

## Benoît Cœuré: Central banking, insurance and incentives

Speech by Mr Benoît Cœuré, Member of the Executive Board of the European Central Bank, at the ECB conference: “Debt, growth and macroeconomic policies”, Frankfurt, 6 December 2012.

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Ladies and Gentlemen,

It is a pleasure to be here with you tonight.

The underlying theme of this conference is the aftermath of the financial crisis. Papers on the implications of debt overhang, on the interaction between private and public indebtedness and on the sovereign debt crisis feature prominently in the conference programme. The aftermath of the financial crisis, which I will focus on tonight, however, has to do with the changes in the nature of monetary policy operations. Central bank liquidity has increased dramatically over the past few years. “Unconventional” or “non-standard” measures have been deployed in all the main industrial countries. At the ECB, such measures have always aimed at improving the transmission of standard policy decisions, but they have assumed different forms over time. In the first phase of the crisis, they were mainly aimed at banks with the objective of preventing a collapse of the interbank market. As the financial crisis has evolved into a sovereign debt crisis, we have stepped up the size of our operations with banks, and we have also aimed at removing redenomination risk from government bond markets through the decision on Outright Monetary Transactions (OMTs).

As a monetary policy-maker, I am convinced that these measures were necessary to prevent the financial crisis from having further adverse consequences on both the financial system and on the macro economy and therefore, ultimately, on medium term price stability. A freezing-up of the interbank market could have caused a credit crunch and a downward spiral in asset prices. The money supply would have shrunk. The ensuing collapse in aggregate demand would have put downward pressure on prices. A Great Depression scenario could have occurred. The same scenario could materialise at local level in case of fear that countries could leave the euro, and severely hamper our ability to deliver price-stability.

Thanks to our non-standard measures, central bank liquidity has proved to be an effective insurance mechanism against the risk of an economic disaster.

Providing insurance can, however, generate perverse incentives. Knowledge of the existence of a safety net can encourage imprudent behaviour. Concern about this has been expressed in connection with our new OMT programme, under which we could purchase potentially unlimited amounts of sovereign bonds. By easing market pressure on governments, it is argued, ECB interventions could lead to a weakening of fiscal consolidation and reform efforts.

The focus of my remarks tonight is this trade-off between insurance and incentives. I am going to start from the general principle of committing to provide partial insurance, which arises from the literature on microeconomics. I will then illustrate how our OMT programme and also the parallel plans for a banking union can be interpreted in the light of this principle.

### 1. The basic principle: how to commit to partial insurance?

The trade-off between insurance and incentives, or equivalently, between ex post efficiency and ex ante efficiency is a recurrent theme in microeconomics.<sup>1</sup> I will argue that this trade-off is a useful framework for thinking about the challenges we face in the euro area. It is a widely studied topic, so we have been able to draw on and adapt existing insights when addressing those challenges.

Why is there a trade-off? Why is ex post efficiency not the same as ex ante efficiency? The reason is that we all react to the circumstances in which we operate. If circumstances change, so does our behaviour. Thus, policies that ensure ex post efficiency are not necessarily efficient ex ante, because people react to those policies by altering their own behaviour. Ex post and ex ante efficiency generally do not overlap.

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<sup>1</sup> As so often in economics, the theme can be traced back all the way to Adam Smith’s “The Wealth of Nations” in 1776. He describes how tenants underinvest in the land they do not own. Around the same time, in 1740, a version of the free-rider problem (a closely related incentive problem) appears in David Hume’s “Treatise of Human Nature” (see J.-J. Laffont and D. Martimort, “The Theory of Incentives”, Princeton University Press, 2002).

Allow me for a moment to be somewhat schoolmasterly and use the example of car insurance to illustrate the basic trade-off.<sup>2</sup> Car insurance is obviously desirable ex post, since it is not optimal for people to bear the consequences of a car accident by themselves. We are all more or less risk averse and feel much better when we have such car insurance. Without it, some of us would stop driving altogether if we had to fully pay for the consequences of an accident. Insurance improves ex post efficiency. Mark Twain is credited with saying that: **“A banker is a fellow who lends you his umbrella when the sun is shining, but wants it back the minute it begins to rain”**. He describes a world that is not ex-post efficient.

Let’s now take an ex ante perspective. Carrying an umbrella does not encourage rain, but why drive carefully if we never bear the negative consequences of careless driving? Insurance may well encourage imprudent driving. In other words, insurance hurts incentives, that is, it reduces ex ante efficiency.

The way to manage the trade-off between ex ante and ex post efficiency is through *partial insurance*. We are usually not fully insured against car accidents. There is a deductible, a sum that we have to pay out of our own pocket if we file an insurance claim – in finance speak: we bear the “first loss”. Moreover, our insurance depends on the car we drive, our past record of insurance claims and also on whether it can be shown that we were negligent or not. In other words, insurance companies worry about the behaviour that insurance induces.

The trade-off between ex ante and ex post efficiency is apparent from the fact that if the deductible is too high, it may discourage insurance and therefore driving altogether. If, on the other hand, the deductible is too low, then drivers may become imprudent again. The same trade-off can be found in other policy domains – say, for example health care co-payments –, and, as I will argue next, in the relationship between outside investors and inside users of funds.

## 2. The case of sovereign debt: insurance and incentives

To some extent, a borrower’s income and hence his ability to repay debt is subject to forces outside his control. A bank, for example, cannot perfectly control its cash flow, which depends on what its competitors do and on general economic conditions, among other factors. Similarly, a country cannot perfectly control the business cycle; its income also depends on worldwide conditions that matter for its imports and exports. At any moment in time, there can be mismatch between a borrower’s income and his expenditures. Without access to capital markets, without the ability to borrow, banks would have to cut lending and countries would have to limit the provision of services once their income dropped. The ability to borrow therefore *insures* against shocks to income and *ensures* the smooth functioning of an economy. Access to capital markets improves ex post efficiency.

But like car insurers, investors in capital markets worry about perverse incentives. Not so much about imprudent driving, but about some other forms of imprudence. A borrower’s income is not only subject to exogenous shocks. It is also the outcome of his decisions. Investors therefore worry that providing full insurance against the risk of income fluctuations can lead to irresponsible – for example, short-term-oriented – investment or policy decisions.<sup>3</sup>

When financing sovereigns, an additional and somewhat more fundamental problem arises: the so-called willingness to pay. Governments cannot be forced or be contractually obliged to repay their debt. Investors have to rely on the willingness of governments to make repayments, or else stop lending.<sup>4</sup>

It is precisely this threat of the loss of access to capital markets that is analogous to the deductible in car insurance. It is a form of partial insurance that provides incentives for governments to undertake good policy and to repay. While a loss of access means less insurance against income shocks and hence less ex post efficiency, it improves ex ante efficiency.

The trade-off between ex ante and ex post efficiency automatically leads to a commitment problem. Let me go back to the example of car insurance. Providing only partial insurance, an insurance company expects drivers not to be imprudent so that accidents are indeed the result of bad luck. But once an accident has occurred, the insurance company could conceivably ignore the original contract and fully reimburse any claim. After all, the

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<sup>2</sup> Indeed, the trade-off between ex-ante and ex-post efficiency first appeared in modern economics in the context of “moral hazard” in insurance markets (see for example M. Spence and R. Zeckhauser, “Insurance Information, and Individual Action,” *American Economic Review*, 1971).

<sup>3</sup> The incentive problem started to appear in (corporate) finance with M. Jensen and W. Meckling, “The Theory of the Firm, Managerial Behavior, Agency Costs and Ownership Structure,” *Journal of Financial Economics*, 1976; S. Myers, “Determinants of Corporate Borrowing,” *Journal of Financial Economics*, 1977; and J. Stiglitz and A. Weiss, “Credit Rationing in Markets with Imperfect Information,” *American Economic Review*, 1981.

<sup>4</sup> The “contract-theoretic” approach to sovereign debt was pioneered by J. Bulow and K. Rogoff, “A Constant Recontracting Model of Sovereign Debt,” *Journal of Political Economy*, 1989; and J. Bulow and K. Rogoff, “Sovereign Debt: Is Forgive to Forget?,” *American Economic Review*, 1989.

accident was then clearly due to bad luck. Anticipating this “renegotiation” and expecting full insurance after all, drivers have an incentive to become imprudent again.<sup>5</sup>

In practice, this is not a real problem for car insurance since insurance companies can credibly commit to sticking to the original contract. But what about sovereign debt? Would investors gain by nevertheless refinancing a government with a low probability to repay? Or should they stick to shutting the country out of the market since they know that this improves incentives?

Past experience shows that sovereign debt has often been renegotiated as governments and investors find it difficult to commit to a given course of future actions. As this hurts ex ante efficiency and thus leads to a higher cost of borrowing for governments, there have been a number of developments to make sovereign debt more “renegotiation-proof.” Just to give a couple of examples: Bonds started to replace loans in the market for sovereign debt. Bonds, which are more widely held and easily tradable, make sovereign debt more difficult to renegotiate as the number of investors involved increases. Another development is the shortening of the maturity of credit in order to exercise the control right (of not refinancing) more often.

While these trends provide better incentives, they hurt insurance – maybe even excessively so. It may become excessively difficult to re-organise sovereign debt and to adapt to new circumstances. One possibility to counter the trend is to have collective action clauses (CACs). They offer the possibility of easier renegotiation by lowering the threshold for the number of bond-holders to agree to a debt restructuring. Indeed, as of January 1st 2013, all new bonds issued by euro area governments will contain such clauses.<sup>6</sup>

Private markets with their various self-interests may, however, find it difficult to achieve a trade-off between incentives and insurance that is optimal for everyone. In fact, markets can worry so much about incentives that they stop providing insurance altogether – in this case markets can freeze-up. And indeed, we have experienced numerous quasi-market freeze-ups in various segments of the interbank, credit and sovereign debt markets. When this happens, it is time for the public sector to step in.<sup>7</sup>

But striking the right balance between insurance and incentives is also a problem for public authorities. Full insurance produces perverse incentives irrespective of whether it is provided by a private or a public institution. One prominent example in the case of sovereign debt crises is the involvement of the IMF. In return for the insurance it provides by lending to countries in difficulty, the IMF usually receives far-reaching control rights to maintain or re-establish a country’s incentive for solid public finances. Without such far-reaching rights, interventions must take other forms to provide partial insurance.

Financial assistance through the European Financial Stability Facility (EFSF) during the sovereign bond crisis in the euro area has also drawn on the experience of the IMF – partly thanks to the involvement of the IMF itself. At the ECB we had the insurance-versus-incentives trade-off in mind when designing our new OMT programme and in our support of a banking union.

Before moving to the OMT and the banking union as topical and recent examples of the trade-off between ex-ante and ex-post efficiency, let me point out that while this trade-off is particularly stark in crises times, it is very much at the heart of central banking in general. After all, the trade-off is inherent to liquidity provision. Banking, by making long-term loans and financing them with deposits and other short-term debt, is inherently fragile. Maturity transformation exposes banks to liquidity risk.<sup>8</sup> The classic postulate of Bagehot, for a central bank to be a lender

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<sup>5</sup> There is by now a vast literature on the issue of whether and under what circumstances contracts can and will be renegotiated (for an early contribution see D. Fudenberg and J. Tirole, “Moral-Hazard and Renegotiation in Agency Contracts,” *Econometrica*, 1990).

<sup>6</sup> For an extensive analysis of these complex issues, see P. Bolton and O. Jeanne, “Structuring and Restructuring Sovereign Debt: The Role of Seniority”, *Review of Economic Studies*, 2009; and P. Bolton and O. Jeanne, “Structuring and Restructuring Sovereign Debt: The Role of a Bankruptcy Regime”, *Journal of Political Economy*, 2007, and the references therein. A closely related debate is whether default is costly or not for sovereigns in the long term (see for example E. Borensztein and U. Panizza, “The Cost of Sovereign Default,” IMF Working Paper 08/238; and M. Aguiar and G. Gopinath, “Defaultable Debt, Interest Rates and the Current Account,” *Journal of International Economics*, 2006).

<sup>7</sup> The case for public intervention when markets collapse has been made in the light of the recent financial crisis in P. Bolton, T. Santos and J. Scheinkman, “Outside and Inside Liquidity,” *Quarterly Journal of Economics*, 2011; F. Heider, M. Hoerova and C. Holthausen, “Liquidity Hoarding and Interbank Market Spreads: The Role of Counterparty Risk,” European Central Bank Working Paper 1126, 2009. For public intervention in form of asset purchases, see J. Tirole, “Overcoming Adverse Selection: How Public Intervention Can Restore Market Functioning,” *American Economic Review*, 2012; and T. Philippon and V. Skreta, “Efficient Interventions in Markets with Adverse Selection,” *American Economic Review*, 2012.

<sup>8</sup> See D. Diamond and P. Dybvig, “Bank Runs, Deposit Insurance, and Liquidity”, *Journal of Political Economy*, 1983. In fact, it is optimal for ex-ante efficiency to expose banks to liquidity risk, see C. Calomiris and C. Kahn, “The Role of Demandable Debt in Structuring Optimal Banking Arrangements,” *American Economic Review*,

of last resort, but to perform that function at a penalty rate, illustrates both the need for (liquidity) insurance and the need to safeguard incentives. In the words of Bagehot: "If the banks are bad, they will certainly continue bad and will probably become worse if the Government sustains and encourages them."<sup>9</sup> The art of central banking is the art of balancing ex-ante and ex-post efficiency.

### 3. OMTs and committing to partial insurance

The purpose of the OMTs is to establish a backstop in the event of negative self-fulfilling market dynamics. We designed this new programme with features that are in line with an efficient trade-off between insurance and incentives.

The first feature is to provide effective insurance against redenomination risk. Under certain conditions, the ECB stands ready to intervene with amounts commensurate with this objective. In other words, the scope for OMT interventions in government bonds markets is ex ante unlimited. This feature has been correctly interpreted as a commitment. After three months, we can say that it has highlighted the value of commitment. In many countries, sovereign yield spreads edged down when the programme was announced. Currently, yields stand at the lowest levels since the beginning of the crisis.

The second feature of OMTs is that the insurance is partial. The objectives of the programme are clearly delimited. The ECB will only buy bonds with shorter remaining maturities. The ECB does not aim to eliminate all spreads between sovereign bond issuers, because sovereign yields don't have to be identical in a monetary union, and market discipline has a role to play. Nor is the ECB willing to purchase any amount of sovereign bonds necessary to balance governments' inter temporal budget constraints. OMTs will remain consistent with a regime of "monetary dominance",<sup>10</sup> in which governments retain the responsibility of balancing their budgets over the medium term and the ECB remains free to set interest rate so as to ensure the maintenance of price stability over the medium term.

The final feature of OMTs has to do with setting the right incentives for governments. To qualify for interventions, countries must have negotiated with the other euro area governments a precautionary European Stability Mechanism (ESM) programme with strict and effective conditionality. Conditionality serves to ensure that governments continue to correct existing economic and fiscal weaknesses when OMTs are activated. At the same time, OMT purchases will not take place while a country programme is under review. The ECB's actions complement, but do not replace, economic and fiscal reform. Incentives also help explain why interventions will focus on shorter-term debt. Purchases of sovereign bonds will be suspended, should a country fail to comply with its conditionality requirements. Relying on short-term debt strengthens the disciplining power of the right to stop our interventions at any point in time. In short, OMTs strike the right balance between ex-ante and ex-post efficiency, and they are fully compliant with the ECB mandate.

### 4. A banking union and committing to partial insurance

The OMTs can, however, only be part of a larger package to solve the European debt crisis, in which not only sovereigns but also banks have come under stress. In fact, both banks and sovereigns have been caught in a negative feedback loop, with the problems of one feeding on those of the other.

To break out of this loop, elements of a banking union are currently being discussed. These elements need to be considered together and seen in the light of the trade-off between insurance and incentives.

The first element of the banking reform is the creation of a single supervisory mechanism involving the ECB. Besides the obvious coordination and information benefits for supervising banking in a financially integrated area, and given the risk of regulatory capture when the supervisor and the supervised are too close to each other, partially transferring supervisory authority up one level can be seen as a commitment not to renegotiate. It limits regulatory forbearance (a form of insurance) and serves as an incentive for sound risk management in the banking sector. It also ensures the singleness of banks' liabilities in the euro area, congruent with the single monetary policy. Within the ECB, there should be a strict separation between the single supervisory mechanism and monetary policy, as a way to safeguard incentives when liquidity is extended. To quote Bagehot once again: "any aid to a present bad Bank is the surest mode of preventing the establishment of a future good Bank."<sup>11</sup>

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1991; and D. Diamond and R. Rajan, "Liquidity Risk, Liquidity Creation, and Financial Fragility: A Theory of Banking," *Journal of Political Economy*, 2001.

<sup>9</sup> See W. Bagehot (1873), *Lombard Street: A Description of the Money Market*, Henry S. King and Co.

<sup>10</sup> See T. Sargent and N. Wallace, "Some unpleasant monetarist arithmetic", *Federal Reserve Bank of Minneapolis Quarterly Review*, Fall 1981, pp. 1–17.

<sup>11</sup> See W. Bagehot (1873), *op. cit.*

Once incentives are upheld, it is possible and desirable to provide insurance. Incentive-compatible insurance must, however, be partial. And that is why it is important to add other elements to complement the single supervisory mechanism. One such element is a European resolution mechanism. Since a bank's debt should not be insured in full, it should, and in fact will, be possible for banks to fail. Since the beginning of the financial crisis in August 2007, the Federal Deposit Insurance Corporation (FDIC) lists 466 cases in which banks in the United States failed.<sup>12</sup>

Given the special role of banks as intermediaries, the failure of one bank can have adverse effects on the rest of the financial system. Hence, it must be possible to organise an orderly failure. Otherwise, failure is no longer credible and incentives for solid risk management are undermined. To achieve an orderly resolution of financial institutions, especially systemic ones, we need a common resolution regime. The existing legislative proposal for a Recovery and Resolution Directive aims at orderly bank resolution, including early interventions, bailing-in and bridge financing. A further important element of a credible and efficient resolution mechanism would be a common European Resolution Fund. The Recovery and Resolution Directive, together with the European Resolution Fund being financed by contributions from the industry, would ensure incentive-compatibility.

Similarly, the possibility to allow direct bank recapitalisations through the ESM can be an illustration of incentive-compatible insurance, provided that it is implemented once a single supervisory mechanism is established, and that any such recapitalisation is preceded by a burden-sharing exercise where shareholders and national taxpayers bear the first losses.

Let me conclude.

The euro area is going through a serious crisis. For all European policy-makers, the crisis is a formidable challenge, but also an opportunity to learn from past mistakes and to improve the EMU architecture. I believe that a number of decisive steps have been taken in recent months.

In designing such steps, the interplay of many different factors must be borne in mind. I have emphasised tonight that we cannot design insurance and forget about its impact on incentives. When dealing with such complex issues, we have an unquenchable thirst for guidance from economic research. Many of you in the academic community have written extensively on the potential consequences of our policy decisions. Rest assured: we closely follow your work. We may sometimes disagree with your conclusions, but you will always help us to focus our thoughts.

I wish you a productive day at the conference tomorrow.

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<sup>12</sup> See: <http://www.fdic.gov/bank/individual/failed/banklist.html> (accessed on December 5th, 2012).