience of individual banking institutions and reduce system wide risks that can build up across the banking sector.

(Counter-cyclical) Capital buffers Capital buffers is essentially the amount of capital that banks keep as a buffer to meet sudden unexpected liquidity needs. Counter cyclical buffers occur when banks build up high capital buffers during periods of economic upturn in expectation of a future downturns and vice versa.

Credit default swap (CDS) A financial contract where one party sells protection to another party against the occurence of a defined "credit-event" – which may be a default. The buyer pays a premium to receive protection against default by the reference entity; the CDS seller receives the premium and in return guarantees the credit risk of the reference entity.[1]

CoCo Abbreviation for Contingent Convertible Bond which is a new instrument used by banks to raise capital. It is issued as debt but is automatically transformed into equity when the stock value of the bank falls below a pre-specified threshold.

Concentration Index An index that measures the dispersion of market shares in a market. A monopolist market will have the highest possible concentration as the monopolist serves the entire market whereas a market with many small firms will have a very low concentration. As a general rule, higher concentration is considered as an indication of less competition.

***De minimis* limit in State aid** A threshold for determining when State aid will be accepted by the Commission without scrutiny. This limit was, during the crisis, raised to EUR 500,000 but has now returned to EUR 200,000.

Effectiveness Effectiveness is basically a measure of the extent to which a policy reach its objective. A fuel blending requirement for biofuels may be highly effective in replacing fossil fuels with non-fossil fuels within a given timeline. However, this may not necessarily be the most efficient that is least costs approach to reduce greenhouse gases if that is the ultimate objective.

[1] Independent Commission on Banking (2011).

Efficiency Efficiency is basically a measure of how well a policy is constructed to address the underlying objective. A tax on financial derivatives may well lead to a substantial reduction in the trading, but may be poorly designed to address the market failures that motivated the tax in the first place such as insufficient regulation of financial sector institutions, lack of transparency in pricing etc.

Externality When the action of one agent has unintentional consequences for other agents which is not taken into account in the private economic decision. An example of a negative externality is exposing other for passive smoking, while a positive externality is derived from purchasing a phone since this will increase the value of others' owning a phone and deriving utility from calling.

Impaired assets Assets where the market value is lower than the value on the banks' balance sheets. This will (unless the market value increases) lead to write-downs of the value of the assets. The market value of impaired assets can be very difficult to assess, unless an actual transaction of assets takes place.

Interbank market The market where banks trade currency and make short-term loans to each other. The market is important for banks' abilities to deal with short-term fluctuations in their supply of or demand for liquidity.

Liquidity Availability of cash or the ability to obtain it over the short term. Assets that can easily be bought and sold are knowen as liquid assets. Liquidity in a market is characterised by a high level of trading activity.

Living will A plan for how a specific financial institutions can be orderly wound down in case of failure. This plan should be in place for all institutions including those who seemingly do not need to be wound down. Such a plan would greatly improve an orderly restructuring in case of failure of the institution.

Moral hazard The phenomenon when a person or a firm does not bear the full risks of his/its behaviour and therefore behaves differently compared to the situation with full exposure to the risk. It is a common problem for e.g. insurance firms as the insured does not carry the full risks of its behaviour and therefore may be less cautious.

Rescue Rescue aid is temporary and reversible assistance. It's primary objective is to make it possible to keep an ailing firm afloat for the time needed to work out a restructuring or liquidation plan. The aid must consist of reversible liquidity support in the form of loan guarantees or loans, with an interest rate at least comparable to those observed for loans to healthy firms and in particular the reference rates adopted by the European Commission.

Restructuring The process of rearranging a firm's assets or liabilities. It may include a consolidation of its debt, discontinuing some lines of its business, laying off workers etc. Most companies that restructure do so as part of a bankruptcy or to avoid a bankruptcy.

State aid Monetary assistance granted by a State to a firm that is considered in the public interest. Under 107(1) TFEU State aid is an intervention by the State that concerns an advantage to the recipient on a selective basis, has distorted or is likely to distort competition and is likely to affect trade between Member States.

Stress tests Model simulations run in order to test how banks' balance sheets will evolve in response to exogenous stress such as liquidity droughts, credit losses etc.

Recapitalisations Government capital injections. It involves a change in the companies' capital structure (debt to equity ratio) which differs between specific recapitalisations schemes.

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EXECUTIVE SUMMARY

Background

The economic and financial crisis that erupted in 2008 has led to substantial cutbacks in employment and production as well as severe financial problems for a number of firms, ultimately threatening bankruptcy. Both, the EU institutions and Member States, recognised early on that targeted and direct support to troubled firms beyond stimulus from macroeconomic policies was required. As a consequence and based on its strong legal position in the EU treaties, the European Commission in close co-operation with Member States adopted five underlying communication on State aid with a dual purpose:

1. Clarify and in some cases extend the Member States' right to support individual firms and industries in need of such support;
2. Ensure that such action should to the extent possible avoid distortions to the functioning of the internal market.

Aim

The aim of this study is to address three basic questions:

- Has the temporary framework for State aid and the actual use of State aid during the crisis been effective in terms of providing stability to the economy?
- Has it been done in an efficient manner and with the least possible costs to the functioning of the internal market?
- Which lessons have been learnt that can help improve the design of EU's State aid rules?

Key findings

In the light of the crisis, State aid has been increased massively reaching 3.5 % of EU GDP in 2009 against 0.5-1 % of GDP per year in the previous decade. The financial sector has received the vast majority of these funds (roughly 80 % in 2008 and 2009). Following Lehman Brothers' collapse in 2008 and with the realisation that banks in EU had severely overextended their balance sheets Member States, with the acceptance of the EU commission, engaged in a massive support action. They extended the coverage of deposit insurance schemes, provided guarantees to banks at beneficial rates and, more selectively, direct capital injections into banks leading, in some cases, to the State being the majority shareholder.

The substantial support to the financial sector, the banking system in particular, has been justified, by the important systemic function that the sector provides to the real economy - a service that the crisis seriously risked disrupting - and considering the network effects within the industry which necessitate interbank confidence. A modern economy cannot work without banks providing credit to trade and investments and this function requires in turn that depositors entrust their savings to the banks and that banks trust that loans to other banks will be repaid.

Nevertheless, the very substantial aid provided raises questions both about its effectiveness in delivering on objectives and its efficiency. Could goals have been reached at lower costs?

We find that action to stabilise the trust in and within the banking system has been to a large extent effective in stabilising the overall banking system, but at a considerable price.

While the final costs to tax payers of bailing out bank investors will only be known after some time, substantial costs have already materialised in some countries e.g. Ireland and Greece. Moreover, the substantial diversity in the structure and size of aid across countries, as well as different attitudes to forcing losses on private investors (shareholders, creditors), have led to distortions of competition. Such distortions manifest themselves inter alia in bank funding rates being artificially low for weak banks in countries with very high explicit or implicit expectations that investors will be bailed out in the end.

While the European Commission deserves credit for launching four Communications on banking rather swiftly after the recognition of the crisis, there is no doubt that the EU as a whole was badly prepared to deal with a major banking crisis.

First of all, the basic instrument to deal with all failing firms, the guidelines on "Rescue and restructuring"[2] was developed to deal with manufacturing firms not banks. This fact manifests itself in many ways. A very substantial part of a "normal rescue operation" in the context of standard state aid approach consists of liquidity provision over a limited time period until a restructuring can take place. However, for bank rescue operations such liquidity support in the EU is typically undertaken by central banks, not the least the ECB. Indeed, the ECB has provided massive amounts of liquidity with, in terms of effects, a *de facto* substantial State aid element by providing credit at beneficial rates to banks with weak balance sheets over a longer period than in a standard "rescue" operation and completely outside the State aid regime.

Second, the seriousness of the pre-crisis situation was recognised very late and there were limited established legal procedures in place to deal with failing banks in an orderly manner. Member States has therefore tended to jump directly and very quickly into the "restructuring" phase. This has left very little room to go through the healthy procedures of ensuring that existing shareholders bear losses, repairing balance sheets, injecting new shareholder capital or considering mergers thoroughly before injecting public capital.

Our main recommendations on State aid to the financial sector, the banking industry in particular, are two-fold. In the current regulatory overhaul of financial services, it is of paramount importance that the strengthened capital requirements in the context of Basel III are implemented rigorously at Member State level and followed up by stress tests on a regular basis that reveal potentially weak banks in due time before they fail. Early identification of banks with balance sheets problems is a precondition for an orderly State aid process which is the basis for the "rescue and restructuring" guidelines. In this context, we would stress that private investors, beyond narrowly defined smaller depositors, should accept very substantial losses as a pre-condition for any public injection of capital which is the last resort option after attempts to attract new private capital has failed.

For the rest of the economy (excluding the financial sector), we will stress that State aid has not increased over the crisis and that rather limited legislative changes to the rules were introduced. Essentially, changes mainly implied that aid review procedures were speeded up while Member States have been allowed somewhat higher so-called *de minimis* ceilings (for amounts lower than the ceiling, the European Commission will approve them automatically).

By and large, we find the direction of the State aid to the real economy during the crisis as being relatively well targeted (also with respect to its limited extent). The temporary framework in particular allowed subsidised credit provision to smaller and medium sized firms, which was taken up by several Member States. This focus seems justified in view of the banking sector being the main external source of finance for SMEs and that credit flows from banks were constrained by weak balance sheets.

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[2] European Commission (2004).

The automobile industry was a large recipient of aid during the crisis. This should be seen in light of the fact that it is one of the industries with the largest fall in production. The European Commission appears though, on the whole, to have ensured that the support to the sector had a high degree of compatibility with the internal market under difficult political and economic circumstances. However, given the structural overcapacity in the sector, there is a risk that the aid provided may delay the necessary consolidation within the industry.

There has been a discussion on whether the crisis should have been used as an occasion to spearhead EU's ambitions to "green" the economy and boost investments in research and development. Bearing in mind that planning productive investments for long term goals takes time, more focus on such objectives would undoubtedly have been at the costs of either reduced efficiency of resource use or less stabilisation of the real economy. However, in conjunction with already rather favourable EU State aid guidelines for funding of research, development and (green) innovation, we find that the focus on easing credit provisions through soft loans to private firms may have had the positive effect of allowing such firms to maintain innovation spending during the crisis.

As a whole we find little evidence that the temporary framework for State aid to the non-financial sector did not function properly. We also take note that most of the temporary rules have been prolonged until the end of 2011, which we find justified.

However, State aid rules serve a valuable purpose. In due time, when the extraordinary circumstances of the crisis cease sufficiently, the provision of State aid should return to the objective of less and better targeted aid. This is important to avoid distortions of competition across Member States and protect the functioning of the internal market.

1. BASIS FOR ASSESSMENT OF STATE AID DURING THE CRISIS

This chapter provides a summary of recent State aid in the light of the economic crisis. Section 1.1 describes the temporary State aid rules adopted as a response to the crisis. Section 1.2 describes the distribution of aid on sectors and horizontal objectives respectively and discusses the impact of crisis measures on public finances. Section 1.3 discusses the stated objectives and potential adverse effects of EU State aid legislation. Finally section 1.4 presents the central questions to be addressed in the course of the report.

1.1. EU temporary State aid regime

As a response to the economic crisis, the European Commission adopted a temporary framework for State aid measures in EU Member States, cf. Table 1. By applying article 107.3(b) of the Treaty as the legal basis for State aid due to the "serious disturbance" caused by the crisis, the European Commission issued five communications that make up the temporary framework. Four of the communications were targeted at the financial sector while one communication was targeted at the real economy (securing access to finance). The framework introduced a more lenient interpretation with respect to the compatibility of national aid measures with EU State aid legislation. The communications also issued guidelines to address the Member States' massive support programmes targeted at the financial sector. The five communications and their two prolongations, issued in 2010 and 2011 respectively, are summarised in Table 1.

Table 1: Overview of temporary State aid communications in response to crisis

Date published in EU Official Journal	Title	Expiry date
25 October 2008	Application of State aid rules to measures taken in relation to financial institutions in the context of the current global financial crisis (banking communication)	No specific expiry
15 January 2009	Recapitalisation of financial institutions in the current financial crisis (recapitalisation communication)	No specific expiry
22 January 2009 (consolidated April 2009, amended October and December 2009)	Temporary Community framework for State aid measures to support access to finance in the current financial and economic crisis (general sector support)	31 December 2010
26 March 2009	Treatment of impaired assets in the Community banking sector (impaired assets communication)	No specific expiry
19 August 2009	Return to viability and the assessment of restructuring measures in the financial sector in the current crisis under the State aid rules (restructuring communication)	31 December 2010
7 December 2010	On the application, from 1 January 2011, of the State aid rules to support measures in favour of banks in the context of the financial crisis	31 December 2011
11 January 2011	Temporary Union Framework for State aid measures to support access to finance in the current financial and economic crisis	31 December 2011

Source: European Commission (2008), (2009a), (2009b), (2009c), (2009d), (2010b) and (2011).

The framework designed for the real economy (general sector support) allowed a higher ceiling for direct support to ailing firms, lower interest rates on loans, and more effective procedures for granting support to individual firms, cf. Table 2.

Table 2: Temporary rules to support access to finance for the real economy

Provision	Existing rules	Rules in temporary framework
Compatible limited amount of aid	Allows support of EUR 200,000 pr. company over a three year period	Increases the amount to EUR 500,000 until ultimo 2010
Aid in the form of guarantees	Specifies minimum premiums associated with providing loan guarantees	Guarantee premiums may be reduced
Aid in the form of subsidised interest rate	Governments may grant subsidised interest rates on loans according to the European Commission's reference rate	A new and reduced reference rate is calculated by the European Commission
Aid for the production of green products	Same as above	Further interest rate reductions in support of "environmentally friendly products"
Risk capital measures	Allows risk capital investments to SME's of up to EUR 1.5 million	Increases threshold to EUR 2.5 million
Short-term export credit insurance	Allows public export credit insurance in exceptional circumstances	Simplified measures to allow export credit insurance
Simplification of procedures	No specific rules	Quicker and more effective procedures in State aid decisions

Source: European Commission (2009b).

The framework for the real economy was to expire at the end of 2010 but has been prolonged until the end of 2011 with some adjustments. One of the important adjustments was to discontinue the increased ceiling of EUR 500,000 on direct support to firms which is now restored to the original *de minimis* limit of EUR 200,000 cf. Table 3.

Table 3: Revisions of the temporary rules to support to the real economy

Provision	Rules in temporary framework (ended 31 December 2010)	New temporary framework for 2011
Compatible limited amount of aid	Allows support of EUR 500,000 pr. company (with notification)	Return to EUR 200,000 *de minimis* limit (without notification)
Aid in the form of guarantees	Allows increased subsidies on bank guarantee premiums	Reduction in coverage and allowable amount of subsidy. No aid to firms in difficulty
Aid in the form of subsidised interest rate	Subsidised interest rate on bank loans	Reduced coverage to large firms and no aid to firms in difficulty
Aid for the production of green products	Increased subsidies on interest rate on bank loans in support of "environmentally friendly products"	Reduction in allowable size of subsidy
Risk capital measures	Increases threshold of risk capital investments to EUR 2.5 million	The increased threshold has been permanently established
Short-term export credit insurance	Simplified measures to allow export credit insurance	No changes
Simplification of procedures	Quicker and more effective procedures in State aid decisions	No changes

Source: European Commission (2009b) and (2011).

Prior to the economic crisis, no specific rules were applicable to the financial sector (except for a footnote in the rescue and restructuring guidelines). However, during the crisis the financial sector's unique role as a vital intermediary in the real economy was formalised, and the European Commission adopted specific rules for this sector in a series of communications from October 2008. The communications should be seen in light of a rising demand from Member States to address their ailing financial sectors. The communications established guidelines on how Member States, acting in accordance with EU State aid rules, should address several issues with respect to financial sector support, including guarantees for bank liabilities, bank recapitalisations, impaired asset relief and restructuring of aided institutions, cf. Table 4. The implications of the communications will be dealt with in Chapter 2.

Table 4: Communications regarding the financial sector

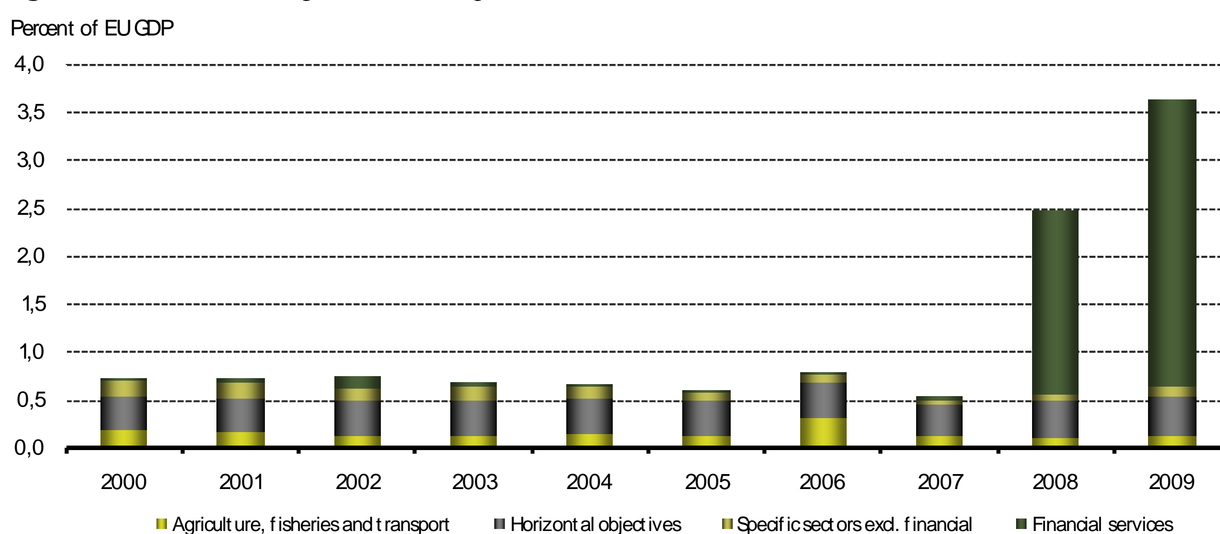
Communication	Provisions
Banking communication	Range of conditions for national support schemes such as non-discriminatory access to schemes, private sector contribution, behavioural rules for recipients and winding-up procedures on market terms
Recapitalisation communication	Capital injections must be remunerated close to market conditions. Pricing mechanisms and pricing interval for the required return on debt were proposed
Impaired Assets communication	Guidelines to a coordinated approach to e.g. valuation of assets eligible for relief
Restructuring communication	Guidelines for restructuring plans for firms in difficulties including e.g. a new limit on the duration of the restructuring plans

Source: European Commission (2008), (2009a), (2009c) and (2009d).

1.2. Distribution of aid on sectors and its impact on public debt

Since the start of the crisis in the real economy from approximately 2008,[3] the amount of national State aid measures has increased dramatically, cf. Figure 1. The majority of this aid has been given to the financial sector (77 and 82 % of the total aid in 2008 and 2009 respectively) amounting to 1.9 and 3.0 % of EU GDP in 2008 and 2009 respectively. For comparison, horizontal objective measures amounted to 0.4 % of EU GDP, and total specific sector support (excluding the financial sector) as well as aid to agriculture, fisheries and transport amounted to 0.13 % of EU GDP respectively in 2009, cf. Figure 1.

Figure 1: State aid by sector/objective, 2000-09



Source: DG COMP A.

The aid granted to the financial sector can be classified in the form of four types: guarantees, recapitalisations, asset relief and other liquidity measures, cf. Table 5. The largest amount of approved aid was given through guarantees on bank liabilities for EUR 3,485 billion. Direct capital injections including both recapitalisations and asset relief interventions amounted to EUR 948 billion in total while other liquidity measures amounted to EUR 156 billion.

Table 5: State aid granted to the financial sector 2008-10

Billion EUR	Approved volume 2008-2010	Actual use i.e. nominal amount 2009	Aid element 2009	Total crisis aid granted in 2009 as a % of EU GDP
Guarantees	3,485	827	128	1.00 %
Recapitalisation measures	546	142	140	1.10 %
Asset relief interventions	402	110	75	0.61 %
Liquidity measures other than guarantee schemes	156	29	10	0.06 %
Total	**4,589**	**1,107**	**352**	2.98 %*

Note: Figures include both schemes and ad hoc measures.

*There is a discrepancy in total crisis aid granted in 2009 as a percentage of EU GDP. The numbers do not add up to 2.98 % but the European Commission has confirmed that this is indeed the correct total number.
Source: DG COMP B.

[3] For a definition of the crisis period see Copenhagen Economics (2010).

To be able to compare the actual aid level of the different measures, the European Commission calculates a number approximating the actual "aid element". It can e.g. be seen from Table 5 that even though the approved amount of guarantees was substantially higher than total recapitalisations, the actual aid element in 2009 from recapitalisations outweighs that of guarantees.

The "aid element" is estimated in a mechanic way, cf. Box 1. This approach offers a simple calculation making the different support schemes comparable. Comparing such schemes is relevant when measuring both total aid to the sector and the effect on public finances of such schemes. In reality however, the actual element of aid to specific firms is much more complicated and will to a large degree depend on subjective factors. The effect of guarantees to a bank facing serious difficulties may be a question of keeping the bank in business or not and may therefore constitute significantly more than 10 % or 20 % used in the calculation, cf. Box 1. Without a specific evaluation of local characteristics regarding e.g. viability and risks in a given sector, the aid element methodology may be of limited use. Moreover the calculation does not make specific evaluations about future losses for governments of providing guarantees. A guarantee to a well-capitalised bank sector will most likely turn out to be a less costly support measure than the same guarantee to a low-capitalised bank sector. In measuring the effect of various aid instruments on public finances the methodology should therefore also be interpreted with care.

Box 1: Calculation of aid element in financial rescue measures

The European Commission's standard method to calculate the aid element of the crisis measures to the financial sector has been applied as follows:

For guarantee schemes and ad hoc measures to sound banks the aid element is estimated at 10 % of the guaranteed amount.

For guarantees to banks in difficulty the aid element is estimated at 20 % of the guaranteed amount.

For recapitalisation measures the aid element is estimated at the full recapitalisation amount.

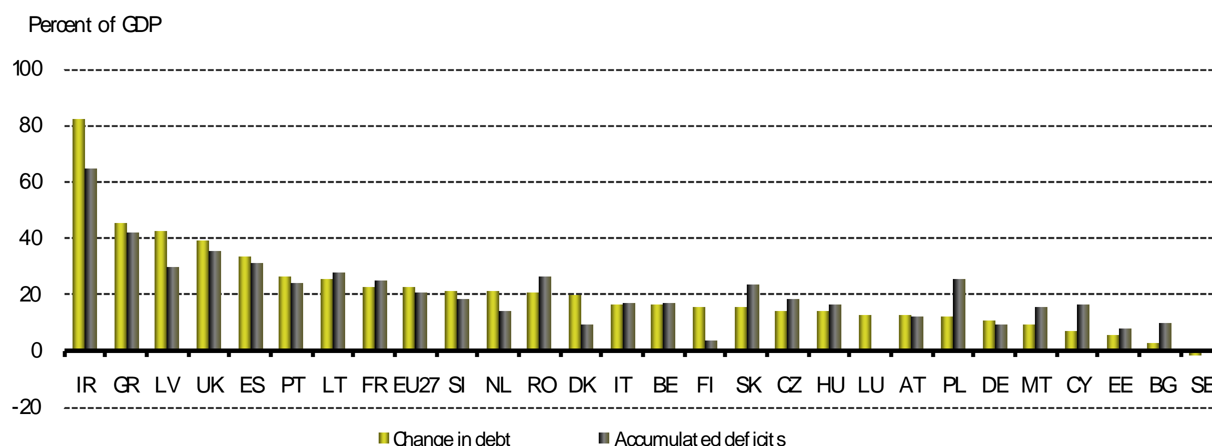
For impaired assets measures the aid element is estimated to the amount, which has been established in the decision.

Note: See the glossary for definitions of the various measures.

Source: DG COMP C.

The crisis has had a significant impact on gross public debt across all EU Member States, cf. Figure 2. The average increase in gross debt for EU27 is 23 % of GDP in the period 2008-2010. There is however a large difference across Member States. Ireland has e.g. experienced an increase in debt of 82 % of GDP while Sweden has actually decreased its debt in the same period.

Figure 2: Change in gross public debt and accumulated deficits, 2008-11



Source: AMECO.

A large part of the support to the financial sector during the crisis is likely to have only a limited immediate direct impact on public finances. Capital injections will increase countries' gross debt but neither net debt nor public deficits are affected until losses materialize on the acquired assets, cf. Table 6. Moreover, guarantees on bank liabilities serve as a contingent public liability and are captured neither in gross/net debts nor in public deficits.

Table 6: Factors affecting public deficits and net and gross debt

Measure	Impact on public spending/deficit	Impact on net debt	Impact on gross debt
Guarantees	Only when guarantee is called upon	Only when guarantee is called upon	Only when guarantee is called upon
Capital injections (recapitalisations and impaired asset relief)	Only when acquired assets are written down or the purchase price indisputably exceeds the market price	Only when acquired assets are written down	Immediate increase
Other liquidity support	Depends on structure of liquidity support	Depends on structure of liquidity support	Depends on structure of liquidity support

Source: Copenhagen Economics, based on European Commission (2009e), ECB (2009d) and IMF (2009).

Hence, the real impact on public finances will only appear over time as the quality of the interventions is revealed. If guarantees are called upon, expenditure and deficits will increase. If capital injections are lost because banks face future losses, eating into the capital base, then governments will receive fewer dividends and lower revenues from a subsequent sale of its shares, and hence also add to deficits.

This risk of increased expenditure and lack of revenues from bank investments should be set against the borrowing costs and requirements of governments to finance the interventions. In the period 2008-2009 government interventions excluding guarantees in the euro area have been estimated to result in an increase in public debt of about 3.3 % of GDP.[4] The implicit liabilities generated by government guarantees in the euro area are on average about 7.5 % of GDP with a ceiling of 19.9 % of GDP. The impact on public debt and the size of the contingent liabilities vary across euro area members. In the euro area, Ireland is the only country that has provided a guarantee for the entire bank sector thus bringing its contingent liability up to about 215 % of GDP.[5]

[4] ECB (2009d).
[5] Considering countries outside the euro area, Denmark also guaranteed the entire bank sector.

1.3. Objectives and adverse effects of State aid

Fundamentally, State aid should be granted as a public response to alleviate market failures.[6] Examples of correcting such market failures could be in relation to "public goods" (providing street lighting, police), "externalities" (pollution, R&D), imperfect factor mobility (asymmetric information in capital markets, restrictions on labour mobility), increasing returns to scale (leading to natural monopolies) or network effects (the proper functioning of industries or firms have positive externalities on other industries).

In relation to financial sector, its' systemic features have clear elements of network externalities. Through the sheer size of some financial firms or the interconnectedness of other financial firms, such firms have the potential to cause massive damage to the rest of the financial sector. These systemic institutions impose an externality on the entire financial system. By granting aid to the financial sector, general confidence in the entire system, including the systemic firms, is improved. Aid to the financial sector should seek to alleviate the risks associated with banks' assets, improving banks' solvency, enhancing confidence in the market, and ensuring the flow of finance to the real economy. In the temporary State aid framework, the European Commission has stated the specific objectives to be achieved by these rules. The objectives are listed in Table 7.

Table 7: Stated objectives to be achieved from temporary State aid measures

Sector	Instrument	European Commission's stated objective
Real economy	Coordinated temporary Union framework to support the real economy	• Preventing a subsidy race to national companies, which could seriously damage the internal market • Access to finance is a precondition for investment, growth and job creation • Encourage companies to continue investing in a sustainable growth economy (green products)
Financial sector	Coordinated framework to support the financial sector	• Level playing field between banks in different Member States • Level playing field between banks which receive public support and those that do not • Reducing moral hazard and ensuring the competitiveness and efficiency of European banks
Financial sector	Allowing national measures supporting the financial sector, including guarantees and recapitalisations	• Enhance soundness and stability of the banking system • Restore confidence and the proper functioning of the financial sector
Financial sector	Allowing government relief of impaired assets	• Prevent uncertainty about the valuation and location of impaired assets and thus the quality of bank balance sheets • Revive confidence in the financial sector and increase flow of credit to real economy
Financial sector	New guidelines on European Commission's interpretation of rescue vs. restructuring	• Enhance predictability and ensure a coherent approach to rescue and restructuring plans

Sources: European Commission (2008), (2009a), (2009b), (2009c) and (2009d).

It is well known that State aid measures can have adverse effects. The economic literature typically focuses on moral hazard and distortions to competition. Moral hazard can arise when the existence or (implicit) promise of State aid to an institution or sector alters the behaviour and strategy in favour of taking more risks, e.g. a riskier behaviour in expectation of government "bail-out" if the troubled institution goes bankrupt.

[6] E.g. Friederiszick et al. (2006) or European Commission (1999), chapter 1, p. 25 (R. Meiklejohn).

Distortions to competition arise when firms are harmed in competition with aided firms. In the temporary State aid framework, the European Commission has stated the specific adverse effects to be avoided and the safeguards envisaged to prevent these. The effects and safeguards are listed in Table 8.

Table 8: Stated adverse effects to be avoided from temporary State aid measures

Measure	Potential adverse effects	European Commission's stated safeguard
General economy	• Distortions to competition	• Limited and targeted use of subsidised loans
Recapitalisations	• Crowd out market based financing • Distortions of competition between sound and unsound banks • Distortions of competition between Member States	• Temporary duration of measures • Enhanced minimum solvency requirements • Limiting size of banks' balance sheets • Pricing capital at market value (risk weighed) • Coordinated framework among Member States
Guarantees of liabilities	• Moral hazard • Distortions of competition between sound and unsound banks • Distortions of competition between Member States	• Ensure burden sharing with shareholders and risk capital investors • Behavioural constraints such as market share ceilings, limiting balance sheets or prohibiting share repurchases or issuance of new stock options for management • Coordinated framework among Member States
Impaired asset relief	• Moral hazard • Distortions of competition between sound and unsound banks • Distortions of competition between Member States	• Ensure burden sharing with shareholders and creditors • Valuation of assets according to general coordinated methodology • Coordinated framework among Member States
Restructuring	• Distortions of competition between sound and unsound ailing banks	• Detailed rescue or restructuring plans required from the Member States

Sources: European Commission (2008), (2009a), (2009b), (2009c) and (2009d).

1.4. The central questions to be posed

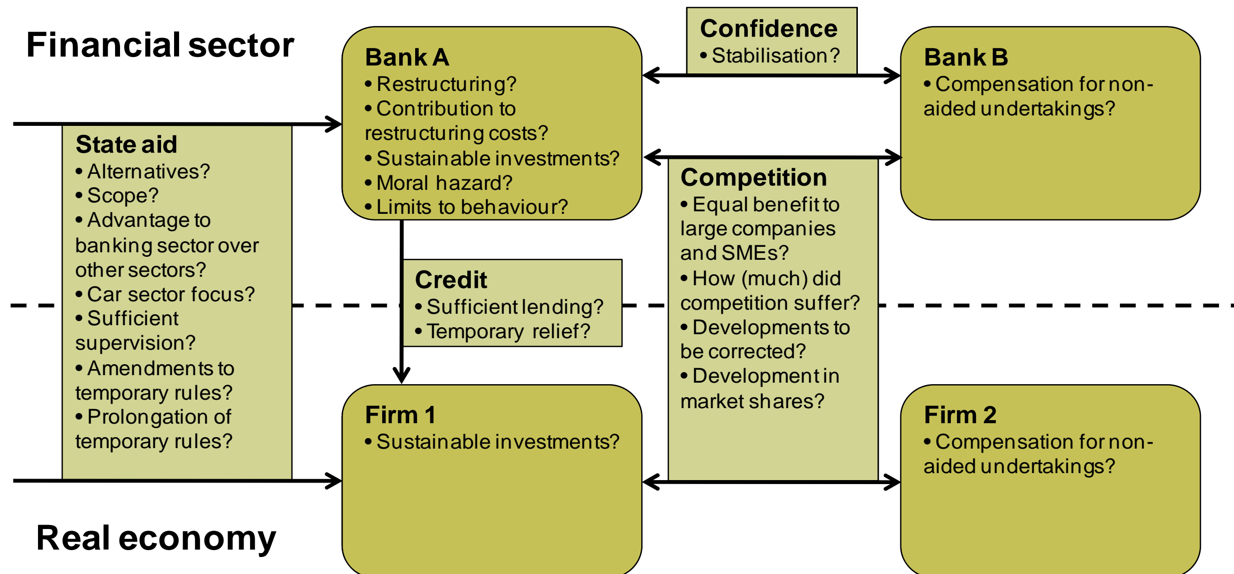
Due to the complexity and potential pitfalls in State aid legislation, several questions should be addressed regarding the temporary framework adopted in response to the financial crisis. In the course of this report, we will address the following questions:

- Why did the guidelines have a specific focus on the financial sector and was it justified?
- Are there other effects (adverse or otherwise) of the measures taken which are not captured by the above tables?
- Were the guidelines sufficiently effective or should they have been more specifically designed towards the objectives pursued?
- Is there a justified argument for using State aid to boost the real economy as a substitute or complement to fiscal stimulus?
- Were the objectives envisaged with the temporary framework effectively achieved?
- Were the potential adverse effects envisaged avoided through effective monitoring and corrective action?
- How did consumers benefit from the aid to the financial sector and the real economy respectively?

- What might have happened if the European Commission had not implemented the temporary framework for aid to the financial sector and the real economy ("counterfactuals")?
- What lessons for the future can be drawn about State aid to the financial sector including measures limiting drawing on explicit and implicit public funding?

The questions can be summed up in the following diagram depicting the relationship between different actors in the economy and how the issues of interest affect the different actors.

Figure 3: Questions to be addressed



Source: Copenhagen Economics.

2. STATE AID TO THE FINANCIAL SECTOR

State aid to the financial sector has accounted for the bulk of overall State aid during the crisis as already documented, raising substantial questions about both the performance of the policy interventions as well as the most appropriate regime for future regulation. To address these questions, we first in Section 2.1 address whether there are broader systemic reasons to support in particular the banking sector during a crisis, e.g. to underpin the recovery of the overall economy. Section 2.2 outlines some criteria for evaluation of support to the sector given its special features, and the following section 2.3, applies the evaluation criteria to assess the State aid given to the financial sector. The evaluation will distinguish between two issues:

- **Effectiveness:** Did it work in practice?
- **Efficiency:** Was it designed to achieve its aims while avoiding adverse effects to as large an extent as possible?

Section 2.4 evaluates two more general policy issues, namely the application of the rescue and restructuring rules and the consistency across countries and firms during the crisis. Finally, section 2.5 summarises the findings.

2.1. Specific reasons to support the financial sector

There are two main arguments for providing specific support to the financial sector: Network effects within the industry and credit and liquidity provision to the general economy.

2.1.1. Network effects within the industry necessitates interbank confidence

The financial sector is characterised by very strong inter-institutional trading, integrated payment systems and other links and interactions between the actors in the industry. Banks transfer large amounts of liquidity between them in interbank markets on an everyday basis. Especially in the short-term banks depend heavily on the ability to lend and borrow money from each other to smooth out liquidity shortages or surpluses arising from banks' other activities. Banks also share electronic payment systems, including ATMs and credit cards, and also in this case the functioning of the system presumes well functioning links between the actors.

The systemic nature of the financial sector can be evidenced by the phenomenon of systemically important financial institutions (the so-called SIFIs).[7] Such institutions are individually deemed as crucial for the functioning of financial markets through their size and the functions they perform for the rest of the industry and the rest of the economy.[8]

SIFIs have such a large weight in the international (and national) economy that their failure would risk a major disruption to the financial systems. It may therefore be justified to save some institutions to the extent that their failure might risk starting a banking crisis, i.e. that their failure is being perceived by market participants (depositors, counterpart banks etc.) as being a symptom of more widespread problem across the sector. Arguably that is the best argument for the very extensive and general support mechanisms that has been extended to nearly all banks during the crisis, small or big, failing or non-failing.

[7] See e.g. EBF (2010).

[8] During the current crisis, such institutions have spurred the "too large to fail"-debate concerning the handling of banks that given their size will jeopardise the entire system if allowed to fail.

The widespread interaction between the actors exposes the sector to crises and contagion of the industry. First and foremost, the sector's functioning rests on confidence and any damage to this confidence will shortly transfer to the balance sheets of the actors in the sector. Moreover, the network features can distort incentives to make the sector even more vulnerable to crises. Since the sector relies strongly on credit risk transfer mechanisms the incentives of financial institutions to monitor its clients are weakened.[9]

A consequence of the network effects in the financial sector, in contrast to e.g. the automobile sector, is that one firm's failure may not benefit its competitors. In any conventional model of competition, one firm's collapse represents a benefit for its competitors as the competitive pressure is lessened. In the financial sector, the increase in industry concentration that is beneficial to remaining firms has to be weighed off against the adverse network effects from the failure, at least in a short-term perspective. The collapse of Lehman Brothers in September 2008 highlighted this phenomenon – following the bankruptcy risk premia surged and interbank markets froze overnight to the detriment of financial institutions across most of the world.

Even a financial institution with no direct link to a failing institution may suffer if a (risk of) default triggers higher general counterparty risk premia and drying up of interbank financing. A competitor's collapse deteriorates the possibilities or the terms of lending and borrowing money in the interbank market. Moreover, investor or depositor reactions can worsen the initial hit: Investors and depositors react on imperfect information about the soundness of financial institutions and one bank's collapse is a signal of the soundness of other banks. This may in turn lead to adverse investor reactions (e.g. unwinding of trades, "flight to quality" etc.)[10] or depositor reactions (e.g. bank runs). Notably, a failure can lead to industry contagion, as the industry distress is self-enforcing: one collapse worsens the situation for other distressed banks. Empirically, the effect of the significant network effects has e.g. been documented through the fact that negative earnings surprises from competitors affect competitors negatively in the financial sector but positively in other sectors.[11]

2.1.2. Credit and liquidity provision to the real economy

The output of the financial sector represents an important input to the rest of the economy. Firms and consumers depend on the financial system when they take on loans, deposit savings or carry out other financial transactions. In Europe, banking loans have accounted for approximately 85 % of total external financing to the private sector in recent years.[12] This liquidity provision is crucial for entrepreneurial activity and stimulates growth. Empirical European evidence documents that loan growth has positive and statistically significant effect on GDP and that changes in supply of credit (both volume and terms) to firms have significant effects on real economic activity.[13]

From a more abstract perspective, the financial sector serves the role to reallocate capital between firms and consumers. Banks are intermediaries between lenders and borrowers and decrease agency costs for both sides through a number of functions. Specifically, banks perform the following important functions:[14]

[9] ECB (2010e).
[10] E.g. Longstaff (2010).
[11] Prokopczuk (2010).
[12] EBF (2010). There may however be cross-country variations due to different equity finance structures e.g. driven by differences in pension schemes etc. In most countries however working capital will predominantly be financed by the banking sector.
[13] ECB (2010a).
[14] OECD (2009), p. 3.

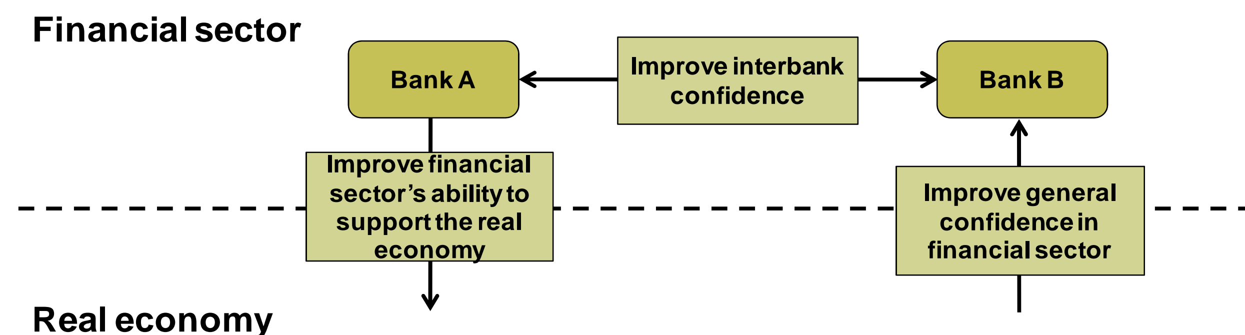
- They improve the problem of asymmetric information between investors and borrowers thus channelling savings into investments
- They provide risk sharing by inter-temporal smoothing of risk
- They provide insurance to depositors against unexpected consumption shocks
- They perform an important role in corporate governance

2.2. Evaluation criteria

Support for the financial industry cannot be assessed by a standard metric of factors. Strong network effects and the fact that the industry performs functions that are essential for the rest of economy necessitate a different evaluation framework for the financial sector.

We propose an overall division of evaluation criteria for effectiveness into three categories, cf. Figure 4.

Figure 4: Three evaluation criteria for effectiveness of aid to the financial sector



Source: Copenhagen Economics.

First, State aid should improve the general confidence in banking sector so that customers will safely interact with financial institutions. *Second*, State aid should improve interbank confidence so that banks efficiently interact with each other. *Third*, State aid should improve the financial sector's (ability to) support the real economy.

It should be emphasised that all other legitimately stated aims of State aid should in principle fall under one of these three aims. For example, when an individual bank is rescued it should ultimately be as an initiative to protect depositors (aim 1), to stabilise the financial markets (aim 2) or to uphold lending to the firms and consumers (aim 3). Saving an individual bank should not be an aim in itself; rather, protecting the network and the functions it performs should be the aim.

In our evaluation we will distinguish between the *effectiveness* and the *efficiency* of the State aid. Effectiveness concerns to what extent the aims were obtained and it will be evaluated according to the three aims outlined above. Efficiency concerns whether the aid could have met the same aims with less distortions. In our discussion of efficiency it will be evaluated according to two factors: 1) competition and 2) moral hazard.

2.3. Effectiveness and efficiency of State aid to the financial sector

2.3.1. Classification of State aid measure to the financial sector

State aid measures to the financial sector can be classified in three categories:

- **Scope:** ad hoc measures (individual institutions) or general schemes (entire sector)
- **Type of measure:** guarantees, recapitalisations, impaired asset relief etc.
- **Recipient firm status:** support to viable firms (restructuring) or non-viable firms (rescue)

The categories are related but can be combined in numerous ways. For example, ad hoc measures are usually targeted at non-viable firms, but can be targeted at viable firms that face distress due to exogenous factors. Likewise, some measures – e.g. guarantees and impaired asset relief schemes – are typically part of general schemes targeted at the entire sector, but may also be used to aid individual institutions.

There are specific concerns linked to each of the three categories. General schemes are less distortive on a national market than ad hoc measures but potentially more distortive in relation to international markets since an entire national sector can benefit from the scheme.[15] Aid for the rescue and/or restructuring of individual firms is one of the most distortive types of State aid as the exit of inefficient firms is a common phenomenon in well-functioning markets.[16]

The premium of receiving government support should optimally be determined by the risk of the specific firm receiving support. However, it is difficult to assess this firm specific risk implying that aid to non-viable firms is often treated in the same way as the aid to viable firms, which is an obvious distortion from State aid.

2.3.2. Effectiveness criterion 1: Improve general confidence in banking sector

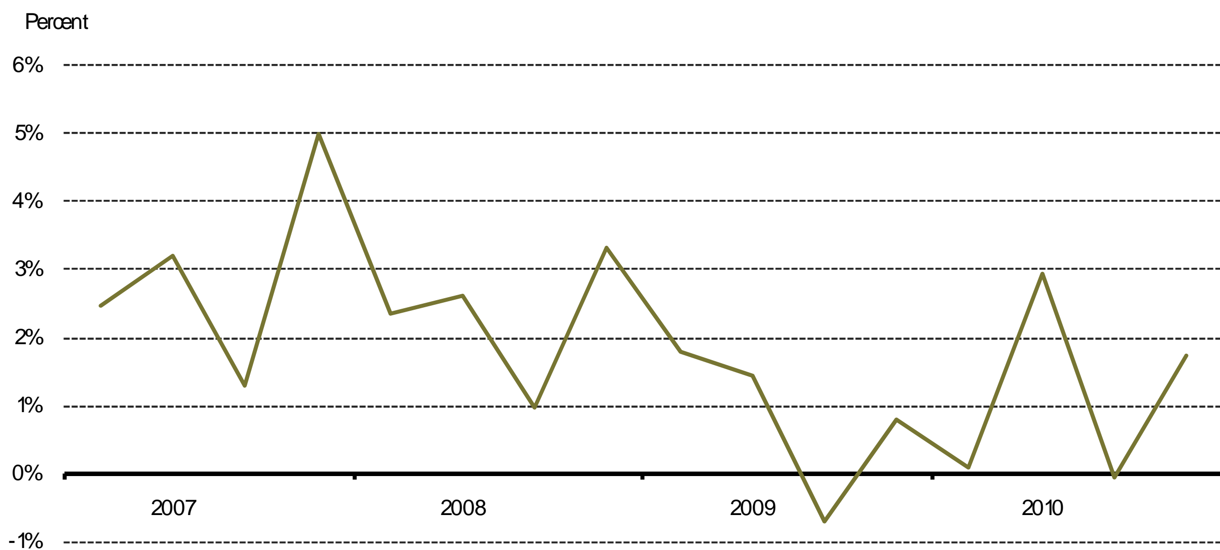
General confidence in the banking sector is inter alia determined by whether the depositors trust their savings in their banks. If there becomes sufficient doubt over the sector's viability, depositors will want to move their deposits elsewhere. If the drop in confidence is large enough this may cause a bank run. One can distinguish between two types of runs where depositors withdraw funds due to lack of confidence in the banking sector: panic runs and fundamental runs.[17] Panic runs are bank runs where customers try to withdraw their deposits before the bank runs out of liquidity. These runs are often made by all types of depositors over very short periods of time. Fundamental runs are withdrawals in anticipation of potential difficulties linked to poor bank performance. Larger, more informed depositors that monitor the bank's performance over a longer period of time typically make these runs.

During the crisis a limited number of bank runs have occurred. The most notable panic run was that of the British bank Northern Rock in 2007, which was one of the initial milestones of the crisis. Another panic run occurred in 2009 when the Dutch DSB Bank failed following depositors' withdrawal of EUR 600 million in 12 days. A fundamental run was experienced shortly before the Belgian bank Fortis was partially taken over by the Belgian, Dutch and Luxembourgish governments in September 2008.

[15] This remark is developed further in section 2.3.5 below.
[16] European Commission (2004), paragraph 4.
[17] OECD (2009).

The general development of deposits during the crisis also looks fairly positive. Only in two quarters during the crisis was there a negative growth in deposits in the euro area, namely in the third quarter of 2009 and in the third quarter of 2010, and in both cases the preceding and subsequent quarters had (numerically) larger positive growth rates. Overall, the trend in the growth of deposits has decreased slightly from the third quarter of 2009 and onwards but the decrease is not drastic and growth is not negative over subsequent quarters, cf. Figure 5.

Figure 5: Growth in total deposits of residents at financial institutions, euro area



Source: Eurostat.

Notable exceptions from this euro area average are Luxembourg, Greece, Ireland and the Netherlands. Greece, Ireland and the Netherlands experienced a decline in the first half of 2010 of approximately 4 %, while Luxembourg experienced a massive decline of 13 % in the end of 2008.

In view of the size of the crisis the efforts to contain bank runs and retain depositor confidence must however be seen as successful.

2.3.3. Effectiveness criterion 2: Improve interbank confidence

Two main features have indicated confidence problems in European interbank markets.

First, there has been a dramatic increase in the risk premia in the unsecured interbank market. In the unsecured interbank market in the euro area the increase in risk premia can be evidenced through the difference between the 3-month Euribor and the 3-month Eonia, which is a commonly applied measure of distress in interbank markets, cf. Box 2. The picture is the same in other European interbank markets.[18] The larger risk premia can also be seen through the decoupling of interest rates in the unsecured market and the market secured by government securities that is closely related to the spread between the 3-month Euribor and the 3-month Eonia.[19]

[18] Danmarks Nationalbank (2010), Figure 7, p. 125.
[19] ECB (2009a).

Box 2: Measuring financial market distress

The difference between the 3-month Euribor rate and the 3-month Eonia rate is a commonly used indicator of financial distress in the Euro area.

The *Euribor* (Euro Interbank Offered Rate) is the reference rate set in the euro area interbank market that banks use to lend unsecured funds to each other.

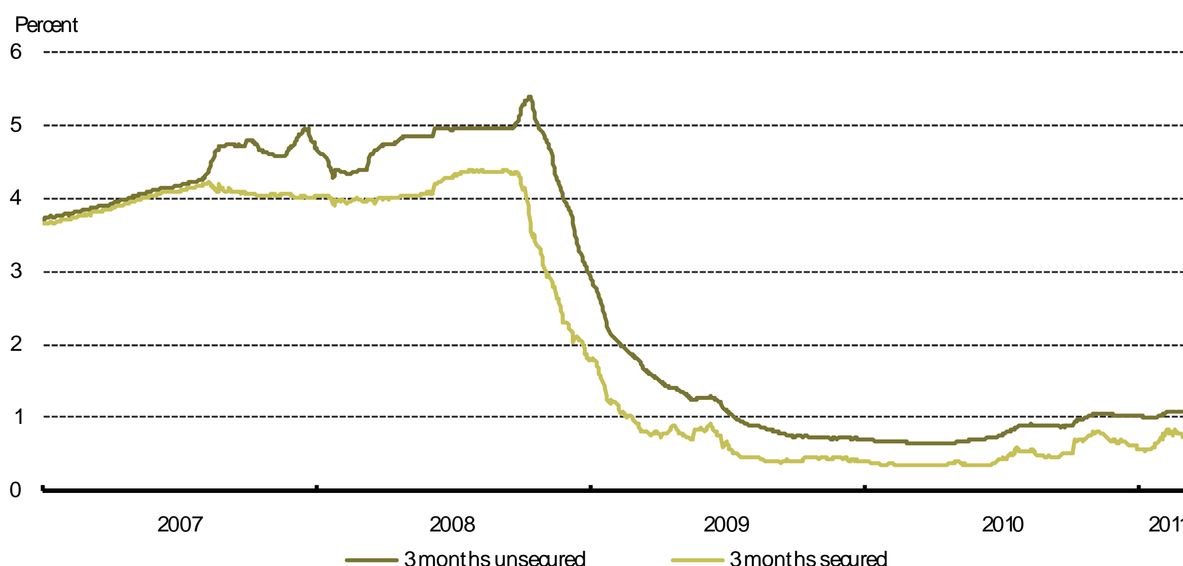
The *Eonia* (Euro Overnight Index Average) is an effective overnight interest rate. It is obtained from short-term interest rate swap agreements in which a fixed interest rate is swapped for on the average day-to-day interest rate of all unsecured lending in the interbank market over a certain period. Since it is based on the average interest rate over a period of time it is a measure of market expectations of the unsecured rate over the given period and thus controls for interest rate expectations.

The Euribor and the Eonia are calculated by Euribor-EBF on a daily basis from rates submitted by a panel of banks. Equivalent measures exist for other currencies, e.g. Libor (London Interbank Offered Rate) and Sonia (Sterling Overnight Index Average) in the UK.

Source*:* Copenhagen Economics based on ECB (2009b) and www.euribor.org.

The increased difference between 3-month Euribor and 3-month Eonia and the spread between unsecured and secured rates indicates that investors require a larger premium to lend unsecured due to larger counterparty risk. The spread widened considerably on two occasions during the crisis: in August 2007 when BNP Paribas announced the suspension of redemption of three funds due to lack of market liquidity and in September 2008 when Lehman Brothers collapsed, cf. Figure 6.

Figure 6: Decoupling of interbank rates in the euro area, 2007-11



Note: The unsecured rate is the Euribor rate and secured rate is the Eurepo rate.

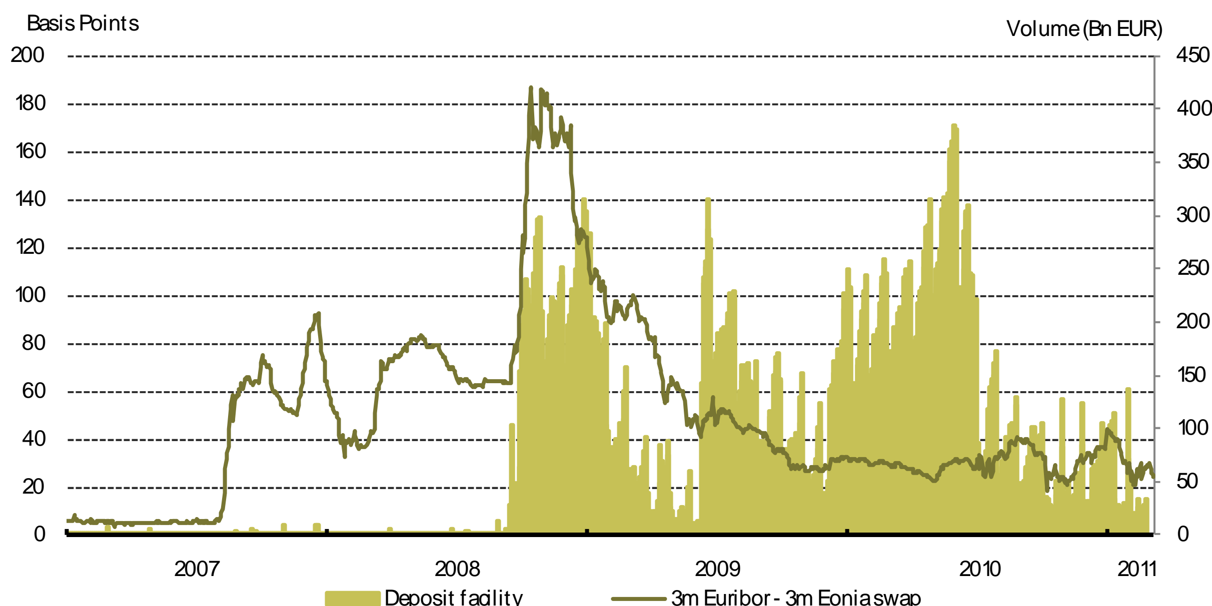
Source: www.euribor.org.

Second, there was a sharp increase in excess reserves at the ECB during the crisis.[20] Euro area banks can make use of a deposit facility at the ECB but usually at a lower interest rate than in the interbank market.[21] Therefore, under ordinary-risk circumstances the deposit facility is considered an inferior alternative to the interbank markets. During the crisis however the ECB has experienced an extensive use of their deposit facility, cf. Figure 7. Widespread deposits at the ECB indicate that banks prefer to deposit funds at the ECB rather than lending them out in a riskier interbank market.

[20] ECB (2009b).
[21] Usually, the interest rate in the deposit facility is 1 % below the policy rate.

Deposits at the ECB increased sharply on several occasions during the crisis: in September 2008, in June 2009 and in December 2009, which led to a rise that peaked in June 2010.

Figure 7: Interbank spread and excess reserves at ECB, 2007-11



Note: The figure does not include fine-tuning.

Sources: www.ecb.int and www.euribor.org.

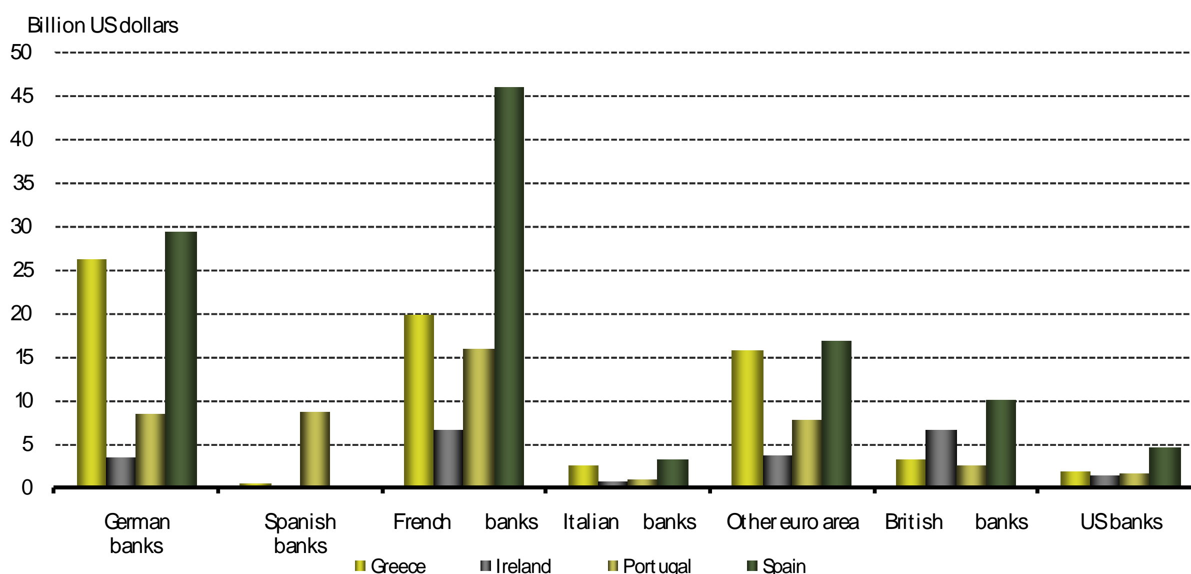
State aid to the financial sector, and in particular the massive government recapitalisations issued in late 2008, injected substantial liquidity into the sector. Nonetheless, ECB deposits were not dampened until June 2010 and are still far above pre-crisis levels. In this way, part of the public liquidity provision to the sector was absorbed by central bank deposits rather than being channelled to interbank markets. As a comparison the size of EU governments' recapitalisations, impaired asset relief and other liquidity measures to the financial sector amounted in 2009 to EUR 281 billion.

The effect of State aid is difficult to disentangle from effects of other public interventions. Alternative measures performed by central banks as e.g. interest rate cuts and quantitative easing are contributing factors to the development in the interbank markets.[22] State aid measures have contributed to lowering spreads in the fall of 2008, but they have not been lowered to pre-crisis levels. It should be emphasised that the financial crisis was of an unseen scale and created an uncertainty about asset risks and values that cannot be expected to be fully dissolved by State aid and other public interventions. Asymmetric information in the financial markets can be an important factor in explaining the prolonged nature of financial market tensions despite the unprecedented public interventions.[23] More direct measures to identify weak banks such as stress tests may be more effective in improving confidence between well-performing banks while forcing the rest of the sector to recapitalise and consolidate. This will be discussed later on.

One type of concern that adds a source of uncertainty in the interbank market is that of foreign banks holding government bonds of troubled European economies. Due to the sovereign debt crisis the exposure of banks to uncertain sovereigns in turn contaminates the private sector with the same risks. If risks materialise in the troubled European countries the banks in especially France, Germany and other euro countries that hold large shares of distressed sovereign bonds may expect to suffer substantial losses, cf. Figure 8.

[22] E.g. ECB (2010d), ECB (2011a) and ECB (2010g).
[23] ECB (2009b).

Figure 8: Banks' exposures to the public sector of euro area's peripheral countries, 2010



Notes: Figures are from end of third quarter.

Source: BIS (2011).

2.3.4. Effectiveness criterion 3: Improve financial sector's ability to support the real economy

Absent State aid and other stimulus, the expected crisis reactions from banks would be to substantially deleverage their balance sheets and reduce the loan size.[24] Worse economic conditions tend to reduce loan giving, especially to firms with lower capital ratios.[25] As loans to consumers and firms are important for growth in the economy the crisis represented a severe threat to growth through a credit freeze to the real economy.

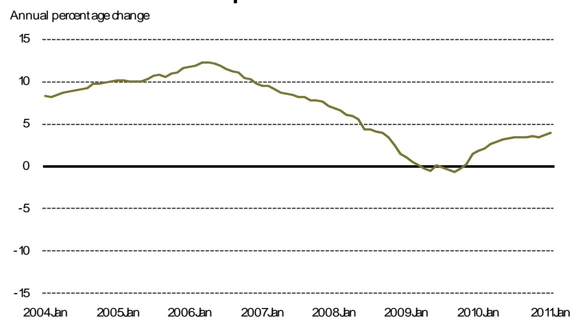
Lending to the real economy can be affected through lending terms, primarily prices, or lending volume. Evidence suggests that adjustments in banks' lending portfolios primarily occurred through prices, not quantities.[26]

The evidence on lending volume during the crisis shows that, on the one hand, growth in loans to households, both for house purchases and consumption, and in long-term loans to firms, was stagnant in 2009. Given the magnitude of the crisis an end to the loan growth rate would seem to be largely demand driven, especially given the fact that many Member States' housing markets were overheated going into the crisis partly due to lax property lending.[27] On the other hand, short-term loans to firms were severely hit and the growth rate was minus 15 % in 2009, cf. Figure 9.

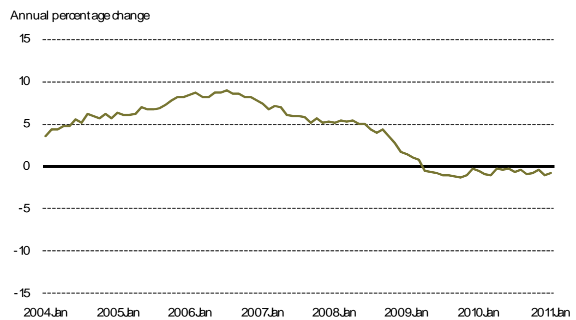
[24] ECB (2010a).
[25] ECB (2010b).
[26] ECB (2010f).
[27] E.g. Glaeser et al. (2010), Duca et al. (2010) and Copenhagen Economics (2010).

Figure 9: Growth in loans to households and enterprises, 2004-11

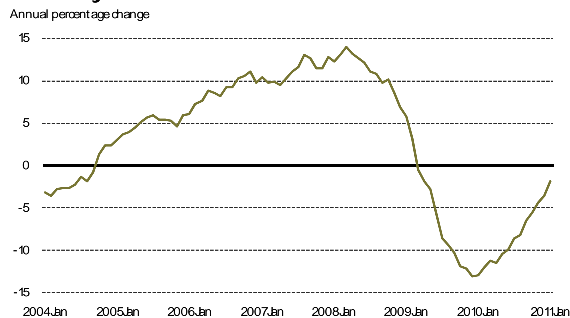
A. Loans for house purchases



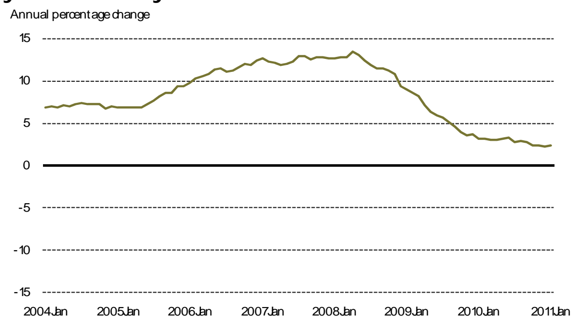
B. Consumer credit



C. Loans to non-financial sector, up to 1 year maturity



D. Loans to non-financial sector, more than 5 year maturity



Note: All figures are seasonally adjusted.

Source: ECB.

The evidence on net interest rate spreads, i.e. the difference in interest rates on deposits and loans, is inconclusive. The difference between the interest rate charged for a consumer loan and the interest rate offered for a deposit tightened in 2008 and the first half of 2009 and in the second half of 2010, cf. Figure 10. Only in short periods of 2009/2010 was the spread larger than in 2007. For housing loans there was a sharp tightening of the interest rate spread in 2009, cf. Figure 10.

Figure 10: Change in net interest rate spreads on loans in the euro area, 2007-11

A. Change in spread between interest rate for consumer loans to households and deposits

B. Change in spread between interest rate for housing loans for households and deposits

Note: Panel A. displays the change in the spread between consumer loans to households and deposits with agreed maturity for new business (i.e. not existing loans/deposits) relative to the spread in January 2007. Panel B. displays the equivalent change in the spread between interest rates for households for housing loans relative to deposits with agreed maturity.

Source: Copenhagen Economics based on Eurostat figures.

A recent bank lending survey has showed that interest spreads on average loans to enterprises decreased in the first quarter of 2011.[28] This is the case even though spreads to riskier loans have increased in the same period.

There are indications that foreign banks, both banks from different Member States and from outside the EU, transmitted a larger share of the financial shocks during the crisis onto their customers than domestic banks did.[29] The largest decline in lending was to high-risk firms and firms with few tangible assets which correspond with the general tendency towards less risk-taking from banks during the crisis. Both in interbank markets and in retail markets banks cut back on credit, especially unsecured lending and lending to riskier firms respectively.

Another indicator of aggravated lending terms for firms is found in the unprecedented spreads on non-financial corporate bonds.[30] When spreads are supernormal and firms nonetheless continue to issue corporate bonds it indicates that they cannot obtain more favourable terms by borrowing from banks. Although the spreads have declined slightly since the peak the injected liquidity has not had much effect in this respect.[31]

At this point in time there is only limited evidence on the derived effects on growth in the real economy following State aid to the financial sector. A recent study on 50 countries during the crisis showed that among all financial sector interventions only bank recapitalisations had a significantly positive effect on the growth of firms in industries highly dependent on external financing.[32] Bank recapitalisation is however estimated to have a strong effect, similar in magnitude to stimulus through fiscal policy. The estimates indicate that an increase in bank recapitalisation of 1 percentage point of GDP stimulates growth in financially dependent firms by 1.3 percentage points.

2.3.5. Efficiency criterion 1: Competition

Distortion of competition is a potential side effect from State aid. Distortion of competition can occur in at least three ways:

- **Between countries:** Banks in some Member States can be adversely affected by financial sector support abroad
- **Between sectors:** Other sectors can be adversely affected through support to the financial sector
- **Between firms:** Non-aided banks are adversely affected in competition with aided banks

There is some evidence that all three types of distortion occurred during the crisis, and especially the first and the third type seem to be pronounced.

Between countries:

Distortion of competition between banks in different countries occurred through differences in Member States' willingness to support their financial sector. When governments do not provide full guarantee and e.g. impose losses on creditors and bondholders of failing financial institutions this realisation of losses will result in increased risk premia to creditors for all the respective country's banks. Increased risk premia entails higher funding costs for the banks in question.

[28] ECB (2011c).
[29] Based on data from Eastern Europe, see ECB (2010c).
[30] CEPR (2010).
[31] Ibid.
[32] IMF (2011).

In practice, the mechanism works via ratings from rating agencies that explicitly take account of governmental support to financial institutions.[33] When a country changes its attitude towards bank bailouts the change may then be reflected in the funding terms for domestic banks. For an illustration of this, see the case in Box 3.

Box 3: Adverse industry effects from lack of systemic support

The Danish bank Amagerbanken A/S was taken over by the State-company administrating failed banks (Finansiel Stabilitet A/S) on 6 February 2011. The takeover was triggered by Amagerbanken's failure to meet solvency requirements after large write-downs inter alia due to a large real estate exposure. Amagerbanken was the first bank in Europe to be rescued under the new regulation (in Denmark: "Bank Package III") where senior bondholders suffer losses in a bailout.

The collapse is not in itself remarkable – Amagerbanken ranked merely as the 11th largest Danish bank and accounted only for roughly 1 % of the Danish banking market – but the consequences of its failure illustrates an important mechanism of cross-country competition distortion. Although no other Danish banks reportedly suffered significant direct losses from its collapse, the Danish banking sector suffered indirectly. Ten days after the bailout, the ratings agency Moody's downgraded five Danish banks (see Box table) and placed six Danish banks under review for a possible downgrade due to a reduction in systemic support.

Box table: Stated adverse effects to be avoided from temporary State aid measures

Measure	Previous rating	New rating
Danske Bank	Aa3	A1
FIH Erhvervsbank A/S	Baa3	Ba1
BankNordic P/F	A3	Baa1
Spar Bank Nord A/S	A2	Baa1
Ringkjoebing Landbobank A/S	A1	A2

In a comment to the downgrade, Moody's elaborated on the significance of systemic support:

> *"Today's rating actions reflect a reduction in Moody's systemic support assumptions... The bankruptcy of Amagerbanken demonstrated both the willingness and ability of the government to allow depositors and senior creditors of Danish banks to take losses in bankruptcy, where bank operations are continued as a going concern."* (Source: Bloomberg (2011a))

The downgrades entail higher funding costs for these and other Danish banks, and in this sense the Danish banking sector suffered from the government's phasing out of the extraordinary support measures. A phasing out, which is in line with ECOFIN conclusions. It should be noted that these losses come on top of other expenses from the failure, e.g. covering expenses to the sector from the deposit guarantee scheme (DKK 2.2 billion) and write-downs.

Sources: Bloomberg (2011a), (2011b), (2011c) and Reuters (2011).

Another indication of the same mechanism comes from CDS spreads to banks. In October 2008 when many Member States implemented rescue packages for the financial system bank CDS premia decreased while the risk premia of sovereign issuers increased.[34] Rescue packages were in other words successful in decreasing bond risk premia for financial institutions but the success can be interpreted as merely a risk transfer from the financial sector to governments and ultimately all other parts of the economy.[35] The downside of such large transfers of risk has materialised in some countries especially in Ireland where the massive transfer of risk from the private to the public sector has resulted in massive losses to the public sector and has questioned the solvency of the State itself. This indicates that the sovereign debt crisis to some extent is linked to the national bank rescue packages (with substantial cross country variation).

[33] Haldane (2010).
[34] ECB (2009c).
[35] Ibid.

In a larger perspective, the problem is that adverse effects on domestic banks will occur irrespectively of whether or not the bailout was based on sound principles. Financial markets react to governments' willingness and ability to secure creditors, and not to whether or not the bailout was desirable from society's point of view.[36] The reputation of regulators to support the financial sector thus matters significantly for banks' perceived risk.[37]

Between sectors

Aid to the financial sector indirectly aids other sectors insofar as it materialises in more favourable lending terms for firms in other sectors than without aid. There is, however, also some sign that aid to the financial sector came at a cost to other sectors. Compared to building societies, which also offers loans to especially real estate, banks had a higher average rating going into the crisis and the difference widened considerably through the crisis indicating that ratings agencies explicitly factored in governmental support and that the value of government support to banks increased over the crisis.[38]

Support to financial institutions should distort competition with respect to other sectors less than support given to other sectors given the positive externalities from network effects. Aid to one bank can help inhibit financial market distress, which benefits all banks. Indirect effects, such as aggressive behaviour from aided banks, can however harm non-aided banks and harm competition.

Between firms

Two types of competition distortions between firms can be noted. *First*, there have been complaints over aggressive behaviour from large aided banks to gain market shares in other Member States.[39] *Second*, some transnational banks have been given a competition advantage through more favourable funding terms through support measures in their home country. This phenomenon distorts competition within a Member State when one bank can obtain better funding (through more favourable loans, a larger guarantee, or better chances of a bailout, leading to a better rating and thus lower funding costs) from its home country compared to the banks it is competing with in the respective Member State. The problem is especially relevant in the retail market of countries with large shares of foreign banks and in the corporate banking market where large banks engage in cross-border competition.[40]

The two types of competition distortions differ in that the first, aggressive behaviour, represents either an inadequate set of behavioural restrictions while the second, national funding differences, is the result of a lack of a common EU-wide support scheme.

[36] There are similar phenomena in financial regulation. For example, a higher deposit insurance guarantee may attract more liquidity to the respective country from other Member States regardless of whether a high insurance is socially desirable.
[37] Adley et al. (2010).
[38] Haldane (2010).
[39] Christian Clausen, president of EBF, has e.g. voiced this complaint in the media.
[40] See Jódar-Rosell and Gual (2009) for a discussion of this issue with a Spanish perspective.

One *potential* concern for distortions at firm level is the evidence that acceptance of State aid in some cases has been made conditional on measures that may adversely affect competition. Some aided banks were forced to undertake obligations to maintain lending by their respective Member State, e.g. in France, UK and Austria, although the commitments had a varying degree of strictness.[41]

Lending commitments are a competition issue as they can represent a requirement to expand (or limit the decrease in) the market share for a bank that should otherwise have restricted the market share (more).[42] In these cases the European Commission has taken the view that the banks concerned were fundamentally sound which calls for constraints to ensure the pass-on of State funding to consumers in the form of more lending rather than constraints to prevent an unviable inefficient firm's increase in market shares in the form of more lending. These distinctions between sound and unviable firms will always be controversial and have the potential to distort competition between domestic competitors as well as between domestic and foreign competitors.

SIFIs and the 'too big to fail'-issue also gave rise to a competitive distortion concern during the crisis. The status of the largest banks was reflected in support to the sector as they received a larger share of the support than their relative size would entitle them to. Estimates of governmental support from reductions in banks' funding costs indicate that the five largest UK banks received 90 % of the total implied subsidy to banks and that the global picture is roughly the same.[43] It should be emphasised that this way of measuring the implied subsidy corresponds to measuring the effect of State aid rather than the amounts of State aid given. In other words, larger banks have received the lion's share of support measured by value but not necessarily support measure by amount. The sheer signal of limitless support to the largest institutions have undoubtedly been part of the explanation for the relatively little harm to their funding terms. The estimated value of governmental support to the five largest UK banks in 2007-2009 was 50 billion GBP, roughly corresponding to their pre-crisis annual profits.[44] The natural characteristics of the financial sector – network effects and the existence of SIFIs – may however make it difficult in the short-term to avoid supporting the large institutions disproportionately.

The observation that large banks have received more (value from) support would be expected to imply that the concentration in the financial sector during the crisis has increased. This is not entirely confirmed by available data and opposite conclusions has been drawn in different studies. Looking at the Herfindahl concentration index, which measures the concentration of firms in a given industry; there are only weak indications of a systematic increase in the market shares of the five largest credit institutions cf. Figure 11. There are nor evidence of systematic increases in or firms' ownership of assets across the 27 EU Member States, cf. Appendix 1. Some countries - e.g. Finland, Ireland and Slovakia - have seen an increase in concentration while other countries - e.g. Belgium, Estonia and Romania – have seen a decline. The average across EU shows a very weak increase in concentration in the EU16 and a slightly more pronounced increase in the entire EU. The Herfindahl index may not tell the whole story and in fact other studies have concluded otherwise.

[41] Cf. case N548/2008 (France), N207/2008 (UK) and N557/2008 (Austria). Under the French scheme the commitment was annual growth of 3-4% in the banks' overall outstanding loans, under the UK scheme the commitment concerned availability of lending to homeowners and small businesses at a level at least equal to the 2007-level and under the Austrian scheme the commitment was merely a requirement to use the granted resources for the benefit of the real economy with 'the focus on' provision of loans to SMEs and mortgage lending to households.

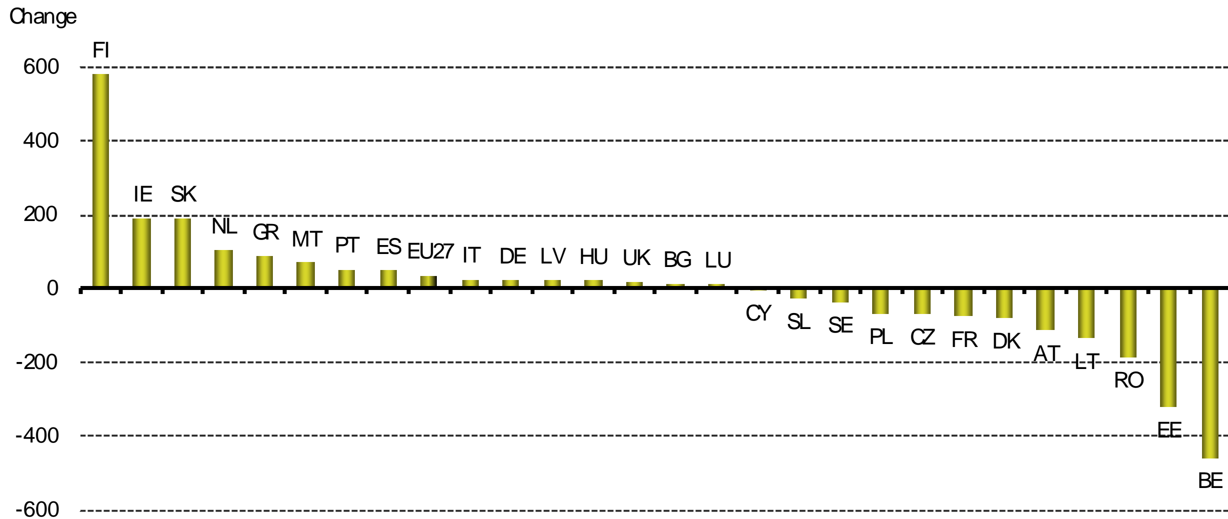
[42] Adley et al. (2010).

[43] Haldane (2010).

[44] Ibid.

This is the case particularly in UK, where some studies find that financial rescue packages have lead to increased concentration levels in personal and small- and medium sized banking.[45] Moreover, changes in the concentration index should also be seen in light of the specific industry structure before the crisis. In some Member States, there may in fact be benefits from increased market concentration.

Figure 11: Change in Herfindahl index for credit institutions, 2007-09



Note: The Herfindahl index is a measure of the concentration in an industry and is calculated as the sum of squared market shares. It ranges from 0 to 10,000 and a higher value represents larger concentration. The figure displays the change in concentration in each country from 2007 to 2009 such that a positive figure represents an increase in concentration over the period and a negative represents a decrease in concentration over the period. The figures for individual years as well as the share of assets owned by the five largest credit institutions for each country are available in Annex 1.

Source: Copenhagen Economics based on ECB (2010r).

2.3.6. Efficiency criterion 2: Moral Hazard

The strong support for the financial sector carries the obvious risk of spilling over into expectations and behaviour. When support is expected in distressed periods, behaviour may be altered in advance to take account of the support.

Government support, or the expectation of it, allows a financial institution to stretch its lending or investment activities to a level that would otherwise have been too costly or too risky. A removal of (the expectation of) government support may therefore give banks incentives to abstain from some risky investments, cut off their riskiest borrowers, increase interest margin on remaining borrowers and reduce the average loan size to diversify the lending portfolio.[46] The key aspect in respect to moral hazard is credibility. The actual actions of governments during times of distress are likely to have a larger impact on future expectations and behaviour, than declarations of intent in normal times.

[45] Independent Commission on banking (2011).

[46] This point has been made by e.g. ECB (2010h) through an analysis on German lending following a general removal of government guarantees for savings banks in 2001. Another study, using one of the German banks in the same period, finds however that the removal of the guarantee increased risk-taking for this bank; see Fischer et al. (2011).

An important aspect in preventing moral hazard is the issue of burden sharing in a bank failure, and specifically the treatment of shareholders, bondholders and other creditors. To prevent future moral hazard a bailout should involve no subsidisation of shareholders and impose at least some losses on bondholders or other creditors.[47]

This has however often not been the case.[48] When deciding on the public intervention strategy in the wake of a bank failure the government may face a trade-off between long-term moral hazard and short-term stability. In a crisis of this magnitude a full bailout with public coverage of all losses might be desirable in the short term for stability reasons, yet the effect on longer-term moral hazard is highly unfortunate. Moreover, in situations where governments have already intervened and owns part of the bank in question it may be difficult for the government to apply the sound policy of imposing losses on investors, since the government will then impose losses on itself. This is also the case in the situation where more public support is the only way of securing that a bank does not go bankrupt and the government loses its original investment.

Another aspect is the behavioural restrictions attached to the given aid. The European Commission has imposed behavioural restrictions in several cases, including divestments (e.g. in the WestLandesbank case, see case C43/2008) restrictions on dividend payments and executives' remuneration, nomination of public interest representatives in the bank's board and the submission of a restructuring plan (all in e.g. the Allied Irish Bank case, see case N241/2009).[49] Some criticism has however been voiced that these restrictions have not been wide-going enough. For example, the responsible management was often not removed[50] and the incentive restraints imposed affected only top management, not the general risk attitude in the respective firms.[51]

Generally, many of the behavioural restrictions have ambiguous effects that make the imposition of the restrictions a complicated issue. Restrictions on wages and bonuses may reduce the excessive risk taking and reduce costs but can also deteriorate the firm's ability to attract new and talented employees. Bans on advertisements of State guarantees will avoid giving the firms an unfair advantage in competition with unaided firms but might somewhat defeat the purpose of signalling State support to investors and depositors.[52]

A promising instrument to curtail moral hazard in the future that has only surfaced during the crisis is contingent convertible bonds, or CoCos.[53] As they transform the non-public investors from bondholders to equity holders when the value of the equity drops sufficiently they ensure that bondholders get some value from their investments and provide the firm with capital without the injection of public funds to bail out the firm. The use of CoCos can help curtail the prevalence of moral hazard in the future.

2.4. Evaluation of the EU policy approach to State aid to the financial sector

The overall approach of the European Commission in cooperation with the (Ecofin and European) Council has been based upon two main instruments. *First*, the standard State aid guidelines for "rescue and restructuring operations". *Second*, a package of four Communications from the period of October 2008 to August 2009 that has gone into more detail on how the EU commission will review and evaluate State aid in individual cases (a bit more detail in Box 4).

[47] OECD (2009) and CEPR (2010).
[48] OECD (2009) and Gortsos (2009).
[49] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/744.
[50] OECD (2009).
[51] Gortsos (2009).
[52] CEPR (2010).
[53] Lloyds Banking Group was the first to issue CoCos in November 2009.

The overall policy framework resulting from the combination of these instruments are a set of rules that at one and the same time attempts to prevent distortions to competition and imposing costs on recipients to safeguard tax payers interest and preventing future moral hazard.

Box 4: Content of Rescue and Restructuring guidelines and four bank communications

Rescue and restructuring guidelines

The European Commission adopted its first set of rescue and restructuring guidelines in 1994, which were later reviewed in 1999 and 2004 and prolonged in 2009. The guidelines set out the European Commission's approach to approving State aid to firms in difficulty. Rescue aid is defined as temporary aid, its duration not exceeding six months, to keep a firm alive while working out a restructuring plan. Restructuring aid is defined as the aid given to a firm once a restructuring plan has been established to carry out the changes needed to long-term viability.

There are a number of conditions attached to the approval of rescue and restructuring aid. Notably, the guidelines operate with a "one time, last time" principle to avoid repeated State aid to keep firms alive and they will not justify repeated aid to keep firms alive in sectors with long-term structural overcapacity.

Four bank communications

On 13 October 2008 the European Commission adopted the "Banking Communication" that approves support measures in exceptional situations. A range of conditions for national support schemes were included, e.g. a review of the state of the financial sector every six months, non-discriminatory access to schemes, private sector contribution, behavioural rules for recipients and winding-up procedures on market terms.

On 5 December 2008 the European Commission adopted the "Recapitalisation Communication" in which it was highlighted that Member States' capital injections should be remunerated close to market conditions. The communication proposed pricing mechanisms and a pricing interval for State recapitalisations: a lower bound of 7.0 % for the required return on subordinated debt and an upper bound of 9.3 % for the required return on ordinary shares.

The "Impaired Assets Communication" was adopted on 25 February 2009 and gives Member States advice on the creation of national impaired assets schemes. It covers guarantees, nationalisations of banks, State purchases of impaired assets and asset insurance schemes. The communication outlines a coordinated approach to valuation of assets eligible for relief, including a classification of these assets.

The "Restructuring Communication" adopted on 19 August 2009 set out guidelines for Member States' submission of restructuring plans for firms in difficulties. It limits the duration of restructuring plans to a maximum of five years and stresses that State aid should be limited to a minimum and cannot be used for the acquisition of competitors, a condition that should remain valid for at least three years.

Sources: Rescue and restructuring guidelines: European Commission (2004) and (2009e). Four bank communications: European Commission (2008), (2009a), (2009c), and (2009d).

It would be fair to say that the immensity of the financial crisis in the EU caught policy makers as a major surprise and, partly as a result, that the development of a common approach to Member State interventions could not keep pace with the actual interventions by Member States which started very early in the crisis.[54] Under the circumstances, the EU regulatory policy makers deserve credit for 1) not challenging the very strong role that DG Competition and the European Commission has in deciding State aid cases in the midst of the crisis with strong Member State interest at stake and 2) rolling out relatively quickly the four supplementary communications. Furthermore, the engagement of the ECB in providing technical advice on more market based pricing of state guarantees etc. has been a potentially useful tool to ensure non-distorted competition and consistent application of State aid policies. Nonetheless, significant weaknesses in the effects of the applied regulatory approach have been identified as discussed above. Some of these are specific to the financial sector; some are of a more general nature as described in the following.

[54] Bruegel (2009) and CEPS (2010).

2.4.1. Application of the general rescue and restructuring rules in practice

The general guidelines for the rescue and restructuring operations have some challenges when being applied to the financial sector. This is not surprising as they were historically developed mainly to deal with firms in the manufacturing and (non-financial) services.[55] This poses a number of problems in practice.

First, the guidelines stress that loan and guarantees should be the first instrument of choice, and with the duration of loans not exceeding 6 months. However, a very substantial part of the help to the troubled bank sector has come by way of very extensive credits from central banks (inter alia ECB) which have provided loans based upon collateral under conditions outside the direct scope of the State aid rules and on arguably more lenient conditions.[56]

Second, the conditions for restructuring aid stipulate that the creditors and shareholders should make a major contribution to the recapitalisation of the troubled institutions of at least 50 % for larger firms, implying most banks in practice.[57] However, the need for speedy action to keep a financial institution in business may limit the ability of regulatory authorities to impose for example "haircuts" on creditors as a precondition for assistance in the absence of well-defined procedures to deal with troubled financial institutions.

Third, the very measurement of the size of the aid provided, and conversely the contribution from other investors are very difficult due to the huge uncertainty associated with the pricing of the assets. This is for example highly relevant when the recapitalisation takes the form of a state capital injection combined with partial state ownership. State ownership, partial or whole, does not in itself constitute State aid. In contrast, State aid is certainly involved if the write down of assets, prior to the state injection of capital with new ownership, has not been sufficiently rigorous. In that case the value of the state investment is diluted from the start while previous investors are being spared the full costs of the investment choices leading to subsequent losses.

2.4.2. Maintaining a consistent approach across countries and firms

While the actions taken by Member States have many similarities, strong differences remain which have complicated efforts to ensure "equality" of treatment. Three examples:

First, one study[58] has highlighted the difference between the European Commission's treatment of aid to banking institutions in France and Germany. A key element of the French approach has been a common scheme where essentially all banks with headquarters in France have received aid. Here the government has bought newly issued securities counting as non-core Tier 1 capital from the banks with a remuneration determined by risk of insolvency. The de facto capital injection took place without any requirements of restructuring, limits to marketing etc. By contrast, capital injections in Germany have taken place on an individual basis, with the European Commission pursuing restructuring plans for all of the involved firms.

[55] CEPS (2010).

[56] One consequence is that banks with different rating standards have been able to get liquidity funding from the ECB at equal conditions, cf. CEPS (2010).

[57] According to the 'Rescue and Restructuring guidelines' the European Commission will normally consider a contribution to restructuring of 50 % to be appropriate for large firms, while the equivalent is 40 % for medium-sized firms and 25 % for small firms, cf. European Commission (2004), paragraph 44.

[58] CEPS (2010).

The potential implicit argument for this result is that general aid schemes such as the one provided by the French government are less distortionary than the sum of 13 individual support measures for individual banks in Germany. However, one could also argue that the financial sector in France was also overextended and needed some scaling down of activities as a counterpart to support. However this was not demanded by the European Commission as part of its acceptance of the scheme.

Second, the availability of relatively generous guarantee schemes has been quite different across Member States and still accepted by the European Commission. The European Commission may also have (inadvertently) been encouraging cross-country differences in order to limit intra country competition distortions: For example Ireland had both no upper limits on the guarantee and allowed it for all financial institutions which posed a systemic risk to the Irish economy. Conversely, the Dutch scheme e.g. was open only to banks with a corporate domicile/substantial operations in the Netherlands and with an acceptable solvency ratio. The Irish scheme, where the broad scope of its beneficiaries seems to have been encouraged by the European Commission,[59] clearly did not involve any contribution from existing investors and did for a long period fail to make support conditional on the health of the recipient. DG Competition's own assessment has voiced concern that despite the common principles issued by the ECB,[60] pricing of guarantees has shown considerable cross-country differences.[61]

Third, given the scale of the banking crisis and the resulting massive government support provided, it is essential that the decisions of the European Commission are very *transparent*. The four communications providing more detail on the principles behinds its decisions are laudable for this reason alone. Yet more swiftness is needed in revealing actual decisions and conformity with even handed application of the principles in practice. It may take a vast amount of time before the reasoning behind the decisions of the European Commission is published which may provide too little understanding among actors too late for the developing case law and may also leaves little room and time for third parties to challenge aid provided to competitors. This latter potential problem is compounded by the fact that the EU Court has tended not to challenge EU decisions on State aid.

2.5. Main findings

The EU as a whole as well as Member States have intervened massively in financial markets to preserve the functioning of the sector. We find these interventions wholly justified in view of the systemic value of the financial sector, including, the provision of credit and other services to the real economy. From our review above, we would like to draw five main sets of findings.

First, a review of the effectiveness and efficiency of the support provided has to bear in mind that a substantial part of the measures are outside the scope of State aid rules. This is the case in particular regarding the functioning of monetary policies whether by ECB or other Central Banks in the union. Effectively, liquidity support have been provided on highly beneficial conditions to a number of banks unable to fund themselves adequately in interbank and commercial markets given the high credit risks they are perceived to represent. In essence, this is the type of support that in State aid term is often provided in the so-called "rescue" phase of State aid but without the same counterpart conditions attached.

[59] E.g. European Commissioner for Competition Policy (2008a) and (2008b).
[60] ECB (2008).
[61] DG Competition (2009).

Second, overall policy action has had some success in stabilising the financial sector, maintain credit flows to the private non-financial sector and restore some confidence in the interbank market. The measures taken by Member States however have only had an effect because the sovereign signatures of the Member States were credible when governments intervened.[62] Some Member States' credibility as sovereign borrowers has been dented in the light of their current fiscal problems. To ensure that sovereign guarantees etc. can have an effect prospectively, high credibility in public finances needs to restored in these countries.

Third, the continued reluctance of banks to extend credit to other financial institutions as well as the continued reliance of weak banks on ECB funding suggest that further recapitalisation and consolidation is required to bring the banking sector back to a sound footing. This issue is strongly linked to more stringent use of stress testing to identify banks with weak balance sheets and to force them to seek new capital and/or merge with stronger banks. Weak bank balances also makes it more difficult to deal with sovereign debt rescheduling. This is so as many banks particularly in Greece, Portugal and Ireland are major holders of domestic sovereign debt instruments. Indeed, empirical research suggests that recapitalisation can help boost a recovery by providing credit in particular to firms such as SMEs which are heavily dependent on external financing.

Fourth, different practices across Member States in dealing with the banking crisis have weakened the functioning of the internal market despite valiant efforts of the European Commission. As demonstrated by the Danish Amagerbanken case, financial markets are apparently still operating under the general assumption that creditors in most EU countries will be saved any from any substantial costs in the case of bankruptcy, which provides substantial risks of moral hazard. Moreover, the different nature of national measures to support banks, as the Germany/France example illustrates, makes it difficult for the European Commission to implement a policy with effectively the same standards in terms of counterpart measures as condition for receiving aid. Finally, we should highlight the difficulties that the European Commission has had in promoting a common line in pricing of guarantees and coverage of guarantee schemes.

Fifth, the limitations of the rescue and restructuring guidelines when applied to the financial sector have also been demonstrated. They are difficult to apply in practice to failing banking institutions which need very quick action with little time to put in place the countermeasures to aid required by these guidelines where restructuring aid has sometimes been provided very early. Furthermore, the ability to apply the central principle of "polluters pay", that is shareholders and creditors foot the bill for failure is in practice dependent on a wider improvement of banking regulation, ensuring that institutions heading for trouble are identified at a relatively early stage and with more automatic bailing in of existing bank investors in any action to save the banks themselves. We will come back to this issue in chapter 4.

[62] According to Jean-Claude Trichet, cf. Committee on Economic and Monetary Affairs monetary dialogue with Jean-Claude Trichet, Brussels, Monday, 21 March 2011, http://www.europarl.europa.eu/document/activities/cont/201103/20110323ATT16157/20110323ATT16157EN.pdf

3. STATE AID TO THE REAL ECONOMY

This chapter will address State aid to the real economy. Section 3.1 reviews the theoretical reasons to support the real economy through State aid. Section 3.2 presents a framework for evaluating State aid. Section 3.3 provides a general assessment of the effectiveness of State aid to the real economy and section 3.4 extends this assessment by focusing on the State aid given to the automobile industry.

For several reasons the assessment of State aid to the real economy will be briefer than the assessment of State aid to the financial sector. Most importantly, the real economy received much less State aid than the financial sector. The financial sector received approximately 80 % of all State aid granted in 2008/2009 and an even larger share of the extraordinary State aid that can be attributed to the crisis. Likewise, the rules for granting State aid to the real economy were not changed nearly as much as the rules for State aid to the financial sector – as indicated by the fact that there were four banking communications (and one communication that extended them) but only one communication for the real economy (and one communication that extended it), cf. Table 1 in chapter 1.

3.1. Specific reasons to support the real economy

3.1.1. Reasons to support the real economy

There are basically two reasons to justify the use of State aid towards the real economy:[63]

1. Economic/efficiency objectives
2. Political/equity objectives

If there are market imperfections/distortions, targeted State aid measures may improve economic efficiency. Potential market imperfections can be imperfect or asymmetric information, environmental and R&D externalities, public goods such as fundamental research or coordination problems such as e.g. transport infrastructure.

State aid can also be used to promote political/equity objectives such as promoting the development of areas with widespread unemployment or abnormally low living standards, improving social and regional cohesion, developing projects with common European interest and promoting culture and heritage conservation.

State aid is one of many economic instruments a government can use to stimulate the real economy. In crises, common economic theory will favour public support to the real economy with the direct aim of creating or maintaining jobs and stimulating output. In these situations, State aid has the advantage, e.g. over generalised tax deductions, that it can be specifically tailored towards a certain firm, sector, region or horizontal objective.

3.1.2. Reasons to support the automobile sector

The automobile sector is characterised by high geographical concentration in production, volatile demand and rigid supply. High geographical concentration closely aligns the state of the sector with the state of employment in the automobile production centres of Europe. The five largest car producing countries in Europe account for 76 % of sector employment and 63 % of the production plants in Europe.[64] Moreover, within these and other countries, there is a high regional concentration in industrial clusters in Europe.

[63] E.g. European Commission (2007), Ganoulis & Martin (2001), and European Commission (1999).
[64] Calculations based on figures from ACEA. The five countries are Germany, France, UK, Italy and Spain.

The concentration is also reflected in the objectives of the State aid granted to the sector: The most common primary objective of State aid given to the sector in the period 2000-2008 was regional development.[65] In other words, the sector has become concentrated in industrial areas of Europe that are otherwise not very developed.

A car is a durable good and for many consumers the most expensive durable good they demand. Along with the other features of a car – a long service life, an active market for used versions, a high degree of loan financing and plenty of transport alternatives that are cheaper in the short run – it makes the demand for new cars highly volatile.

High volatility of demand is not a problem in itself but the combination of high volatility of demand and rigid supply is. The automobile sector has high capital intensity in production, large industry players and little entry into the sector. When demand shrinks, employment can easily be adjusted[66] but the capital invested in production plants and machinery cannot be reversed or scaled down. The dangerous cocktail of volatile demand and rigid supply leaves the sector with large-scale underutilisation of production plants, and thus higher unit costs, when crises strike.

3.2. Evaluation criteria

State aid during crises serves the same basic purposes as State aid under normal circumstances. Entering into a crisis should not prompt a review of the entire State aid policy, but merely cause a review of whether and what rules are needed to facilitate the *excess* State aid called for in the bust. To assess the State aid granted we will therefore consider the major shifts in State aid observed during the crisis, i.e. the sectors and horizontal objectives that were granted significantly more State aid during the crisis. This serves as a foundation for the ultimate issue that will be considered in chapter 4: Are specific crisis rules for State aid needed and how should they be designed? Once again, a distinction will be made between effectiveness and efficiency in the evaluation.

Regarding effectiveness, the first relevant criterion is whether the hardest hit sectors were targeted. Targeting sectors with large production setbacks might be beneficial in the sense that it reduces the risk of losing permanent investments in physical and human capital in those sectors. The second criterion is whether the sectors and the horizontal objectives that were granted more aid during the crisis were in fact effectively better off.

Regarding efficiency, the first criterion is whether the granted aid achieved "bang for buck". State aid is costly both in terms of opportunity costs (the money could be spent elsewhere) and shadow costs (funding aid measures may create distortions through taxation). An important evaluation criterion is thus if the aid measures have obtained the greatest effect on output and employment pr. unit of public spending. The second criterion is whether the excess aid created distortions that could have been avoided. Possible distortions are inefficient promotions of "national champions" or internal market distortions.

[65] Nicolini et al. (2010).

[66] E.g. by enforcing temporary shutdowns of major car assembly plants which was widely used during the current crisis, see IHS (2009), p. 13/14.

3.3. General assessment of State aid to the real economy

3.3.1. Effectiveness

The real economy received only a fraction of the State aid during the toughest crisis years 2008 and 2009. In absolute terms, the financial sector received 79.5 % of total EU State aid in 2008/2009 while 13.0 % were granted to horizontal objectives and merely 7.5 % were given directly to specific sectors in the real economy. When the focus is restricted to the aid that was granted under the temporary framework, which is the focus of the present study, the share received by the financial sector was even much larger.[67] Compared to the level in 2007, the increase in State aid to the real economy experienced in 2008 and 2009 corresponds to 0.06 % and 0.11 % of EU GDP respectively. The levels of State aid granted to the real economy in 2008 and 2009 were even far lower than the level in 2006. By all standards, crisis-related State aid granted to the real economy was very limited and insignificant compared to the financial sector's share.

Even if disregarding the volumes received under the temporary framework, the scope of the use of the temporary framework for the real economy has mainly been limited to a single measure within the temporary framework. The temporary rules for the real economy[68] set out six areas in which it was temporarily possible to grant aid on a larger scale or on simpler terms with legal basis in article 107.3(b). The six areas are:

- Compatible limited amounts of aid
- Aid in the form of guarantees
- Aid in the form of subsidised interest rates
- Aid for the production of green products
- Risk capital measures
- Short-term export credit insurance

Of these six measures, the enlarged possibilities to grant compatible limited amounts of aid was by far the most used measure by Member States. Under the temporary framework this legal exemption allowed Member States to grant aid of EUR 500,000 instead of EUR 200,000 (the higher *de minimis* limit) and, with the amendment of October 2009,[69] to grant aid of EUR 15,000 to agricultural undertakings. Under the temporary framework for the real economy, 23 out of 27 Member States have introduced schemes to grant compatible limited amounts of aid, cf. Table 9. The full set of measures introduced under the temporary framework can be seen in Annex 2.

[67] Exactly how large is impossible to assess as the European Commission only has a characterisation of "crisis measure" aid for the financial sector, not all sectors and horizontal objectives cf. http://ec.europa.eu/competition/state_aid/studies_reports/conceptual_remarks.html#categ_aid. If calculating the increase in State aid in 2008/09 compared to 2007-levels, the financial sector accounted for almost 97 % of the increase in State aid.

[68] Prescribed in the communication for the temporary framework for the real economy (European Commission (2009d)), its subsequent amendments (European Commission (2009i), (2009j), (2009k), (2009l)), and the prolongation of it (European Commission (2011)).

[69] European Commission (2009k).

Table 9: Member States' use of the temporary framework for the real economy

	Limited amounts of aid	Guarantees	Subsidised interest rates	Green products	Risk capital	Export credit insurance
Number of Member States that used measure	23	12	7	5	5	13
Share of Member States that used measure	85 %	44 %	26 %	19 %	19 %	48 %

Notes: The table displays how many Member States that adopted schemes within each of the six possible measures under the temporary framework for the real economy. Only cases where the European Commission decided not to raise objections are included. The table is primarily based on searches using DG Competition's search tool for all State aid cases that have article 107.3(b) TFEU as the primary legal basis and the temporary framework for the real economy as the secondary legal basis. As such searches do not encompass all the actual cases, the searches have been complemented with cases mentioned in relevant editions of the European Commissions' Competition Policy Newsletter. The complete list of actual underlying case numbers is presented in Annex 2.

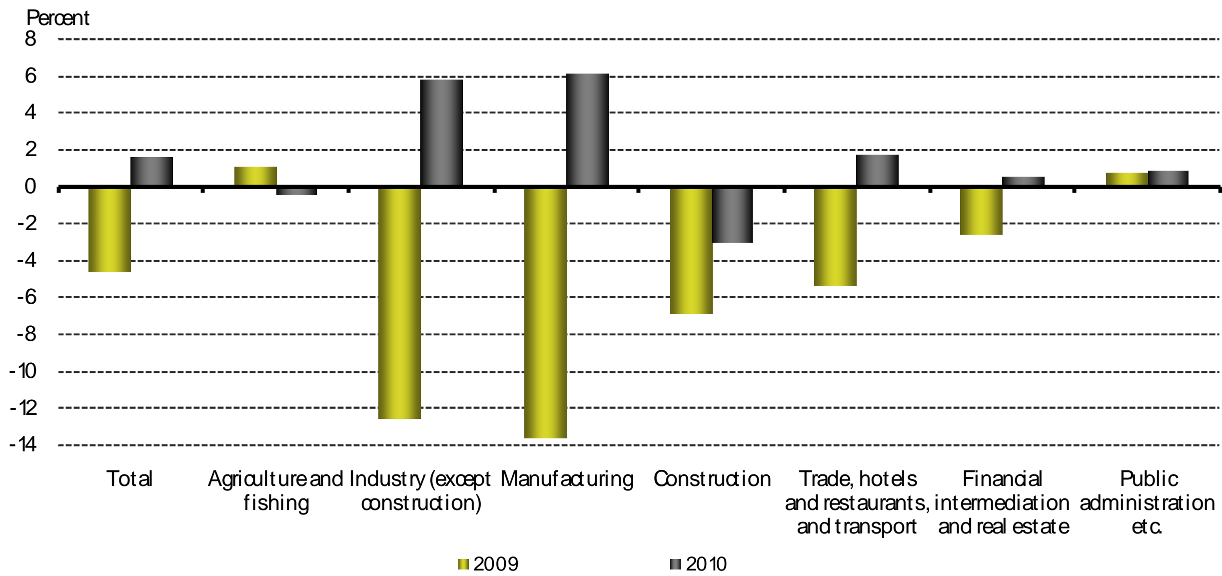
Source: Copenhagen Economics based on DG Competition's case search tool and European Commission (2009g), (2009h), (2010c), (2010d) and (2010e).

A little less than half of the Member States made use of guarantee and export credit insurance schemes while only about a quarter made use of subsidised interest rates, aid for green products and risk capital measures under the temporary framework for the real economy. These figures reflect that some countries were heavy users of the temporary framework while others hardly made use of it: France and Germany adopted schemes within all six possible measures of the Temporary Framework while Cyprus did not adopt any.

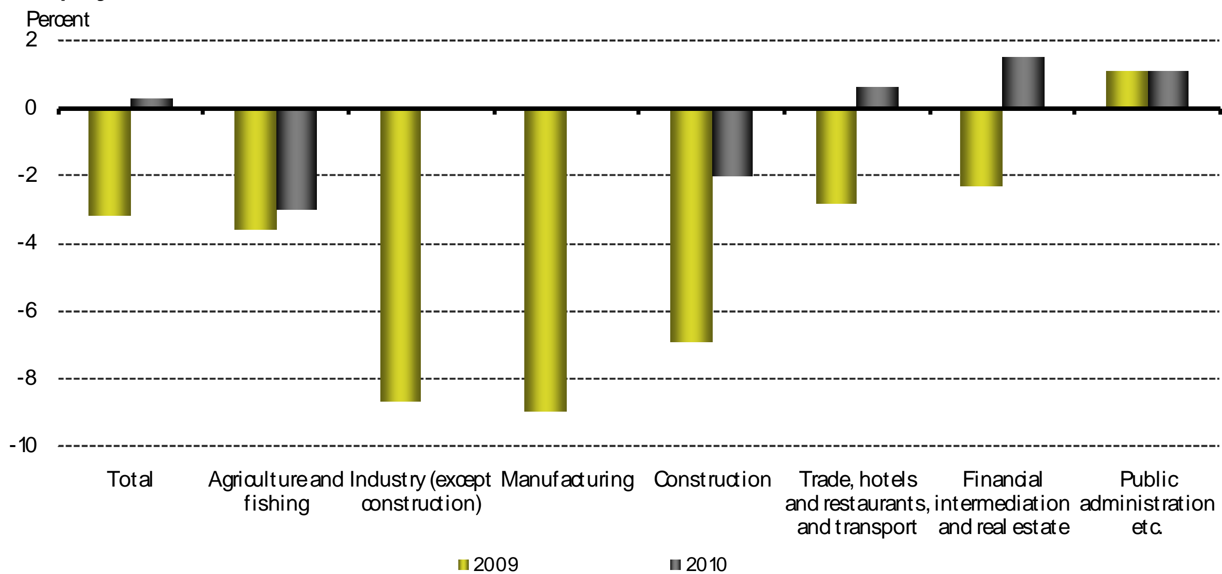
As for the financial sector, the effects of State aid are difficult to disentangle from other simultaneous types of support. In terms of output and employment, manufacturing was the hardest hit sector in 2009, followed by industry and construction, cf. Figure 12. Manufacturing was also the sector that experienced the largest increase in support in the real economy during the crisis. Manufacturing attracted EUR 6 billion more in 2009 compared to 2007 and the effect is visible. After a sharp decrease in output and employment in 2009, Manufacturing had the largest increase in output in 2010 and stabilised the employment level, Figure 12.

Figure 12: Change in output and employment for seven sectors, EU27, 2009 and 2010

A. Output



B. Employment



Notes: Change in output is measured as gross value added relative to the previous year. Change in employment is measured as change in total hours worked.

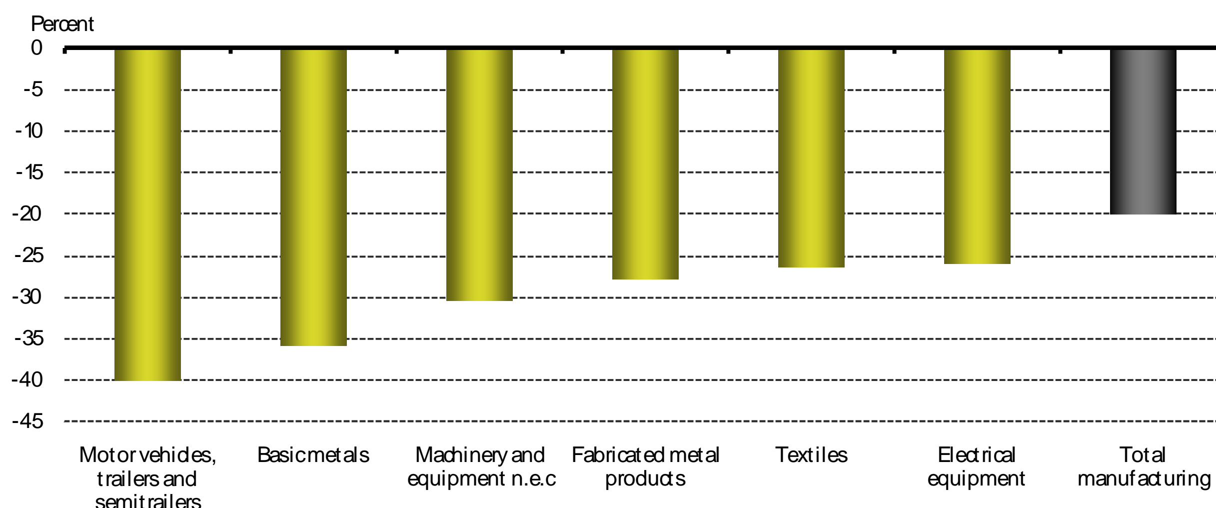
Source: Eurostat.

Measured in terms of business cycles, the decline in manufacturing was even larger than outlined above: Manufacturing saw a decrease in output from peak to trough of 20 %.[70]

Although the figures should be interpreted with care, the figure indicates that the State aid was well targeted towards the sectors that were hardest hit during the crisis. The manufacturing sector was hardest hit and experienced the largest increase in State aid during the crisis. The automobile sector received a significant share of the support[71] and it was the hardest hit manufacturing sector with respect to output which has been reduced by 40 % from peak to trough, cf. Figure 13.

[70] According to ECEI (2010). Peak is defined as first quarter 2008 while trough varies between sectors. For total manufacturing trough is defined as the second quarter 2009.
[71] European Commission (2009f). Exactly how much State aid was received by the automobile sector is impossible to assess from the available data material.

Figure 13: Change in output from peak to trough for hardest hit manufacturing sectors



Source: ECEI (2010), Table 2, based on Eurostat figures.

In terms of timeliness, it seems that both EU and individual Member States have been successful in adopting timely legislation and schemes respectively. Economic projections from EU, IMF, and OECD were still positive in the first half of 2008[72] and when the outlook quickly turned negative in the fall of 2008, EU promptly adopted a temporary framework for the real economy in December 2008. Likewise, many of the Member States that did make use of the temporary framework did so shortly after its adoption (recall that many Member States have not made much use of the temporary framework for the real economy, cf. Table 9 and Annex 2). Notably, Germany has used more than 78 % of the total EU crisis aid granted under the measure for compatible limited amounts of aid[73] and the first German measure was already approved by the European Commission in December 2008. In general, most measures – not only State aid measures – seem temporary, targeted and timely.[74]

As for the financial sector support, many of the initiatives in the real economy were aimed at improving access to credit for the real economy. According to the European Commission, 66 % of the total support initiatives, i.e. both State aid and other support types, launched until mid-2009 were aimed at easing financing constraints for firms.[75] The empirical evidence suggests that the efforts have indeed improved the access to finance for firms. The use of external finance has increased continuously since the first half of 2009 for both large firms and SMEs. Furthermore, there has been a strong continuous increase in the use of trade credit, leasing, hire-purchase or factoring since the first half of 2009 which confirms the return to a stronger dependence on inter-company financing.[76]

When it comes to horizontal objectives the European Commission's stated aim during the last decade has been less and better targeted State aid, i.e. less State aid of which a larger share should be targeted horizontal objectives.[77] Needless to say, the "less"-part of the aim was clearly violated in the recent crisis but, when disregarding the "crisis measures" in the granted State aid, the focus on horizontal objectives was not compromised during the crisis.

[72] Copenhagen Economics (2010).
[73] European Commission (2011).
[74] European Commission (2009f).
[75] European Commission (2009f).
[76] For Euro area firms, cf. ECB (2011b).
[77] See e.g. Nicolini et al. (2010) and European Commission (2005).

Support to horizontal objectives has been gradually increasing the last decade and increased further in 2008/2009. Within the category of horizontal objectives primarily regional aid and R&D accounted for more State aid during the crisis, while SMEs experienced a small decline in State aid support.

3.3.2. Efficiency

State aid has the beneficial property of being able to address the specific parts of the economy that need special attention in the light of a crisis. This could be in areas where the crisis will cause large investments to degenerate by causing an overly corrective response to supply. However, in practice State aid should be measured against the use of more general countercyclical fiscal stimulus such as reducing taxes or increasing public spending. If State aid is directed to the "wrong" economic areas, State aid will be less efficient in stabilising the economy.

As mentioned above, the State aid given in the crisis period has mainly been to the manufacturing sector and to the horizontal objectives, R&D and regional aid. Targeting the manufacturing sector – especially the automobile industry – has merit in the sense that this sector is among the hardest hit sectors and therefore contributes substantially to the economy's output gap. On the other hand parts of the manufacturing sector have had much unutilised capacity in the years up to the crisis. By focusing specifically on such sectors a much-needed reduction in overcapacity might be prevented. We will discuss this in detail for the automobile industry.

With an objective to stabilise the cyclical downturn in light of the crisis, granting State aid to the horizontal objective of R&D is not a very efficient tool. The benefits from investing in R&D will not materialize in the short- to medium term. However, as a response to an economic crisis, firms may choose to cut back on R&D expenses. Thus as a means of preserving a sufficient level of research and development the State aid may be efficient. It is inherently difficult to assess whether or not State aid to R&D has in fact been efficient.

Regional aid may be justified as a crisis response since a fall in output and employment may have very large effects on specific regions. By granting aid to avoid the closure of a large regional manufacturer that employs a substantial amount of the region's inhabitants this type of aid may be very efficient in targeting the hardest hit areas.

There were a few cases concerning larger amounts of aid to individual firms (individual applications and ad hoc cases) in the real economy under the temporary framework. Although there were numerous such cases in the financial sector, only four firms outside the financial sector received State aid with legal basis in the temporary framework: The car producers Ford (Romania), Volvo (Sweden) and SAAB (Sweden) as well as the steel manufacturer JSC LM (Latvia).[78] The automobile cases will be addressed briefly in section 3.4. The aid to the steel manufacturer JSC LM did have a potential to distort competition – it was a selective guarantee granted to a firm that exports the bulk of its production to the rest of the EU[79] – but it was nonetheless one of a kind.

The general findings about the efficiency of State aid are mostly positive, cf. Box 5. If applying the general findings to the State aid granted during the recent crisis one should expect that recipients are more likely to survive although for some firms the aid may merely have postponed the bankruptcy. There are generally diminishing returns to scale when granting aid but this is unlikely to play a major role in this respect as there were only limited increases in the amount of aid given to any sector or horizontal objective in the real economy.

[78] Cases N478/2009, N680/2009, N80/2009, N541/2009, N520/2010 and N670/2009.
[79] Case N670/2009.

Box 5: General empirical findings about the efficiency of State aid

- State aid improves the probability of survival of firms.
- There are indications that State aid merely postpones troubled firms' bankruptcies.
- State aid does in general have a positive impact on the objective sought promoted.
- There is diminishing return to the amount of aid, meaning that there is less value generated from State aid to a certain objective if there is already granted much aid to this objective.

Source: Nitsche and Heidhues (2006) and Chindooroy (2005).

The use of State aid instead of general fiscal measures greatly risks distorting the internal market. This will be the case when State aid is not well targeted. By supporting industries or specific firms with overcapacity, the aid is providing a strong competitive disadvantage to firms in the same industry or industries in other. Several examples can be found in the past of countries supporting firms being their so-called national champions. There is very little evidence that this type of targeted State aid has a larger effect in stabilizing the cyclical downturn than general fiscal measures, and there is substantial evidence that it distorts internal market competition.

3.4. Effectiveness and efficiency of State aid to the automobile industry

3.4.1. Effectiveness

The automobile sector is accustomed to demand that fluctuates highly with business cycles but the present crisis' effect on the sector was exacerbated by other factors than just the economic downturn. As a provider of expensive durable goods the automobile sector relies massively on the terms and availability of loan financing to consumers.[80] Since this crisis was first and foremost a financial crisis lending volumes and terms have deteriorated. In other words, not only the severity but also the nature of the crisis has affected the sector negatively. Besides the deterioration in the general economic situation and consumer lending terms the crisis was preceded by a drastic increase in the oil price. From January 2007 to July 2008 the oil price increased by 197 %, which increased material costs and shifted consumer preferences towards smaller, less profitable cars.[81]

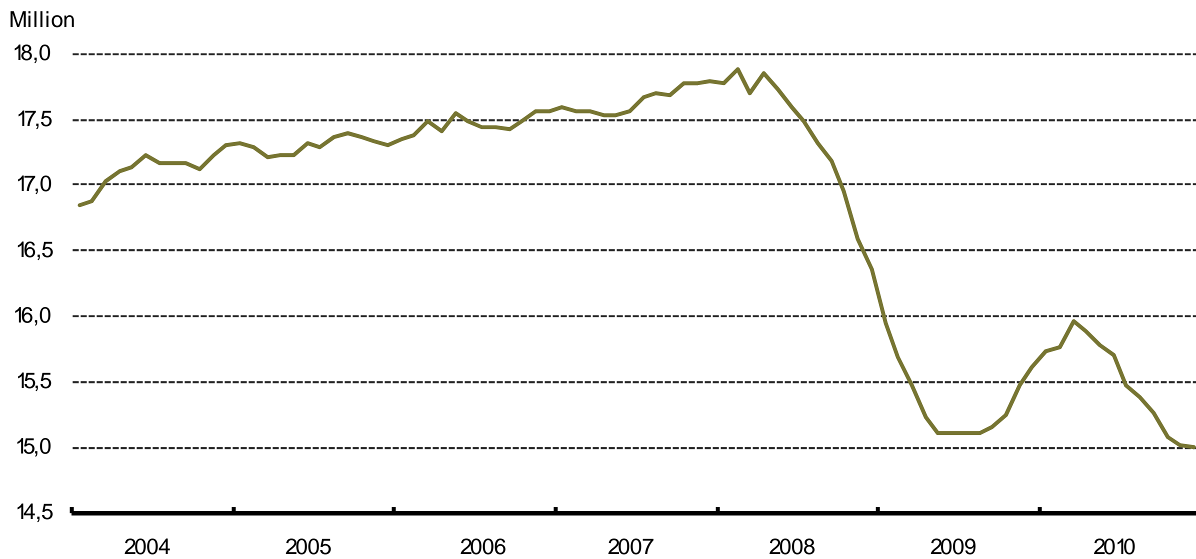
The outcome of the crisis in the car sector was a historical drop in new car registrations in the end of 2008. Car registrations quickly fell to the lowest level recorded for more than a decade before it saw a small rebound in late 2009/early 2010, cf. Figure 14. Part of the decline in 2009 came from a drop in exports that fell by 31 % in 2009.[82]

[80] Moreover, some car manufacturers have in-house financing divisions that provide loans to customers and these divisions account for approximately 15 % of manufacturers' earnings, cf. IHS (2009). Credit access problems also affect the profitability of these divisions.

[81] OECD Economic Outlook 2009 Issue 2 and own calculation of oil price increase based on data from U.S. Energy Information Administration, http://www.eia.doe.gov/dnav/pet/pet_pri_wco_k_w.htm.

[82] ECEI (2009).

Figure 14: New car registrations in EU during the last year, 2004-2010



Note: The figure displays the new car registrations during the last 12 months. Data for Cyprus, Malta, Romania and Bulgaria is not included.

Source: Copenhagen Economics based on figures from ACEA.

To protect jobs in the industry Member States have implemented various support initiatives, including guarantees, loans, short-term working allowance schemes,[83] subsidies to firms in difficulty and scrapping programs where the replacement of an older car with a newer car is subsidised.[84] Some of these measures have required the recipient firms to produce more energy-efficient cars in return for the support.[85]

The State aid directly targeted at the automobile sector has indeed saved or created jobs in the industry. Since 2008 the European Commission has processed 25 State aid cases. Of these, many were of a considerable size, including six State aid initiatives with EUR 400 million or more granted or loaned to firms.[86] The support to the Spanish Ford factory Almussafes (N473/2008) was estimated to save 5,000 jobs,[87] but also other cases were estimated to have a direct job-saving effect (see e.g. case N126/2010 in Poland or NN15/2009 in the UK).

On top of the direct support to the car sector that was processed by the European Commission come two other types of State aid. First, there is the State aid that was exempted from treatment via the *de minimis* limit in the temporary framework. This type of State aid is almost by definition impossible to measure. Second, there is the State aid that was given to horizontal objectives, such as environmental protection or research and development, but aided the car sector. The car sector has benefitted substantially from these measures and it appears that the aid has translated into sustainable investments.

[83] An example is the German extension of the period of receipt of short-time allowance. The scheme extended the allowance period six months and introduced compensation for firms that give short-time precedence over redundancies, c.f. e.g. European Commission (2009f).

[84] Scrapping programmes do not constitute State aid unless they are only open to certain undertakings, cf. EU 2009 Communication "Responding to the crisis in the European automotive industry", Annex 3. We do therefore not consider scrapping programmes in the following. The same principle applies to other schemes such as working allowances.

[85] OECD Economic Outlook 2009 Issue 2.

[86] Three initiatives in Sweden, 2 in Romania and one in the Netherlands, cf. DG Competition case searches.

[87] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/09/958. Note that the case was not adopted under the temporary framework.

All the five largest car producing countries in EU have implemented extensive State aid measures to stimulate green technology including environmentally friendly cars, cf. Table 10.

Table 10: Green State aid crisis initiatives in largest car producing countries in EU

Country	Case number	Description
Germany	N426/09	Subsidised interest rates relating to investment loans for financing projects which consists of the production of new products which significantly improve environmental protection
France	N11/09	Temporary scheme to grant reduced-interest loans to businesses producing green products
UK	N72/09	Interest rate subsidy for investment loans for production of green products, initially aimed at the car sector
Italy	N542/09	Interest rate subsidy for investment loans for production of green car component products
Spain	N140/09	Subsidised interest rates relating to investment loans for financing projects, which consist of the production of green cars and car components which contribute to the realisation of green cars

Source: DG Competition cases listed in table. Links to cases can be found in the references.

Of these five countries' schemes, the schemes in UK, Italy and Spain were explicitly linked to the automobile sector. Moreover, no other Member States than the five abovementioned countries used the temporary framework for the real economy to introduce schemes of aid for the production of green products. The exemption to grant aid to the production of green products under the temporary framework for the real economy thus became highly linked to the automobile sector.

In one of the French cases (N23/2009) the European Commission successfully forced the French government to change a sector support scheme favouring French producers into a non-discriminatory horizontal scheme.[88] However, the other French scheme (N11/2009), a UK scheme (N72/2009) and the Spanish scheme have received critique for defining green products such that they de facto included almost only environmentally friendly cars and not other green products.[89] Sectoral State aid disguised as horizontal aid is detrimental to long-run sustainability of the sector but as long as the aid is truly used for the development of green production initiatives that would otherwise not have taken place the aid does serve a purpose.

3.4.2. Efficiency

Competition distortions between countries can notably take place through one country offering more State aid to car producers than others. This phenomenon is not new in the car sector, quite the contrary. Since the Second World War policies aimed at attracting car producers have been observed and they have sometimes turning into actual subsidy races between countries.[90]

The debate on State aid to the automobile sector during the crisis has, for a large part, revolved around the possible return to protectionism. A notable case was the French automobile sector aid, see case N23/2009, that was preceded by initial French requirements that aided firms did not move activities out of France.

[88] Nicolini et al. (2010).
[89] Ibid.
[90] Dancet and Rosenstock (1995) and Nicolini et al. (2010).

In this case, and in a similar case concerning an attempt from General Motors to sell its Opel/Vauxhall European operations, the European Commission enforced that schemes were not allowed to contain any requirements on the location of activities or any preference for domestically based firms.[91]

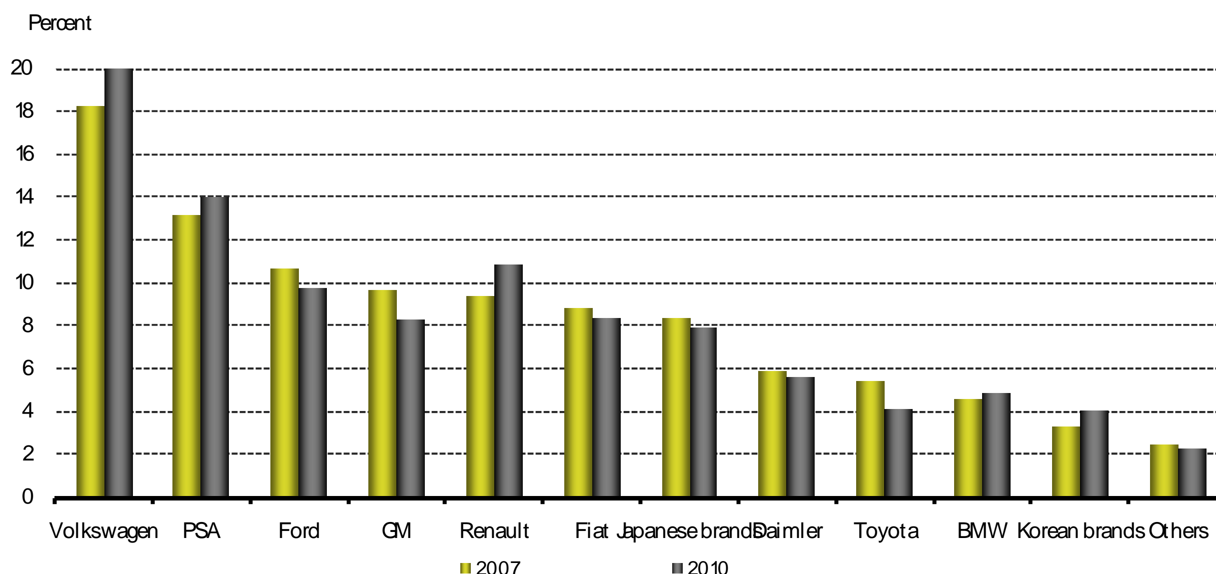
The individual cases that were approved by the European Commission, i.e. the cases where aid was granted to Ford (Romania), Volvo (Sweden) and Saab (Sweden), have not escaped criticism. Saab and Volvo were granted aid although the first has not been profitable for years and the latter has only been marginally profitable - and the aid granted to both of them have been criticised as unintended outcomes of large US automobile bailouts.[92]

In general, a clear distinction should be made between the aid to the entire sector via schemes and aid to individual firms. Cases concerning aid to individual firms are, almost by definition, more likely to be problematic in terms of adverse effects to competition or moral hazard. Given the scope of individual cases – only three automobile producers have received individual aid under the temporary framework – the problem is probably small compared to the State aid issues in the financial sector. Nonetheless, such cases should call for caution and a general recommendation may be to use schemes over individual measures and aid targeted at the demand-side over aid targeted at the supply-side wherever possible. During the recent crisis, the majority of measures adopted by Member States in the automobile sector were indeed targeted at the demand-side.[93]

The development in market shares during the crisis show that the two largest producers in Europe, Volkswagen (producing Audi, Seat, Skoda and Volkswagen) and PSA (producing Citroën and Peugeot) increased their market share on behalf of a number of producers with smaller market shares in Europe. BMW, the group of Korean brands and especially Renault also increased their market shares during the crisis, cf. Figure 15.

[91] European Commission (2010a).
[92] E.g. The Economist (2010) and Bloomberg (2008). Volvo and Saab are owned by Ford and General Motors respectively that both received large bailouts in the US and conjectures had, at the time, that the sale of the two Swedish subsidiaries might have been part of the restructuring plans for Ford and General Motors.
[93] European Commission (2009f).

Figure 15: Market shares for EU car producers, 2007 and 2010



Note: Market shares are calculated from the registration of new cars. This method underestimates the market share of high-end producers that produce expensive cars and overestimates the market share of producers of inexpensive cars. 'Japanese brands' include Daihatsu, Honda, Mazda, Mitsubishi, Nissan, Subaru, Suzuki and others. 'Korean brands' include Hyundai, Kia and others.

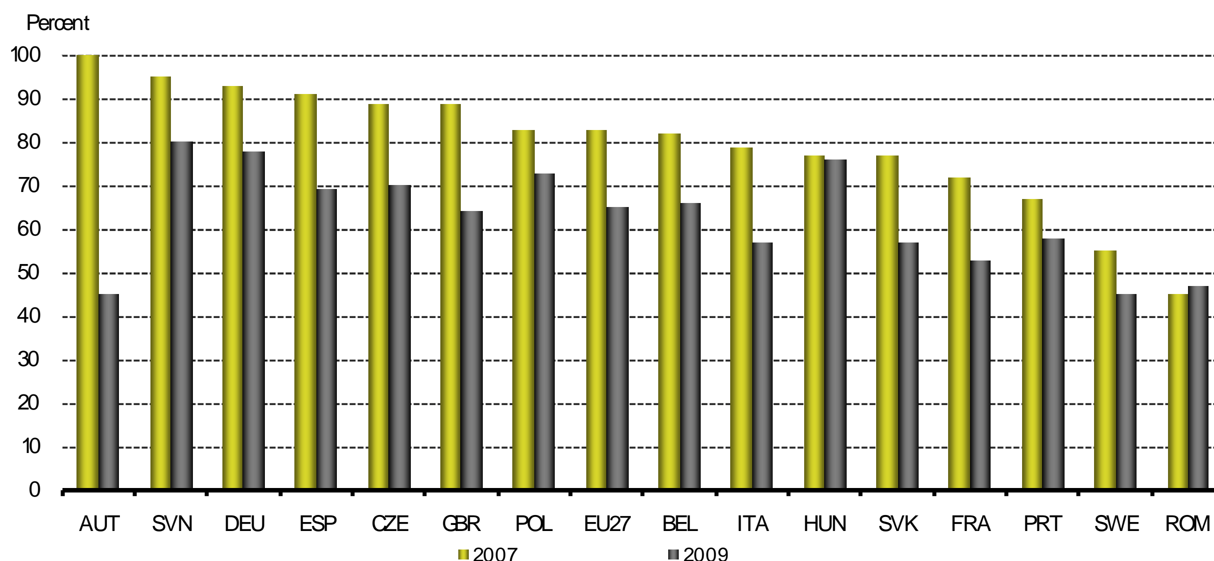
Source: Copenhagen Economics based on figures from ACEA.

The sector faces a set of longer-term challenges that should ideally be kept in mind when granting State aid. If ignored, State aid carries the obvious risk of deteriorating the structural problems already faced by the industry. The main long-term challenges are:

- **Excess capacity:** For years there has been excess capacity in EU car production, which should be inhibited to improve profitability and reduce dependence on public aid.
- **Transition to green technology:** There is pressure to make the industry greener, including smaller cars and new technologies, but smaller cars are less profitable and new technologies are costly.
- **Political biases:** The high geographical concentration and existence of national champions are likely to bias national State aid decisions towards short-term considerations, subsidy races and protectionist measures.

The problem of excess capacity has only been aggravated by the crisis. When going into the crisis in 2007 the EU average for car producing countries was a utilisation of approximately 83 % with Romania being below 50 %. In 2009 the average EU car production utilisation had fallen to approximately 65 % with Austria, Sweden and Romania being below 50 %, cf. Figure 16. Lower utilisation increases unit costs and exerts pressure on profitability if plants are not closed down.

Figure 16: Capacity utilisation estimates for car producing countries in EU



Source: IHS (2009), Exhibit 5, p. 15.

For the policymakers in Member States and the EU the overcapacity represents a dilemma in a crisis period. Short-term employment considerations will favour job creation while long-term capacity considerations will favour job reductions and plant closures. An optimal solution to the dilemma is probably to limit crisis responses to job savings and avoid new plant openings unless they make the industry significantly greener. The European Commission does however appear to have been successful in combating protectionist measures proposed by Member States.[94]

3.5. Main findings

State aid to the real economy during the crisis has in two dimensions been radically less important than aid to the financial sector. First, overall aid has been nearly stable over the period 2006 to 2009 while aid to the financial aid has exploded. Second, the change of rules was very limited, temporarily raising the ceiling for which aid would be accepted without specific EU vetting or simplifying approval procedures. We would like to highlight five points in our review.

First, we are looking at the specific role of State aid under the crisis and not performing a general review of EU's State aid policies. The criteria by which the State aid should be evaluated foremost is whether measures of a State aid character would stabilise the overall economy better than if the equivalent funds were used to ease macroeconomic policies by more general measures such as a lower VAT rate or cuts in social contributions.

Second, the very limited scale of interventions implies that the effect on overall stabilisation of the economy is likely to be limited.

Third, while the scale of support has been limited, we find the overall focus as a whole well targeted. Most of the measures have aimed at easing the credit constraints that in particular smaller firms have had during the financial crisis given the state of the financial sector. Moreover, the manufacturing sector that was hit hardest has also been the largest beneficiary.

[94] Notably in the case on the French loans to Renault and Peugeot and in the German case on the takeover of Opel, see Wishlade (2010) and Nicolini et al. (2010).

Fourth, the auto industry has in particular benefited from support, which raises some questions. One the one hand this is consistent with the above-mentioned principle of supporting the hardest hit sectors even within the manufacturing industry. Moreover, the auto industry is also in some countries accounting for a large share of employment in particular regions. On the other hand, the industry is characterised by structural overcapacity in EU, suggesting that over time employment will have to go down in a process of industrial consolidation where the most competitive firms should gain market shares. Particular support to individual firms as opposed to more general support to underpin demand for cars may have postponed this process. However, the European Commission does appear to have been effective in preventing State aid measures that provided unduly favours to the individual car manufacturers.

Fifth, the question has been raised whether the crisis should be used to further more long-term goals of the EU such as expanding its research base and/or "greening" the economy. Our response to this question is two-fold:

- EU already has generous rules for promoting investments in research, development and innovation (RDI) as well environmental goals. Given that it may take substantial time to boost further such aid if they are to be of high quality, we see limited merit in proposing substantial increases in the context of short-term stabilisation of the economy.
- Bearing in mind though that private firms' spending on RDI maybe at risk of being cut back during the crisis, potentially driven also by lack of external sources of funding, increased government funds can help stabilise private spending in these areas. We note in this context that among the horizontal objectives, R&D and regional development experienced the largest rise in State aid although they by their nature are long-term structural objectives that could be vulnerable to crises.

4. POLICY RECOMMENDATIONS FOR IMPROVED REGULATION AND STATE AID RULES FOR THE FINANCIAL SECTOR AND THE REAL ECONOMY

The crisis has yet again, as in earlier financial and economic crises, triggered massive public interventions to stabilise the financial sector as well as, to a lesser extent, State aid measures to prop up non-financial firms.

For the financial sector this has led to a very substantial regulatory overhaul at both a national, EU and global level. In section 4.1 we review the financial sector regulatory reform mainly from a State aid perspective, underlining that broader reforms are required to make an effective application of State aid rules possible. In section 4.2 we provide some priorities for reform of the State aid rules for rescue and restructuring aid and in section 4.3 some overall priorities for banking policy in terms of reducing moral hazard, distortions to competition and costs to taxpayers. As described previously, State aid for the non-financial sector has been much more limited and in section 4.4 we provide some policy recommendations in this area.

4.1. Reform of financial sector regulation as prerequisite for effective banking State aid rules

One of the main findings in chapter 2 is that State aid rules applicable to the financial sector, and in particular the guidelines for rescue and restructuring as extended by the four bank communications by the European Commission, cannot be seen isolated from general regulation of banks and other financial institutions. This is illustrated by the central premise in the bank communications - that investors in banks such as shareholders and creditors should provide the largest contribution in any support action – which can only be achieved by improving general regulation of the financial sector.

In this context and with some risk of oversimplification, regulatory measures to stabilise the financial sector and prevent future financial crisis can be split into *three main types* of actions described below and summarised in Table 11.

The first group of measures aims to *make the entire financial sector more resilient and less risky* by applying a general set of measures to all firms under the chosen regulatory umbrella. Higher risk-adjusted capital ratios force banks to have more buffers against credit losses. This aims to improve the general resilience of the banking sector against a weakening of the economy and large unexpected credit losses in individual institutions.[95] There are also plans to further increase capital requirements for institutions deemed too large to fail. These institutions have essentially obtained an implicit State guarantee against default, since public authorities have no other de facto recourse than to save the firm in case of trouble.[96] Other instruments than capital buffers have been suggested, e.g. in the UK and US, where proposals have been put forward to limit the extent to which (perceived) high-risk investment banking activities can take place inside banks covered by deposit guarantee schemes. Moreover, an instrument such as financial levies have already been imposed in a number of countries e.g. UK, Germany and France which will inter alia lead to higher capital costs for banks and hence reduce the leverage under which they are operating.

[95] Such policies can be supplemented with cyclically adjusted ratios that force banks to hold more capital in "good" times when their assets are rising in value and hence providing a potential source of even more lending in the absence of tightening capital requirements.

[96] E.g. Press Release by Basel Committee on Banking Supervision (September 12th - 2010) – Group of Governors and Heads of Supervision announces higher global minimum standards.

The second group of measures aims at *creating better incentives for good risk management* within companies, *i.e. improving corporate governance*. Bankers must accept limits to remuneration and/or accept that payment is spread over several years with the explicit purpose of discouraging excessive risk taking. Boards are to be made more directly responsible for the actions taking by executive management. Moreover, shareholders' options to prevent management from taking too much risk at the cost of long-term shareholder value are to be strengthened.

The third group of measures aims to *target directly the weak and, in some cases, ultimately failing financial institutions* with the general purpose of *ensuring that investors in these firms pay the bulk of any costs* associated with rescuing or winding down these institutions. In the first instance, regular stress tests are set to identify institutions with weak buffers against identifiable adverse risks such as a weakening economy and falling property values and equity prices.[97] Subsequently, banks can be required to replenish reserves within a certain time limit. Even more rapid boosting of capital can be obtained by legal provisions where an identified "stress" situation automatically converts senior debt to equity. If banks in trouble ultimately fail, pre-defined resolution regimes and living wills can shorten the period in which public authorities need to intervene and reduce the capital to be injected. Finally, narrowly defined deposit insurance schemes can signal to investors that deposits beyond a certain low level are at their own risk.

Table 11: More stable and less risky financial sector: three groups of measures

Group of measures	Instruments
More resilient financial sector	• Basel III capital ratios • Cyclically adjusted buffer requirements • Taxing financial institutions • Separation of investment and commercial banking
Corporate governance	• Bank bonus rules etc. • Strengthening formal role of boards in internal risk management • Strengthening the role of shareholders vis-à-vis the boards
Targeting weak/failing institutions	• Stress test with recapitalisation requirements • Automatic conversions of debt to equity • Living wills • Design of deposit insurance and its financing

Source: Copenhagen Economics.

The State aid guidelines for rescue and restructuring operations are placed somewhat in the second category and their effective application are conditional on the other parts of the policy packages being implemented. In particular we would like to underline that strengthened capital ratios combined with more vigorous stress testing allow supervisors and policy makers at national and EU level more time to put in place orderly rescue and restructuring packages.

[97] The stress tests carried out in 2010 were seen as far too weak and applied in a non-uniform way. The renewed round in spring 2011 is scheduled to run on tougher criteria and in more uniform manner. However, there has also been voiced critique about the lack of strictness of the 2011 round. The idea to work with three different groups of financial institutions: passing, in doubt and failing - seems promising in also identifying firms in a grey zone where monitoring needs to be stepped up.

4.2. Reform of the rescue and restructuring guidelines and their implementation

We recommend introducing separate rescue and restructuring guidelines for the banking sector including four changes in comparison to the current rescue and restructuring guidelines - as extended by the banking communications: separation of rescue and restructuring measures, higher contributions from investors, role of state ownership and transparency in implementation.

Separation of rescue and restructuring measures

With the extended time, hopefully provided by improved banking regulation, weak institutions should be identified at an earlier stage. Hence, there should be less risk that authorities already in involved in the rescue phase will be forced into accepting measures that are typically part of a restructuring plan such as public capital injections without a proper evaluation of counterpart measures. During a rescue operation, the emphasis should be on short term bridging loans while avoiding measures that jeopardise an orderly restructuring or winding down of the institution.

Higher contributions from investors in restructuring operations

At present, there is a 50 % minimum contribution in a restructuring operation from existing non-public bank investors. This share could be increased and the application of the rule clarified. First, non-public shareholders and creditors should shoulder a much larger part of any solvency gap while the loss for smaller creditors can be protected by narrowly defined deposit insurance schemes. Public injection of equity shares as well as hybrid capital counting under solvency requirements should be accompanied by a rigorous prior write down of asset values to ensure that public investments are not diluted from the very start and to protect tax payers against future losses.

Pure capital injections should largely be avoided unless linked to well-defined policy objectives etc. as allowed under the more general State aid rules. Provided that the market has confidence in the ability of stress tests to deliver the true market value of a firm, the firm should be capable of attracting private capital. This would trigger markedly higher costs for existing shareholders as the value of their shares are diluted. Indeed, persistent stress testing of banks will increase the likelihood that the boards of banks with weak/weakening balance sheets will seek out investors on their own before they are forced into more drastic restructuring at a later stage. In this process, prospective investors will have time to do their own due diligence of the balance sheets to provide appropriate offers of capital injections, merger terms etc.

Role of state ownership

A reform of the rescue and restructuring rules could also clarify the role of banks owned partly or wholly by a state. It is clear from Treaty Rules that state ownership is fully compatible with internal market rules provided the state owner acts as a rational investor and require a normal market return.

While this has always proven to be a difficult benchmark to use in practice, it would seem inappropriate to limit Member States' right to increase their ownership share in the banking system during a crisis. However, three types of "rules" could be considered.

- To protect taxpayers' interest, there should be a clear interest in limiting the provision of capital by public authorities to buying new shares rather than conducting pure capital transfers without counterpart values. Provided that the rights of previous investors are diluted appropriately, future earnings from such shares could be expected to reach what would be expected by a rational investor.
- This principle could then be combined with a strengthened reporting mechanism to ensure that normal market behaviour is pursued by the public owner in the immediate years following a public capital injection.
- State owned banks would always be assumed to ultimately have an implicit state guarantee. Presently all explicit state guarantees to privately or publicly owned banks are supposed to be priced at uniform principles. Given the huge importance of small variations in funding rates for bank profitability an important question is whether also perceived implicit guarantees should be paid for by the bank.

Transparency in implementation

Given the very substantial discretion the EU Treaty allows the European Commission in interpreting the rather general terms of State aid rules, we suggest that a move towards strengthened transparency in implementation is called for. The key ingredients could be to provide:

- Swifter process and better transparency with respect to the disclosure of the material behind decisions on State aid cases. This will provide central actors with a better understanding of the case law being built up.
- Review the extent to which the guidelines have been applied consistently across countries and firms, covering again both measures deemed compatible and not compatible with the internal market.

Table 12: Recommendation for future banking rescue and restructuring rules

Changes	Reasoning
Better separation of rescue and restructuring measures	Ensure that in the rescue phase authorities are not forced into accepting restructuring measures such as capital injections
Higher non-public shareholder contributions in State aid interventions	To avoid moral hazard it should be ensured that the risk entailed by an investment is also borne by the investors
Clarification of roles of state ownership	To comply with treaty rules, government owned banks must act as a rational investor requiring a normal market return. To avoid competition distortions, principles are needed for e.g. pricing the implicit bail-out guarantee implied by state ownership
Greater transparency in implementation of State aid guidelines	Provide central actors with a better understanding of the case law being built up

Source: Copenhagen Economics.

4.3. Aligning the financial sector reform with State aid policy

This section will focus on how the three sets of measures described in section 4.1[98] can be effectively aligned with State aid guidelines in policy packages to prevent damage to competition. Damage can occur either in the form of direct distortions of competition, creation of ex-ante risk of moral hazard and creation of ex-post risk that bank failure will lead to costly bank rescues with further risks of distortions to competition. We focus on three types of desirable outcomes of banking and financial sector regulation:

- **Ensure orderly rescue of individual entities:** To the extent possible the benefiting recipient should be prevented from using the support to maintain or expand market shares that would otherwise be lost to stronger competitors in the same country, other EU countries or globally.
- **Avoid cross-country institutional differences in regulation:** The differences should only be allowed to the extent that they do not confer cost advantages to institutions located in "lenient" jurisdictions that are (explicitly or implicitly) based on extensive and low cost bail-out expectations among investors (shareholders, lenders and depositors).
- **Avoid leakage:** Regulatory measures may push financial activity towards non-regulated firms engaged in financial activities within the EU or financial firms outside EU where EU regulation confers larger costs on firms than globally. This risk should be minimised.

Based on existing studies and our own evaluation, we suggest some prioritisation of the regulatory reform process in the order of dealing with weak institutions through a credible resolution framework, ensuring that non-public shareholders bear the entire burden of a banking crisis and lastly strengthening banks' balance sheets:

First, we suggest that the primary focus should be on ensuring that policies focused on identifying and dealing with weak financial institutions need to be put at a central place. Automatic schemes to convert debt into equity have been discussed by some countries. We note with some concern that dealing with failing banks seems to be an area where no strong legislative consensus is emerging. This may seriously affect relative funding costs between countries due to different expectations of implicit or explicit bailout of investors, debt holders and depositors in particular.

Second, we believe that a first-best policy is a credible framework where all investors but depositors with limited funds are bearing the full costs of a banking crisis before the public steps in. Furthermore, we suggest that the creation of crisis resolution funds – whether funded by the banking sector or not - can be problematic as they by definition create the impression that bank investors will be bailed out. We have seen in chapter 2 that funding costs go up in countries that clearly signal that lenders will pay in a case of a default. This suggests as a very minimum that countries that de facto intend to bail out more than minor deposit holdings should charge financial institutions a premium that corresponds to the funding advantage gained through the implicit guarantee. Such a premium will not remove the moral hazard involved but ensure smaller distortions between financial institutions with funding bases in different jurisdictions.

[98] Resilient financial sector, corporate governance and targeting weak/failing institutions.

Third, more apparent progress has been made on the group of measures which aims to generally strengthen balance sheets for banks across the board. For instance the adoption of Basel III by G20 and EU has sought among others to strengthen financial institutions' capital requirements, ensure a higher capital quality, limit the gearing ratio and introduce counter-cyclical capital buffers. The implementation of Basel III will gradually proceed until 2023 (capital requirements should be introduced in 2015).

Moreover, when considering the effectiveness of regulatory measures one should not forget some of the central lessons learnt from many decades of financial market innovation and the deregulation process that went along with it. From the 1970s onwards, financial market regulators in many OECD countries increasingly came to the view that regulation could often very quickly become obsolete as financial firms devised new ways of doing business that effectively brought the targeted regulated activity wholly or partly outside the remit of the regulator. We will most likely see that again. Moreover, some of that innovation will bring activities outside the regulated entities. Some of the largest collapses in US financial sector in 2008 were linked to massive liabilities outside the regulated banking sector but with massive links to investment and commercial banks.

Table 13: Learning points when aligning financial regulation with State aid policy

Learning point	Reasoning
Financial regulation reform in line with recommendations in Table 11 is a pre condition for application of State aid rules which should be in line with the recommendation in Table 12	Due to the systemic nature of the financial sector, governments will most likely bail ailing institutions out, *in the absence* of proper regulative instruments such as credible resolution schemes, living wills etc. Without a proper focus on weak institutions e.g. through stress tests the sudden need for urgent government interventions may render formal State aid rules of little use.
The easier it is to identify and orderly wind down weak institutions, supplemented by a solid State aid framework, the less important capital buffer requirements etc. become.	Public interventions become expensive when governments cannot distinguish between viable and non-viable firms and inject money into the latter. This risk is naturally increased when non-public shareholders do not bear a sufficient amount of the costs of a failure. The better regulation and supervision deal with failing institutions through resolution schemes, stress tests and restructuring guidelines, the less important it becomes to increase banks' resilience through e.g. requirements on capital buffers etc. These requirements have side effects such as increased cost of lending and driving activity into shadow banking systems without regulation. These requirements are only a second best solution which should be avoided if possible.
Dealing effectively and directly with troubled banks may prove more resilient as an approach than general measures to reduce risks in banking sector which tends to be undermined by financial innovation over time.	The decades of financial market innovation has shown that financial sector regulation may not be particularly effective over time. By ensuring that weak financial institutions are restructured in orderly fashion through resolution schemes and State aid guidelines the need for other types of regulation (such as capital requirements mentioned above) declines. This is positive in light of the powers of financial sector innovation to shift the supposedly regulated activities to non-banking sectors etc.

Source: Copenhagen Economics.

4.4. Overall assessment of crisis State aid policy for the real economy

By and large, we find that the State aid rules as applied to the non-financial sector during the crisis have performed relatively well. Only relatively minor regulatory changes to the framework have been applied.[99] In any case the majority of the increased amount of crisis related State aid has been distributed to the financial sector. We have in this study focused on two questions related to the non-financial sector:

First, has the focus of support on the automobile industry been justified by economic reasoning? There are arguments in favour. There is no doubt that the massive reductions in demand for cars, might have subjected the regions and firms involved to even more drastic cut backs in the absence of some off-setting measures. This would have involved lay-offs of workers with limited alternative of short-term employment prospects. This provides an argument for targeted support to keep plants running during very adverse economic times to protect the fixed investments made into the plants. Under such conditions State aid can stabilise the economy more than the same amount of public money being spent on general economic support measures i.e. lower tax rates. On the other hand, the auto industry is characterised by structural overcapacity and the support offered during the crisis may inadvertently have helped to prolong the adjustment period. There were some concerns that policy measures to support specific firms were distorting the internal market, but it appears that the European Commission were effective in preventing this concern to materialise to a significant degree.

Second, should State aid rules as a result of the crisis have been used to shift public spending and support to underpin longer-term goals such as innovation, climate change mitigation etc.? Our response here is also somewhat mixed. Targeting spending on areas like research, development and innovation is intrinsically a process that takes time and good preparation in order to deliver good results. By contrast, the purpose of providing beneficial tax aid rules in a crisis is to allow spending that can have quick and notable effects in terms of stabilising the economy over and above the effect from more conventional macro-economic policies. That being said we do recognise that long-term capital spending by firms may be one of the first victims during a crisis and that public action to underpin such private sector spending during a crisis may prove useful. In essence, easing such rules have more to do with protecting existing levels of spending than ramping up spending from existing levels.

However, our overall review is that there is little need to maintain any of the increased room for manoeuvre that has been provided during the crisis. The case for reducing State aid that is not narrowly linked to research externalities, public goods etc. is as valid as ever.

[99] The decision to ensure a quick process of State aid applications was a rather large intervention and has undoubtedly been of benefit to Member States.

Table 14: Overall assessment of State aid to the real economy

Measures	Positive features	Negative features	Assessment
Focus on automobile industry	Protect the loss of large fixed investments	Already over capacity in the sector which needs to be adjusted	The focus has been justified during the crisis but capacity adjustment should not be prevented
Use of crisis related State aid to enhance R&D, climate mitigation etc.	Contribute to a sufficient level of spending on long term issues	Implementation of R&D funding etc. takes time and is not well suited for stabilisation purposes	Difficult to assess the effectiveness due to the long-term nature of R&D etc.

Source: Copenhagen Economics.

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ANNEX 1: CONCENTRATION AND ASSET OWNERSHIP IN THE FINANCIAL SECTOR

Table 15: Herfindahl index for five largest credit institutions, 2005-09

Country	Herfindahl index for credit institutions					Share of total assets of the five largest credit institutions				
	2005	**2006**	**2007**	**2008**	**2009**	**2005**	**2006**	**2007**	**2008**	2009
Belgium	2112	2041	2079	1881	1622	85.3	84.4	83.4	80.8	77.1
Bulgaria	698	707	833	834	846	50.8	50.3	56.7	57.3	58.3
Czech Republic	1155	1104	1100	1014	1032	65.5	64.1	65.7	62.1	62.4
Denmark	1115	1071	1120	1229	1042	66.3	64.7	64.2	66	64
Germany	174	178	183	191	206	21.6	22	22	22.7	25
Estonia	4039	3593	3410	3120	3090	98.1	97.1	95.7	94.8	93.4
Ireland	644	649	690	794	881	47.8	49	50.4	55.3	58.8
Greece	1096	1101	1096	1172	1184	65.6	66.3	67.7	69.5	69.2
Spain	487	442	459	497	507	42	40.4	41	42.4	43.3
France	727	726	679	681	605	51.9	52.3	51.8	51.2	47.2
Italy	230	220	328	344	353	26.8	26.2	33.1	33	34
Cyprus	1029	1056	1089	1019	1086	59.8	63.9	64.9	63.8	65
Latvia	1176	1271	1158	1205	1181	67.3	69.2	67.2	70.2	69.3
Lithuania	1838	1913	1827	1714	1693	80.6	82.5	80.9	81.3	80.5
Luxembourg	312	294	276	278	288	30.7	29.1	27.9	27.3	27.8
Hungary	795	823	840	819	861	53.2	53.5	54.1	54.4	55.2
Malta	1330	1171	1177	1236	1246	75.3	70.9	70.2	72.8	72.7
Netherlands	1796	1822	1928	2168	2032	84.5	85.1	86.3	86.8	85
Austria	560	534	527	454	414	45	43.8	42.8	39	37.2
Poland	650	599	640	562	574	48.5	46.1	46.6	44.2	43.9
Portugal	1154	1134	1098	1114	1150	68.8	67.9	67.8	69.1	70.1
Romania	1115	1165	1041	922	857	59.4	60.1	56.3	54	52.4
Slovenia	1369	1300	1282	1268	1256	63	62	59.5	59.1	59.7
Slovakia	1076	1131	1082	1197	1273	67.7	66.9	68.2	71.6	72.1
Finland	2730	2560	2540	3160	3120	82.9	82.3	81.2	82.8	82.6
Sweden	845	856	934	953	899	57.3	57.8	61	61.9	60.7
United Kingdom	399	394	449	412	467	36.3	35.9	40.7	36.5	40.8

Country	Herfindahl index for credit institutions					Share of total assets of the five largest credit institutions				
MU16	640	634	659	687	663	42.8	43.1	44.4	44.7	44.6
Unweighted average	1052	1022	1032	1091	1076	56.7	56.4	56.7	57	57
EU27	614	592	596	665	632	42.6	41.5	41.5	45.2	44.3
Unweighted average	1135	1106	1106	1120	1102	59.3	59	59.5	59.6	59.5

Note: The Herfindahl index is a measure of the concentration in an industry and is calculated as the sum of squared market shares. It ranges from 0 to 10,000 and a higher value represents a larger concentration.

Source: ECB (2010i).

ANNEX 2: USE OF THE TEMPORARY FRAMEWORK FOR THE REAL ECONOMY

Table 16: Member States' use of the temporary framework for the real economy

Country	Limited amounts of aid	Guarantees	Subsidised interest rates	Green products	Risk capital	Export credit insurance
Austria	N47a/2009, N317/2009, SA.32171				N47d/2009	N434/2009
Belgium		N117/2009			N68/2009	N532/2009
Bulgaria	N333/2010					
Cyprus						
Czech Republic	N236/2009, SA.32664		N237/2009			
Denmark						N198/2009, N554/2009, SA.32047, SA.32513
Estonia	N387/2009, SA.32104					
Finland	N224/2009	N82b/2009				N258/2009, SA.32075
France	N7/2009, N188/2009, N278/2009, SA.32140	N23/2009	N15/2009	N11/2009	N119/2009, N36/2009	N449/2009, SA.32090
Germany	N668/2008, N299/2009, N411/2009, N597/2009, SA.32031	N27/2009, SA32032	N661/2008, N38/2009, SA.32030	N426/2009	N39/2009	N384/2009, N456/2009, N91/2010, SA.32033
Greece	N304/2009, SA.32512	N308/2009	N309/2009			
Hungary	N77/2009, SA.32040, SA32061	N114/2009, N203/2009, N341/2009, N56/2010, Sa.32306	N78/2009			N187/2010
Ireland	N186/2009, N473/2009					
Italy	N248/2009, N706/2009, SA.32036	N266/2009, SA.32035	N268/2009, SA.32039	N542/2009	N279/2009	
Latvia	N124/2009, N506/2009	N139/2009				N84/2010

Country	Limited amounts of aid	Guarantees	Subsidised interest rates	Green products	Risk capital	Export credit insurance
Lithuania	N272/2009, N523/2009, Sa.32575					N659/2009
Luxembourg	N99/2009	N128/2009				N50/2009
Malta	N118/2009					
Netherlands	N156/2009, SA.32160, SA.32506					N409/2009, N14/2010
Poland	N408/2009, N22/1020, N86/2010					
Portugal	N13/2009					
Romania	N547/2009, SA.32174	N286/2009, N173/2010, SA.32551				
Slovakia	N222/2009, N711/2009, N707/2009					
Slovenia	N228/2009, N396/2010	NN34/2009, N105/2010				N713/2009
Spain	N307/2009	N336/2009, N68/2010, N157/2010		N140/2009		
Sweden						N605/2009
United Kingdom	N43/2009, SA.32110		N257/2009, N460/2009	N72/2009		
Count	**23**	**12**	**7**	**5**	**5**	**13**

Notes: The table displays which Member States that adopted schemes within each of the six possible measures under the temporary framework for the real economy. Only cases where the European Commission decided not to raise objections are included. The table is primarily based on searches using DG Competition's search tool for all State aid cases that have article 107 (3)(b) TFEU as the primary legal basis and the temporary framework for the real economy as the secondary legal basis. As such searches do not encompass all the actual cases, the searches have been complemented with cases mentioned in relevant editions of the European Commission's Competition Policy Newsletter.

Source: Copenhagen Economics based on DG Competition's case search tool and European Commission (2009g), (2009h), (2010c), (2010d) and (2010e).

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