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TARGET2-SECURITIES

DIRECTORATE GENERAL PAYMENTS AND MARKET INFRASTRUCTURE

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# T2S ECONOMIC IMPACT ASSESSMENT

On 8 March 2007, the Governing Council of the European Central Bank (ECB) concluded that it is feasible to implement TARGET2-Securities (T2S) and therefore decided to go ahead with the next phase of the project, namely the definition of user requirements based on market contributions. As requested by the Governing Council, the ECB has updated the initial T2S Economic Feasibility Study of March 2007[1] in the present T2S Economic Impact Assessment (EIA).

The ECB prepared a methodology, which was discussed several times in the T2S Advisory Group (AG). The AG proposed, and the Governing Council agreed, to release the methodology to the general public for consultation in parallel with the T2S User Requirements Document (URD). Both documents were published on 18 December 2007. The public consultation ended on 2 April 2008. Partly anticipating on the outcome of the public consultation, and due to the very tight deadlines for the finalisation of the EIA, the ECB asked all European CSDs, and a sample of potential T2S Users, for data input (the ECB survey) on 18 March 2008, with responses due by 15 April 2008. A sample of smaller market participants was approached by the national central banks.

The ECB survey follows a "conservative approach" in the sense that it takes the current market structure as given and excludes substantial benefits from increased disintermediation, in particular for cross-CSD transactions. The survey is also very conservative in the assumptions for calculating the collateral savings, the expected traffic growth until 2013 and the extent to which the survey includes the benefits from harmonisation triggered by T2S.

The EIA aims at evaluating the net benefits of T2S from three perspectives:

1) by collecting data from market participants directly (the ECB survey);
2) by adapting the results of studies from Clearstream in 2002[2] and Euroclear in 2003 and 2006[3].

[1] European Central Bank, "TARGET2-Securities – Economic Feasibility Study", March 2007.

[2] Clearstream International, "Cross-Border Equity Trading, Clearing & Settlement in Europe", White Paper, 2002.

These results were "re-scaled" in order to allow comparison with the geographical and functional scope of T2S; and

3) by using the results from points 1 and 2 above and applying a methodology established by the European Commission to evaluate the dynamic effects of market integration and harmonisation achieved by T2S.[4]

T2S will offer its services to all European CSDs. For practical reasons, however, the ECB survey only covers the CSDs of the 15 euro area countries and those of Denmark, Sweden, Switzerland and the United Kingdom. According to this survey, euro area CSDs processed 345 million settlement instructions in euro (with settlement in central bank money) in 2007. Scenario 1 is based on the hypothesis that these transactions will be processed by T2S. If non-euro, local currencies are included, the number of settlement instructions in 2007 increases to 640 million. Scenario 2 is based on the hypothesis of T2S processing all these transactions. Scenario 3 is based on T2S processing only 50% of the euro traffic (172 million settlement instructions). Current average fees per instruction charged by CSDs in 2007 amount to 73 cents in Scenario 1 and 62 cents in Scenario 2[5].

The Eurosystem expects costs of in total €203 million for the complete development phase (2008 – 2013). For the operating phase, the Eurosystem expects annual maintenance and running costs of €79 million (Scenario 1), €104 million (Scenario 2) and €65 million (Scenario 3). The amortisation of the development costs of €34 million p.a. need to be added to derive total annual costs during the operation phase. As a result, the average T2S cost to be recovered per settlement instruction if T2S had started to operate in 2007 ranges between 32 cents in Scenario 1, 21 cents in Scenario 2 and 57 cents in Scenario 3.[6] These average fees have been adjusted at individual CSD level to create consistency within the surveyed CSD data and with the T2S calculations. In particular, they include (where not yet included by the respective CSD) the cost for the cash settlement, the cost of queries, but exclude connectivity costs between the final user and the CSDs.

One of the main criticisms raised with respect to the March 2007 Economic Feasibility Study was that it did not include the costs CSDs would add to the T2S cost to cover their "help desk" function and the amortisation of their investment costs (i.e. providing an end-to-end cost):

- According to figures provided by CSDs, the help desk costs have been estimated at 3 cents in Scenario 1 (and Scenario 3) and at 2 cents in Scenario 2.

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[3] Euroclear, "Delivering low-cost cross-border settlement", January 2003, and e.g. Euroclear, "The view from the CEO of Euroclear", April 2006.

[4] European Commission, Draft Working Document on Post-Trading Activities, May 2006. This document builds on a previous study by London Economics, "Quantification of the Macro-Economic Impact of Integration of EU Financial Markets", Final Report to the EU Commission, 2002.

[5] The average settlement fee varies considerably between the surveyed CSDs, and ranges from 34 cents per instruction to €3.9 per instruction, depending mainly on the traffic volume, the availability of central counterparty netting and direct or indirect holding structures

[6] As set out in the T2S Economic Feasibility Study of March 2007, the T2S average cost per settlement instruction is calculated so as to achieve a zero net present value of the cash flows during the period 2008-2019. To allow comparison with the current market conditions, and to remain conservative, the T2S cost recovery has been calculated as if T2S were to start operations in 2007, i.e. with 2007 traffic conditions.

- An evaluation of the CSD investment costs is difficult because only two CSDs provided figures, resulting in CSD add-on costs of 4 cents and 22 cents (to be added to the help desk cost).

On account of the limited size of the sample for CSD investment costs, the ECB Project Team has renounced presenting separate figures for the three scenarios. Similarly, for lack of information, the ECB cannot present meaningful figures for the different types of adjustment (i.e. minimum and maximum reshaping at the CSD level). The survey therefore uses 7 and 24 cents as minimum and maximum estimates of the CSD add-ons. Informal contacts with the CSDs allowed the ECB to conclude that most CSDs that did not answer considered the 24 cents to be a realistic estimate. However, the ECB notes that competitive pressures will probably force CSDs to envisage more economical solutions than what they may envisage today.

The ECB survey concludes that if T2S had existed in 2007, CSDs would have charged to their customers, on average, between 39 and 57 cents in Scenario 1 and between 26 and 44 cents in Scenario 2. This compares with current average CSD fees of 73 cents in Scenario 1 and 62 cents in Scenario 2. This translates into annual savings on settlement fees at the CSD level of

- between €56 million p.a. and €118 million p.a. in Scenario 1,
- between €113 million p.a. and €228 million p.a. in Scenario 2 and
- between an additional cost (i.e. negative savings) of €14 million p.a. and savings of €17 million p.a. in Scenario 3. It is mentioned however, that even in scenario 3, T2S will generate sizeable savings if users' back office savings and collateral savings are considered (see below).

When comparing the average T2S settlement cost per instruction to the current average CSD settlement fee, it is important to keep in mind that CSDs quite often mingle "pure" settlement costs with costs of other services, e.g. services for the issuer like registration. This cross-subsidisation might distort the interpretation of the result.

At the bank level, the ECB survey considered the additional benefits reaped by banks in terms of back office costs and in collateral costs. It also considered, negatively, the amortisation of the investment costs. In the methodology, it was envisaged to ask banks and CSDs to evaluate the new business opportunities that T2S could create for them. However, the number of answers was too small to present any meaningful result.

Detailed analysis of the answers shows that small institutions expect limited additional benefits. Among the bigger players, the ECB was confronted by three problems:

1. Two of the most important banks did not provide any quantitative responses; one because it could not calculate the benefits and the other because it could not present the results for legal reasons.

   From informal contacts with these institutions, the ECB knows that they expect benefits from T2S and, therefore, the survey was completed to include figures equal to the average of the figures provided by the two respondents whose agent bank activities seems to be the closest to those of these two important banks.

2. One respondent clearly over-valued the benefits to be obtained from collateral savings as compared with other respondents. Its figure was much higher than the total savings posted by all the other respondents. Therefore, the ECB reduced the figure of this bank to the level of the next highest response.

3. One institution provided an investment figure that was clearly excessive with regard to the rest of the market: although this institution is not one of the European leaders, its figure was more than twice the next highest figure. In this case, the ECB reduced the figure of this respondent to the level of the next highest figure.

To remain conservative, and to be able to calculate Scenario 3, the ECB evaluated the additional net benefits for banks of Scenario 3, estimating it to be 50% of the additional net benefits for banks in Scenario 1.

Moreover, in some cases, banks answered with a high and a low figure. At the aggregated level, the spread is not significant. Therefore, the ECB uses, where appropriate, the average between the high and the low figure.

Under these hypotheses, on an annualised basis, the back office savings reported by respondents are €48 million in Scenario 1 and €58 million in Scenario 2. The collateral savings are estimated at €53 million in Scenario 1 and €68 million in Scenario 2. According to the methodology, the required investment costs are amortised in six years, and thus result in an annualised cost of €13 million in Scenario 1 and €16 million in Scenario 2. Therefore, the additional benefits at the bank level are estimated at

- €89 million p.a. in Scenario 1,
- €110 million p.a. in Scenario 2, and
- €44 million p.a. in Scenario 3.

Based on conservative assumptions, and on a static approach, the ECB survey concludes that the benefits of T2S for the market participants total at least between €145 million p.a. and €207 million p.a. in Scenario 1, depending on the size of the CSD add-on.

In Scenario 2, the ECB survey concludes that the benefits of T2S for the market participants amount to at least between €223 million p.a. and €338 million p.a. in Scenario 2, again depending on the size of the CSD add-on.

In Scenario 3, representing the worst case, the ECB survey concludes that the benefits of T2S for the market participants total at least between €30 million p.a. and €61 million p.a., depending on the size of the CSD add-on. Thus, even in the case of a worst-case scenario, T2S still provides a positive business case.

These figures are lower than the figures obtained by Clearstream and Euroclear in their respective studies, (i) because the ECB survey also takes the T2S development and operational cost as well as the market's adaptation cost into account and (ii) because the T2S EIA hypotheses were possibly more conservative:

- Following the T2S EIA methodology,[7] the results of the Clearstream study have been rescaled to adjust:
    - the scope of the securities settled,
    - the geographical scope,
    - the results/benefits already attained and
    - for a more efficient usage of collateral, based on the ECB survey.

  Applying the approach of the Clearstream study, and the rescaling as described above, T2S could bring gross benefits for the market participants of €376 million in Scenario 1 and €584 million in Scenario 2.[8]

- Following the T2S EIA methodology, the results of the Euroclear study (€350 million net savings for Euronext markets) once the Single Platform has been in place have been rescaled to adjust:
    - the scope of the securities settled,
    - the geographical scope,
    - the service covered (only settlement in T2S),
    - the result already achieved through the implementation of the first phase of the single settlement engine and
    - for a more efficient usage of collateral, based on the ECB survey

  Applying the Euroclear approach and rescaling as described above, T2S could bring gross benefits for the market participants of €274 million in Scenario 1 and €390 million in Scenario 2.

Depending on the geographical scope and methodological approach applied to T2S, the results of the two studies and the ECB survey range from €145 million to €584 million, based on the calculation of the static net benefit of building and implementing T2S (as defined in the URD).

The dynamic impact analysis is an attempt to quantify the impact of T2S beyond directly affected market participants. Based on the methodology used by European Commission,[9] dynamic effects have been calculated to include savings reaped through market integration and through-increased efficiency. A conservative net macroeconomic result is estimated at between €1.1 billion and €1.6 billion per year, based on the T2S EIA static cost result analysis. Applying the European Commission methodology to the rescaled results of the Clearstream and Euroclear studies, the conservative net macroeconomic result is

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[7] European Central Bank, "TARGET2-Securities – Economic Impact Analysis", December 2007

[8] This rescaling underestimates the result because it does not take into account the increased trading volume since the study was conducted in 2002.

[9] European Commission, Draft Working Document on Post-Trading Activities, May 2006. This document builds on a previous study by London Economics, "Quantification of the Macro-Economic Impact of Integration of EU Financial Markets", Final Report to the EU Commission, 2002

estimated at between €2.1 billion and €4.0 billion per year.

**Table 1: Overview of the benefits of T2S for the euro area (in EUR millions)**

| | Static impact | Dynamic impact |
|---|---|---|
| ECB survey (net impact, minimum) | 145 | 1,119 |
| Rescaled Clearstream study (gross benefits) | 376 | 2,891 |
| Rescaled Euroclear study (gross benefits) | 274 | 2,110 |

**Table 2: Overview of the benefits of T2S for the European Union (in EUR millions)**

| | Static impact | Dynamic impact |
|---|---|---|
| ECB survey (net impact, minimum) | 223 | 1,594 |
| Rescaled Clearstream study (gross benefits) | 584 | 3.993 |
| Rescaled Euroclear study (gross benefits) | 390 | 2,914 |

Conclusion:

All methodologies substantiate the initial estimates of the T2S Economic Feasibility study of March 2007, since they confirm the significant positive impact of T2S on market participants and on the European economy.

It should be noted that the T2S EIA methodology and the assumptions taken in the calculations are very conservative, so that the derived benefits have to be regarded as the minimum benefits that T2S will bring to the European financial markets and the European economy as a whole. A wide range of benefits has been excluded (i) to avoid methodological difficulties or (ii) in cases where the responses obtained were not deemed to be representative of the market. Furthermore, all ECB survey participants agreed that T2S will act as catalyst for further market harmonisation and integration, but – in order to remain conservative – only those benefits already contained in the T2S URD were included in the assessment, while significant wider harmonisation benefits that may be expected were not been considered in the study.