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How Costly Would a Euro Exit Be?

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TARGET2 and issues related to central banks operations

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1. Introduction

The perspective of this presentation is not to provide a blueprint of how to undo the logistical platform that central banks built to first launch and then manage the euro, but rather to show how complicated, just from an operational point of view, this exercise would be. This presentation thus provides an additional, albeit relatively small, reason to fight any doubt about the survival of the euro. Yet an other reason in this same direction would be the huge complications and the "very significant disruptions, with dramatic macro economic implications." (Nordvig and Firoozye page 4) that could, indeed in all likelihood would, come from the redenomination of euro assets and liabilities into resuscitated national currencies. This aspect of the hypothetical undoing of the euro is only briefly alluded in this paper when referring to the changeover scenario, without at all implying that it is of marginal importance.

In a way, this presentation helps explain why Europeans showed such dogged determination in defending the euro during the crisis, instead of listening to the many siren songs advising or just foreseeing its demise. The logistical nightmare sketched in this paper goes some way in explaining this determination, even if there are other, much more important, economic and political considerations that explain why Europeans spent so much effort in defending their creature.

To a first approximation, the issue of "exiting" consists, from a logistical point of view, in reversing what central banks did in preparing for the launch of the euro until the beginning of 1999 as well as the developments that have followed since.

Already at the end of 1991, the logistical issue was presented as "building the platform" (Saccomanni and Padoa-Schioppa 1992) that would allow the conduct of the single monetary policy. Then the European Monetary institute worked, especially between 1994 and the middle of 1998, to actually build that platform. My first task in joining the ECB in June of 1998 was just to carry out the testing of the platform, to see whether everything had appropriately been prepared (which subsequent experience showed it had been the case).

The choice of my presentation to show how the undoing would be fiendishly difficult, rather than to provide a plan to carry this out, is determined by two considerations, one less and the other more important. The less important consideration is that the preparation of such a plan would be a long and painstaking endeavour, not the task of a conference presentation. The more important one is that I find it much more useful, in practice, to describe the difficulties of such an operation, which add to the huge cost of an exit, than starting to write the plan that would serve for an exit.

The presentation is articulated, after this introduction, in 3 sections plus one for the conclusions.

In the second section, I will briefly recall how the logistics of monetary union was done. In the third section, I would first illustrate which of the many scenarios of "exit" I would address, then I would try to briefly indicate what it would imply to undo the logistics underlying monetary union. A last section with conclusions will follow.

2. How did central banks prepare the logistics of monetary union

Even before the Maastricht Treaty was signed, in February of 1992, Padoa-Schioppa and Saccomanni (1991) identified the need to build the "Platform" which would allow the single monetary policy to be carried out. Indeed they wrote:

> "*The treaty will embody a concept of a central bank; but the task of defining the functions and instruments of the European Central Bank will not end there. During the implementation phase the elaboration and discussion of ideas will continue, within the confines agreed in the texts, and will reach a much deeper level of analysis than is possible in a constitutional document. Our starting-point must therefore be a detailed conceptual view of the functions and instruments of the central bank.* (From the presentation of the paper in the Centre for Economic Policy Research web-site)
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> *The functions of the central banks, which we have already dealt with* (payment systems, monetary policy, banking supervision, Editor´s note), *are performed in each country with instruments and methods that have been honed over the decades. The unity and consistency of the monetary system on the basis of which the central bank operates are such obvious features of the economy that it is hard to imagine that they could be lacking. It is a `platform´ that comprises a multiplicity of elements and institutions. Within each country the homogeneity of this platform does not depend only on the needs of the central bank; it is the end-product of a body of legislation that has been built up gradually, of a market structure developed over many years and of a common economic and even linguistic heritage."* (page 5).

The Maastricht Treaty mandated, in Article 109f (3), the European Monetary Institute, the predecessor of the European Central bank, to specify the regulatory, organisational and logistical framework necessary for the ESCB to perform its tasks in Stage Three, i.e. in Padoa Schioppa and Saccomanni terms, to build the platform.

In the ECB web site one finds an overview of the preparatory work undertaken by the EMI:
"Directly pursuant to its Treaty mandate, the EMI undertook in particular:

1. *to prepare a range of instruments and procedures for the conduct of the single monetary policy in the future euro area and to analyse potential monetary policy strategies;*
2. *to promote the harmonisation of the collection, compilation and distribution of properly articulated euro area statistics in respect of money and banking, balance of payments and other financial data;*
3. *to develop the framework for conducting foreign exchange operations as well as for holding and managing the official foreign exchange reserves of the Member States participating in the euro area;*
4. *to promote the efficiency of cross-border payment and securities settlement transactions in order to support the integration of the euro money market, notably by developing the technical infrastructure (the TARGET system) for the processing of cross-border payments in euro to be as smooth as that of domestic payments; and*
5. *to prepare the euro banknotes, including their design and technical specifications.*

With a view to making further preparations for the establishment of the ESCB, as also outlined in the Statute of the European System of Central Banks and of the European Central Bank (the "Statute"), which is annexed to the Treaty, the EMI took on the task of:

1. *elaborating harmonised accounting rules and standards to make it possible to construct a consolidated balance sheet of the ESCB for internal and external reporting purposes;*
2. *putting in place the necessary information and communications systems support for the operational and policy functions to be undertaken within the ESCB; and*
3. *identifying the possible ways in which the ESCB would contribute to the policies conducted by the competent supervisory authorities to foster the stability of credit institutions and the financial system.*

The EMI also assisted in the preparation of national and Community legislation relating to the transition to Stage Three, in particular in respect of monetary and financial legislation, including the statutes of the NCBs.

Furthermore, the EMI cooperated with other EU bodies in preparing for Stage Three. In particular, either pursuant to a Treaty requirement or in response to an invitation from the European Council, it submitted reports on:

1. *a scenario for the changeover to the single currency;*
2. *monetary and exchange rate policy cooperation between the euro area and other EU countries; and*
3. *the progress made in the fulfilment by the EU Member States of their obligations regarding the achievement of the conditions necessary for participation in Economic and Monetary Union (economic and legal convergence).*

In accordance with its statutory requirements, the EMI regularly reported on the progress it had made in its preparatory work, most notably in its four Annual Reports covering the years 1994 to 1997. Moreover, in January 1997 the EMI published a report outlining the specification of the ESCB's operational framework for the conduct of the single monetary policy, pursuant to the Treaty requirement that this framework be specified by 31 December 1996 at the latest. Separate reports on progress towards convergence were released on three occasions. A number of more specialised publications covered topics in the areas of monetary policy, foreign exchange policy, payment and securities settlement systems, statistics, banknotes and the changeover to the euro."

It is interesting to observe that the list of areas in which work was carried out was longer, or at least much more detailed, then the one identified by Padoa-Schioppa and Saccomanni, adding to the 3 basic functions in their paper the following areas: statistics, foreign exchange operations, banknotes, Information Technology, communication, accounting, legislation, scenario for the changeover, the latter including the very important issue of the changeover in the government area. In a way, this is an indication that the work to build the platform proved more and more challenging and complex as it progressed over the years.

This is confirmed looking at the four Reports of the EMI informing about the preparatory work.

The EMI report on 1994 contained a list of intentions, rather than a plan. Yet it did show no doubt that monetary union would come, notwithstanding the fact that the Exchange Rate Mechanism had suffered a near fatal blow just a few months before: "*In August 1993, as a consequence of overwhelming market pressure, the decision was taken by EU Ministers of Finance and central bank Governors to widen the fluctuation bands while confirming the prevailing central rates.*" (EMI Report on 1994, April 1995). The world may have doubted that the euro would come at the indicated time, but not the EMI, which continued its preparatory work. The practical tool to carry out the work was a so-called "Master Plan" (Galvenius and Mercier, 2011). This master plan included around 100 projects, divided in 10 areas, each with a detailed description of the work to be done as well as precise timeline and responsibilities.

The EMI Report of 1995 started in earnest to define the work to be done, which could become more precise in the following year, after *" ... the adoption of the changeover scenario by the European Council at its meeting in Madrid in December 1995"* (EMI report for 1996). Indeed in the EMI Report on 1996 (published in April 1997) there was already quite something on the strategy and the implementation of monetary policy.

In the last report of the EMI, the one on 1997, the EMI reported on its: "..*preparatory work for Stage Three of Economic and monetary union*

- *Specify and develop the technical and organisational infrastructure for the European System of Central Banks and the European Central Bank*
- *Define the concepts and develop the framework for carrying out the future single monetary policy of the European System of Central Banks, in particular with regard to:*
    - *devising a monetary policy strategy and the appropriate set of monetary policy instruments,*
    - *promoting the harmonisation of statistics.*
- *Develop the framework for conducting foreign exchange operations as well as holding and managing the official foreign exchange reserves of the participating Member States.*
- *Promote the efficiency of cross-border payments, in particular by preparing the technical infrastructure for a trans-European payment and settlement system.*
- *Supervise the technical preparation of the euro banknotes."*

The issues were somewhat differently presented than in other instances, but the overall message was clear: the platform was in an advanced state of preparation. The test of the pudding then came in two rounds, a first, bigger one on January 2nd 1999, when the euro started its existence and the second, smaller, one on January 2nd 2002, when euro banknotes were introduced. Both rounds were, as it is well known, fully satisfactory and the preparatory work evidently successful. So, in 5 years, starting the counting with the birth of the EMI in 1994, an adequate "Platform" for managing the euro was created.

While it is neither possible nor necessary to describe in detail the platform, its essential features for each of the relevant fields can be summarized as follow:

- A ´two pillar´ monetary policy strategy (M3 and economic analysis) was identified to pursue a quantified (2 per cent) price stability objective.
- A fully fledged monetary policy implementation technology was built including (Galvenius and Mercier 2011)
    - An operational target
    - Open market operations and standing facilities
    - Reserve requirements
    - Counterparties and collateral framework.
- Tools for managing foreign reserves and the own funds of the European Central Bank as well as, when needed, the exchange rate were prepared.
- Accounting common criteria were established.
- Statistical methods to produce euro area financial and monetary statistics were agreed.
- The different national payment systems converged towards a common real time gross settlement model and were linked in the so-called Target application.
- Legal provisions were adapted, including those establishing the legal tender nature of the euro.
- IT systems and linkages were established allowing the National Central Banks and the European Central Bank to work like a single institution, while being composed of different institutions located in different countries.
- Appropriate communication tools and channels towards market participants and public

opinion at large were established.
- The design, security features and industrial production of euro banknotes were prepared.

The results did not, however, achieved full integration in all the different fields. In particular a linked rather than an integrated approach prevailed in four areas:

- The collateral system was organized along two tiers, one comprising assets which could be used all across the euro area and the other including assets to be used only nationally.
- As mentioned above, the Target application linked existing systems instead of providing an integrated platform for payment flows.
- IT systems were built according to a hub (European Central Bank) and spokes (National Central Banks) architecture.
- National Central Banks maintained substantial freedom in their "investment" activities, notwithstanding the fact that these inevitably had monetary policy implications.

In all four areas, full integration was achieved in the years after 1999: the two tier collateral was eliminated (even if during the Great Recession some elements of it reappeared); Target was substituted by Target 2, a fully integrated application; the architecture of IT system progressively moved from a hub and spokes model to a fully integrated one (all to all); significant constraints were applied to the investment activities of national central banks to minimize possible disturbances to the conduct of monetary and foreign exchange policy.

One additional area, which belongs to the "platform" concept only if this is meant in a very broad sense, is that of international relations. In this area the situation that resulted at the beginning of 1999 was somewhat half-baked, in the sense that the representation of the euro area in the global scene was split along uncertain lines between the European Central bank and the National Central Banks, especially those from countries of the so called G7. Over the following years the responsibility of representing the euro area moved decisively towards the European Central Bank. This movement accelerated significantly during the Great Recession, when a particularly intense collaboration developed between the European Central Bank, the Federal Reserve of the United States, the Bank of Japan, the Bank of England and other central banks. The climax of this collaboration was the establishment of a network of swaps, including unlimited, reciprocal and long lasting swap lines between[1], which allowed, in particular, the provision of central bank liquidity in dollars to banks outside of the United States. This represented a substantial "completion" of monetary policy as it allowed the FED to provide, through the European Central bank and other central banks, liquidity to non-American banks and it allowed the latters to provide liquidity in a foreign currency to their banks

Another important development took place after the launch of the euro: the progress towards financial integration in the euro area. This progress is illustrated in the Reports on Financial Integration in Europe of the European Central Bank (2007 to 2012). Three relevant messages should be recalled from these reports:

1. Financial integration was very fast in some market segments after the launch of the euro.
2. Financial integration progressed most in the areas closer to the implementation of monetary policy (i.e. the money market), were it was nearly completed.
3. The crisis caused some damages to financial integration, but the prevailing paradigm to describe the euro area financial market is more that of an integrated market having suffered some fragmentation, than that of imperfectly linked segmented markets.

Within financial integration, a development deserving particular attention is the completion of the SEPA (Single European Payment Area), which has made bank transfers across countries of the euro

[1] The Swaps between the FED and the European central bank were part of a large network, including many other central banks, but the actual size of the FED-European Central Bank swaps dwarfed that of other central banks.

area as cheap and fast as those within each country of the area. This, joined with the diffusion of internet banking, means that even private individuals may transfer funds abroad by a click of the mouse, giving different speed and ease to capital movements.

While, of course, much of the logistical preparation was the responsibility of central banks, also Governments and private financial institutions had an important role to play. Indeed contracts, assets and liabilities, money outflows and inflows had to be redenominated in euro. This required also adapting legislation and regulations to give a clear framework for redenominating in an orderly and fair way all money relationships. As mentioned in the introduction, this is an issue not dealt with in this paper.

3. What would it imply to undo the logistics of monetary union?

a. Two general remarks

The **first general remark** is that, of course exit could come in many different forms: one or more countries could exit "from below", i.e. from the "periphery", or from above, i.e. from the core, say because a country did not want to bear any more the burden of supporting weaker members or, still, the entire construction may be undone, as in the analysis of Target balances carried out by Buiter and Rahbari (2012), in which the Bundesbank remains the sole member of the Eurosystem. Given the impossibility of analysing each and every scenario, the case dealt with in this paper is the one of a full undoing of monetary union (what Nordvig and Firoozye 2012 call the "big bang" breakup scenario). One can derive direct and precise indications about the other scenarios under either of two assumptions:

- Either one can scale down, according to some proportionality factor, the scenario of full breakdown into more limited scenarios, meaning, for example, that an exit of Greece, from below, or Finland, from above, is some proportion of the full breakdown scenario;
- Or, in the polar opposite assumption, the exit of a country cannot be contained and produces the ful undoing.

If one is unwilling to make one or the other assumption, the case examined below of full undoing carries only imprecise and indirect information about more limited scenarios.

The second general remark, is that one could look at the undoing of the logistical platform for carrying out monetary policy as the symmetric and opposite exercise of the preparatory work that was done to launch the euro. Under this assumption, the undoing would take 5 years and involve the same effort as the one coordinated by the EMI and by national governments. However, the undoing exercise can just not be considered as the symmetric and opposite endeavour of the preparation. Indeed there are three factors which make the former a much more difficult exercise than the latter as well as two factors that have the opposite effect.

Among the factors that would make the undoing more difficult than the doing are the following:

1. The platform was built according to a well thought plan, within an ambitious but doable schedule; the undoing would be done in a crisis mode, without any possible planning;
2. Unlike in the preparation for the euro, were markets converged smoothly to the conditions which would prevail with the single currency, the undoing would have to be carried out in very difficult financial conditions as the demise of the euro would be a cataclysmic event for the financial markets and for the national economies;
3. The launch of the euro resulted from the coordinated efforts of the EMI, national central banks, national governments and the European Commission, while the undoing would most likely be done in the middle of very serious political tensions, with little if any hope of collaboration.

The two most prominent factors that would make the undoing easier are:

1. Unlike in the creation of the common platform, each country could choose its own way to move back to national monetary policies, deciding either to maintain some aspects of the Eurosystem approach (for instance as regards the types of open market operations) or to move to new, national approaches. Thus no international agreement would be needed;
2. In building the platform for the launch of the euro area there was a striving for perfection; in undoing it in a haste, one would have to have much lower ambitions and be content with far from perfect solutions.

Given the two general remarks above, what would be needed to undo the platform underlying the euro? For this purpose, it is useful to distinguish two types of activities, those to undo what was done until January 1st 1999, even if in some cases what was achieved by that date was followed-up and perfected in subsequent years, and the activities that would be needed to undo what took place since. The two types of activities are discussed in the two following paragraphs.

c. Undoing the activities carried out until January 1st 1999

Following the same list as in section 2 above, the undoing of what was done until January 1st 1999 (and developed in subsequent years) would require:

1. Each country would need to elaborate a new monetary policy strategy as well as the target of its monetary policy. This would be extremely difficult because of two main reasons. First, there would be no reliable information about the behaviour of the different national economies after the demise of the euro (see also below on the lack of adequate national statistical time series). Second, financial and economic variables would be extremely volatile for a long period and it would be difficult to calibrate monetary policy.[2] Monetary policy would be for quite a while like blind flying, for large as well as small countries of the former euro area.
2. Each country should thoroughly review the Eurosystem monetary policy implementation technology to see whether it fits its needs. This would likely be easier in some area, e.g. for open market operations and standing facilities, reserve requirements and counterparties, where, if the national central bank so wished, it could just maintain the Eurosystem approach. The situation would be more complicated for the operational target: in the Eurosystem this is the so-called EONIA (Euro Overnight Index Average), which is intrinsically a euro area measure and would have to be substituted by some national rate. The transition would be even more complicated in the case of collateral: this is, after the move to the single list of collateral, a fully Euro area system, only just dented, as mentioned above, by some return to "national idiosyncrasies" during the crisis. The eligibility system as well as the risk mitigation measures would in all likelihood have to be totally rebuilt.
3. As regards the foreign reserves and the own funds of the European Central Bank, as well as the exchange rate, different considerations apply. The foreign exchange reserves that were contributed to the European Central Bank (which were worth some 65 billion euro at the end of 2012) as well as the own funds of the European Central Bank (worth some 16 billion on the same date) would have to enter the very complicated unravelling of the financial assets and liabilities of the different central banks. However, they would not probably be the most complex issue in this unravelling. The most complex topic would instead probably be what would happen to the outstanding monetary policy operations (just think of the approximately one trillion euro of the two 3 years Longer Term Refinancing Operations), as it is not obvious that apportioning them to the different national central bank on the basis of the location of the counterparties taking the liquidity would be a feasible solution. This issue is looked at under the next section, together with the germane problem of Target balances. On the management of the foreign exchange rate of the newly constituted national currencies, the (big) problems would be of economic and financial nature (some currencies

[2] Setting the issue in a „Taylor rule" framework, it would be extremely difficult to estimate both the inflation and the output gap as well as to identify the right parameters to be applied to them.

would be under huge appreciation pressure while other would be under symmetric downward pressure) not of logistic nature. An additional issue broadly belonging to the international sphere is the one of international representation, as the increasingly important role of the European Central Bank would have to be attributed back to National Central Banks. With such a move, the substantial simplification of international monetary relationships as well as the greater ease with which a central bank can incorporate the externalities of its actions, which were achieved with European Monetary Union, would be lost. This loss would be particularly serious as regards the swaps with the FED: arguably it would be much more difficult to organize the swaps if the American central bank could not cooperate with one single institution in the euro area but with a host of 17 National Central Banks. Indeed it is fully unrealistic that the FED would have entered with central banks from the periphery of the euro area swap agreements equivalent to those that it agreed with the European Central Bank. More generally, among the 17 national central banks, which now form the Eurosystem, it is probably only the Bundesbank that could try, albeit with uncertain prospects, to maintain the same kind of tight cooperation with the FED that was established with the ECB.

4. On accounting, there should not be overwhelming problems, as National Central Banks could very well decide to remain with the common criteria that were established while preparing the launch of the euro. Change would be an option, not a necessity.
5. On statistics, all the efforts made over the last 15 years to move from national to euro-area aggregation would have to be reversed, with uncertain success. As mentioned above, monetary policy would have to be decided without the information derived from adequate national time series.
6. In the highly technical area of payment systems, it is not clear how the integrated Target 2 application could be broken down into separate national payment systems, each dealing with a separate currency. It may be relevant in this respect that it took 5 years to move from the linked Target to the integrated Target 2. Of course the difficulties would not be only for central banks but also for commercial ones. It is also likely that the large investment (estimated at 256 million over 11 years) in the securities settlement system built upon Target 2 (the so calledthat were adapted to introduce the euro, including those establishing its legal tender nature, would have to be reverted. This, however, should not prove too complex except in the area, which is not dealt with in this paper, of redenomination of contracts as well as of assets and liabilities. In this field, given the huge amounts of cross border transactions, given the great legal uncertainty that would apply and given the acutely unsettled financial conditions, redenomination would create dramatic consequences (Nordvig and Firoozye 2012).
7. IT systems and linkages, which over time were built more and more according to an integrated architecture, would have to be rebuilt as national systems, with uncertain (but surely extended) timing and cost.
8. 16 billion euro banknotes should be substituted with national ones; it is worth its while recalling that the sheer opposite substitution took approximately 1 year, after all the preparatory and printing work had been done.

c. Additional difficulties deriving from new developments since January 1st 1999

Two new developments taking place after January 1st 1999 create additional difficulties in undoing the platform underlying the euro: the most visible issue is given by the pantagruelic target balances, the less visible, but also grave, issue has to do with the fully liberalized and operationally easy capital movements within the euro area, as part of the enhanced financial integration in the euro area. The two are examined in turn.

The nature, size and consequences of Target balances have been examined by many economists, from the alarmist and politically tainted treatment of Sinn (2011a, 2011b and 2011c) to the more technical and objective treatment of Bindseil and König (2011 and 2012), Bindseil and Winkler and Buiter and Rahbari (2012).

Without rehearsing the analyses and the controversies in the papers mentioned above, it is useful to retain here, for the purpose of this paper the following 4 conclusions:

1. Target 2 balances offset capital outflows from (and on a cumulated basis current account deficits of) the periphery to the core of the euro area and thus they represent the support that the European Central Bank (and behind it the countries in the core of the euro area) provide to the periphery; if they would have to be precipitously undone great financial tensions would follow.
2. In the plausible assumption that target liabilities would neither be repudiated by debtors nor immediately repaid (how could periphery countries immediately pay their debt, especially when subject to the huge shock of a demise of the euro?) a large and poisoning "reparation" problem, potentially as disruptive as the one affecting Germany in the interwar period, is likely to be raised, with debtors needing large current account surpluses (or improbable large capital private capital inflows) to repay, over time, their debt. This issue would add itself to the also disruptive one of the redenomination of cross border contracts as well as of assets and liabilities.
3. Target balances are huge, correspondingly huge is the problem they represent in case of break-up (see chart 1 below).
4. As Buiter and Rahbari put it "*Under a full euro area break-up, the precise arrangements to realise and distribute losses (including the implied recovery rates) are hugely uncertain.*" (Buiter and Rahbari 2012). Of course, this problem is another face of the one recalled above about the redistribution of assets and liabilities of the European Central Bank.

If the problem of Target balances is very serious, the consequences from full and easy capital mobility are not to be underestimated either. The reduction by one third of bank deposits in Greece at the peak of the crisis with respect of the pre-crisis stock, is a small indication of what could happen, in the matter of days, if depositors would be convinced that the end of the euro is nigh. And, of course, the huge capital flows would not only be limited to bank deposits as they would affect all financial assets (again what happened to Greek Government securities, which lost 80 per cent of their value between 2007 and 2012 is a harbinger of what could take place in much bigger scale). In these conditions it would be inevitable to reintroduce capital controls. This would not only meet huge legal difficulties (capital freedom is one of the basic freedom of the Maastricht Treaty) but also operational difficulties, in an area that for decades endeavoured to integrate the financial market.

4. Conclusions

The undoing of the platform that central banks built to support the unified monetary policy presents huge, one is tempted to say insurmountable, challenges. The first analysis conducted above identifies the following issues as the most serious:

I. Countries exiting the euro area would have to re-found a monetary strategy in the worst possible conditions, raising the risk of a blind monetary policy;
II. Large parts of the monetary policy implementation technology would have to be rebuilt (in particular regarding the operational target and collateral);
III. The distribution among former participants of assets and liabilities of the Eurosystem (including foreign reserves, own funds and bank refinancing) and the interlinked issue of Target balances are likely to be fraught with huge difficulties, which could eventually generate, adding themselves to the consequences of the redenomination of contracts as well as assets and liabilities, a "reparation" problem as destructive as the one which afflicted Germany in the interwar period;
IV. Global central bank collaboration would lose the substantial benefits that resulted from the simplification brought about by Monetary Union in Europe, whereby one single institution represents the entire euro area and can more easily incorporate the externalities of its actions. This loss could be particularly troublesome as regards the swaps that were established between central banks during the Great Recession.

V. Integrated Payment and Settlement systems as well as integrated IT applications would have to be rebuilt on a national basis, requiring great cost and extended time. In their absence, monetary policy but also financial and economic activity would be gravely affected.

VI. 16 billion euro banknotes would have to be substituted with national ones.

There are many, fundamental reasons why governments and central bank authorities, and behind them the people of the euro area, went out of their way to fight the risk of a demise of the euro. Only in relation to these fundamental reasons, do the logistical difficulties considered in this paper look minor. In absolute terms they are, on their own, important enough to tilt the balance of costs and benefits in the direction of preserving the euro area.

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