

**8th Meeting of the Advisory Expert Group on National Accounts,
29-31 May 2013, Luxembourg**

Agenda item: 2

Topic: FISIM

Introduction

During 2011/2012, tests were carried out in Europe on the inclusion/exclusion of maturity and credit default risk, as recommended by the European Task force on FISIM. Based on the results of these tests the EU Directors of Macro-economic Statistics (DMES) decided, in November 2012, to keep the present FISIM allocation method. This means that, in the 2010 ESA, a single reference rate based on inter-bank loans and deposits will continued to be applied, and that the default risk will not be excluded from FISIM.

The ISWGNA Task Force on FISIM assessed the report of the European Task force based on a note by the ISWGNA containing a summary of the results of the FISIM-exercise, as conducted by the EU countries and two non-EU respondents. The summary also includes the main issues related to the debate on credit default risk.

Guidance on documentation provided

The final report of the ISWGNA FISIM Task Force.

Main issues to be discussed

The AEG is asked to provide opinions on the following recommendations made in the report:

- For international trade in FISIM: FISIM should be calculated by at least two groups of currencies (national and foreign currency).
- The reference rate for a specific currency need not be the same for FISIM providers resident in different economies. Although they should be expected, under normal circumstances, to be relatively close and so national statistics agencies are encouraged to use partner country information where national estimates are not available.
- The Task Force has concluded that a term premium should be reflected in FISIM. This means that the SNA should continue to calculate FISIM on the basis of a single reference rate that should contain no service element and reflect the risk and maturity structure of deposits and loans . The basis and calculation of that single reference rate should reflect national circumstances.
- The Task Force recognised that there were a number of challenges presented by the costs of funds approach, and, so, whilst recognising the conceptual merit behind the costs of funds approach, and in particular the fact that it was able to differentiate between 'high risk' and 'low risk' banks, the Task Force concluded that it was premature to adopt such an approach, and so the reference rate, in a given country for a given currency, should be considered as being

applicable to all FISIM denominated in that currency, provided by all resident financial intermediaries in that country. In other words reference rates should not differ across resident providers.

- The recommendation of the Task Force is that research continues on the issue of credit default risk both within the FISIM Task Force and within national agencies, to develop methods and data that can support estimation in the future. In the interim however and in the interest of maintaining international comparability the Task Force also recommend that those countries that exclude credit default risk from their FISIM estimates, should also provide supplementary estimates, to international agencies, that include credit default risk, at least as a supplementary item.
- In relation to volume and prices of FISIM: The advantage of the quantity approach to calculating volume measures of FISIM is acknowledged, but it is concluded that it is data intensive and difficult to determine relevant weights for the indicators. The Task Force recommends therefore that countries continue to use the direct deflation method with volume estimates of FISIM created separately for the various types (maturities) of loans and deposits, since the effective margins (difference between actual rate and reference rate) differ according to these types.
- In relation to occurrences of negative FISIM. The AEG are asked to comment on the recommendation that compiling agencies should review the reference rates used on such occurrences with a view to making adjustments as necessary when it is clear that liquidity markets are acting abnormally (with negative FISIM itself often being an indicator of such occurrences).
- The idea that negative FISIM may often be an indication of holding gains and losses and not FISIM per se.

The AEG is also asked to consider the following issues and to provide guidance on the appropriate mechanisms and timing to resolve the following issues, as well as opinions regarding their resolution:

- **Developing the 'costs of funds' approach:** There are a number of issues central to this discussion, The first concerns the underlying concept that there is a separate reference rate for any given institution, reflecting its overall 'costs of funds'. The second concerns the approach needed to estimate the FISIM free effective rate paid by institutions on deposits. And the third concerns the range of instruments on which the underlying institutional reference rate should necessarily be estimated. For example should the approach include equity.
- **The scope of FISIM:** The Task Force only scratched at the surface of this topic, and even then only in an abstract way. However it was ever present in many of the underlying discussions, in particular on those relating to the 'costs of funds' approach. There are arguments for example that could be made to extend FISIM beyond loans and deposits and also beyond pure financial intermediaries, including to non-financial corporations. However of particular urgency concerns the scope of 'borderline' institutions such as money lenders, credit card issuers, financial leasing companies, pawnshops, etc. **The current report says little on these units but for the time being countries should not include these as being within scope of FISIM.**
- **Credit default risk:** As noted above, this should form a priority area for many countries, learning from the experience of those countries that have successfully adjusted for these flows in calculating FISIM.

Further the AEG are asked to advise on the appropriate mechanisms to ensure consistency between the recommendations developed here and the guidance in the IMF's Balance of Payments 6 Compilation Guide which is currently being prepared. The need for consistency will be important in countries with decentralized statistical systems where national accounts and balance of payments are typically compiled by different agencies.

Finally the AEG are asked to consider whether there is scope in Recommendation 6 to recommend a hybrid method comprising the output and direct deflation methods to compute volume measures of FISIM. This hybrid method can be used if countries are able to find appropriate indicators for some types of loans or deposits. For other types of loans and deposits for which appropriate indicators are not available, the compiling agency can use the deflation method.

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ISWGNA TASK FORCE ON FISIM

FINAL REPORT

MAY 2013

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ISWGNA TASK FORCE ON FISIM

FINAL REPORT

Preamble

Much has happened in the period following the creation of the Task Force on FISIM, highlighting the importance of developing a robust methodology for FISIM: one that is conceptually sound, meaningful, practicable and replicable across countries.

The recent financial crisis, which, in many ways, precipitated the creation of this Task Force, revealed that in many countries the approach used to estimate FISIM presented significant interpretative difficulties and raised questions relating to the underlying rationale for measurement. In the wake of the crisis many other events have raised similar questions: the manipulation of LIBOR rates by some banks being perhaps the most important but many others, such as the banking crisis in Europe, also raise important questions that this report tries to reflect.

Timing is also a critical factor. Many countries have already begun to implement partial and tentative recommendations of the Task Force that were developed shortly after the second meeting. But the tentative nature of the recommendations, pending this final report, has meant that countries are beginning to implement the recommendations in different ways.

Whilst it is clear therefore that further work should be conducted to consider all of the complexities inherent in FISIM calculations, it is also clear that this is unfortunately not an affordable luxury. This report therefore makes a series of recommendations that should be implemented now in the interests of international comparability. But the report also makes a recommendation with an eye to the future, namely that the research, including on those areas where this report makes recommendations, should necessarily continue. Indeed this was foreseen to some extent at the beginning of the Task Force whose mandate was also to consider issues for the longer term research agenda. The events of the last few years bear stark witness to the need for these continued discussions.

Executive Summary

This Executive Summary briefly describes the conclusions of the ISWGNA Task Force on FISIM. They reflect discussions that took place at meetings of the Task Force in 2011 and further discussions held by the Advisory Expert Group on National Accounts in April 2012. They further reflect discussions held at the OECD Working Party on National Accounts meeting in October 2012 and an assessment made by Eurostat of national simulations of various (single) reference rates.

The following summarily lists the key recommendations of the Task Force.

- **For international trade in FISIM:** FISIM should be calculated by at least two groups of currencies (national and foreign currency). Ideally international coordination is needed to better estimate the imports of FISIM through counterparty data.
- The Task Force has concluded that a term premium should be reflected in FISIM. This means that the SNA should continue to calculate FISIM on the basis of a single reference rate that should contain no service element and reflect the risk and maturity structure of deposits and loans . **The basis and calculation of that single reference rate should reflect national circumstances.**
- In the ESA more explicit recommendations specifying the calculation or rather choice of that single reference rate will be adopted. But it's important to note that the underlying principle and concept within the ESA and SNA will be consistent. The recommendation in this report recognises that the basis for the single reference rate in the SNA can include a weighted average of a mix of maturities. Eurostat developed a simulation exercise, to which 22 countries responded, testing results based on a unique single reference rate reflecting short-term interbank lending rates¹ (such as LIBOR, EURIBOR) and a single reference rate based on a weighted average of underlying short-term and longer term reference rates.² Subsequent to these tests 13 of the countries concluded that there was no over-riding material difference in FISIM results, FISIM volatility, or occurrences of negative FISIM, and, so, these countries expressed a preference to retain the current method for defining the single reference rate. Eight countries voted in favour of adopting a weighted average approach. Subsequently a decision was taken that the ESA would continue to recommend the use of a single reference rate based on interbank short-term lending rates. **However, given the broader international coverage implied by the SNA, this report necessarily recommends that countries select a single reference rate (calculated as an average or otherwise) according to national circumstances.**
- The costs of funds approach to FISIM calculates a single reference rate that differs for individual financial institutions. The underlying rationale in this regard can be viewed as similar to the approach to use a single reference rate for an entire economy - the argument being that it merely disaggregates measurement into smaller components whilst following the same underlying concept. Indeed, the recommendation of the Task Force that a weighted average approach can be used to estimate the (whole economy) single reference rate, to some extent, strengthens the idea that calculations should be performed at the level of specific financial intermediaries. To be clear however FISIM calculations made at the level of financial institutions (with each having a separate reference rate) are unlikely to result in the same measure of FISIM one would arrive at using a single reference rate for an economy as whole. The Task Force further recognised that there were a number of

¹ See EC Regulation 448/98.

² (EURIBOR * short-term weight) + (ISDAFIX * long-term weight).

additional challenges presented by the costs of funds approach, and, so, whilst recognising the conceptual merit behind the costs of funds approach, and in particular the fact that it was able to differentiate between 'high risk' and 'low risk' banks, the Task Force concluded that it was premature to adopt such an approach, and so **the reference rate, in a given country for a given currency, should be considered as being applicable to all FISIM denominated in that currency, provided by all resident financial intermediaries in that country. In other words reference rates should not differ across resident providers** (see also below, recommendations for the longer term research agenda). The preference to use a single reference rate (calculated on the basis of one underlying short-term instrument or a weighted average of instruments with multiple maturities) rather than multiple reference rates (the matched maturity approach) was driven by the view that FISIM should include liquidity transformation services and also a recognition that the exclusion of liquidity transformation services would (often) result in implausibly low estimates of Bank's output.

- The Task Force has also concluded that whilst there is conceptual merit in excluding **credit default risk** from FISIM, in practice it does not seem feasible, at least in a way that can ensure reasonable comparability across most countries, and so the Task Force concluded that credit default risk should remain part of FISIM in order to facilitate international comparability, at least in the immediate future. However, a number of countries have demonstrated that it is feasible, in their cases, to produce meaningful results and these countries have developed plans to estimate FISIM on this basis. **The recommendation of the Task Force is that research continues in this area, both within the FISIM Task Force and within national agencies, to develop methods and data that can support estimation in the future. In the interim however and in the interest of maintaining international comparability the Task Force also recommend that those countries that exclude credit default risk from their FISIM estimates, should also provide supplementary estimates, to international agencies, that include credit default risk, at least as a supplementary item.** This will also require coordination with SDMX expert groups.
- In relation to **volume and prices of FISIM**: The advantage of the quantity approach to calculating volume measures of FISIM is acknowledged, but it is concluded that it is data intensive and difficult to determine relevant weights for the indicators. The Task Force recommends therefore that countries continue to use the direct deflation method with volume estimates of FISIM created separately for the various types (maturities) of loans and deposits, since the effective margins (difference between actual rate and reference rate) differ according to these types.
- **The Task Force's key recommendation is for work to continue.** It is perhaps fair to say that not all of the issues have been fully resolved, Whilst there appears to be broad, although not unequivocal, agreement on the idea that one reference rate (exogenous or endogenous) should be adopted (and that liquidity transformation services form part of FISIM) there are a number of areas where the Task Force has recognised that more needs to be done (notwithstanding the current set of recommendations).
- These concern the following:
 - **Developing the 'costs of funds' approach:** There are a number of issues central to this discussion, The first concerns the underlying concept that there is a separate reference rate for any given institution, reflecting its overall 'costs of funds'. The second concerns the approach needed to estimate the FISIM free effective rate paid by institutions on deposits. And the third concerns the range of instruments on which the underlying institutional reference rate should necessarily be estimated. For example should the approach include equity.

- **The scope of FISIM:** The Task Force only scratched at the surface of this topic, and even then only in an abstract way. However it was ever present in many of the underlying discussions, in particular on those relating to the 'costs of funds' approach. There are arguments for example that could be made to extend FISIM beyond loans and deposits and also beyond pure financial intermediaries, including to non-financial corporations. However of particular urgency concerns the scope of 'borderline' institutions such as money lenders, credit card issuers, financial leasing companies, pawnshops, etc. **The current report says little on these units but for the time being countries should not include these as being within scope of FISIM.**
- **Credit default risk:** As noted above, this should form a priority area for many countries, learning from the experience of those countries that have successfully adjusted for these flows in calculating FISIM.

ISWGNA TASK FORCE ON FISIM

FINAL REPORT

1. Background

1. It has been long recognized, since at least the 1953 version of the System of National Accounts (SNA) that the current price value of financial services has a significant indirectly measured component, whose value is covered wholly or in part in the spread between financial institutions' return on financial assets and expense on financial liabilities. Measuring the economy's output and use of FISIM (Financial Intermediation Services Indirectly Measured) has been the subject of refinements in every revision of the SNA since 1968. FISIM again was discussed during the preparation of the System of National Accounts 2008 (2008 SNA), under Update issue No. 6a Financial Services. FISIM also has been discussed in the context of the European System of Accounts (ESA) Revision.

2. Paragraph 4.98 of the 2008 SNA says the following concerning the nature of financial services:

... The production of financial services is the result of financial intermediation, financial risk management, liquidity transformation or auxiliary financial activities...

3. This is consistent with the conceptual views of the OECD Financial Services Task Force³ that delivered its report in 2003, emphasizing the risk management and liquidity transformation, in addition to financial intermediation, components of financial services output.

4. A major part of these financial services are included in FISIM. The fact that these services are not explicitly priced naturally complicates their measurement, and while the 2008 SNA provides detailed guidance on the method that should be used to measure FISIM in practice, the debate on whether the underlying principles embodied in the SNA are necessarily correct from a conceptual perspective or appropriate from a practical perspective continues. Indeed the 2008 SNA explicitly recognises this on-going debate in its Research Agenda. Paragraph 4.33 states:

.....The SNA recommends that FISIM should be calculated with respect to a reference rate that contains no service element and reflects the risk and maturity structure of deposits and loans. Different reference rates may be needed for domestic and foreign financial institutions. The assumption behind the FISIM approach is that it is the service element, and not the interest flows, that reflect varying degrees of risk, with riskier clients paying a higher service charge. This assumption has been queried and is being investigated.

5. The need to accelerate this research was heightened by the recent crisis as official estimates of FISIM in many countries became volatile, often resulting in negative depositor FISIM, and also proved problematic for price indices, such as the CPI, creating significant interpretation difficulties.

³ www.oecd.org/dataoecd/9/60/24332238.doc

Responding to these developments the ISWGNA formed a Task Force in 2010 year with an initial membership of experts from 14 institutions to investigate the measurement of FISIM. This report reflects the findings of the work of the Task Force⁴, it also takes into account the work, and recommendations of a parallel Eurostat led Task Force on FISIM (whose final report and recommendations are attached as Annex II).

1.1 What is FISIM?

6. In layman's terms FISIM in the SNA can be described as the implicit prices charged by a financial institution (typically a bank), which take the form of interest rate margins incorporated in the rates charged for loans and/or paid on deposits. In exchange for paying a higher rate of interest on loans or accepting a lower rate of interest on deposits, customers receive the following types of services: record keeping, safekeeping, payment processing, intermediation between savers and borrowers, risk management and advice, and liquidity provision.

7. The 2008 SNA describes FISIM as the following in paragraph 6.163:

One traditional way in which financial services are provided is by means of financial intermediation. This is understood to refer to the process whereby a financial institution such as a bank accepts deposits from units wishing to receive interest on funds for which the unit has no immediate use and lends them to other units whose funds are insufficient to meet their needs. The bank thus provides a mechanism to allow the first unit to lend to the second. Each of the two parties pays a fee to the bank for the service provided, the unit lending funds by accepting a rate of interest lower than that paid by the borrower, the difference being the combined fees implicitly charged by the bank to the depositor and to the borrower. From this basic idea the concept emerges of a "reference" rate of interest. The difference between the rate paid to banks by borrowers and the reference rate plus the difference between the reference rate and the rate actually paid to depositors represent charges for financial intermediation services indirectly measured (FISIM).

8. This simple definition, which describes the stylized case where a financial intermediary passes funds from one unit to an identifiable recipient of those same funds, introduces a number of important boundary distinctions but at the same time raises a number of questions; chiefly concerning the reference rate. The important boundary distinctions concern the type of financial instruments where FISIM can be provided and the type of institutions that provide FISIM. In this sense FISIM is (by convention) only **provided by financial institutions in respect to deposits and loans**, (see also 2008 SNA paragraph 6.165). The OECD Financial Services Task Force recognised the possibility that FISIM could in practice be provided in respect to other financial instruments, including by non financial institutions, but it was also recognised that measuring the activity in a comparable way across countries, institutions and instruments would not be practicable, particularly in the context of equity, reflecting the difficulty in separating a FISIM component from holding gains and losses.

9. Paragraph 6.163 also raises a number of questions, addressed in subsequent paragraphs, which also extend the simple example to the more general case where intermediaries pass funds from a number of sources through to a number of borrowers. The important distinction between the more general (typical) case and the simple example given above is that

- there is not necessarily a consistency between the funds provided to (deposited with) the financial intermediary and the funds provided (lent) by the intermediary (the intermediary could for example choose to invest funds received in non-financial assets);

⁴ The Task Force met in March 2011 (Washington) and July 2011 (New York).

- the maturity structure of the funds provided to the financial intermediary (liabilities) is not necessarily the same as the maturity structure of the funds it makes available to borrowers (assets); and
- it follows that there is not necessarily any direct link between a unit providing funds to the financial intermediary and the unit that subsequently receives those funds. Indeed it is not a necessary precondition that the financial institution necessarily provides deposit and loan facilities; the provision of either loan or deposit facilities is sufficient.

1.2 *The Reference Rate in the 2008 SNA*

10. Paragraph 6.166 defines the reference rate in the following way (bold added):

*The reference rate to be used in the calculation of SNA interest is a rate between bank interest rates on deposits and loans. However, because there is no necessary equality between the level of loans and deposits, it cannot be calculated as a simple average of the rates on loans or deposits. The reference rate should contain **no service element and reflect the risk and maturity structure of deposits and loans**. The rate prevailing for inter-bank borrowing and lending may be a suitable choice as a reference rate. However, different reference rates may be needed for each currency in which loans and deposits are denominated, especially when a non-resident financial institution is involved. For banks within the same economy, there is often little if any service provided in association with banks lending to and borrowing from other banks.*

11. The 2008 SNA provides little in the way of further guidance in this respect however, causing there to be some debate on how the SNA guidance on the reference rate should be interpreted in practice. Where there is agreement, it is that the reference rate should be a rate that excludes any associated service element. The description of a rate that reflects the risk and maturity structure of deposits and loans has however led to a need for clarification. Commonly the interpretation is that the rate should be *risk-free*; indeed the OECD Financial Services Task Force describes the reference rate in this way, but this still leaves considerable scope for interpretation, partly driven by different views on the operations of institutions providing FISIM.

12. Importantly, a point this note returns to later, the SNA itself does not actually refer to the reference rate as being *risk-free*. It merely notes that the rate should not include any service elements. The only place in the SNA where a reference is made to a *risk-free* reference rate is in paragraph 11.56, in the context of inter-bank lending rates, where the SNA notes that the rates are usually risk-free (which was generally the case at the time of writing but clearly not during the recent crisis). The reference in paragraph 6.166 to "*The rate prevailing for inter-bank borrowing and lending may be a suitable choice as a reference rate*", may have led to this deduction. That said, the deduction is not an unreasonable one⁵, as a risk-free reference rate corresponds to a 'pure' rate of interest. However its application has consequences when the actual rate used to measure the reference rate (for example the inter-bank lending rate) is not risk-free.

13. Two views have been formed over how the reference rate should be defined.

- The first takes the view that there is an underlying **single reference rate** that reflects the overall cost of money that is not specific to any single financial institution and is applicable in the calculation of FISIM for all loans and deposits irrespective of their maturity structure. For example the same reference rate would be used to determine FISIM for a five-year loan and a 25-year loan irrespective of the risk-profile of the loan and/or borrower. This view treats risk management as being part of FISIM.

⁵ The widespread perception that the SNA refers to a risk-free rate may also reflect the fact that earlier drafts of the 2008 SNA contained such references, which were subsequently removed, partly reflecting discussions within the Advisory Expert Group.

- The second takes the view that there is a specific reference rate that is applicable to loans which varies depending on the maturity of the loan and where, in addition, adjustments to FISIM are needed in respect of the risk-profile of the borrower. This view considers risk bearing as a non-productive activity, and, so, should be removed from FISIM. In other words the view postulates that the reference rate should differ for a five year loan and a twenty five year loan and also argues that FISIM should not include any implicit charges included in bank interest that reflect the credit-risk profile of a particular borrower.

14. Both views have merit, depending on how one perceives the operations of financial institutions providing FISIM services. In the first case there is an underlying theoretical pure cost of 'money' for financial institutions, that holds for all institutions. In the second, there is a view that there is an underlying theoretical cost of money for each loan provided by a financial institution that varies depending on the maturity and risk structure of the loan.

15. At the same time it should be recognised that both approaches require certain assumptions about the way that banks work and are financed.

- With the first approach there is an underlying assumption that the same reference rate is applicable to calculate FISIM for a bank that only provides loans to high-risk borrowers and a bank that only provides loans to AAA-rated borrowers. In the first case, interest rates charged by the bank are likely to be higher than in the second case, as will be borrower FISIM, if the same reference rate is used; this seems plausible if a greater degree of monitoring services are required, for example, for high-risk borrowers. However this also, to some extent, presupposes that the first bank will have access to finance at the same costs as the second bank. With perfect information on the risk-profile of the bank's borrowers being available this is unlikely to be the case as the bank's funders, including depositors, may demand higher rates of interest (or the bank will be forced to offer higher rates) than the second bank. If the first bank is only financed by depositors, who receive a higher rate of interest than the second, the consequence of a single reference rate will be that the borrowers in the first bank receive a higher value of FISIM services than the second but the depositors receive less (including negative FISIM). If however all depositors have asymmetric information (*i.e.* they are unaware of the risk profile of banks' borrowers) and all depositors receive the same interest rate on deposits, then depositors in both banks receive the same value of FISIM services but the borrowers in the first bank receive a higher value of services; which was a reasonable assumption until recently. But in recent years, in particular on the back of the banking crisis in Europe, this assumption now appears perhaps stretching. In practice it would seem that the truth lies somewhere in the middle, vis-à-vis what funders know about the risk-profile of a bank's borrowers (its assets). The arguments suggest therefore that individual banks may have different reference rates which vary according to their financing costs (and also, in part, driven by the risk profile of their borrowers (assets), or as explained below that depositors may also be providing liquidity - and insurance - services).
- With the second approach there is a view, after credit-default risk is accounted for, that each of a bank's loans have a theoretical opportunity cost of financing specific to the maturity of that loan, based on the yields observable for alternative financial instruments with similar characteristics but without services provided. For example, if a bank financed all of its loans by selling (credit-default risk-free) debt securities of similar maturities, at a reference rate that was applicable for all institutions, then it is clear that the implicit services provided by the bank would correctly be recorded by the rate used for each security that financed each loan. But, in practice, banks finance their lending using a variety of instruments with differing maturities, including short-term and long-term deposits. The matched maturity approach therefore by design removes liquidity transformation services from FISIM, by assuming that an underlying theoretical reference rate exists for different maturities. Paradoxically this would mean that in the long-run (assuming that rates on long-term instruments are generally higher than those on short-term instruments) two banks identical in every way except one

financed its loans by issuing debt securities with the same maturity structure and the other via short-term borrowing would have exactly the same output. But the bank financing itself via short-term securities would (normally) have higher net interest receipts and in all likelihood lower operating surplus (assuming the intermediate costs of operating in this way would be higher), reflecting the fact that it was engaged in liquidity transformation. The matched maturity approach therefore treats these as intermediate costs, which, as described below, can lead to negative operating surplus for the bank

16. Notwithstanding the differences in the treatment of credit-default risk, the key difference between the two views relates to liquidity transformation services. The first view, the 'single reference rate approach', treats these as part of FISIM, the second 'the matched reference rate approach' views these as being non-productive activities. In this context it should be noted that the second approach differs from the SNA definition of financial intermediation services given in paragraph 6.158:

Financial intermediation involves financial risk management and liquidity transformation, activities in which an institutional unit incurs financial liabilities for the purpose of acquiring mainly financial assets. Corporations engaged in these activities obtain funds, not only by taking deposits but also by issuing bills, bonds or other securities. They use these funds as well as own funds to acquire mainly financial assets not only by making advances or loans to others but also by purchasing bills, bonds or other securities.....

17. Resolving this difference in view, as well as the treatment of credit-default risk, was recognised in the 2008 SNA research agenda and led to the creation of an ISWGNA Task Force.

1.3 Negative FISIM?

18. Given that a major driver for the formation of this Task Force was the occurrence of negative FISIM, typically for depositors in the FISIM estimates of some countries in recent years, it is perhaps instructive to consider this in more detail before continuing.

19. To begin with we return to an extract of paragraph 6.163 which states: Each of the two parties pays a fee to the bank for the service provided, **the unit lending funds by accepting a rate of interest lower than that paid by the borrower**, the difference being the combined fees implicitly charged by the bank to the depositor and to the borrower. And also of paragraph 6.166: **The reference rate to be used in the calculation of SNA interest is a rate between bank interest rates on deposits and loans.**

20. A strict interpretation of these two extracts suggests that the reference rate must be higher than the bank interest rate for depositors (at least in total) and lower than the bank interest rate for borrowers (again at least in total). As such, from the above one could arguably deduce that overall depositor FISIM and overall borrower FISIM can never be negative.

21. Note however that the two extracts do not necessarily mean that negative FISIM may not arise for certain categories (*e.g.* institutional sectors, residents, non-residents) of depositors or borrowers, as the SNA merely refers, albeit perhaps by omission, only to total FISIM for depositors and total FISIM for borrowers.

22. In many countries the reference rate for FISIM is taken as the short-term interbank lending rate. With this approach negative (measured) FISIM can arise, in practice, in two reasonably simple and illustrative cases:

(i)

- In times of high risk, as revealed in the recent financial crisis, interbank lending⁶ may dry up, with banks being forced to offer high deposit rates to lenders in order to increase their liquidity positions. Where the rates offered to depositors exceed the reference rates, negative FISIM to depositors will occur, with compensation, ideally from the banks' perspective, even if this may not happen in practice, provided to the banks by the increased rates on loans charged to (typically new) borrowers.
- If we assume for a moment that this is correct, and that negative FISIM is an economic reality, how should this be interpreted? All other things being equal the quantity of FISIM services provided to depositors (for a given deposit) is unchanged but the negative value necessarily means a negative price (similar to the negative margin prices that can be observed in practice on loss-leader products offered by retailers for example). So, the interpretation is that depositors are offered loss-leading products with a view to profits being generated via borrowers; with the precedent for negative prices being provided by the treatment of margins in the distributions sector .
- There are however some subtle differences that it is useful to flesh out in this case. Typically the beneficiary of the loss-leader product by a retailer for example is intended to be the same individual (in the same institutional sector) that purchases other products, which is often not the case for deposits and loans (where, often, the individual sectors can also differ). Moreover, banks often provide loans and take deposits internationally and so the depositors and the borrowers may not even be in the same country. In addition, for the consumer, the impact of their overall spending on any given good, even on a discounted product (with a negative margin) remains positive. But with negative FISIM the overall impact is a reduction in overall consumption.
- Equally it is not always the case that banks provide attractive deposits with a view to recouping any losses on deposits via profits made on loans. Banks often provide attractive deposit rates for a limited period to depositors because evidence suggested that depositors would remain with the bank thereafter; even after deposit rates returned to normal market levels (although in a world of internet banking, this expectation is less today than it used to be). **In these circumstances perhaps a more plausible explanation than negative FISIM is that banks offer financial inducements to depositors, akin for example to offering depositors up-front explicit cash inducements, such as \$100 for a new bank account.** Moreover, certainly during the financial crisis, the argument that losses to depositors were being used to make profits through lending generally held less water. Banks were forced to seek money (depositors) to pay off their own short-term lending positions in some cases, as well as increase their liquidity, and to bolster their balance sheets; indeed banks were generally reluctant to lend money at all neither to borrowers nor each other. The analogy with distribution margins seen through this prism is generally less than ideal. That all said however, as discussed below, it is important to recognise the complementary nature of explicit and implicit services charges. It is not difficult for example to defend occurrences of negative FISIM for certain groups of depositors/borrowers if these implicit charges are outweighed by explicit intermediation fees.
- Notwithstanding the complementary nature of explicit service charges, one could argue that there is another explanatory factor at play when variable depositor rates are higher than variable reference rates plus the effective rate for explicit intermediation charges. **Although inconsistent with the SNA one could argue that this demonstrates that depositors are**

⁶ And in theory, in these cases one should question the risk-free nature of interbank lending.

also, in effect, providing liquidity services to the Bank. And that the difference between the value of liquidity services provided by depositors and intermediation services provided by the Bank is equal to the difference between the bank interest rate minus the reference rate minus the underlying rate charged for explicit fees, all multiplied by the value of the deposit⁷. Sometimes this will be negative meaning that the value of services provided by depositors is higher than that provided by banks and sometimes it will be positive, meaning that the services provided by the Bank will be higher than those provided by depositors. But in both cases FISIM is always positive. Because this is not consistent with the 2008 SNA, this idea is not explored further here but it should be noted that a long term remit of the Task Force is to consider more broadly the types of instruments and institutions which can generate FISIM.

(ii)

- Consider now a very simple example. A bank explicitly charges its borrowers and lenders all bank intermediation fees (at 1% of the value of the loan/deposit) and, for simplicity, there is no term intermediation service (*i.e.* depositors and borrowers require the same maturity structures, in this case a 5 year term). Moreover because fees are explicitly charged we further assume that bank interest paid to depositors is equal to that paid to lenders which is equal to the temporal interbank lending (reference) rate of 5%. Assume now that in the following year the temporal interbank lending (reference) rate falls to 3% but no new loans or deposits are issued by the bank in question. FISIM calculations based on a temporal reference rate would mean negative overall intermediation services for depositors but an increased value of services for borrowers, and this would translate into negative price movements for depositors but positive price movements for borrowers.
- This would have occurred despite the fact that: (a) the bank charges explicitly for its intermediation services, begging the question of why FISIM is calculated at all; and (b) from the Bank's, borrowers' and depositors' perspectives nothing has changed - the bank has seen no change in its financing costs or bank interest receipts nor explicit charges and borrowers/depositors have seen no change in their interest receipts/payments nor in the volume of intermediation services received. An alternative explanation, for example, is that movements in the reference rate merely impact on the realisable market value of the bank's assets (loans) and liabilities (deposits) as holding gains and losses, with FISIM unchanged from the values set when the contracts were struck.
- What the above does reveal however is the complementary nature of explicit and implicit intermediation charges and the need to consider the two collectively. Banks for example may choose to give depositors relatively high interest rates if this is clawed back via explicit charges that leave the overall net value of intermediation services, other things being equal, as those that depositors would have received if lower rates were offered and no explicit charges were made. In these cases it is clear that FISIM (as opposed to total intermediation services, which reflect explicit intermediation charges plus FISIM) can be negative. It is not clear however that all occurrences of negative FISIM can be explained in this way.

23. The question becomes therefore how should one interpret overall negative intermediation services for any given group of borrowers/savers. Ruling out the possibility that depositors can also provide liquidity services it would appear that the following, not mutually exclusive, options exist.

⁷ In addition one could make a case the depositors are also charging insurance premia to reflect the relative credit-worthiness of the various institutions. Certainly one could, albeit, retrospectively make this case for depositors with Cypriot Banks.

- Negative FISIM is possible if the overall value of intermediation services, which includes explicit service charges, is positive.
- For fixed rate loans and deposits, movements in the temporal reference rate which lead to negative FISIM arising (using the estimation approach adopted by most countries), could instead be interpreted as reflecting changes in the market value of loans and deposits and not changes in FISIM (the value of which was predetermined at the original strike date of the contracts - see Annex I).
- For variable rate loans or deposits where, at a given point in time, the bank rate of the loan is lower than the reference rate, or the bank rate of the deposit is higher than the reference rate, one could argue that this reflects financial (non-productive) inducements provided by the Bank to borrowers and depositors (with compensation to the Bank returned over the longer term through lower depositor rates or higher lending rates).

24. All of the above are inconclusive in so far as proving or otherwise that negative FISIM can exist. Certainly, for some cases, where explicit service charges are large enough, this is plausible. But in most cases where negative FISIM may arise in practice, robust economic arguments can be made to suggest that something else is going on. Given this, and notwithstanding the impact of negative FISIM (and negative prices) on volume and price aggregates, the desire to adopt calculation methods that, by design, try to minimise occurrences of negative FISIM is justified.

2. The ISWGNA Task Force - Membership and Terms of Reference

25. The ISWGNA Task Force to tackle the treatment of FISIM in the SNA was created towards the end of 2010. Two meetings were organised, the first in March 2011 and the second in July 2011 (see <http://unstats.un.org/unsd/nationalaccount/crList.asp>). Subsequently discussions on a preliminary report of the Task Force were held at an AEG meeting in April 2012 and at the OECD Working Party on National Accounts (WPNA) in October 2012.

26. The Task Force was initially formed with representatives from 14 agencies: Australian Bureau of Statistics, Statistics Canada, Czech Statistics Office, INSEE (France), Bank of Japan, Bank of Korea, CBS (Netherlands), Singapore Statistics Office, US Bureau of Economic Analysis, ECB, Eurostat, IMF, OECD and the UNSD. The Task Force was subsequently enlarged at its July meeting when it was merged with the Eurostat Task Force on FISIM, resulting in representatives from the Bank of Portugal and UK Office for National Statistics physically attending.

27. The Mandate of the Task Force was to consider the following issues:

1. How the composition of the services that FISIM covers - particularly risk management and liquidity transformation - affects the selection of the reference rate and the price and volume breakdown of FISIM,
2. The financial instrument and unit scope of FISIM, and
3. The connection between the recommendations on implementation of FISIM and the definition of income.

28. In terms of the immediate objectives of the Task Force, it was recognised that there was a pressing need to clarify the issue raised in item (1) above, which was seen as a *clarification issue*, and that consideration of items (2) and (3) would need to form part of a medium-term research agenda (as *research issues*).

29. The single clarification issue raised four clarification questions:

- **First clarification question (Risk management):** How should financial institutions' risk management/mitigation activities be characterized and reflected in FISIM?

Background: At least two views have formed on this question. The first is that risk premia should be included in FISIM to cover costly risk mitigation activity and/or purchased insurance against specified risks. The second is that risk premia should be excluded from FISIM because they do not represent payments for services but are only distributive flows.

The first view interprets the language of the 2008 SNA as referring to a reference rate that is not matched to the specific risk profiles of the instruments on which FISIM is calculated. This allows instrument risk profiles to affect the current price value of output of financial services (and generally to affect the relative prices of the services associated with those instruments). The second view is characterized in terms of matching reference rates to loan assets by individual asset risk profile, effectively cancelling the risk premia in loan rates with the risk premia in the risk-matched reference rates. An example of this is matching commercial and industrial loan rates with reference rates from commercial paper (a type of SNA debt security that, for a given commercial borrower, should have a similar risk profile to a loan).

Regarding currency of denomination, part of the interest rate differential across currencies reflects exchange rate risk, other things equal. The reflection of exchange rate risk differentials in FISIM appears to be analogous to, for example, treatment of the default and other risks that earn loan interest premia/discounts regardless of the currency of denomination. If currency risk premia compensate resources that are committed to risk mitigation, then reference rates specific to exchange rate risk profiles also should not be matched to individual assets. On the other hand, if currency risk premia are distributional flows only, this matching should occur. In the first case, currency/exchange rate risk is reflected in FISIM, while in the second it is not.

- **Second clarification question (Liquidity transformation):** Transforming short-term deposits into long-term loans is inherent to financial intermediation. How should this transformation element be represented in FISIM? Should the differences in maturities be reflected in FISIM calculations? If so, how?

Background: Two distinct views have formed on this question as well, again characterized by choice of reference rate.

The first view interprets the language of the 2008 SNA as referring to a reference rate that is not matched to the specific maturities of the instruments on which FISIM is calculated (this corresponds to the first option described in Section 1). This allows instrument maturity to affect the current price value of output of financial services (and generally to affect the relative prices of the services associated with those instruments). The second view (which corresponds to the second position described above) has characterized its position in terms of reference rates matched to deposit and loan assets by maturity, thus by implication excluding maturity premia from FISIM.

Since deposit-taking corporations tend to take loan positions that are longer than their deposit positions, the issue also can be characterized as whether FISIM should or should not cover the cost of hedging the inherent term risk of these positions.

- **Third clarification question: How can FISIM be made consistent in international trade?**

Simply put, exports of FISIM from the resident of one country should equal the imports of FISIM received by the resident of another country and vice versa, regardless of the currency unit selected to show these flows. How does the calculation of FISIM, via conversion between domestic and foreign currency, and via selection of reference rate, affect this balance? This issue may relate to the idea of allowing different reference rates by currency of denomination noted under clarification question (1), but it needs to be explained and placed in the context of the answers to the other clarification questions.

- **Fourth clarification question: What are the implications for the price and volume measures of FISIM** that follow from the clarification of the issues raised above?

3. Recommendations of the Task Force

3.1 *FISIM in International Trade:*

30. A survey to determine data availability after the first meeting of the Task Force was developed to assess the feasibility of calculating FISIM in international trade as specified in the 2008 SNA - namely by using different reference rates for domestic and international transactions. The results of the survey showed that, in general, the data available to calculate imports and exports of FISIM, especially with separate reference rates, and with respect to individual (sub) sectors and industries was low.

31. The Task Force agreed that in principle the appropriate reference rate should be used for each underlying currency. The Task Force also agreed that for practical purposes, if stocks of deposits and loans were not available to allocate FISIM to specific (sub) sectors or industries, then shares of value-added would form the least-bad practical means of allocation. The Task Force also noted that there would be a need to initiate a form of international coordination such that information on FISIM imports/exports by country could be made available to facilitate consistency across countries. This position was subsequently endorsed by the AEG who met in April 2012 and also by the Eurostat Task Force.

32. Recognising that it would not be practical for countries to record FISIM for each separate currency however the Task Force concluded that, **at a minimum**, FISIM should be calculated **using at least** one separate reference rate in respect of foreign currencies. In cases where only one separate reference rates was used for all deposits and loans denominated in foreign currency, countries are recommended to create a reference rate that reflects the broad mix of relevant major currencies (weighted by their overall shares of deposits and loans, even if the weighting is only based on partial or anecdotal information).

Recommendation 1: For international trade in FISIM: FISIM should be calculated by at least two groups of currencies (national and foreign currency).

33. The Task Force did not form a strong view on whether the underlying reference rate for a given currency should always be the same irrespective of the residence of the service provider. Certainly there was a recognition that the use of weighted average approaches could mean that the reference rate for a given currency may not be the same for all producers when they were resident in different economies (as the weights would necessarily differ). Equally there was a recognition, following the costs of funds argument that the reference rates need not necessarily align.

Recommendation 1(bis): The reference rate for a specific currency need not be the same for FISIM providers resident in different economies. Although they should be expected, under normal circumstances, to be relatively close and so national statistics agencies are encouraged to use partner country information where national estimates are not available.

34. A separate issue arose after the Task Force's second meeting concerning inter-bank lending in international trade, in respect of advice provided by paragraph 11.57:

There may be cases where the instrument classification of inter-bank positions is unclear, for example because the parties are uncertain, or one party considers it as a loan and the other a deposit. Therefore, as a convention to assure symmetry, all inter-bank positions other than securities and accounts receivable or payable and changes in the positions are classified under deposits.

35. The concern related to the fact that any FISIM services provided in relation to interbank loans would result in FISIM imports being recorded rather than exports, so understating the value of FISIM output by the loan provider. In practice it was recognised that these would be recorded as negative imports of the loaning institution (as the loan rate would typically be higher than the reference rate), and it was felt that additional guidance be needed in the SNA. The additional guidance is provided as follows.

In cases where negative FISIM is received by the institution deemed, following the above convention, to be the depositor, this should instead be recorded as liquidity services provided by the institution (increasing the institution's output and the economy's exports) and should not be recorded as negative imports. For the counterparty these flows should be recorded as intermediate consumption of liquidity services and imports, and not negative exports or output.

3.2 *Liquidity Transformation*

36. The Task Force was not able to fully agree on whether liquidity transformation services should or should not, in theory, be part of FISIM. However the majority of the Task Force agreed that, in practice, the exclusion of liquidity transformation services would increase the probability of low values of FISIM, resulting in implausibly low values of value-added and operating surplus, and, that liquidity transformation services required capital and labour inputs from banks, and so, there was strong support that FISIM should include the value of liquidity transformation services. This was also the view of the AEG.

37. One argument put forward for a matched-maturity approach to calculating FISIM relates to the idea that after adjusting for FISIM the value-added for a firm should be indifferent to how it finances its expenditures, be that via a bank-loan or a corporate bond. Typically, a corporate bond with a long-term maturity will yield a higher rate than the single reference rate approach (which typically relates to a mix of maturities, typically shorter term). All other things being equal one could intuitively argue that the firm's value-added would only be lowered by the additional bank interest paid above the interest paid on the bond, and so the argument follows that only this amount corresponds to FISIM. FISIM following this approach would be lower than that used following a single reference rate approach because the compensation for term and credit default risk are priced into the interest rates charged for the bond whereas they would be excluded from the reference rate used to calculate FISIM. But the majority of the Task Force concluded that this presupposed that the firm would have been able to issue a corporate bond with the same maturity structure and terms and conditions as the loan. Certainly this was considered unlikely in relation to household loans and also in relation to many, perhaps most, corporations..

38. Equally there was a view that the argument did not negate the idea that liquidity transformation services existed *per se*, rather they raised the question of why the services should only be provided in relation to deposits and loans or by financial intermediaries, as the financing of long-term debt securities with short-term liabilities could be done by any investor in theory. This conclusion echoed the findings of the OECD Task Force on Financial Services which also recognised that, in practice, liquidity transformation services could be provided by non-financial intermediaries but by convention the SNA restricts their provision to being made by financial intermediaries, a view the majority of the Task Force on FISIM endorsed; particularly as they viewed banks as providing liquidity transformation services, under normal circumstances, in a safe and stable way that required dedicated capital and labour inputs. Additional arguments made against the matched reference rate approach (if applied to deposits and loans) concerned: (i) the de facto status of short-term deposits, which in practice, from a bank's perspective, acted as a source of long-term financing, (virtual versus contractual maturity); and (ii) the difficulty many countries may face in practice in identifying suitable rates. .

39. Concern was also voiced in the context of what the matched-maturity approach implied for the definition of SNA interest, as implicitly any costs excluded from loan FISIM would necessarily emerge in SNA interest. Further concerns were raised in relation to the fact that, in practice, the reference rates used for a given maturity would be based on the price of similar risk-free instruments at that point in time but that the fixed term deposits and loans to which these reference rates were applied would often reflect reference rates that were struck in earlier periods.

40. Despite this view however the Task Force also recognised that a single reference rate approach was not necessarily a panacea for the measurement of FISIM, certainly in the context of using interbank lending rates which proved problematic during the recent crisis. The Task Force recognised in this respect (where the reference rate was estimated using interbank lending rates) that steepening yield curves led to increased depositor FISIM output without any necessary, easily explainable, change in the price of labour and capital used to produce FISIM. The key concern in this instance related to the construction of reference rates in practice; namely the fact that the maturity structure of interbank lending (typically short-term) did not generally reflect the maturity structure of deposits and, especially, loans. As such, while interbank lending rates may accurately reflect the instantaneous user-costs they do not necessarily reflect the actual financing costs incurred by banks nor do they necessarily reflect the vintages of loans and deposits (see also below the discussion on 'costs of funds').

41. To illustrate the above it is instructive to consider an analogy with the distribution industry, with which FISIM is often compared. If a wholesaler secures an order to purchase widgets at \$10 per widget for the next 5 years and agrees to sell them at \$12 per widget over those 5 years to a manufacturer, the margin output of the wholesaler, for these transactions, is unaffected by any subsequent changes in the market price of widgets. Equally if a bank sold a 5 year bond, paying interest of 10 at that time to finance the provision of a 5 year loan on which it receives interest of 12, the margin the bank makes from the borrower should arguably be unaffected if the interest rate for any further corporate bonds it issues subsequently changes. This argues in favour of a vintage type approach to calculate the single reference rate, as shown in Annex I - which because it also implies a separate reference rate for loans and deposits is considered as an item for the longer term research agenda. It does not however suggest that maturity-matched reference rates should be preferred to calculate the service margin, since during the five year period the price for supplying widgets at a fixed price for five years will also diverge from the \$10 and \$12 contract prices struck earlier, or, additionally, in the case of financial intermediaries, the bank could have chosen to finance the provision of a loan by issuing consecutive bonds with shorter maturities.

42. In addition the Task Force took the view that the use of interbank lending rates as a proxy only made sense if the volume of interbank lending was sufficiently large in relation to loans and deposits.

43. The Task Force also took the view that the use of current market interbank lending rates (which are typically short-term) appears to only make (conceptual) sense if one implicitly assumes that the flow of money from depositors to banks and from banks to borrowers is constant for all depositors and all borrowers (even if fixed term contracts are in operation), with the bank always paying the instantaneous market-price for the money; in other words the provision of FISIM services is calculated on a second-by-second basis.

44. The key questions raised by the use of an interbank lending rate therefore are the following:

All other things being equal, does it make sense for the split of FISIM services provided by a bank to depositors and borrowers to change (potentially significantly), from one day to the next, in line with changes in the interbank lending rate (opportunity costs), if the bank changes none of the terms and conditions to borrowers or savers and requires no additional funding itself from one day to the next? And so affect GDP?

All other things equal, why should changes in the interbank lending rate necessarily mean differing price movements in FISIM prices for deposits and FISIM prices for borrowers, when the bank's actual costs of production have, to all extents and purposes, remained unchanged?

45. Of course, this can be theoretically justified but it is difficult to explain to policy makers, particularly if FISIM enters the CPI.

46. This led the Task Force to consider whether a single reference rate could be better calculated using an approach that took account of the different maturity structure of loans and deposits, for example by weighting the underlying rates for short-term and long-term loans and deposits. It was recognised that this would not create a consistency with the treatment of margins in the distribution industry (where the margin rate implicit in a historic fixed contract is unaffected by any subsequent changes in the market rate for a similar contract) but that it would, in all likelihood, reduce the sensitivity, and volatility, of FISIM to abrupt changes in interbank lending rates.

47. Subsequently the Task Force considered a cost of funds approach to the measurement of FISIM, which is theoretically closer (equivalent) to the treatment of margins in the distribution industry (and also closer to an approach that calculates a single reference rate by averaging reference rates for different maturities of loans and deposits). This approach recognised that in providing financing for its loans a financial institution draws on a number of sources of finance including deposits, bonds and own-funds (via capital services) and indeed equity, and that the institution's reference rate should be determined by the actual rate pertaining to this mix of its liabilities (after adjusting for FISIM services provided to depositors). The conclusion of the cost of funds approach therefore is that there is necessarily a separate reference rate for each individual financial intermediation institution.⁸

48. The Task Force recognised the conceptual merit behind the approach but also the challenges, particularly concerning: (i) the data demands; (ii) the difficulties in estimating the FISIM free effective rate paid by financial institutions on deposits, that is, which instruments could be used to determine the risk and service free reference rate applicable to the institution; and (iii) the implications of the approach in estimating credit-default risk - in some cases it is not always clear that it is necessarily the bank that accepts the risks of default, arguments for example could be made that depositors share some of the risks (and accept higher rates in return). The Task Force also recognised that the cost of capital variations across institutions would, under normal circumstances, approximate the single exogenous reference rate approach for the whole economy. But that complications could arise when considering exports and imports of FISIM, particularly in the context of the SNA requirement that separate reference rates were used for instruments denominated in different currencies,

49. Notwithstanding the issues raised by the costs of funds approach, where there was an agreement to conduct further investigation as part of the longer term research programme, the Task Force agreed that it would be necessary to evaluate, via testing, a number of proposals for calculating reference rates. The Task Force agreed to conduct tests on the following approaches:

- Single reference rate using inter-bank lending rates.
- Matching reference rates using different rates for short-term and long-term deposits and loans, where countries could specify the classification and disaggregation of maturities depending on data availability.
- Reference rate calculated using the midpoint of interest rates on deposits and interest rates on loans.

⁸ See 'FISIM Accounting' 2013, Kimberly D. Zieschang, IMF for a more detailed exposition of the costs of funds approach.

- Average reference rate (weighted by the stocks of short-term and long-term loans and deposits) calculated using different rates for the short-term and long-term reference rates.

The criteria for a reasonable reference rate and the resulting FISIM calculation were also discussed in order to obtain comparable results.

- Strong connection to underlying economic conditions as measured by volatility. It was noted that reductions in volatility in nominal prices do not necessarily ensure that volatility will be reduced in volume measures.
- No sustained periods of negative FISIM. However, the Task Force noted that negative FISIM is possible (in practice) for short periods of time so a view should be taken to note the conditions under which this result occurred.
- Sensible changes in FISIM near economic turning points (to determine if there is an unacceptable lag in response rate).
- Data is observable

50. It was agreed that the tests would be performed with data spanning at least a ten year time period to allow a view into the robustness of each method during both volatile and stable economic periods.

51. Unfortunately only one member of the Task Force (the ECB) conducted tests on the matched maturity approach but Eurostat did conduct its own tests using data provided in response to its simulation exercise. In addition no country provided simulations for the vintage approach (which was only developed and articulated in this report after the scope for the simulations was established).

3.2.1 Results of Simulation Exercises

52. Annex II contains the results of the exercise for all participating countries. Generally the results point to a marginal improvement in FISIM estimates (based on the criteria set out above) using a weighted average approach, compared to short term interbank lending rates. The results for the matched maturity approach illustrate, not surprisingly, lower FISIM in practice.; although some care is needed in interpretation: (a) because this reflects only one simulation; and (b) because the reference rate used is an unweighted average of loans and deposits among financial intermediaries (i.e., secure and unsecured instruments) and includes operations with other financial intermediaries.

3.2.2 Conclusions on Liquidity Transformation

Recommendation 2: The recommendations of the Task Force are that liquidity transformation services should remain part of FISIM and that there should be a single temporal reference rate used to determine FISIM with the:

- difference between effective bank lending rates made to borrowers minus the reference rate, multiplied by the stock of loans, equal to total borrower FISIM; and
- the difference between the reference rate minus the effective bank lending rate provided to depositors, multiplied by the stock of deposits, equal to total depositor FISIM.

Recommendation 3: The calculation (definition) of the reference rate should be determined according to national circumstances, using any of the following approaches:

- a reference rate based on a single observable exogenous rate for a specific instrument, such as interbank lending rates;
- a reference rate based on a weighted average of observable exogenous rates of maturities with different terms (weighted by the stock of loans and deposits in each maturity); or

- a weighted average of the endogenous interest rates on loans and deposits.

Recommendation 4: The Task Force also recommends that during periods of volatile movements in reference rates and when liquidity markets begin to dysfunction, considerable care should be taken in determining FISIM estimates. These periods may be characterised by negative FISIM estimates, particularly for depositors, but also for borrowers. When such incidences occur countries are encouraged to review the applicability of the underlying reference rate for that period to calculate FISIM.

53. During such periods of disfunctioning liquidity markets, countries are encouraged to consider alternative approaches for the calculation of FISIM. Two approaches are described here.

54. The first, and simplest approach, is that countries consider taking the simple weighted average of the interest rates on loans and deposits for those years with negative depositor or borrower FISIM. This approach ensures a consistency between actual bank interest, SNA interest and FISIM. This will not always however be a panacea, especially in very dysfunctional markets. For example when current bank lending rates are higher than effective bank borrowing rates (which may occur in countries with a high proportion of fixed term loans offered during periods when underlying rates were significantly lower).

55. The second, and slightly more complicated approach, takes the view that, during periods when markets are dysfunctional, banks may offer financial inducements to attract depositors, meaning that part of what is now typically recorded as bank interest is actually a current transfer. In this approach, during periods of negative FISIM calculated using the conventional approach, FISIM should instead be calculated by assuming that the margin (FISIM as a per cent of deposits or loans) banks charge on deposits or loans is broadly stable over time.

56. Table 1 below provides an illustrative example of how this approach could work. Periods 12 and 13 in the table reflect years when liquidity markets begin to dysfunction resulting in higher depositor rates than the underlying calculated reference rate. Corrected depositor FISIM is calculated in this example by taking a ten year average of the effective preceding FISIM margin rates charged by banks (the difference between the reference rate and effective bank depositor rates in normal periods). This rate is then applied to the total stock of deposits to arrive at a corrected estimate of FISIM. The reference to ten years is not intended to be prescriptive. Countries should choose a period or cycle that best reflects national circumstances, also bearing in mind that in practice, for example, effective margins on deposits are generally relatively lower during periods of low rates and relatively higher during periods of higher rates. The example below, for ease of exposition, does not adjust for this.

57. Note however that this does imply that bank interest paid plus FISIM no longer equals the product of the reference rate and the stock of deposits. This is because there is implicitly a current transfer from banks to depositors (the higher interest paid to depositors above normal rates for liquidity). Re-estimated bank interest paid by banks is taken as the product of the reference rate and the stock of deposits minus FISIM. The current transfer is then equal to bank interest actually paid minus re-estimated bank interest. Note that this can also result in negative bank interest paid as shown in period 13. If this occurs it may be preferable for countries to adjust the effective margin rate used. Again, this is not done in Table 1, for ease of exposition.

58. The table also provides a stylised example to show how the approach could also be applied to borrower FISIM, in volatile or unusual periods. The table assumes that in years 15 and 16 banks provide incentives (e.g. lower borrowing rates than reference rates) to borrowers in expectation of future falls in the cost of money (future lower reference rates). The logic and approach follows the case of depositors, with the following exceptions: the average ten year margin is calculated on the basis of differences in effective bank borrower rates and the reference rate over the ten year period; and bank interest is equal to FISIM plus the product of the reference rate and the stock of loans. Note also that in year 16, that the average borrower rate is lower than the average depositor rate, which may

occur in those counties with high proportions of fixed terms loans taken out during periods of lower interest rates (see also Annex 1).

3.3 Default Risk

59. The Task Force considered the view that default risk management can be viewed as an insurance contract where the lender, acting as a guarantor, charges a premium (default risk premium, or the expected loss on a loan) to the borrower in exchange of the risk of his potential default; which raises comparisons with the approach used to estimate the output of non-life insurance. In this case, output is derived as the difference between the collected premiums minus the payments or the calls under guarantees.

60. The majority of the Task Force agreed that the analogy with non-life insurance had merit and took the view that credit default risk⁹ should be excluded from the calculation of FISIM. Some however took the view that credit default risk should not be excluded from FISIM as it was seen as a business expense. This second view was supported by the discussion on the cost of funds approach, since the reference rate calculated with this approach implicitly included some compensation to a bank's funders in respect of the perceived credit-default risk of a bank's borrowers. As such a concern emerged that in accounting for credit-default risk on the borrower side there would need to be a corresponding adjustment made to the reference rate or to the way in which bank interest to depositors is interpreted (following the argument that they are indirectly taking on board some of the risks of borrower default).

61. The key concern related to the feasibility of removing credit-default risk from FISIM in practice and the measurement of the implicit insurance services provided. The use of Credit Default Swaps data provided a possible approach. The European Task Force, based on its results (attached as Annex II), concluded that, although write-off data was typically available for most countries, accounting provisions differed widely, and so it would not be feasible to conduct comparable estimates across countries. This is also broadly the view of this Task Force but notwithstanding that position, the Task Force also recognises that current data difficulties regarding data availability, need not be permanent, and, as such the Task Force recommends that further work continues in this area.

Recommendation 5: The Task Force has concluded that there is conceptual merit in excluding credit default risk from FISIM. At present many countries will not be in a position to do this in a way that ensures reasonable comparability across most countries. However, a number of countries have demonstrated that it is feasible, in their cases, to produce meaningful results and these countries have developed plans to estimate FISIM on this basis. The recommendation of the Task Force therefore is that research continues in this area, both within the FISIM Task Force and within national agencies, to develop methods and data that can support estimation in the future. Recognising that these improvements will take some time to materialise, the Task Force recommends that, in the interim, in the interest of maintaining international comparability, those countries that exclude credit default risk from their FISIM estimates, should also provide supplementary estimates that include credit default risk to international agencies

62. For those countries that do choose to present national estimates excluding credit default (for national purposes, as distinct from internationally comparable estimates, which should not exclude credit default risk), an additional concern relates to the treatment of credit-default risk which will require further discussion in future deliberations on the longer term research programme. From the bank's point of view, the default premium is neither implicitly-priced output nor property income from interest. Treating the default premium as a transfer to defaulters used to repay the principal that

⁹ Credit default risk should be interpreted here as being the totality of what is referred to as credit-default spread and default risk in the Australian Bureau of Statistics paper "On the convergence of theory and practice in the measurement of FISIM", Maritz.A, 2012.

they owe would give the best estimate of banks' entrepreneurial income (profits) and saving. But this would mean that on the borrower's side the non-repayment of principal was treated as saving, which should, at least from the borrower's perspective be recorded under "other changes in the volume of liabilities" (bad debts).

3.4 *Price and Volume Measures*

63. The Task Force considered both direct deflation and output approaches for estimating volume estimates of FISIM. The discussion on output measures centred on the experience of Statistics Netherlands. The advantages and disadvantages of this approach were seen as follows:

- Good indicator of the amount of service provided by banks as current accounts differ more within periods than between periods;
- Offers insight into operations of bank;
- Weighting the contribution of various output indicators is a difficult and complex task;
- Data burden is high;
- Approach may not work well in situations where corporations have major changes that might not be reflected in raw numbers of transactions.
- Difficult to account for changes in direct charging for intermediation changes.

64. Most countries use a direct deflation approach by deflating stock of deposits and loans using a general price index and applying previous year's (or base year) reference rates to arrive at borrower FISIM and depositor FISIM in volume terms. However it was noted that different kinds of loans or deposits have different margins between their interest rate and the reference rate, and thus are treated as having different prices in calculating nominal FISIM. Pooling different kinds of loans or different kinds of deposits therefore amounts to the use of a unit value measure of price change in circumstances in which index number methods are needed. The Task Force agreed therefore that each type of loan or deposit must be deflated separately, and the various types of loans and deposits must be aggregated using a price index formula (*e.g.* Paasche price index or Fisher price index).

65. The advantages and disadvantages of the deflated stocks approach were seen as:

- Simple way of calculating volume measures
- Low data burden
- Available price indices for deflation may not be directly applicable to FISIM
- The volume of FISIM is not directly calculated
- Developments moving from indirect charges to direct charges of intermediation services will not be appropriately reflected in the measurement of volumes and prices.

Recommendation 6: The Task Force agreed that, in principle, output indicators could be used to calculate volume measures of FISIM (as long as double counting for explicitly charged services was avoided), but there was an overriding preference, not least because of simplicity, to use a deflated stocks approach that differentiated between the types of loans and deposits. The Task Force also agreed that stocks of loans and deposits should be deflated using a general price index. The Task Force further agreed that domestic price indices should be used for exports, while for imports the appropriate country price indices should be used. The Task Force further recommended that the general price index used to deflate FISIM should itself exclude FISIM.

4. Concluding comments

66. As stated in the preamble to this report, the work of this Task Force has been accelerated to meet an essential demand for guidance. Foremost in the minds of the Task Force has been a need to introduce practical and sound methods to measure FISIM that are comparable across countries. In many respects the Task Force has not been able to fully achieve this. Much remains to be done and investigated, including on the concept itself, which was to a large extent anticipated at the outset of this Task Force.

67. The events of the recent financial crisis exposed difficulties in the methods used to calculate FISIM across countries, particularly for those countries using interbank lending rates. As this report demonstrates it is not unequivocal that the estimates returned at the height of the crisis necessarily captured FISIM only. Certainly there are many arguments to support pause for reflection. Unfortunately, the urgency attached to finalising this report necessarily outweigh that pause. And as such further work will need to be done in the future. Three key issues dominate this reflection: better understanding occurrences of negative FISIM estimates and their plausibility/meaningfulness, a deeper reflection on the scope of assets, liabilities and institutions which provide FISIM, and a consideration of vintage based approaches to measuring the reference rate.

68. With respect to the first issue, the Task Force has adopted a pragmatic set of recommendations that, at least in part, is driven by minimising the occurrence of negative FISIM: Firstly by allowing the possibility of weighted approaches to the establishment of a reference rate, which should help to produce less volatile FISIM estimates (and also price and volume estimates); and, Secondly, by explicitly encouraging countries to examine negative occurrences of FISIM, with a view to corrective action as may be necessary. But it cannot be overstated that further work is needed, particularly concerning the scope of FISIM (range of instruments and institutions) and indeed in terms of methods, such as the related costs of funds approach and the vintage reference rate approach, which is summarily described below.

TABLE 1: AN EXAMPLE OF DEALING WITH 'DISFUNCTIONING' AND UNUSUAL LIQUIDITY MARKETS

Year	Reference Rate	Stock		Stock		Average Depositor Rate	Average Borrower Rate	FISIM Standard Approach		FISIM Corrected Approach Depositors				FISIM Corrected Approach Borrowers			
		Deposits	Loans	Bank interest paid	Bank interest received			Depositors	Borrowers	Bank Margin	FISIM	Re-estimated Bank Interest paid	Current Transfer	Bank Margin	FISIM	Re-estimated Bank Interest received	Current Transfer
1	6	100	95	4	7.79	4	8.2	2	2.09	2				2.2			
2	4	125	120	1.875	6.48	1.5	5.4	3.125	1.68	2.5				1.4			
3	5	120	115	3.36	8.165	2.8	7.1	2.64	2.415	2.2				2.1			
4	6	110	100	5.06	8.3	4.6	8.3	1.54	2.3	1.4				2.3			
5	4	90	120	2.16	7.32	2.4	6.1	1.44	2.52	1.6				2.1			
6	3	80	125	0.88	6.375	1.1	5.1	1.52	2.625	1.9				2.1			
7	2	120	130	0	4.81	0	3.7	2.4	2.21	2				1.7			
8	8	140	95	8.26	9.595	5.9	10.1	2.94	1.995	2.1				2.1			
9	9	140	90	9.52	9.99	6.8	11.1	3.08	1.89	2.2				2.1			
10	4	125	120	2.875	7.32	2.3	6.1	2.125	2.52	1.7				2.1			
11	3	120	125	0.96	5.625	0.8	4.5	2.64	1.875	2.2				1.5			
12	2	125	130	5	5.33	4	4.1	-2.5	2.73	1.98	2.475	0.025	4.975	2.1			
13	1	120	135	3.6	4.185	3	3.1	-2.4	2.835	1.928	2.3136	-1.1136	4.7136	2.1			
14	3	120	120	0.84	6.12	0.7	5.1	2.76	2.52	2.3				2.1			
15	7	130	105	6.11	5.145	4.7	4.9	2.99	-2.205	2.3				2	2.1	9.45	4.305
16	8	140	100	8.26	5.6	5.9	5.6	2.94	-2.4	2.1				1.99	1.99	9.99	4.39

ANNEX 1: VINTAGE REFERENCE RATE APPROACH

During the course of the Task Force's deliberations a number of additional views were formed where further work will be needed as part of a longer term research programme.

One such approach is referred to here as the vintage reference rate approach. But it has not been considered further in this report as it implies an inconsistency with SNA 2008 paragraph 6.167¹⁰. It is however recommended for consideration as part of the future research agenda.

The approach assumes that there is a single reference rate applicable to loans and deposits but it differs, from option 1 presented in this report, in the sense that for loans and deposits that have a fixed term and a fixed rate, the reference rate is itself fixed to the underlying reference rate that was applicable when new fixed term loans and deposits were struck.

For all variable rate loans and deposits the approach is identical to the single reference rate approach described above as option 1. For simplicity it is assumed that loans and deposits only fall into these fixed rate and variable rate categories. This means that there will in practice be a number of time dependent reference rates which can be combined to create a de facto single reference rate for loans and another single reference rate for deposits.

The underlying principle behind the approach is an attempt to capture the 'contractual' nature of fixed term loans and deposits which can be interpreted as instruments and agreements between banks and costumers to provide FISIM services for a fixed fee. Implicitly, in these cases, the Bank promises to provide FISIM services to its customers at the price struck when the contract was agreed. In other words the value of FISIM services provided by the bank is invariant to future movements in the underlying temporal reference rate

It should be noted that this differs from the matched maturity approach. For a given five year loan and twenty year loan for example, issued on the same date, there will be two different underlying reference rates with the matched maturity approach, whereas for the vintage approach there will be only one single reference rate for both of these instruments.

The approach assumes that there is a theoretical pure cost of money that is relevant when contracts (loans and deposits) are struck and these contracts determine the value of FISIM services provided thereafter for fixed term instruments. The approach recognises that after these contracts are struck additional, marketable, contracts (non produced non financial assets) may be created depending on movements in the pure cost of money (current reference rate) relative to the vintage reference rate.

¹⁰ Strictly speaking this approach is inconsistent with the 2008 SNA. Paragraph 6.167 says that: "Banks may offer loans that they describe as being fixed interest loans. This is to be interpreted as a situation where the level of bank interest is fixed but as the reference rate changes, the level of SNA interest and the service charge will vary". However this implicitly assumes that the agreed bank interest rate will always be higher than the reference rate. If this was not the case the SNA would be explicitly recognising the possibility of negative FISIM, which was more than likely not the motivation for this paragraph.

This avoids one of the interpretative problems inherent in the two main options presented in the report above: namely that for fixed rate loans and deposits, movements in the temporal reference rate can lead to opposing and counter-intuitive movements in the prices of FISIM services provided to borrowers and the prices of services provided to depositors.

All other things equal, in both of the main options presented in the report, for fixed term instruments, a rise (fall) in the temporal reference rate will lead to a price fall (rise) for FISIM services provided to borrowers and a price rise (fall) for FISIM services provided to depositors. Given the fact that the prices of the capital services produced by non-financial assets and labour used to provide these services are likely to move (at least broadly) in the same direction for both depositors and borrowers, asymmetric price movements in FISIM for depositors and borrowers are difficult to explain; unless one allows Operating Surplus to also reflect compensation for the use of financial assets.

The following describes the underlying approach.

Let R^t be the temporal reference rate at time t . Further, the bank lending rate for loans and deposits issued at time t with a term of length greater than one year are defined as RL^t and RD^t with the current value of these loans and deposits at time y defined as $VL^{t,y}$ and $VD^{t,y}$. For variable rate loans and deposits, including those with duration of one year or less, we define BRL^t and BRD^t as the bank lending and deposit rates at time t with the current value of these loans and deposits at time t defined as VL and VD .

Total borrower FISIM at time t can be defined as

$$\sum_{i=0}^t (RL^i - R^i) * VL^{i,t}$$

(for all fixed term loans with a duration of more than one year, and noting that $RL^i * VL^{i,t}$ is equal to actual interest received in year t on loans issued at year i)

$$+ (BRL^t - R^t) * VL$$

(for all variable rate loans and loans with duration of one year or less).

Total depositor FISIM at time t can be defined as

$$\sum_{i=0}^t (R^i - RD^i) * VD^{i,t}$$

(for all fixed term deposits with a duration of more than one year)

$$+ (R^t - BRD^t) * VD$$

(for all variable rate deposits and deposits with duration of one year or less).

Table 1 provides a summary of the method for deposits and Table 2 for loans. Column 3 reflects the new short term deposits made every year (assumed to be of value 100 every year) and column 4 reflects the new 5 year deposits made every year (assumed to be of value 30 every year). Columns 5 and 6 reflect the stock of short term and 5 year deposits at a given point in time, assuming that the value of the 5 year deposits remains fixed throughout the duration of the term. Column 7 reflects the actual Bank interest paid to depositors (with short term depositors paid 2 percentage points below the underlying reference rate (Column 2) and 5 year depositors paid 1.5 percentage points below the reference rates that were applicable when the deposits were made). The effective bank interest rate reflects the implicit reference rate applicable for the total stock of deposits (Column 7/(Column 6+Column 5)). FISIM calculated on the basis of the single explicit reference rate approach (based on the rates in column 2) is shown as Column 9. FISIM based on the reference rates shown on the vintage rate approach is shown in Column 10.

By design, and for illustrative purposes, the overall stock of deposits (and its composition) is unchanged over the period, and the margin charged by banks on depositors is also unchanged (2.0% for short-term deposits and 1.5% for 5 year deposits). A priori therefore an intuitive conclusion would be for overall level of FISIM to be unchanged over the period, which the vintage reference rate approach achieves, as shown below with depositor FISIM being consistently 4.25. This is also consistent with the underlying margins charged on deposits (2% for short term and 1.5% for long term, which when weighted by the stocks gives an overall margin of $(100*2\%+150*1.5\%)/250=1.7\%$ = the difference between Bank interest paid in any given year and the underlying reference rate used for depositors, (see Table 3)

But this is not the case for the standard approach, which demonstrates significant volatility in FISIM estimates, reflecting the fact that current reference rates are applied to fixed term deposits with a pre-specified contractual interest rate.

Table 2 presents the equivalent information for loans - where for loans value 40 of new 5 year loans are taken every year (with a margin of 2%) and 50 of short term loans (with a margin of 1.5%). As was the case for deposits, it demonstrates considerable volatility in FISIM estimates using the standard approach but stability using the vintage approach.

Notwithstanding the method's inconsistency with paragraph 6.167, there is another reason why this method has been recommended for future discussion only. The approach implicitly results in a separate overall reference rate for loans and a separate overall reference rate for deposits. This is despite the fact that at heart, its calculations are based on there being one underlying reference rate at a given point in time for new loans and deposits.

Table 3 and Figure 1 illustrate this. Note however that the implicit reference rates for depositors and borrowers correspond exactly with the underlying average margins charged by banks to borrowers and depositors (1.9% for borrowers = $(2\%*200+1.5\%*50)/250$, and 1.7% for depositors).

Note that the implicit rates are always below (for borrowers) and always above (for depositors) when compared to the actual effective interest rates paid or received, which is not the case when using the standard reference rate approach.

Note however that the vintage reference rate approach is not a complete panacea to negative FISIM. In practice the share of short-term deposits may be disproportionately higher than fixed term deposits, meaning that the two approaches will more closely align. So, where current Bank rates for new depositors are higher than the underlying reference rate used for new depositors, the approach may also result in these circumstances in negative FISIM. However, as noted in the main body of this report, in these circumstances, it could be argued that other factors (not FISIM) are at play, where the appropriate treatment may be to implicitly adjust the underlying reference rate.

Interestingly, it is also important to note that the appearance of two separate reference rates should not be interpreted as an eradication of liquidity transformation services. As can be seen in Table 3, FISIM using the vintage reference rate approach can often be higher, as well as lower, than the standard approach. Indeed, it can be demonstrated that over the long run they will be equal, highlighting a 'smoothing' aspect of the approach.

TABLE A1: FISIM COMPARED - DEPOSITS

Year	Reference Rate for new loans and deposits	Flows		Stock		Bank interest paid	Effective Bank interest Rate	FISIM	
		New Short Term deposits	New 5 year deposits	Short Term deposits	5 year deposits			Standard current approach	Vintage reference rate approach
1	6	100	30	100	150				
2	4	100	30	100	150				
3	5	100	30	100	150				
4	6	100	30	100	150				
5	4	100	30	100	150	7.25	2.9	2.75	4.25
6	3	100	30	100	150	5.35	2.14	2.15	4.25
7	2	100	30	100	150	3.75	1.5	1.25	4.25
8	8	100	30	100	150	10.65	4.26	9.35	4.25
9	9	100	30	100	150	12.55	5.02	9.95	4.25
10	4	100	30	100	150	7.55	3.02	2.45	4.25
11	3	100	30	100	150	6.55	2.62	0.95	4.25
12	2	100	30	100	150	5.55	2.22	-0.55	4.25
13	6	100	30	100	150	8.95	3.58	6.05	4.25
14	7	100	30	100	150	9.35	3.74	8.15	4.25
15	8	100	30	100	150	11.55	4.62	8.45	4.25
16	4	100	30	100	150	7.85	3.14	2.15	4.25
17	2	100	30	100	150	5.85	2.34	-0.85	4.25
18	3	100	30	100	150	5.95	2.38	1.55	4.25
19	6	100	30	100	150	8.65	3.46	6.35	4.25
20	4	100	30	100	150	5.45	2.18	4.55	4.25
21	5	100	30	100	150	6.75	2.7	5.75	4.25

TABLE A2: FISIM COMPARED - LOANS

Year	Reference Rate for new loans and deposits	Flows		Stock		Bank interest received	Effective Bank interest Rate	FISIM	
		New Short Term loans	New 5 year loans	Short Term loans	5 year loans			Standard current approach	Vintage reference rate
1	6	50	40	50	200				
2	4	50	40	50	200				
3	5	50	40	50	200				
4	6	50	40	50	200				
5	4	50	40	50	200	16.75	6.7	6.75	4.75
6	3	50	40	50	200	15.05	6.02	7.55	4.75
7	2	50	40	50	200	13.75	5.5	8.75	4.75
8	8	50	40	50	200	17.95	7.18	-2.05	4.75
9	9	50	40	50	200	19.65	7.86	-2.85	4.75
10	4	50	40	50	200	17.15	6.86	7.15	4.75
11	3	50	40	50	200	16.65	6.66	9.15	4.75
12	2	50	40	50	200	16.15	6.46	11.15	4.75
13	6	50	40	50	200	17.35	6.94	2.35	4.75
14	7	50	40	50	200	17.05	6.82	-0.45	4.75
15	8	50	40	50	200	19.15	7.66	-0.85	4.75
16	4	50	40	50	200	17.55	7.02	7.55	4.75
17	2	50	40	50	200	16.55	6.62	11.55	4.75
18	3	50	40	50	200	15.85	6.34	8.35	4.75
19	6	50	40	50	200	16.95	6.78	1.95	4.75
20	4	50	40	50	200	14.35	5.74	4.35	4.75
21	5	50	40	50	200	15.25	6.1	2.75	4.75

TABLE A3: REFERENCE RATES AND TOTAL FISIM COMPARED

Year	Reference Rate for new loans and deposits	Effective Borrower Rate	Effective Deposit Rate	Vintage implicit reference rate - deposits	Vintage implicit reference rate- loans	Total FISIM Standard approach	Total FISIM vintage approach
5	4	6.7	2.9	1.2	4.80	9.50	9
6	3	6.02	2.14	0.44	4.12	9.70	9
7	2	5.5	1.5	-0.2	3.60	10.00	9
8	8	7.18	4.26	2.56	5.28	7.30	9
9	9	7.86	5.02	3.32	5.96	7.10	9
10	4	6.86	3.02	1.32	4.96	9.60	9
11	3	6.66	2.62	0.92	4.76	10.10	9
12	2	6.46	2.22	0.52	4.56	10.60	9
13	6	6.94	3.58	1.88	5.04	8.40	9
14	7	6.82	3.74	2.04	4.92	7.70	9
15	8	7.66	4.62	2.92	5.76	7.60	9
16	4	7.02	3.14	1.44	5.12	9.70	9
17	2	6.62	2.34	0.64	4.72	10.70	9
18	3	6.34	2.38	0.68	4.44	9.90	9
19	6	6.78	3.46	1.76	4.88	8.30	9
20	4	5.74	2.18	0.48	3.84	8.90	9
21	5	6.1	2.7	1	4.20	8.50	9

FIGURE A1: REFERENCE RATES AND INTEREST RATES COMPARED

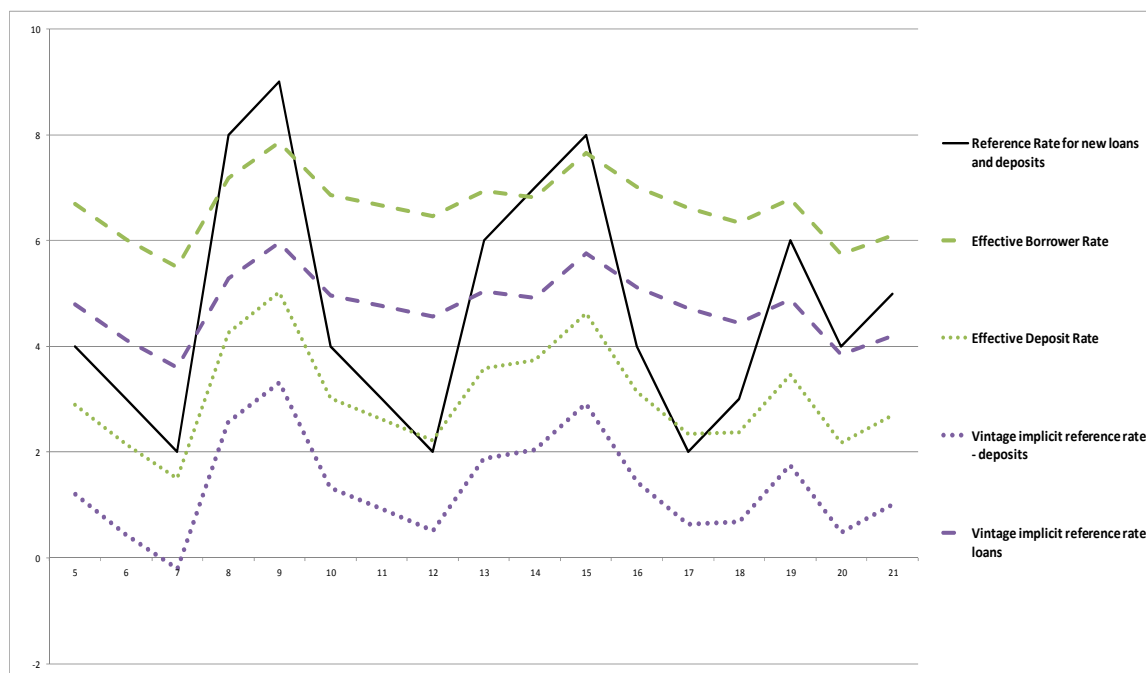
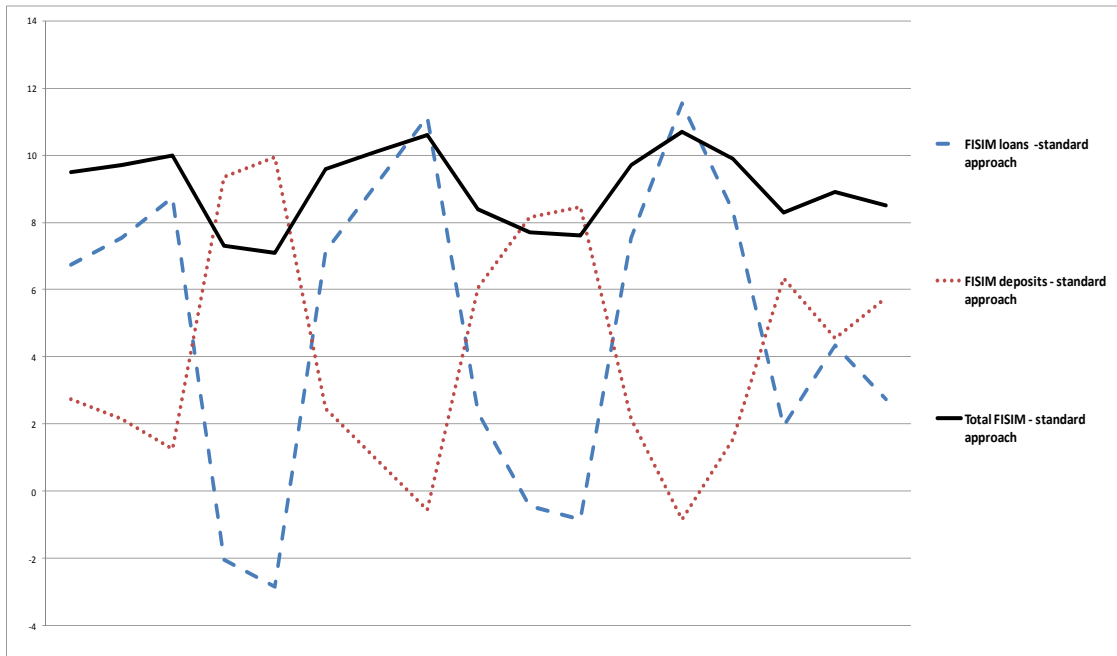


FIGURE A2: STANDARD FISIM APPROACH - AND VOLATILITY



ANNEX II :EUROSTAT TESTS ON FISIM



EUROPEAN COMMISSION
EUROSTAT

Directorate C: National Accounts, price and key indicators



Eurostat C1

Results on the FISIM tests on maturity and default risk

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Results on the FISIM tests on maturity and default risk

EXECUTIVE SUMMARY

In the context of the revisions of SNA and ESA, it was agreed that FISIM methodology should be further investigated, on issues related to: currencies, maturities, risks, and price and volume measures in FISIM.

This led to establishing the European Task Force on FISIM 2010-11 that made the following recommendations agreed by the CMFB at its meeting on 30 June 2011:

- FISIM should be calculated by at least two groups of currencies, and FISIM in real terms should be calculated using deflated stocks on loans and deposits, following the principles described in ESA2010, chapter 14;
- FISIM by maturity based on an alternative Reference Rate should be tested by the EU Member States (MSs), and
- FISIM calculated excluding default risk should also be tested by MSs.

The recommendations on FISIM tests on maturity and default risk required Eurostat to send questionnaires to MSs in order to collect their statistical data and information on their sources and methods.

On the test on maturity, 22 MSs and ECB (on Euro Area aggregates) returned completed questionnaires, The results of FISIM test on maturity for a slight majority of the countries analysed showed that FISIM calculated using Internal and External Weighted Average Reference Rates weighted by the level of short- and long-term stocks of loans and deposits can be considered, in most cases, as a slight improvement compared to the method currently used according to the EC Regulation 448/98. This is mainly determined by solving the issue of continued occurrence of negative FISIM on deposits significantly impacting the FISIM contribution to GDP around and in the aftermath of the recent financial crisis in some cases. In addition, the proposed new method tends to reduce the volatility of FISIM estimates impacting GDP in 10 countries, while increasing the volatility in 7 countries, in particular in the euro area.

The test also showed that in some countries their Internal Reference Rates defined by the Regulation 448/98 currently used in FISIM calculations were not necessarily short-term, as it would be expected. Hence, the proposed use of the Weighted Average Reference Rate should also be considered an improvement of cross-country comparability in calculating FISIM.

On the test on risk, 20 MSs and ECB (on Euro Area aggregates) returned completed questionnaires. The results on the FISIM test on default risk eliminated from the calculations of FISIM margin proved to be inconclusive at this stage, due to limitations of reliable source data on write-offs and provisions for bad and doubtful loans.

1. THE FISIM TEST ON MATURITY

1.1. Background

The current approach in measuring FISIM uses interbank transactions to calculate Internal and External Reference Rates, which are short-term and comparable 3-month maturity published rates, like EURIBOR, LIBOR, STIBOR, PRIBOR.

Several members of the European Task Force on FISIM 2010-2011 indicated that in the wake of the financial crisis, the short-term nature of the reference rates resulted in rather surprising outcomes, including occurrence of negative FISIM on deposits and high volatility in FISIM allocated into GDP components.

FISIM measures the financial services provided on short-term as well as long-term loans and deposits. Hence, it seems appropriate to expand the coverage of the (internal and external) reference rates to also reflect long-term operations.

The large majority of the Task Force members confirmed that matching benefits and term premium (concepts that reflect maturity transformation) should not be eliminated from the measure of FISIM. The Task Force stated that channelling funds from borrowers to lenders is a fundamental function of banks, and maturity transformation is inherent to Financial Intermediaries (FIs).

However, for completeness of the analyses on FISIM test on maturity, in accordance with the Task Force report, Eurostat provides some analysis using the two Reference Rates for some countries (where sectorial data were broadly available), using government security rate for one other country. These analyses were performed in order to assess the possible impact on GDP and the volatility of the FISIM estimates, and are presented in the sections 1.4.

In addition, most of the MSs indicated that they were not in position to implement such a method, due to the limited data available on short- and long-term interest and stocks data broken-down by user sectors.

Following the recommendation of the European Task Force on FISIM, Eurostat assessed the results of the test on maturity taking into account the following criteria:

- a) Continued occurrence of negative FISIM on deposits is solved;
- b) Better reflects exposure to financial shocks/crisis;
- c) Reduction in the volatility would be welcomed.

and comparing the two following methods:

1. The method currently used, defined by the Regulation 448/98, where:
 - Internal Reference Rate (448/98) is calculated based on interest and stocks on loans and deposits between resident FIs, and applied to FISIM calculations between residents.
 - External Reference Rate (448/98) is calculated based on interest and stocks on loans and deposits between resident FIs and non-resident FIs, and applied to cross-border FISIM calculations.

2. An alternative method based on a single Weighted Average Reference Rate calculated using EURIBOR 3-month for short-term operations and ISDAFIX 5-year for long-term operations¹, weighted by stocks of loans and deposits. This method is best explained by the following formula:

Weighted Avg. Ref. Rate = (EURIBOR * short-term weight) + (ISDAFIX * long-term weight)

Where:

- $short - term\ weight = \frac{short-term (<1\ year)\ stocks\ of\ loans\ and\ deposits}{total\ stocks\ of\ loans\ and\ deposits}$
- $long - term\ weight = \frac{long-term (>1\ year)\ stocks\ of\ loans\ and\ deposits}{total\ stocks\ of\ loans\ and\ deposits}$

To illustrate this calculation, if short-term stocks of loans and deposit are 400 and long-term stocks are 600, then: Weighted Average Reference Rate = (EURIBOR * 0.4) + (ISDAFIX * 0.6).

Similarity to the methods based on the Regulation 448/98, two Internal and External Weighted Average Reference Rates should be used:

- Internal Weighted Average Reference Rate is calculated based on EURIBOR and ISDAFIX² weighted by stocks on loans and deposits between resident FIs and resident user sectors, and applied to FISIM calculations between residents.
- External Weighted Average Reference Rate is calculated based on short-term rate and long-term rate³ weighted by stocks on loans and deposits between resident FIs and non-resident user sectors, and applied to cross-border FISIM calculations. The short- and long-term rates should be calculated using currency composition in cross-border operations (see recommendation 4 of the European Task Force on FISIM).

This method using the single Internal and External Weighted Average Reference Rates presents the advantages of not leading to the elimination of term premium, and of being less data intensive requiring only totals (unsectorised) short- and long-term stocks of loans and deposits.

The choice of ISDAFIX rate as the Reference Rate for long-term operations was determined by the following facts:

- It is the leading benchmark rate in interbank operations;
- It is analogous to EURIBOR or LIBOR for long-term operations;
- It is the rate that the banks take into account in developing the rates for charging their customers on loans and deposits;
- It is similar in terms of liquidity to loans and deposits operations (government bonds have liquidity constraints);
- It reflects interbank risk (government bonds reflect sovereign risk);
- It is available in a number of maturities and in a number of currencies.

The next section of this report describes the results the FISIM test on maturity by country based on the single Internal and External Weighted Average Reference Rates.

¹ Appropriate rates should be used for other currencies

² Ibid.

³ These rates are based on currency composition of loans and deposits granted and received from the rest of the world.

Eurostat also collected additional information on government security rates (see section 1.4.1).

The European Task Force on FISIM did not consider testing other methods, because during the work of the FISIM Task Force in 1998-2002, the MSs tested a number of difference reference rates for FISIM, as a follow-up of the EC Regulation 448/98 of 16 February 1998. Among others a method using Reference Rate calculated as a mid-point between loans and deposits was tested, but it was not retained. Australia and Canada that participated in the recent European Task Force on FISIM, had been calculating FISIM using the mid-point reference rate, however Canadian delegate presented a new method to calculate FISIM where mid-point rate was replaced with a calculated reference rate. It should also be stressed that the mid-point as a Reference Rate is not in line with 2008 SNA, paragraph 6.166, which states that the Reference Rate cannot be calculated as a simple average of the rates on loans and deposits, because there is no necessary equality between the level of loans and deposits.

1.2. Results of the FISIM test on maturity

According to the report of the European Task Force on FISIM, the test on maturity would be considered an improvement of the currently used method for FISIM legislated by the EC Regulation 448/98, if the following criteria are met:

- a) Continued occurrence of negative FISIM on deposits is solved;
- b) Better reflects exposure to financial shocks/crisis;
- c) Reduction in the volatility would be welcomed.

In the section 1.2.1, the analyses of FISIM test are provided by MS, taking into the account the criteria mentioned above. The analysis concentrated mainly in comparing the calculation of FISIM using the Internal and External Weighted Average Reference Rates (explained in section 1.1) and the Internal and External Reference Rates according to the EC Regulation 448/98 (sometimes referred in this paper as the Reference Rates 448/98).

In the section 1.2.2, the analyses concentrated on comparing the Internal Reference Rate 448/98 with other relevant market rates.

Analysis on impact on GDP and volatility analysis are provided in section 1.3.

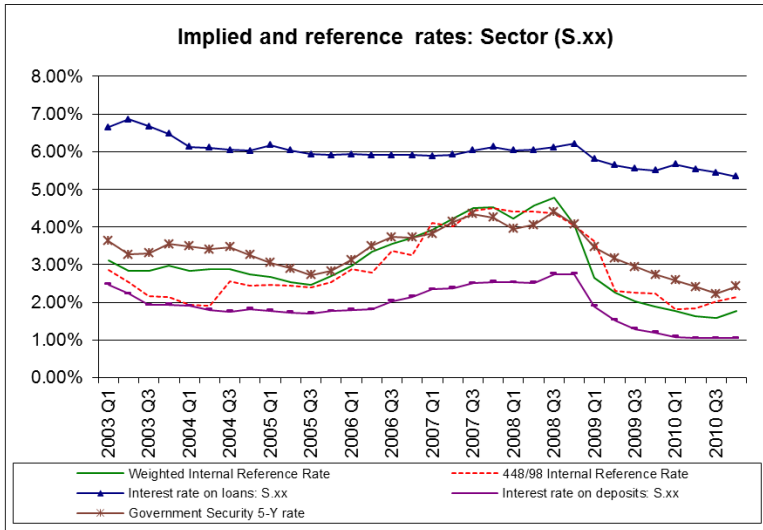
Further analysis using Government Security Rate and Two Reference Rates approaches is presented in section 1.4.

Finally, the analyses on FISIM test on maturity are concluded in section 1.5.

1.2.1. The Weighted Average Reference Rates tested

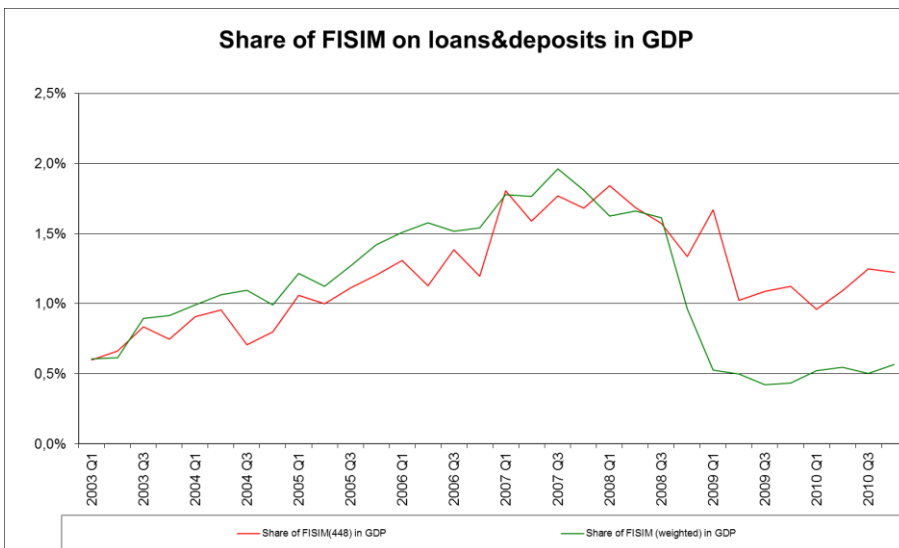
In this section the analysis by user sectors is best illustrated by the chart below, which shows:

- a) the implied rates on loans (in blue) and deposits (in purple);
- b) the reference rate according to the Regulation 448/98 (in red), the new developed Weighted Average Reference Rate (in green); and
- c) the government security with 5-year maturity was also presented



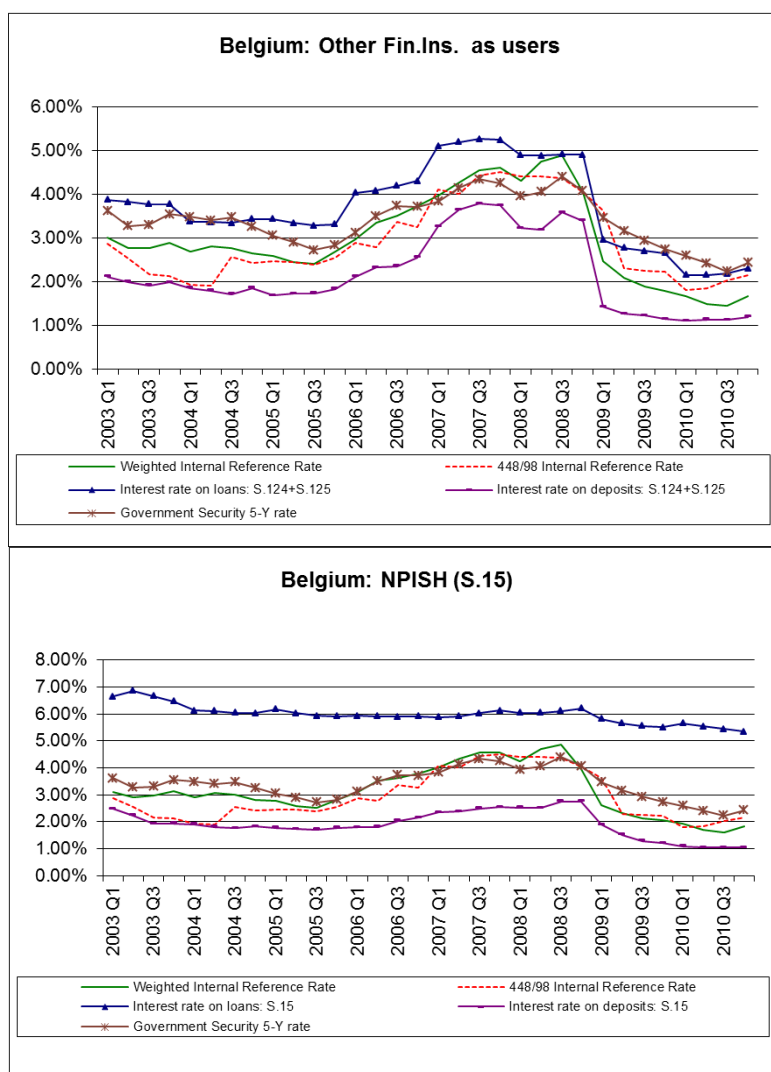
Other charts were also presented showing the FISIM estimates and its impact on GDP or other statistics, measures using:

- the reference rates according to the Regulation 448/98 (in red),
- the new developed single Weighted Average Reference Rate (in green)



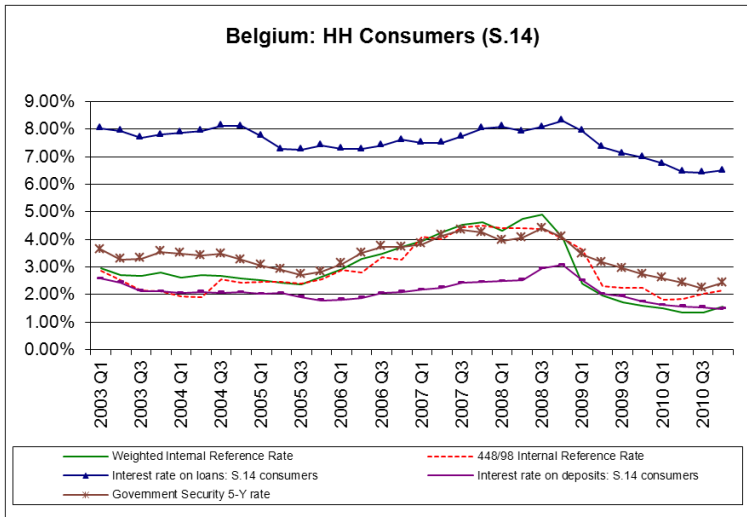
Belgium:

The Internal Weighted Average Reference Rate fitted relatively implied rates on loans and deposits for some sectors, like Other Financial Institutions as users and NPISH.

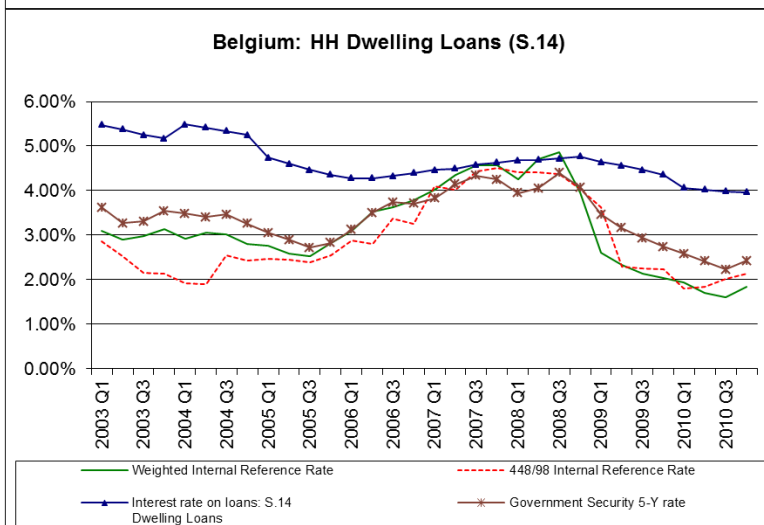
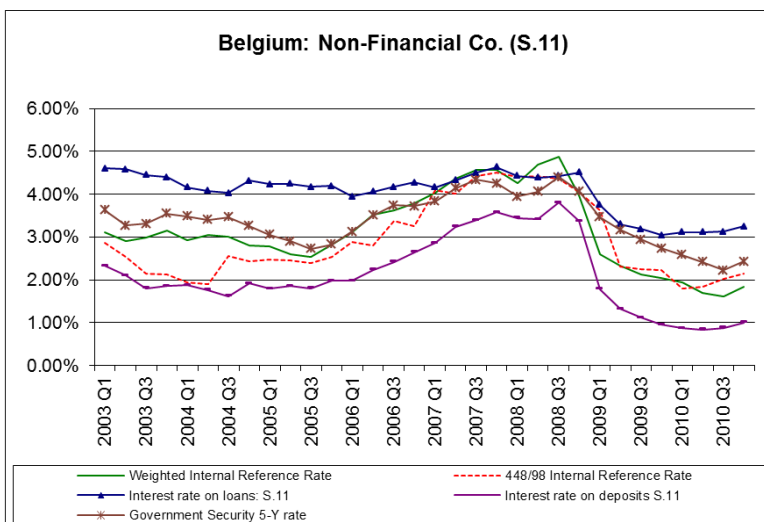


In case of households as consumers the Internal Weighted Average Reference Rate fitted relatively implied rates on loans and deposits until the period of the financial crises, after which some continued (although modest) occurrences of negative FISIM were observed. This issue, however, could be solved by further improving the calculations for the weighting scheme, where at present the short-term weight dominates.

The dynamics of government security rate showed in the charts fits very well between the implied rates on loans and deposits. Thus, further improvement could be applied by blending the government security rate into the weighted rate. (see section 1.4)

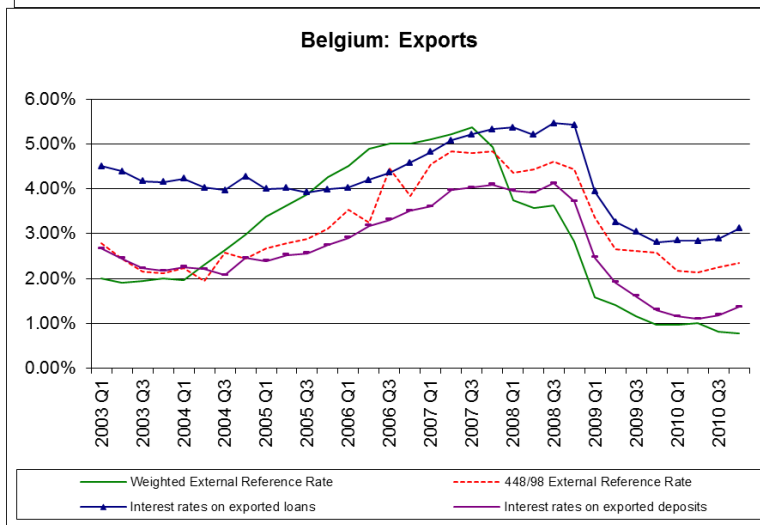
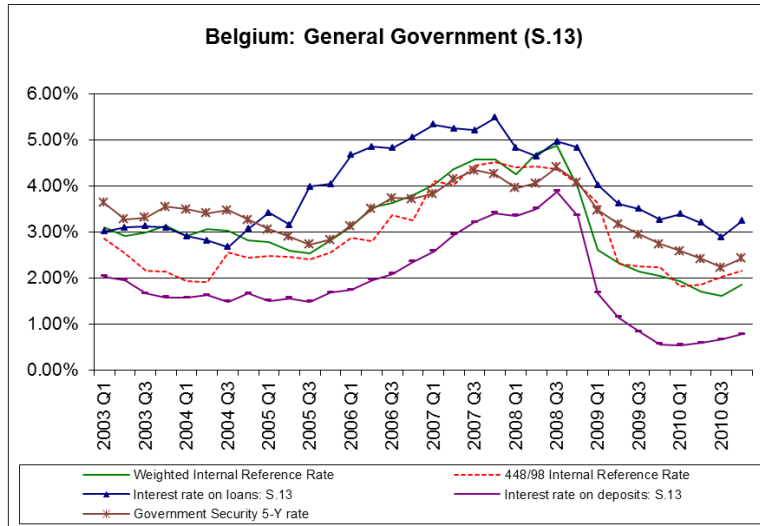


When the financial crises hit the markets the interbank rates in the euro area increased significantly, while the loan rates in Belgium remained broadly unchanged resulting relatively modest (short-lasting) negative FISIM on loans of the non-financial corporations sector and on dwellings in 2008 Q2-Q3.

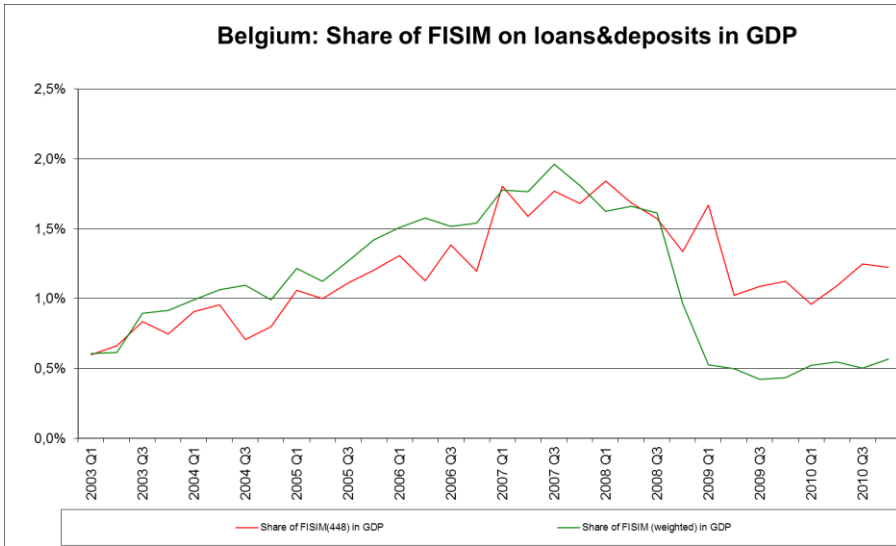


Some exceptions, where the Weighted Average Reference Rates did not fit very well between implied rates on loans and deposits were observed in FISIM allocated to:

- General government (S.13) – where the Weighted Rate was higher than the rate on loans around 2003, resulting in negative FISIM. This however, is an acceptable side effect as S.13 may obtain preferential rates, and its contribution to FISIM output is modest;
- Exports - where External Weighted Reference Rate would need to be recalculated using improved weighting scheme by currencies.

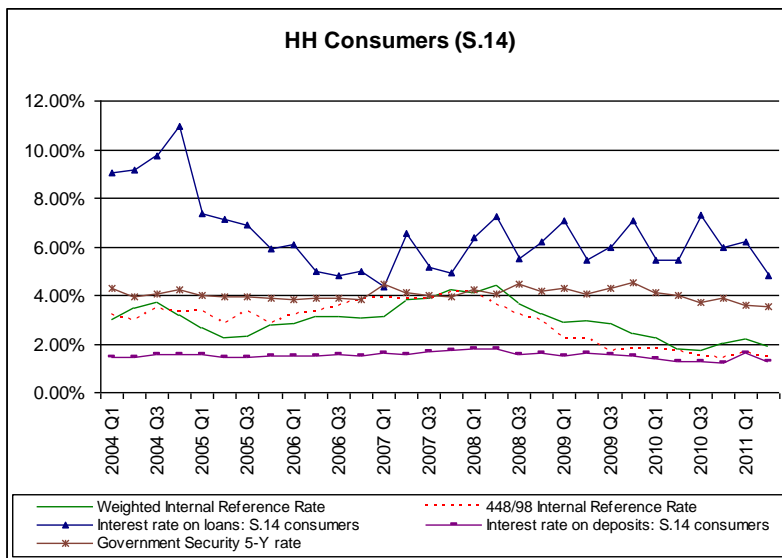


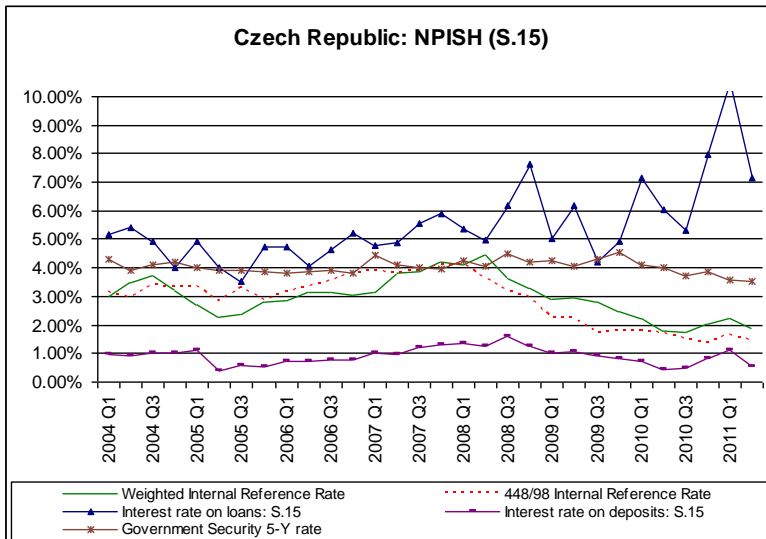
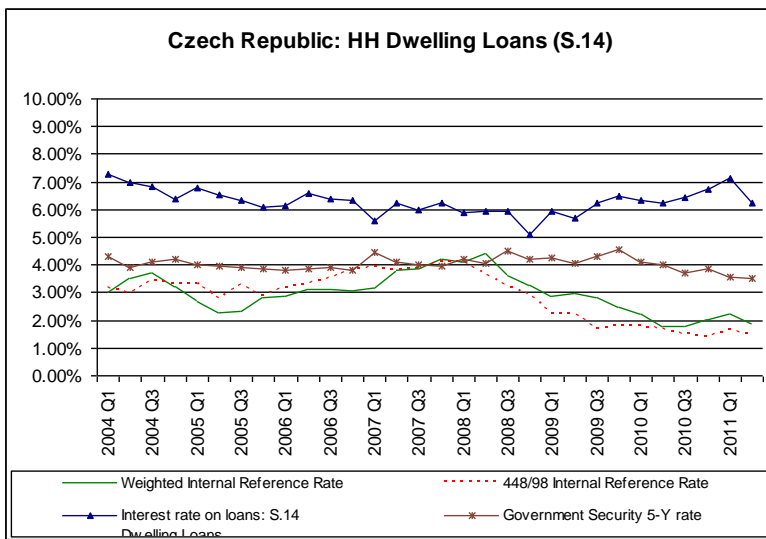
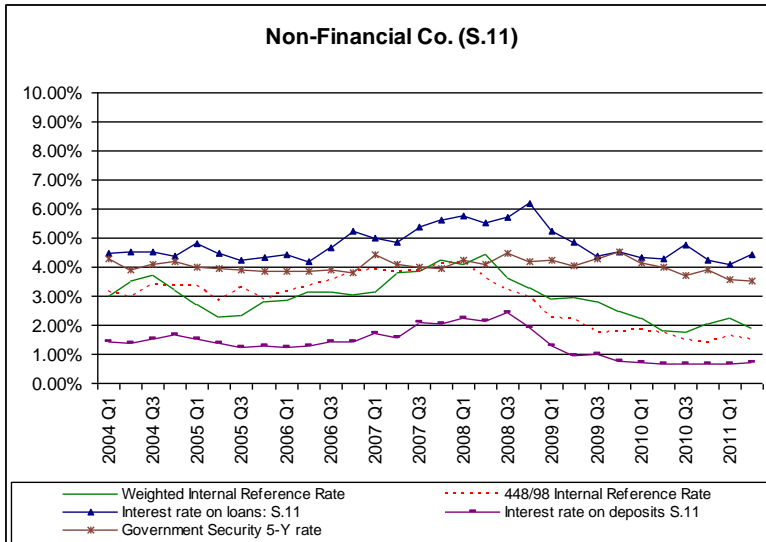
In summary, the test results of FISIM showed that the Weighted Average Reference Rates may be seen as a modest improvement compared to the method currently used, but further work is required to improve the weighting scheme. FISIM calculated with the Weighted Rates in some cases generated sporadic occurrences of negative FISIM. It must, however, be stressed that FISIM calculated using the Weighted Rates and allocated to GDP was more stable compared to the method using the Reference Rates 448/98.

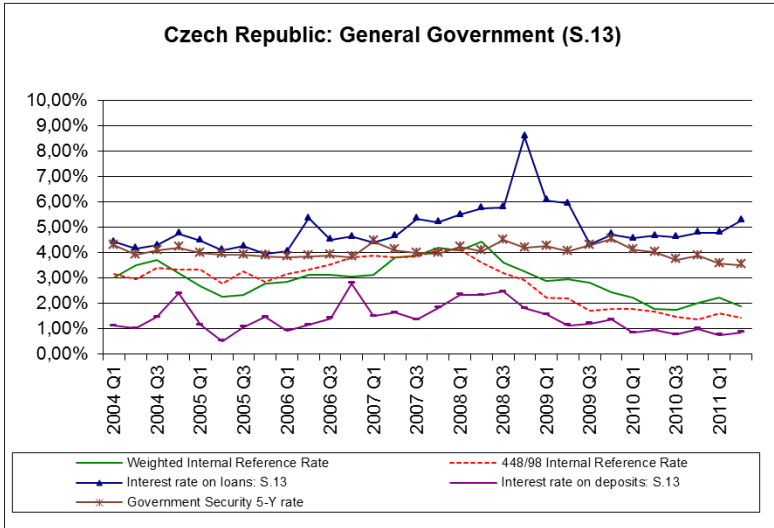


Czech Republic:

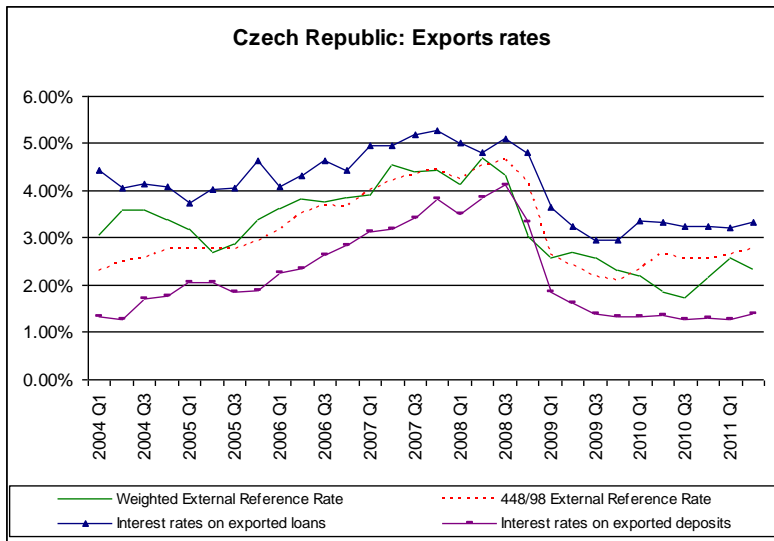
The Internal and External Weighted Average Reference Rates fitted rather well between implied rates on loans and deposits.



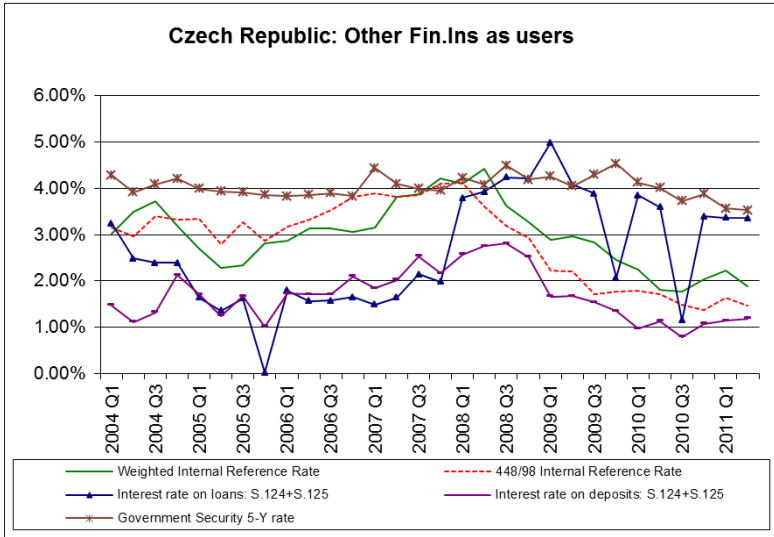




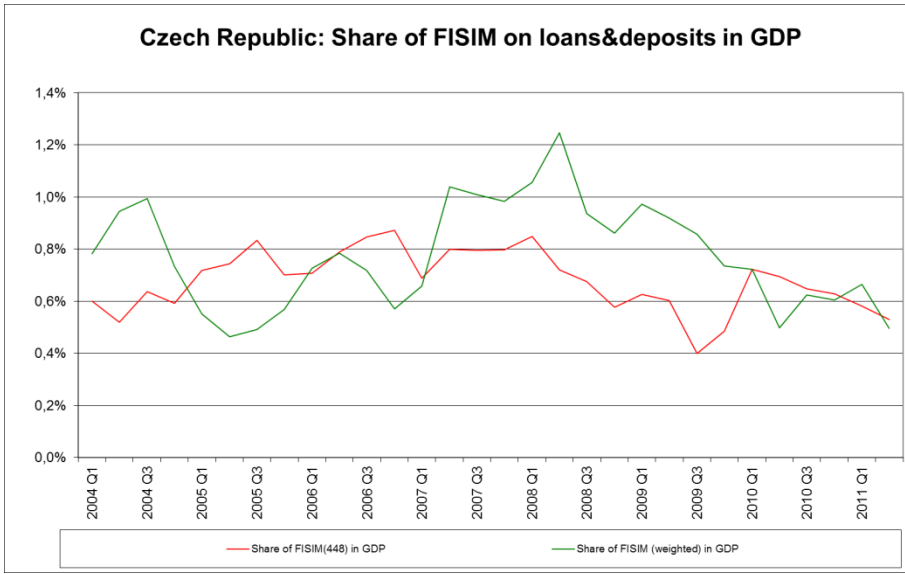
In case of FISIM exports, although, the External Weighted Average Reference Rate fitted well between the implied rates on loans and deposits in most of periods, only of-off modest negative FISIM on deposits was observed in 2008q4. This is the known side effect of the financial crises.



An exception, where the Weighted Average Reference Rates did not fit very well between implied rates on loans and deposits was observed in FISIM allocated to Other Financial Institutions as users, where the implied rate on loans was very volatile, and in early period the loan rate was lower than the deposits rate. Thus, it was difficult for any reference rate in well-fitting between the two implied rates, which may be caused by high participation of loans and deposits with fixed rates. However, the contribution of these consumers to FISIM output is modest.



In summary, the test results of FISIM test showed that the method using the Internal and External Weighted Average Reference Rates provided similar results, as the method currently used. It should be noted, that although the Weighted Average Reference Rate is slightly less volatile compared to the Reference Rate 448/98. FISIM calculated using Weighted Rate allocated to GDP is more volatile, this is mainly due to volatile loan rate of household consumers.



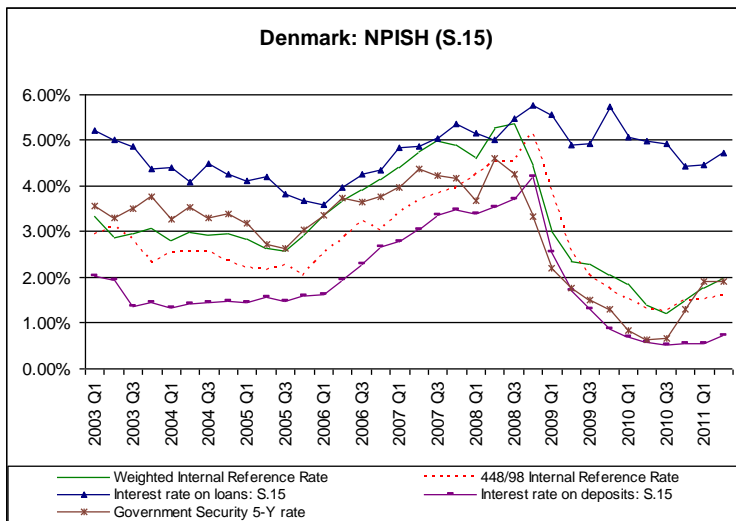
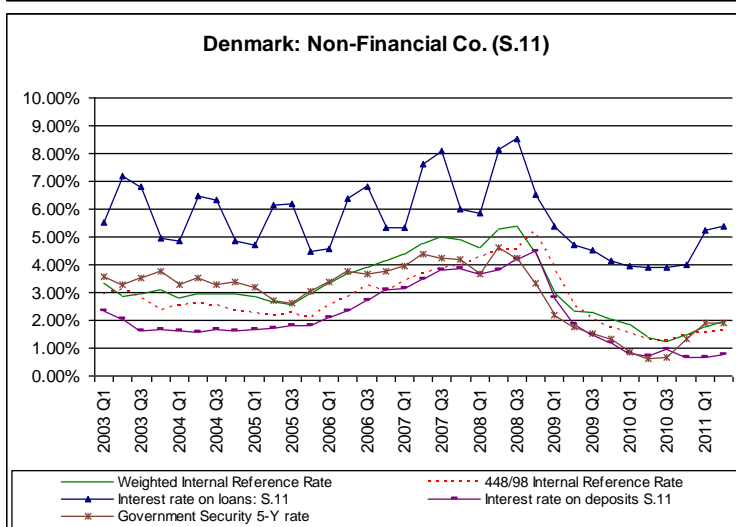
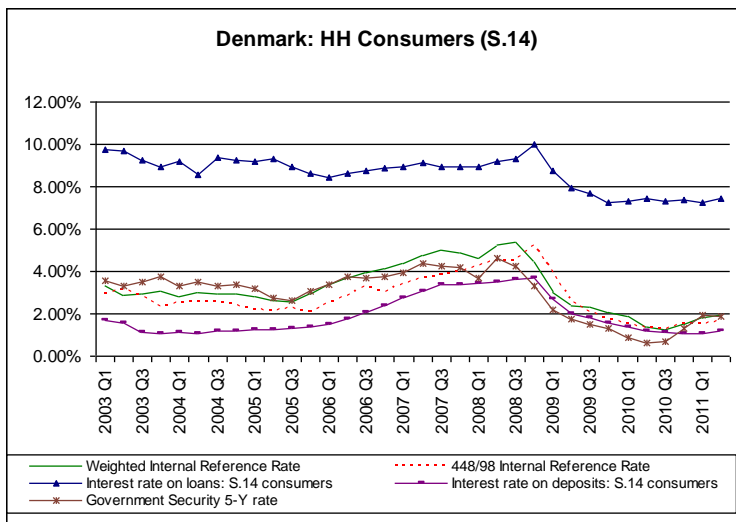
Denmark:

In the calculations of the Internal Weighted Average Reference Rate, Eurostat used swap 5-year rate available at the National Central Bank of Denmark⁴ for the long-term rate.

The Internal Weighted Average Reference Rate fitted well between implied rates on loans and deposits for most resident user sectors.

4

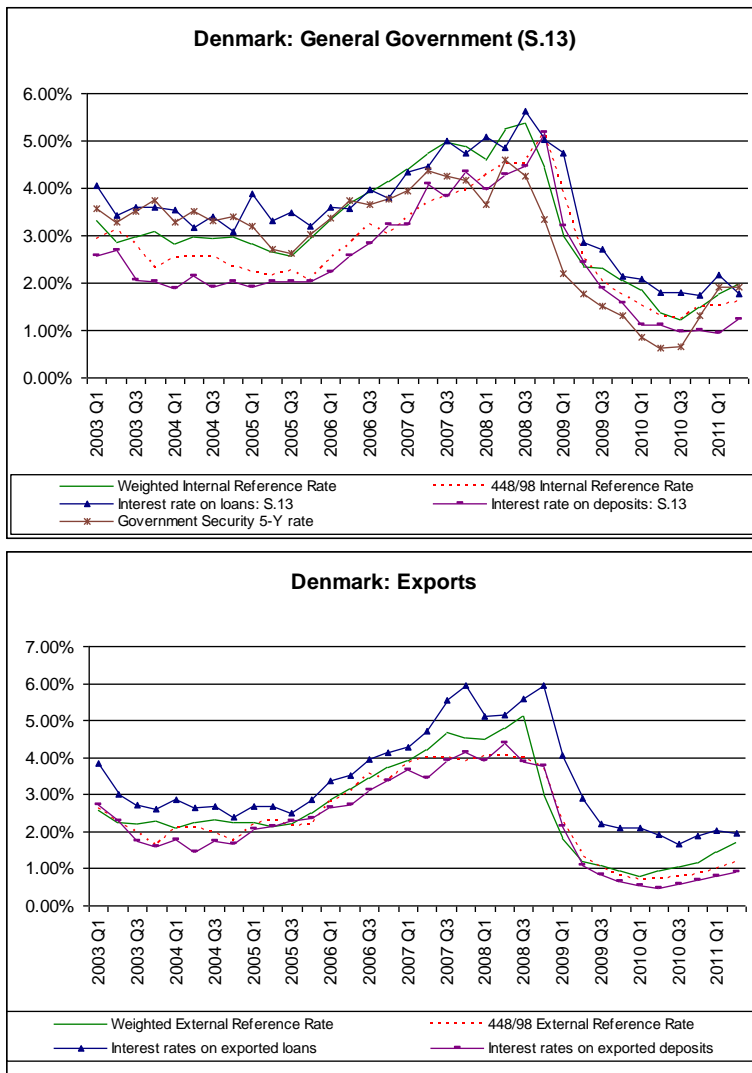
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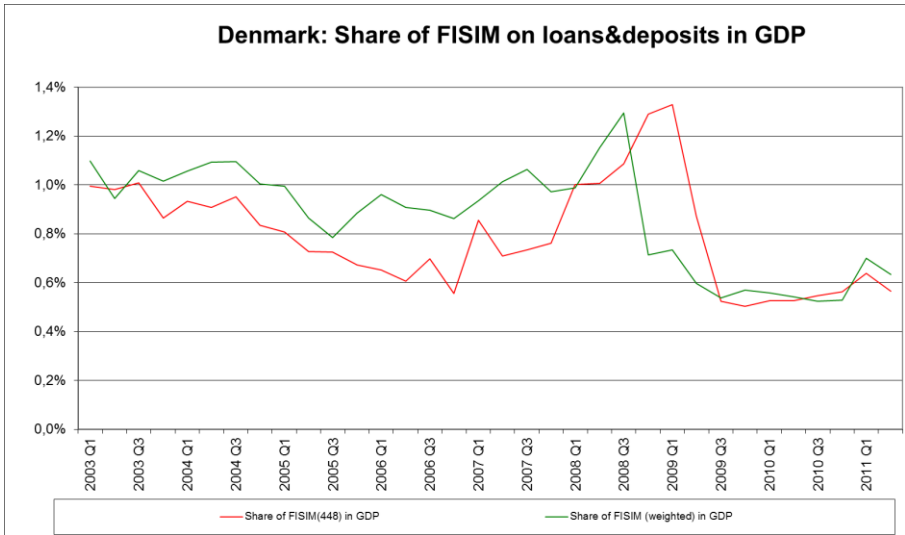
Some exceptions, where the Weighted Average Reference Rates did not fit very well between implied rates on loans and deposits are observed in FISIM allocated to:

- General government (S.13) – where the Weighted Rate was higher than the rate on loans with some occurrences within a short period (2006-2008), resulting in negative FISIM. This however, is an acceptable side effect as S.13 may obtain preferential rates, and its contribution to FISIM output is modest;

- Exports - where External Weighted Reference Rate fitted rather well for most periods, but during the financial crisis eruption the Weighted Reference was lower than the deposit rate, resulting in negative FISIM. This, however, may be an acceptable side effect, caused by the crisis.



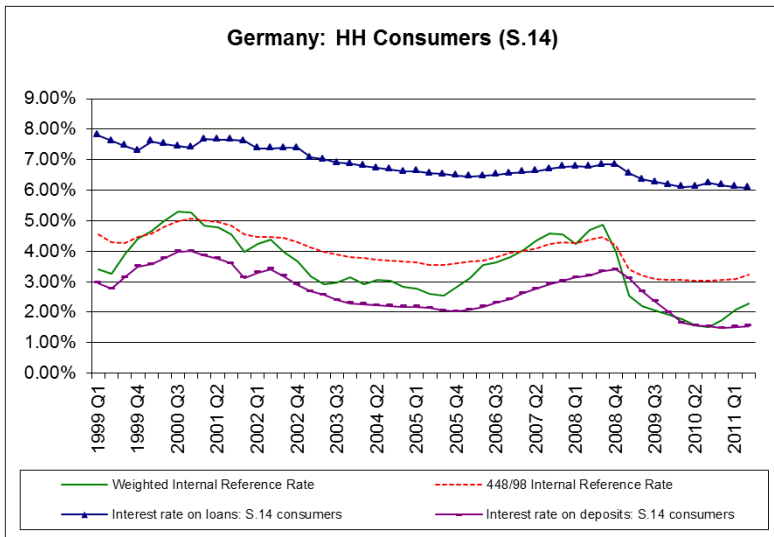
In summary, the Internal and External Weighted Average Reference Rates seem that it fitted well between implied rates on loans and deposits, and it leads to modest improvements in most of the periods. It should be noted that both the Weighted Rates and the Reference Rate 448/98 currently used were similar. It should be noted that volatility of FISIM allocated to GDP calculated using the Weighted Average Reference Rates was reduced compared to the Reference Rates 448/98 (see section 1.3).

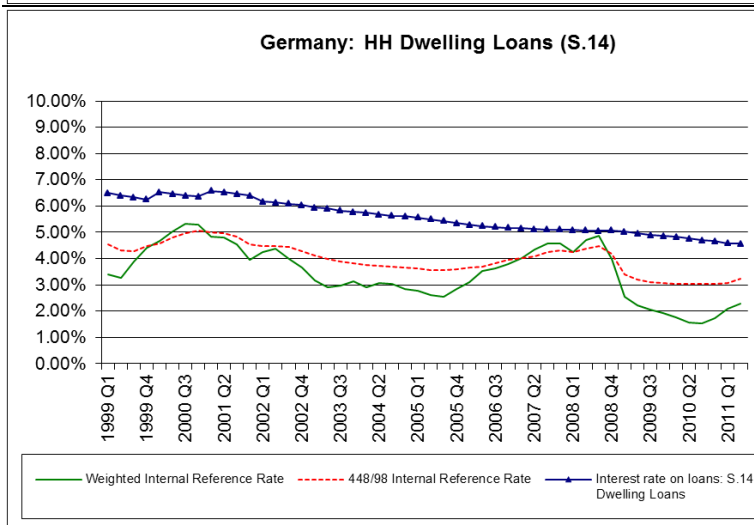
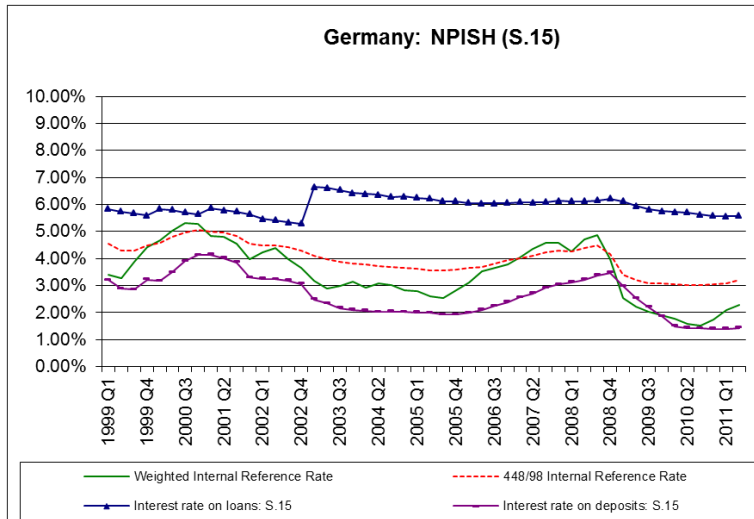


Germany:

Although the internal weighted Reference Rate seems to rather well fit between implied rates on loans and deposits, the currently used internal Reference Rate is already a weighted rate of overnight, 3-month and long term interbank rates. The level of the weighted average rate is lower than the Reference Rate currently used, as a result FISIM calculated with the weighted average rate reduced the impact on GDP.

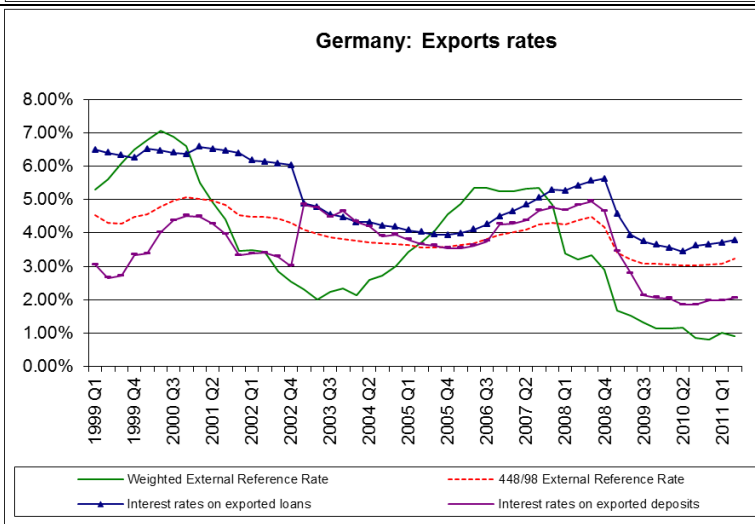
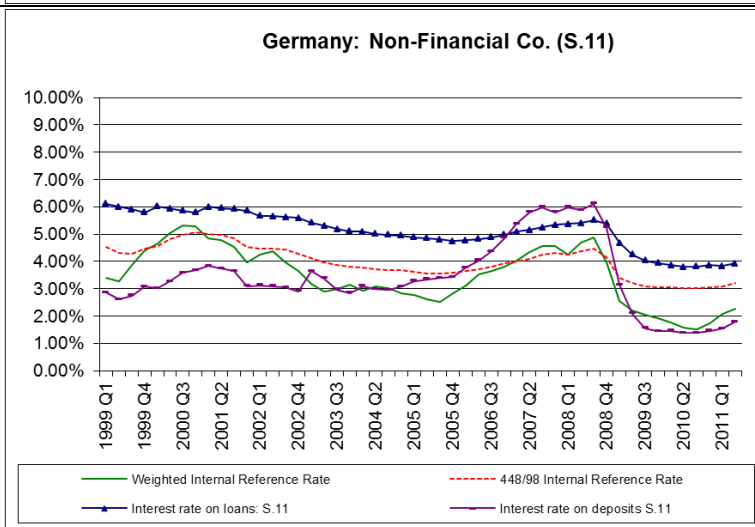
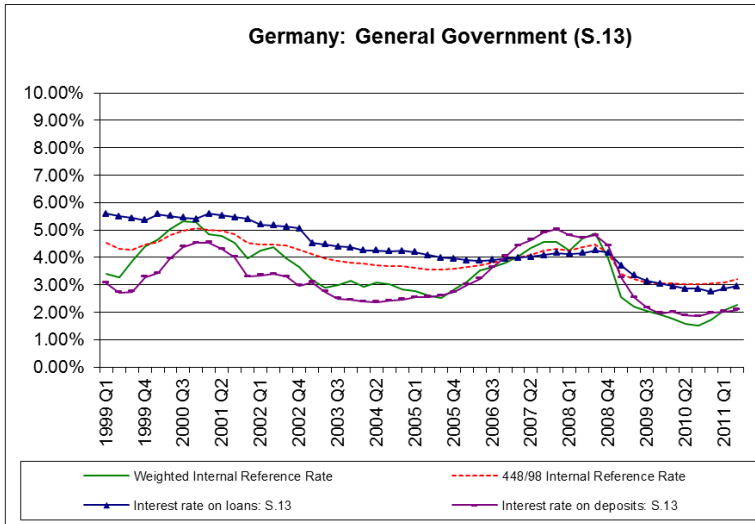
For households as consumers and NPISH, occurrences of negative FISIM on deposits were observed in 2009.



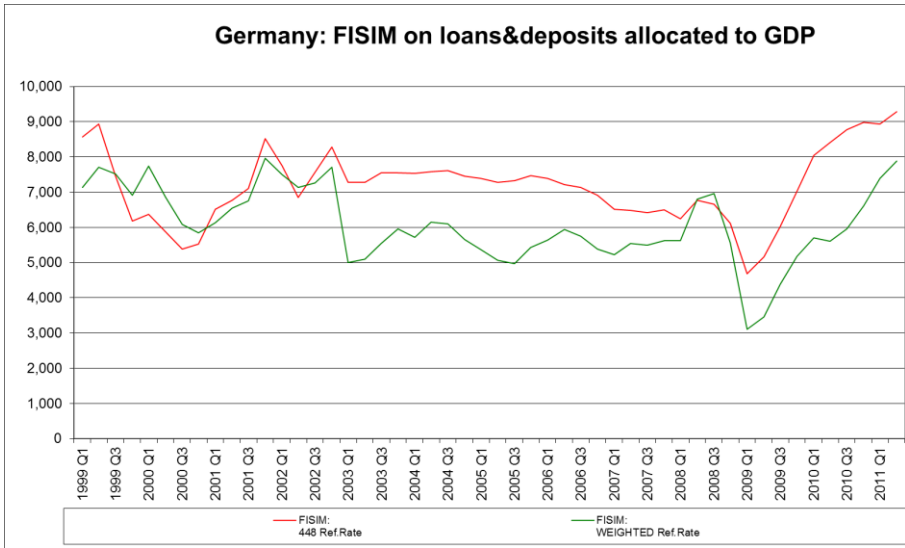


Some exceptions, where the Weighted Average Reference Rates did not fit very well between implied rates on loans and deposits are observed in FISIM allocated to:

- General government (S.13) – where the Weighted Rate was higher than the rate on loans with some occurrences within a short period (2006-2008), resulting in negative FISIM. This however, is an acceptable side effect as S.13 may obtain preferential rates, and its contribution to FISIM output is modest;
- Non-financial corporations (S.11) – where in 2007-2008 the rate of deposits was higher than the rate of loans, therefore whatever the reference would be, negative FISIM would be observed;
- Exports – where in most periods, the implied rates on loans and deposits are close one to another, thus it is difficult for the Weighted Rate in well-fitting between the two implied rates, which may include some inter-FIs flows



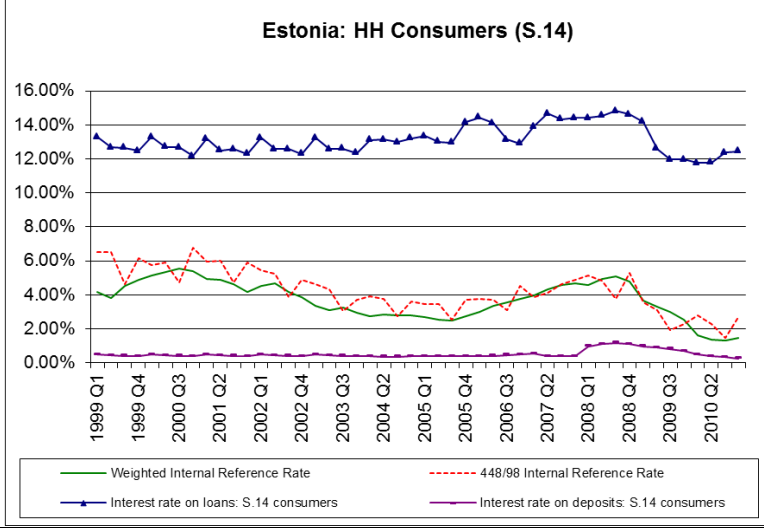
In summary, it appears that the Internal and External Weighted Average Rates were too low, especially in 2009 as compared to the rate of deposits. However, the Weighted Average Rates fitted well in the ten previous years and in 2010-2011. Compared to the method currently used, the Weighted Average Rates have slightly disadvantage from the point of view of the occurrence of negative FISIM, and of the volatility.

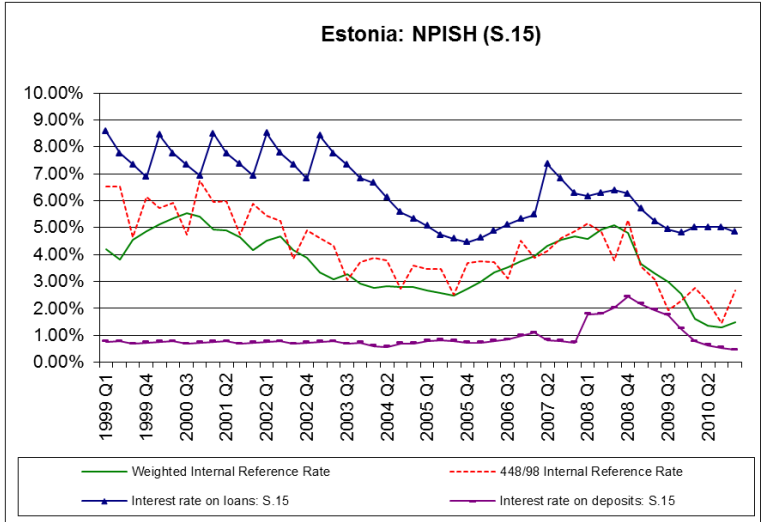
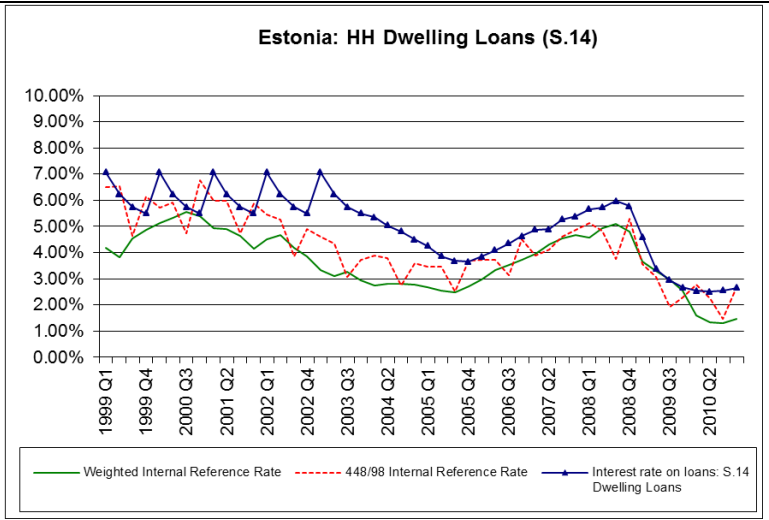
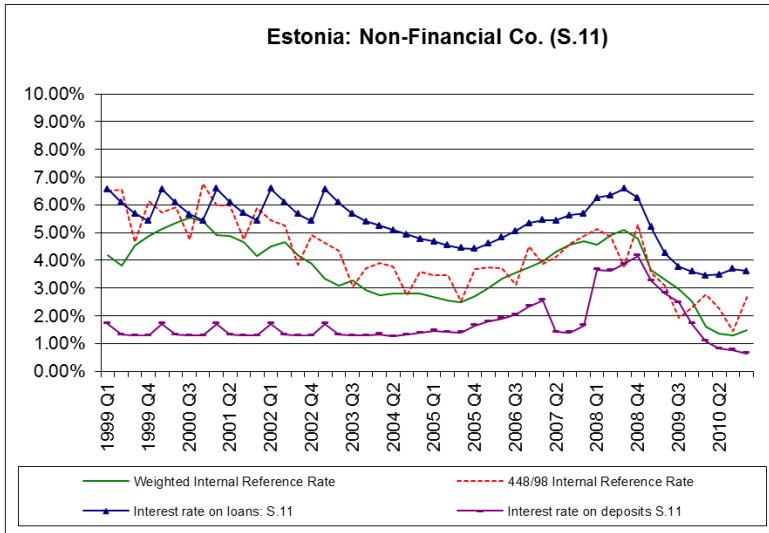


Estonia:

The Estonia interbank market was characterised by strong relationship with Euro (Estonia joined Euro Area on 1 January 2011) over the tested period. Due to the specific characteristics of the Estonia interbank market, the short-term was calculated using TALIBOR and EURIBOR with 3 month maturity, whereas the ISDAFIX 5 year was used for the long-term rate.

The Internal and External Weighted Reference Rates fitted rather well between implied rates on loans and deposits. The rare occurrences of negatives FISIM, mainly on loans, were solved when using the Weighted Reference Rates.



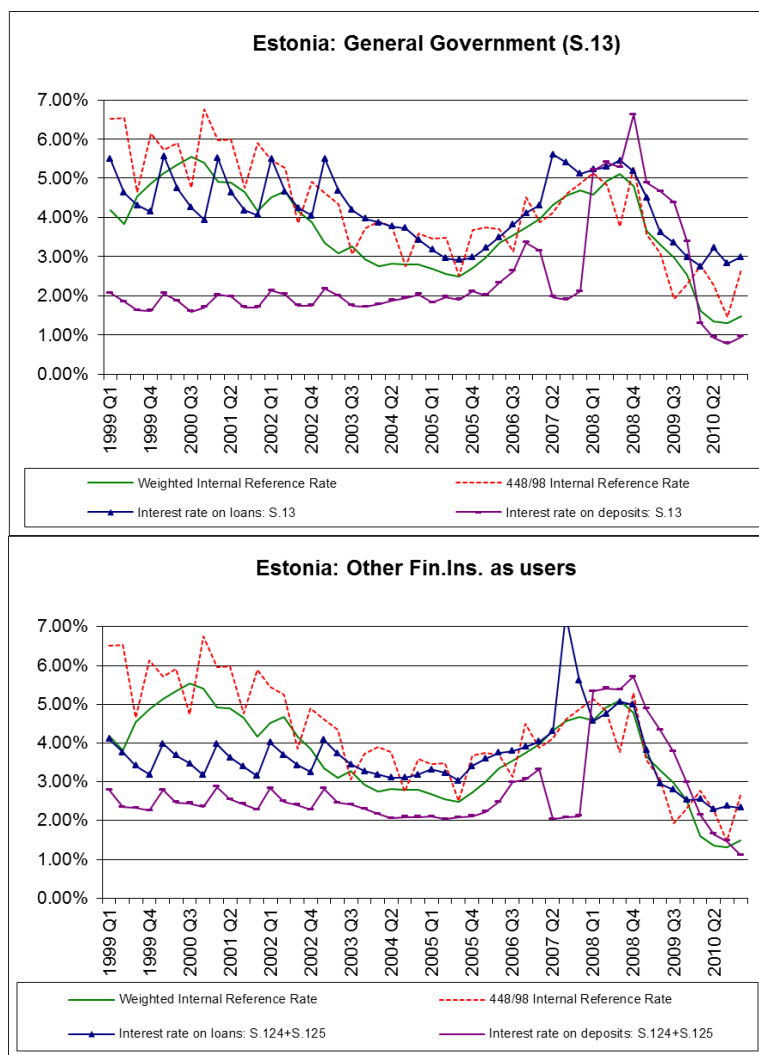


Some exceptions, where the Weighted Average Reference Rates did not fit very well between implied rates on loans and deposits are observed in FISIM allocated to:

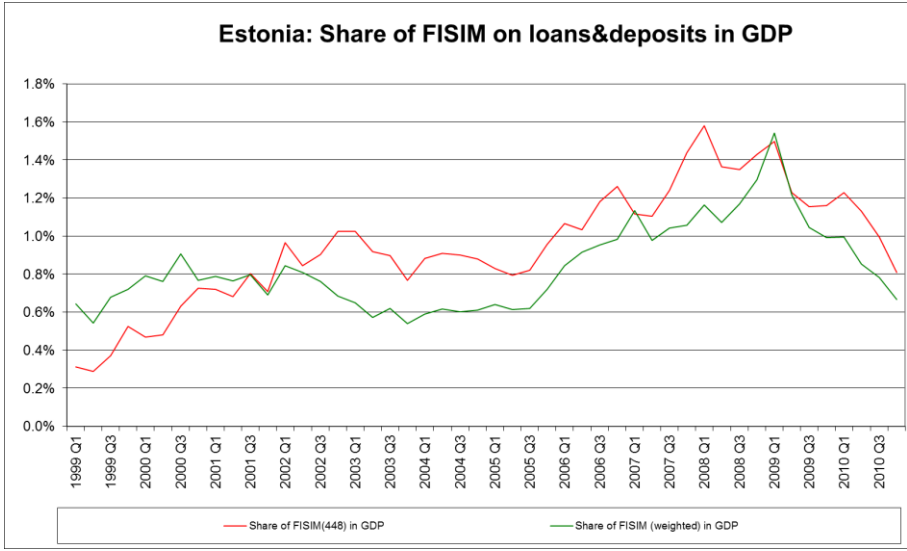
- General government (S.13) – there were a number of cases where the Weighted Rate was higher than the rate on loans resulting in occurrences of negative FISIM. In addition in the aftermath of the financial crises deposit rate was higher than loan rate. Thus, it was very difficult for the Weighted Rate in well-fitting between the two implied rates. This however, is

an acceptable side effect as S.13 may obtain a preferential deposits rates, and its contribution to FISIM output is modest;

- Other Financial Institutions as users - where in the aftermath of the financial crises the implied rates on loans and deposits are very close one to another, with cases where deposit rate was higher than loan rate. Thus, it was very difficult for the Weighted Rate in well-fitting between the two implied rates. However, the contribution of these consumers to FISIM output is modest.

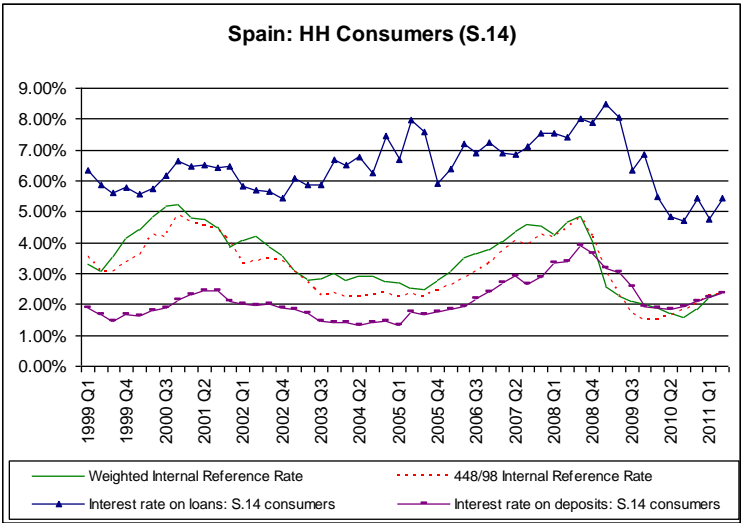


In summary, the results of FISIM test showed that the method using Internal and External Weighted Average Reference Rates may be seen a modest improvement compared to the currently method according to the Regulation 448/98. This is mainly determined by solving the issue of occurrence of negative FISIM, and reduction of volatility (see the chart below).

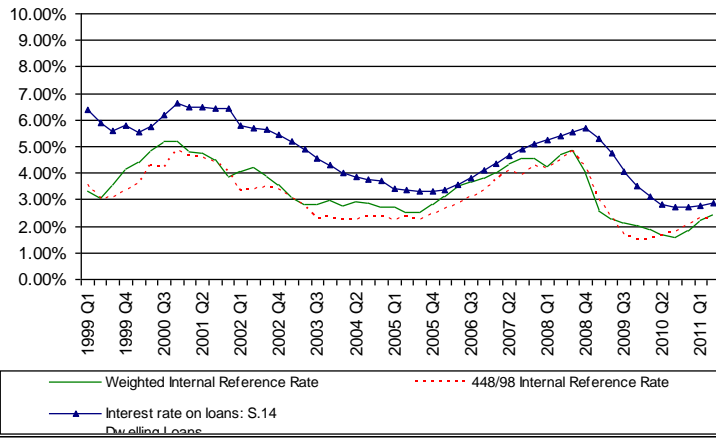


Spain:

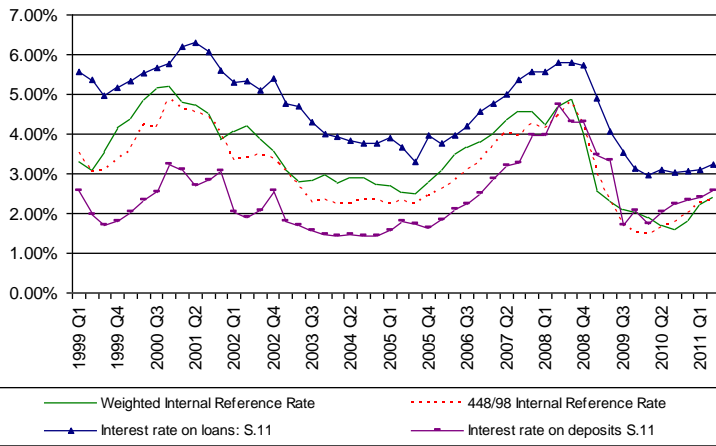
The Weighted Average Reference Rates fitted rather well between implied rates on loans and deposits. Although the continued occurrence of negative FISIM on deposits was not necessary solved, it was reduced and in some case only one-off occurrence of negative FISIM remained in 2008. This may be because by inaccuracy of the weighting schemes, which is based on assumptions and data from different sources.



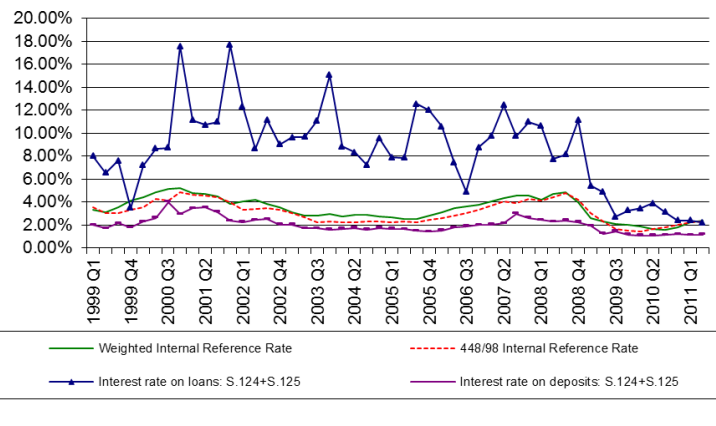
HH Dwelling Loans (S.14)

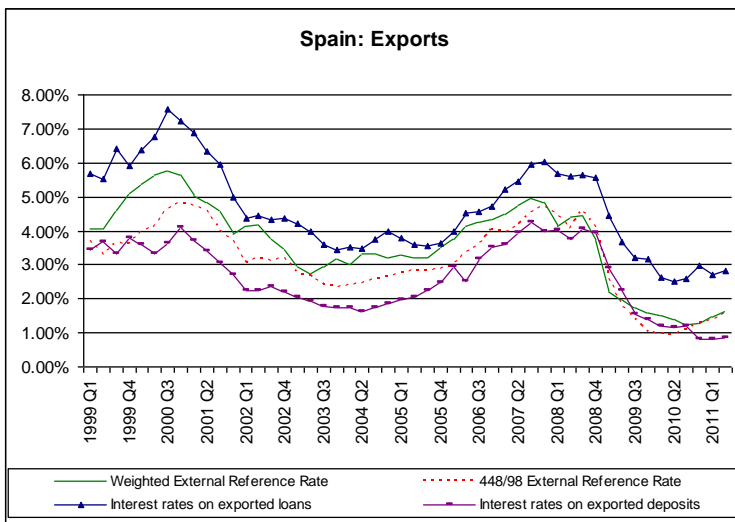
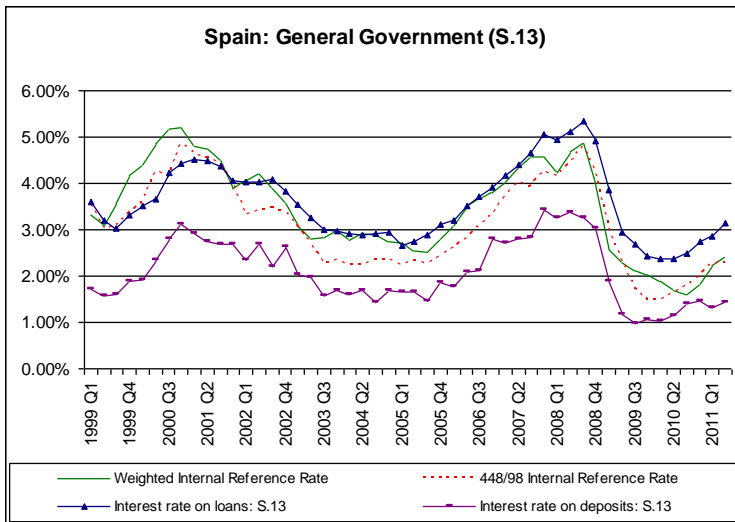


Spain: Non-Financial Co. (S.11)

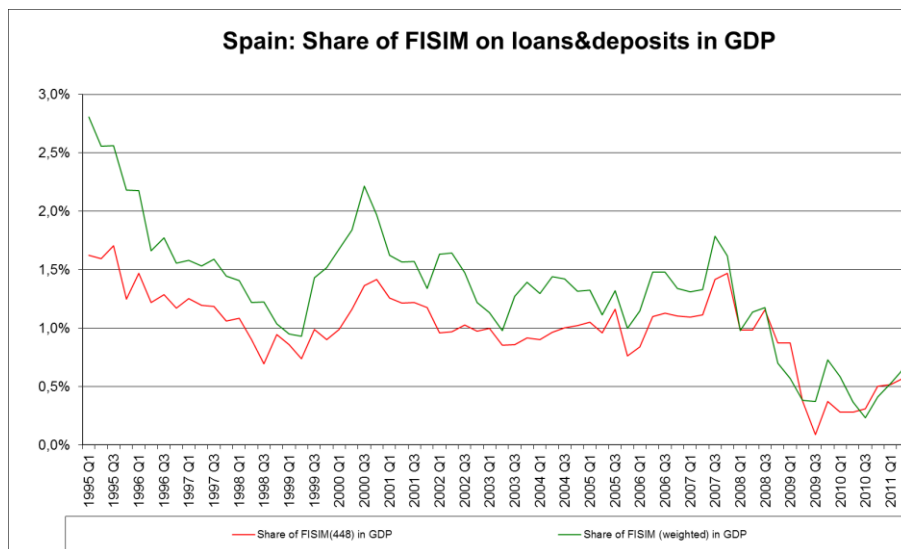


Spain: Other Fin.Ints. as users





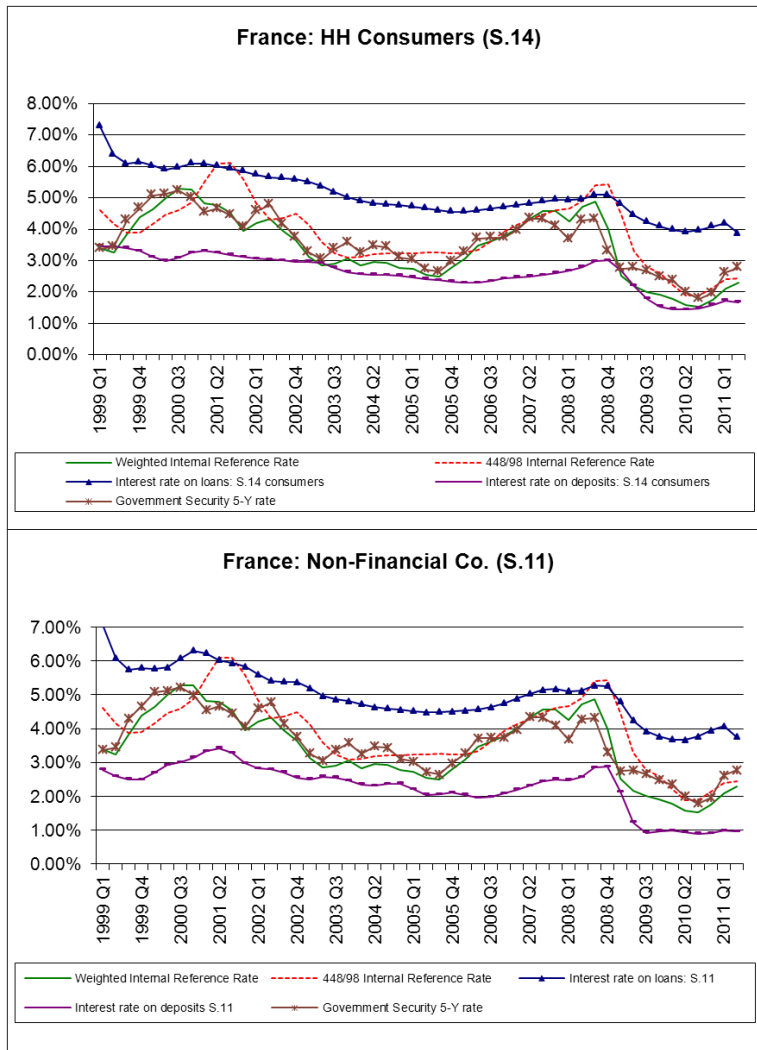
In summary, the Internal and External Weighted Average Reference Rates seem that they fitted well between implied rates on loans and deposits. There were still negative FISIM on deposits occurring when using the Weighted Average Reference Rates in the aftermath of the financial crisis, but the negative values were reduced. The volatility of FISIM was improved on both deposits and loans.

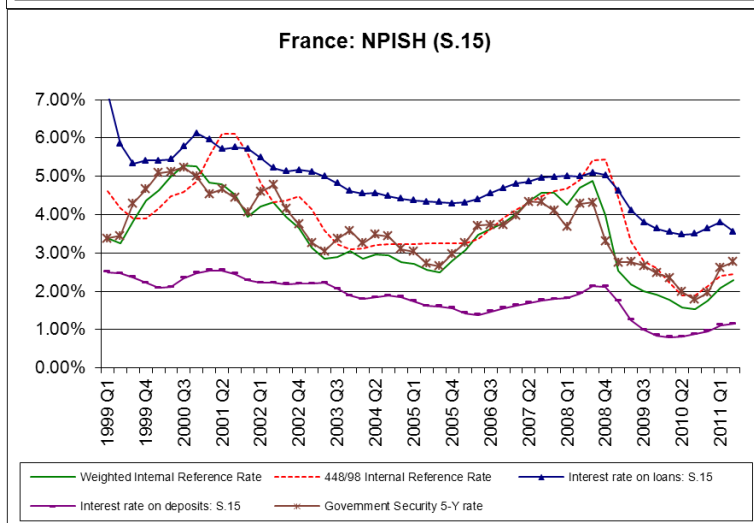
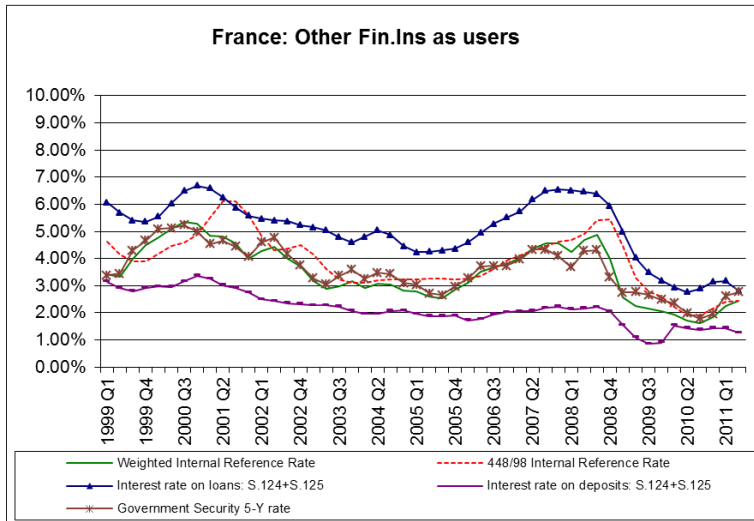


France:

The Internal and External Weighted Average Reference Rates fitted rather well between implied rates on loans and deposits.

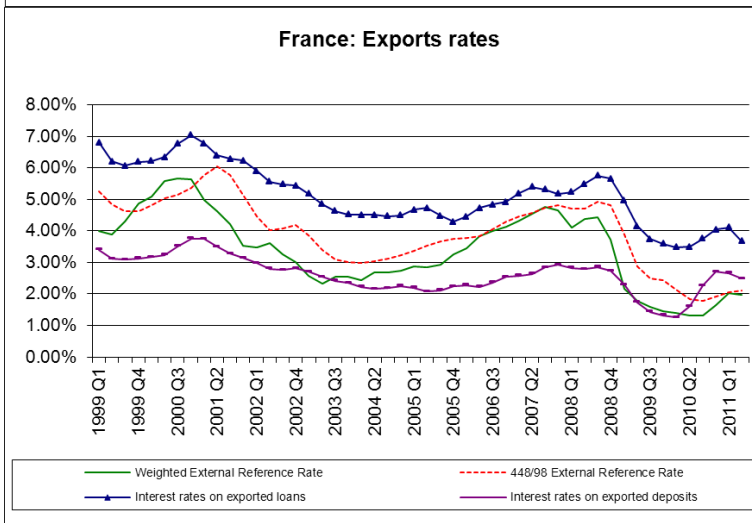
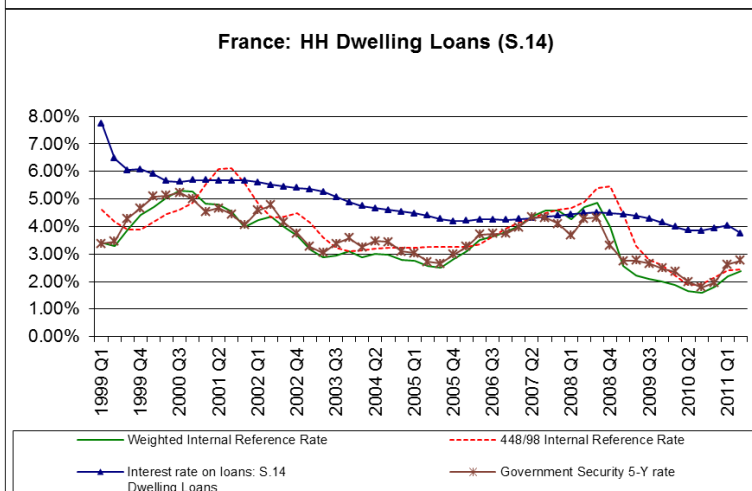
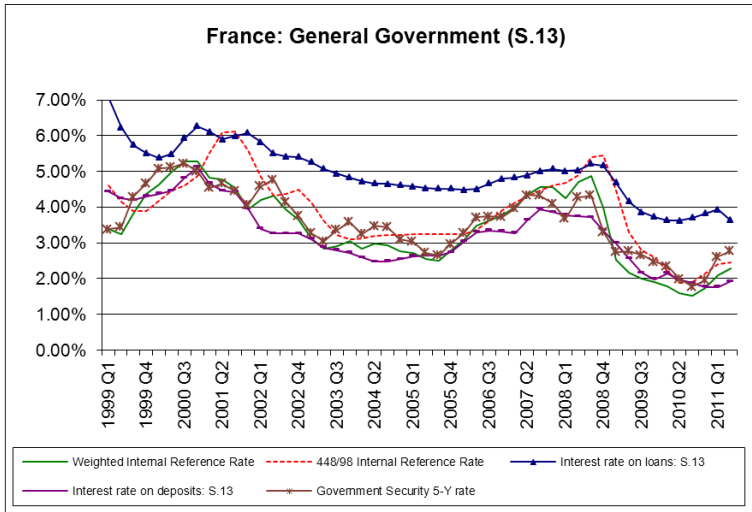
It is interesting to note that the Internal Reference Rate 448/98 is higher than the Internal Weighted Average Reference Rate. In some periods, the Internal Reference Rate 448/98 is higher than the loans rates resulting in negative FISIM on loans, e.g. in 2001 Q3, 2008 Q3, and 2008 Q4.



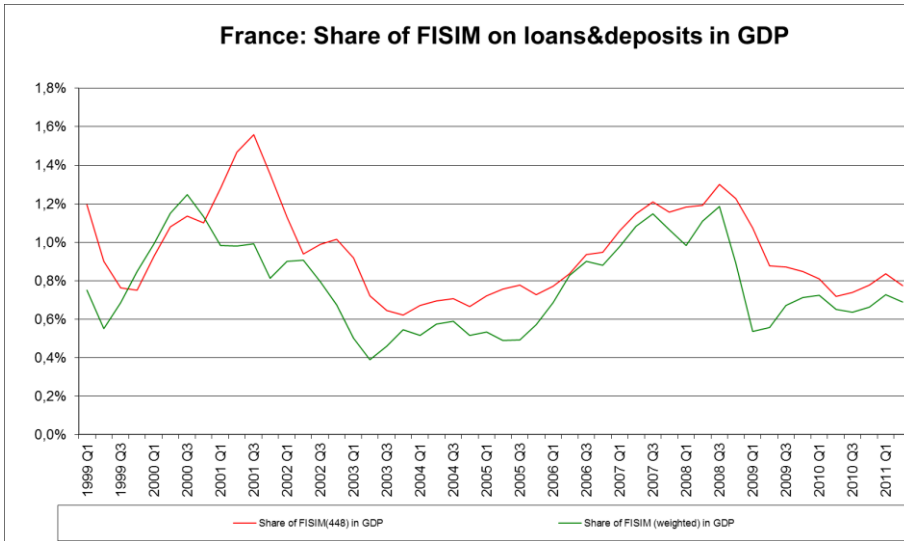


Some exceptions, where the Internal and External Weighted Average Reference Rates did not fit very well between implied rates on loans and deposits are observed in FISIM allocated to:

- General government (S.13) – where the weighted rate is higher than the rate on loans for a short period (2009-2010) resulting in negative FISIM. This however, is an acceptable side effect as S.13 may obtain preferential rates, and its contribution to FISIM output is modest;
- Dwelling Loans – where the weighted rate is higher than the rate on loans for a short period (2008 Q2 and 2008 Q3) resulting in negative FISIM. This however, is improvement compared to the Reference Rate 448/98, although it would require some further improvements;
- Exports - where only some sporadic occurrence of negative FISIM on deposits was observed, except the recent periods. This could possibly be solved further using ISDAFIX rate weighting by currencies.

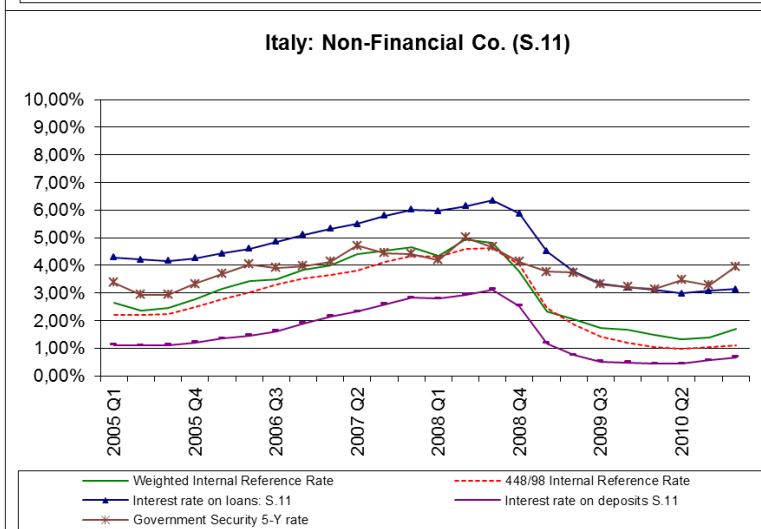
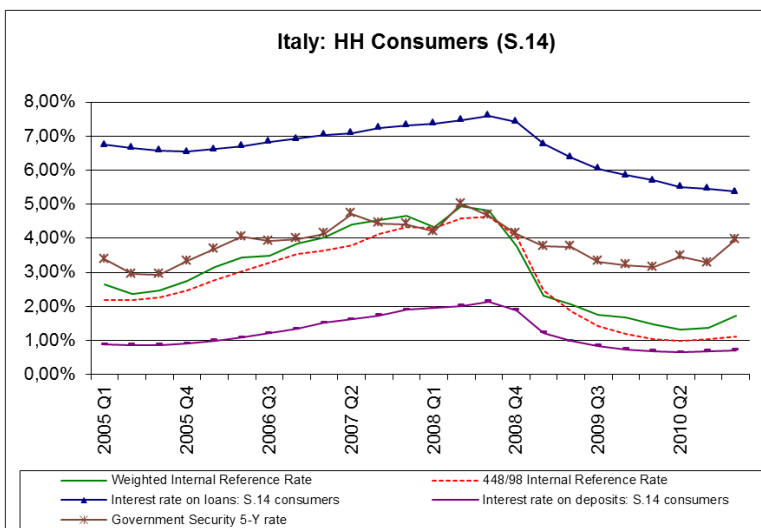


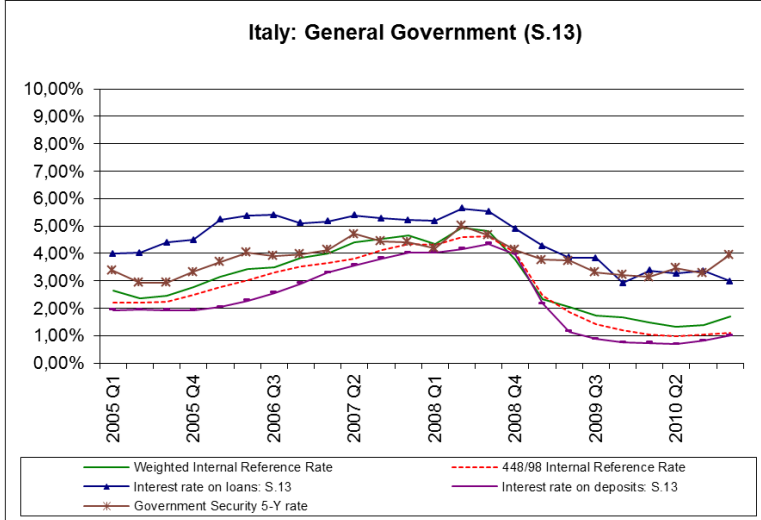
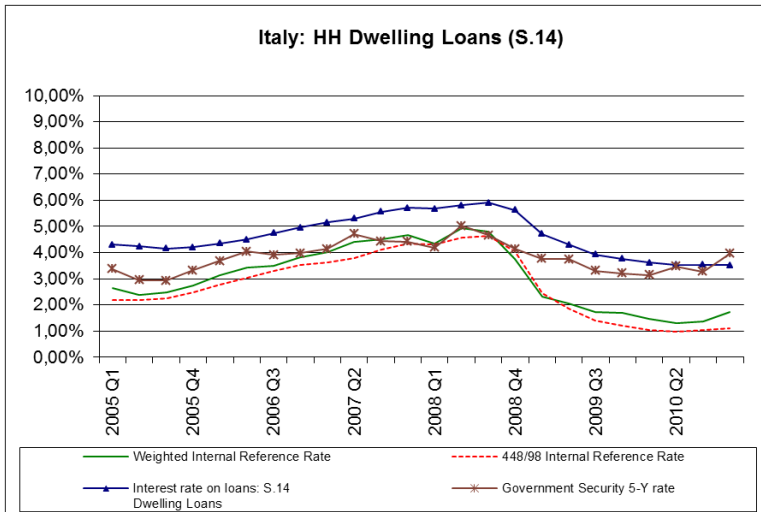
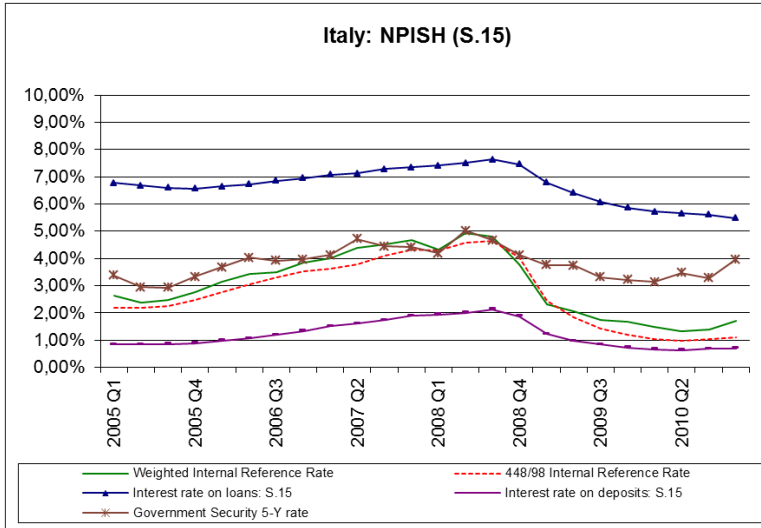
In summary, the test results of FISIM showed that the method using the Internal and External Weighted Average Reference Rates may be seen as a modest improvement compared to the method currently used. FISIM calculated using the Weighted Average Reference Rates well fitted between implied rates on loans deposits, and solved or reduced some concurrencies of negative FISIM on loans. The volatility of FISIM calculated using Weighted Average Reference Rates increase slightly, while FISIM share to GDP modestly reduced.

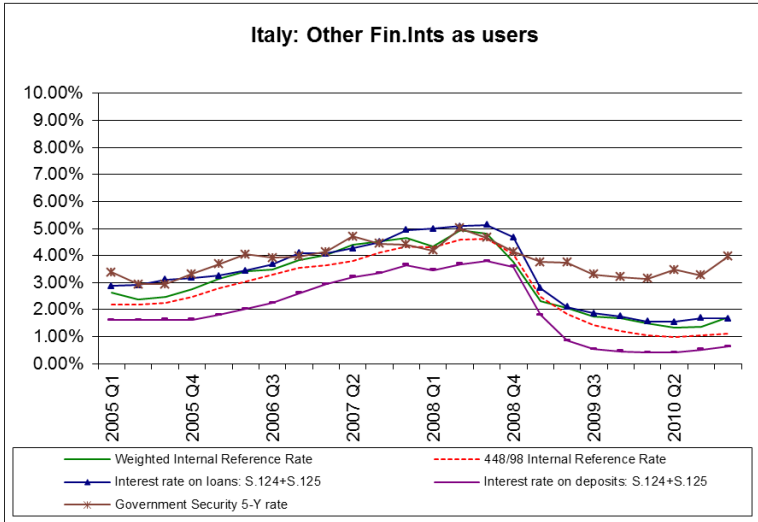


Italy:

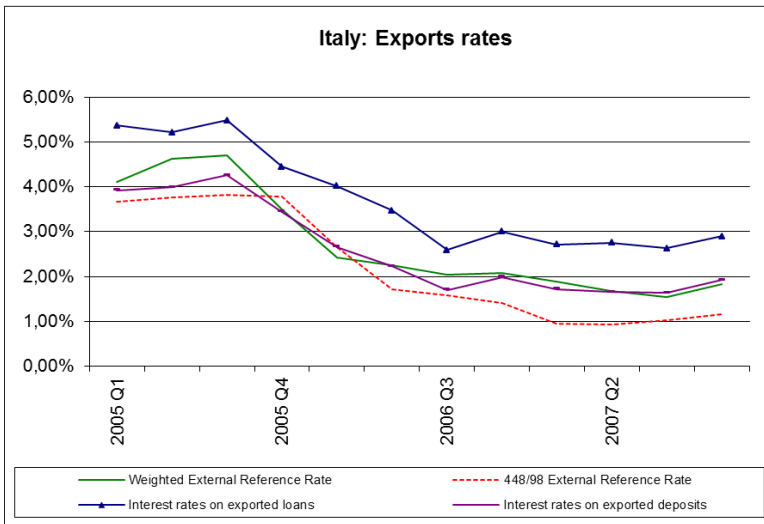
The Internal and External Weighted Average Reference Rates fitted rather well between implied rates on loans and deposits.



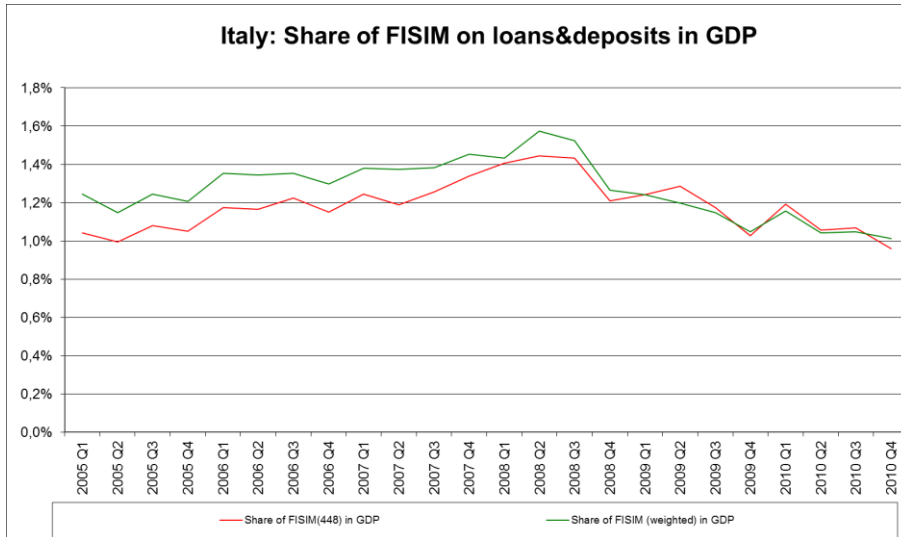




The exception, where the External Weighted Average Reference Rates did not fit very well between implied rates on loans and deposits are observed in FISIM Exports - where only some sporadic occurrence of negative FISIM on deposits was observed. This could possibly be solved by improving the weighting scheme by currencies.



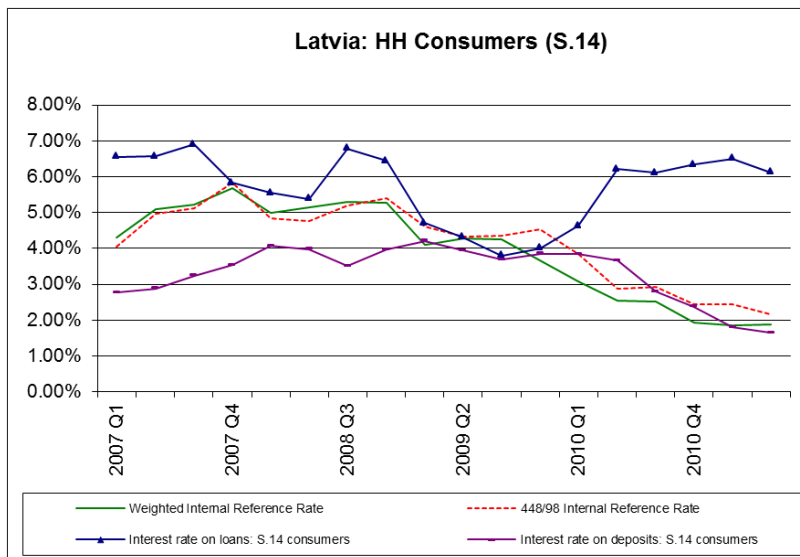
In summary, the Internal and External Weighted Reference Rates well fitted between implied rates on loans and deposits. There was no issue with occurrence of negative FISIM on deposits in the aftermath of the financial crisis, thus FISIM calculated using Weighted Average Reference Rates leads to modest improvements with reduced volatility of FISIM allocated into GDP.



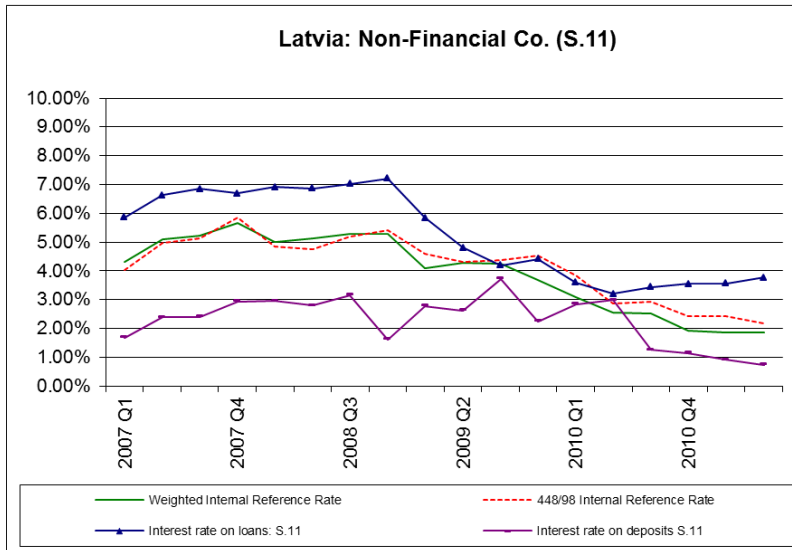
Latvia:

The Latvian interbank market was characterised by strong relationship with Euro over the tested period. Due to the above, the short-term was calculated using and weighted average of RIGIBOR and EURIBOR with 3 month maturity, whereas and weighted average of RIGIBOR 1-year⁵ and ISDAFIX 5-year was used for the long-term rate.

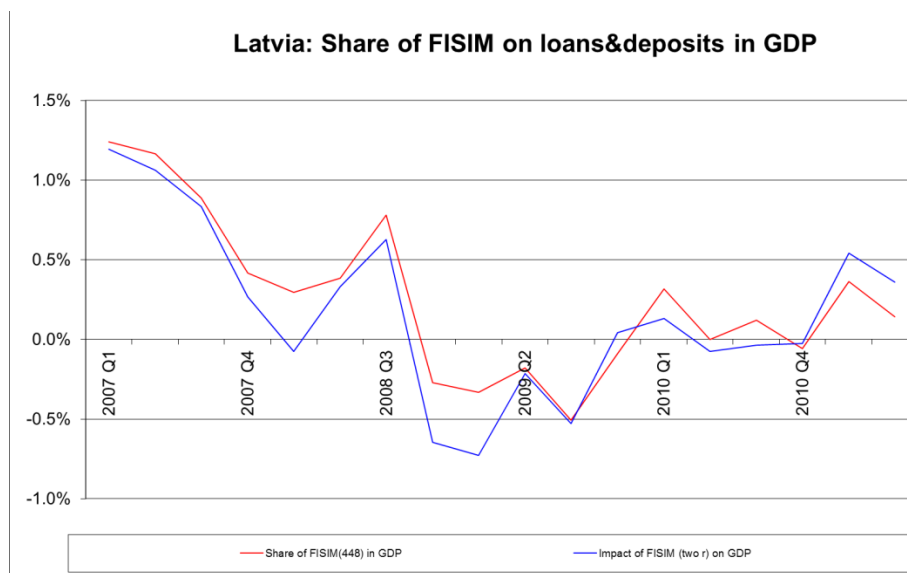
The Internal and External Weighted Reference Rates fitted rather well between implied rates on loans and deposits for most of the periods before 2009. Due to data provided for limited time span of 2007-2011, it was difficult to perform analysis with conclusive outcome. It is worthwhile noting that, in 2009 the rate on loans of the users sectors decreased sharply almost matching the rate on deposits; hence the reference rate could not fit between the rates on loans and on deposit. This is best illustrated by the graphs given below.



⁵ There is no swap 5-year type rate available in Litas, thus the longest maturity VILIBOR rate was used instead.



In summary, the results of FISIM test for the Latvia were inconclusive. The main difficulty was caused by erratic behaviour of the loan rates. This during the period of the financial crises resulted in negative FISIM allocated to GDP driven mainly by FISIM on loans (see the chart below).



Lithuania:

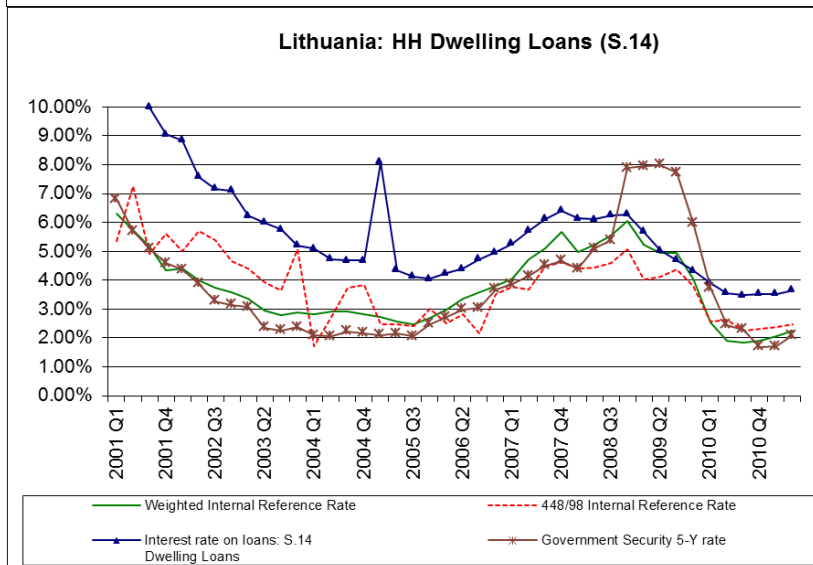
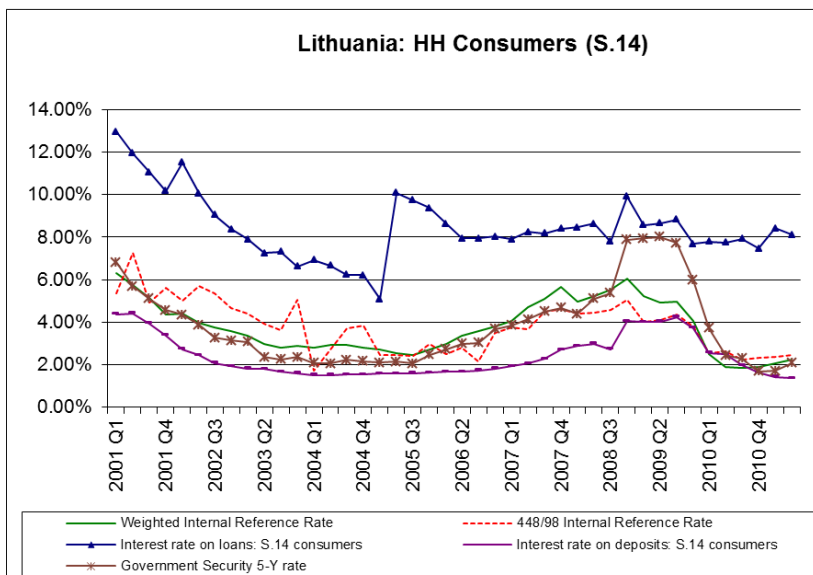
The Lithuanian interbank market was characterised by strong relationship with Euro over the tested period. Due to the above, the short-term was calculated using a weighted average of VILIBOR and EURIBOR with 3 month maturity, whereas a weighted average of VILIBOR 1-year⁶ and ISDAFIX 5-year was used for the long-term rate.

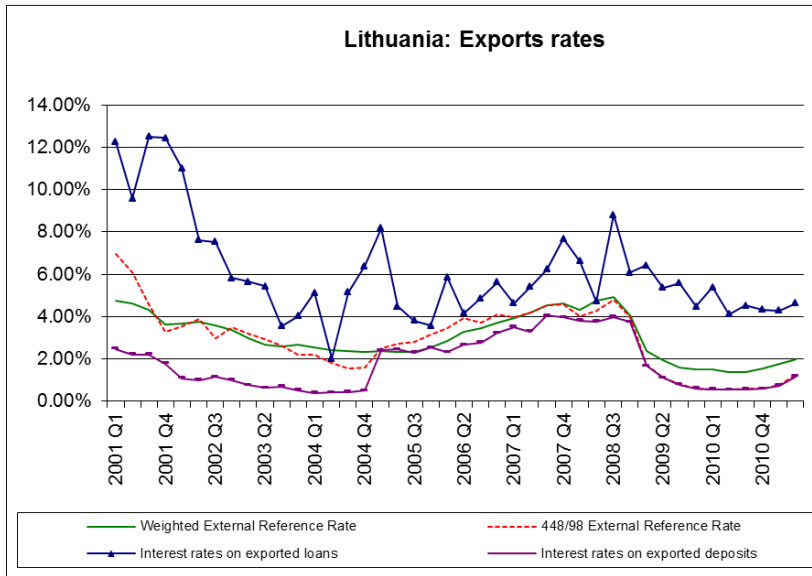
The Internal and External Weighted Reference Rates fitted rather well between implied rates on loans and deposits for most of the periods, and these weighted rates were much less volatile than the rates calculated according to the Regulation 448/98.

⁶ There is no swap 5-year type rate available in Litas, thus the longest maturity VILIBOR rate was used instead.

It should be noted that some sporadic occurrences of negative FISIM were observed in the household and in the non-resident sectors, which could be solved by reworking the currency weighting scheme.

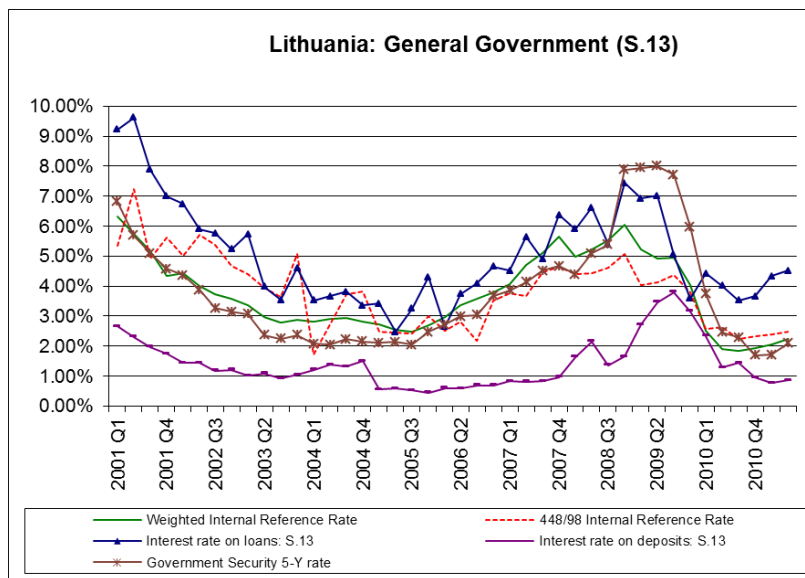
- Negative FISIM on deposits allocated to household consumer was observed in early quarters of 2010;
- Negative FISIM on dwelling loans and on loans of non-financial corporations were observed in 2009q3;
- Negative FISIM exports were observed in 2003q2 and in 2008q2. Please note the very erratic loans rates.



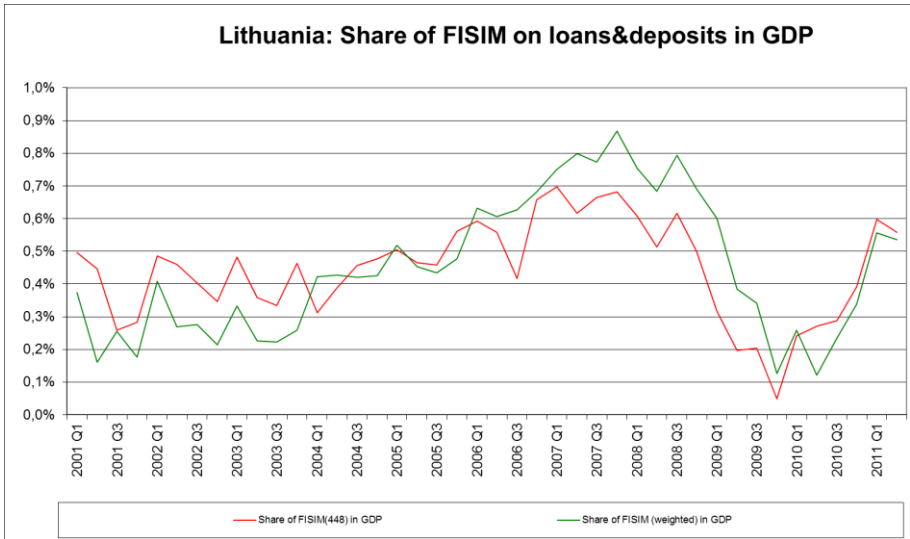


Some exceptions, where the Weighted Average Reference Rates did not fit very well between implied rates on loans and deposits are observed in FISIM allocated to:

- General government (S.13) – there were a number of cases where the Weighted Rate was higher than the rate on loans resulting in occurrences of negative FISIM. This however, is an acceptable side effect as S.13 may obtain preferential rates, and its contribution to FISIM output is modest.

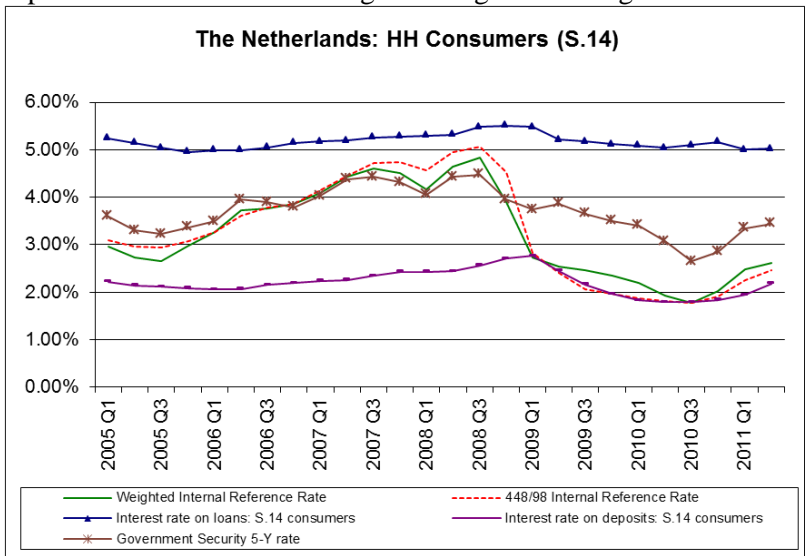


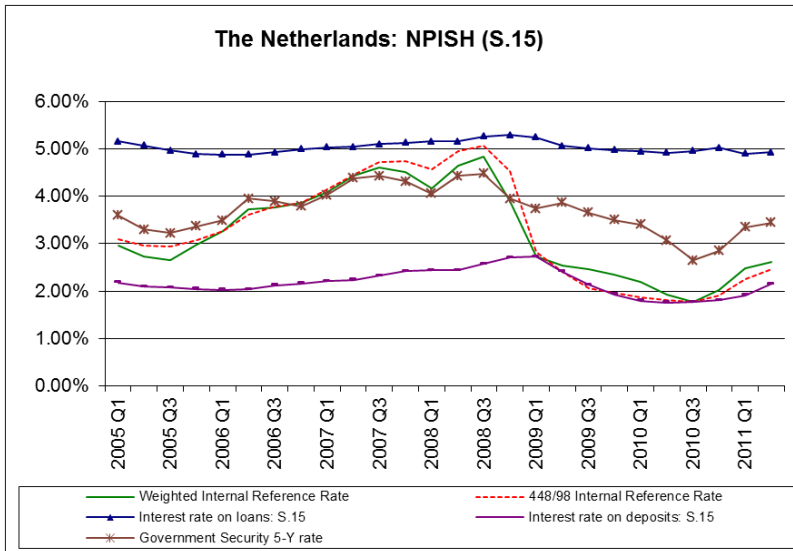
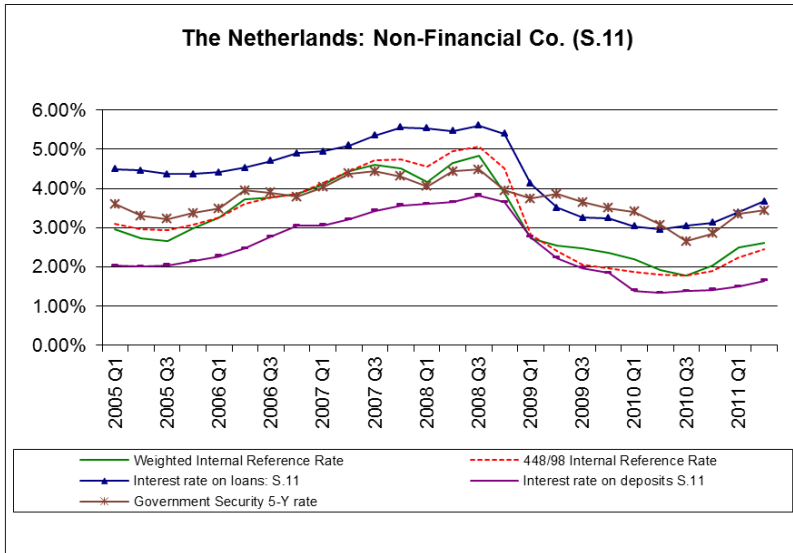
In summary, the results of FISIM test for the Lithuania showed that the method using Internal and External Weighted Average Reference Rates would need some further reworking of the currency weighting scheme solving the sporadic occurrences of negative FISIM. Improvements of the long-term rate by replacing the VILIBOR 1-year with more representative 5-year swap type could also lead to better results. It is worthwhile noting that Internal and External Weighted Average Reference Rates were much less volatile than the Internal and External 448 rates, which results in modestly reducing of volatility of FISIM allocated to GDP (see the chart below).



The Netherlands:

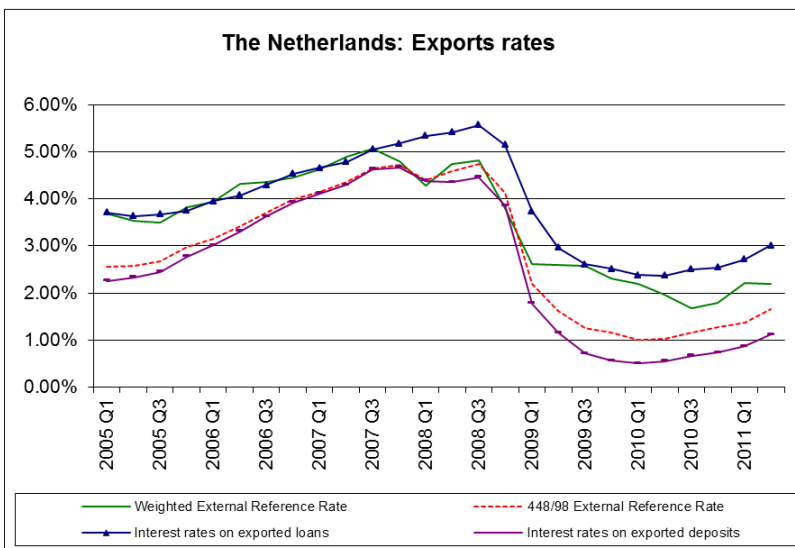
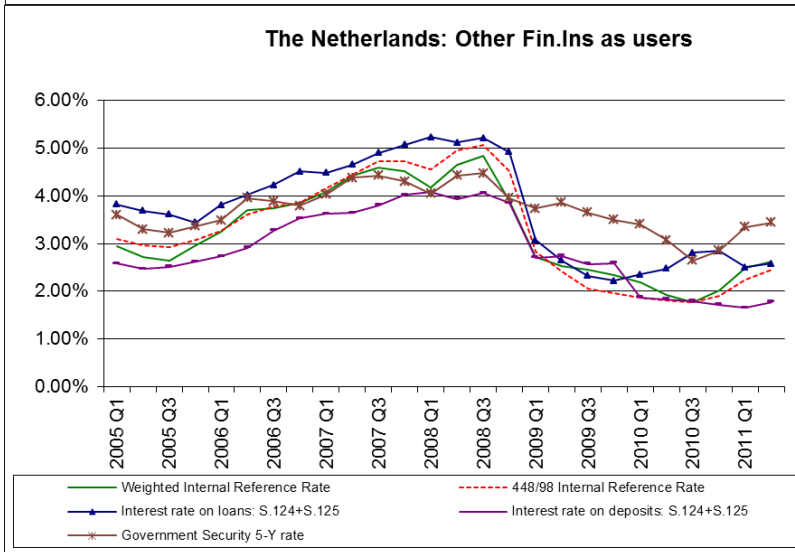
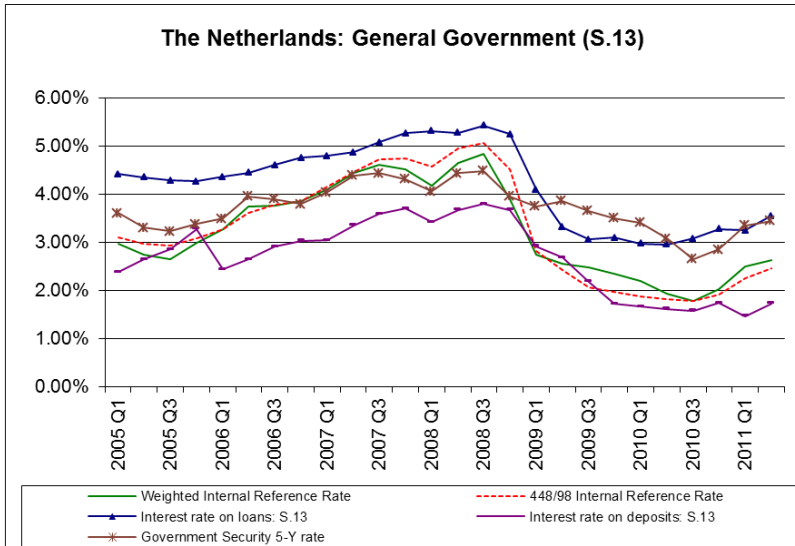
The Internal and External Weighted Average Reference Rates fitted rather well between implied rates on loans and deposits. In the aftermath of the financial crises, some occurrence of negative FISIM on deposits was solved when using the Weighted Average Reference Rates.



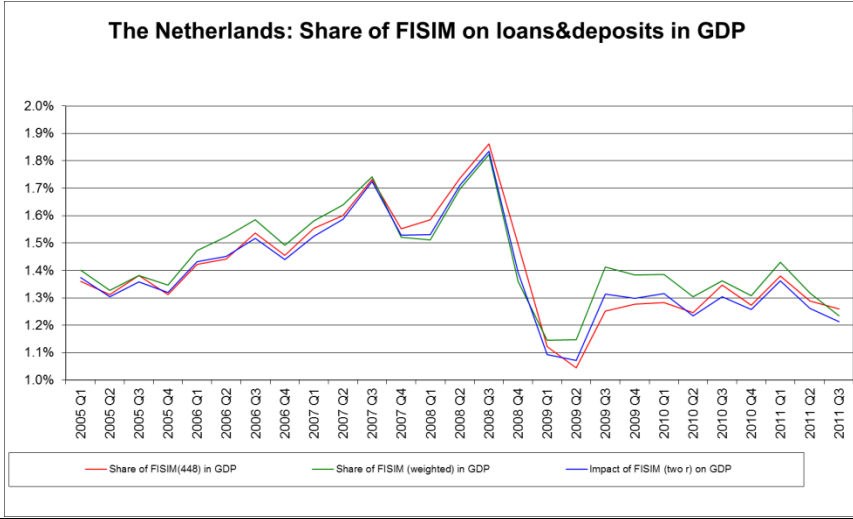


Some exceptions, where the Weighted Average Reference Rates did not fit very well between implied rates on loans and deposits are observed in FISIM allocated to:

- General government (S.13) – where in some cases the Weighted Rate was lower than the rate on deposits resulting in sporadic occurrences of negative FISIM. This however, is an acceptable side effect as S.13 may obtain a preferential deposits rates, and its contribution to FISIM output is modest;
- Other Financial Institutions as users - where in the aftermath of the financial crises the implied rates on loans and deposits are very close one to another, with cases where deposit rate was higher than loan rate. Thus, it was very difficult for the Weighted Rate in well-fitting between the two implied rates. However, the contribution of these consumers to FISIM output is modest;
- Exports - where External Weighted Reference Rate fitted rather well for most periods, with exception of period prior to 2008, where the External Weighted Reference Rate was in some cases higher than the reference rate, resulting in negative FISIM. This may be due to the quality of the weighting scheme applied to the currency composition. It would be advice to calculate cross-border FISIM separated for each of the important currency groups (see recommendation 4 of the FISIM task Force).

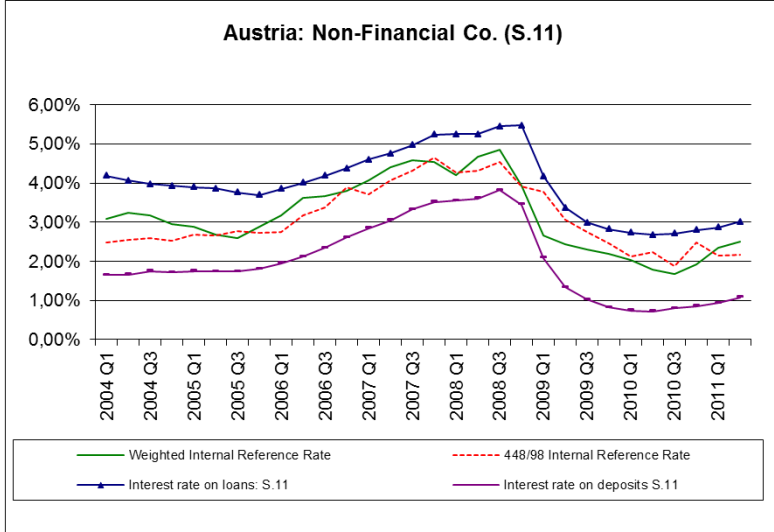


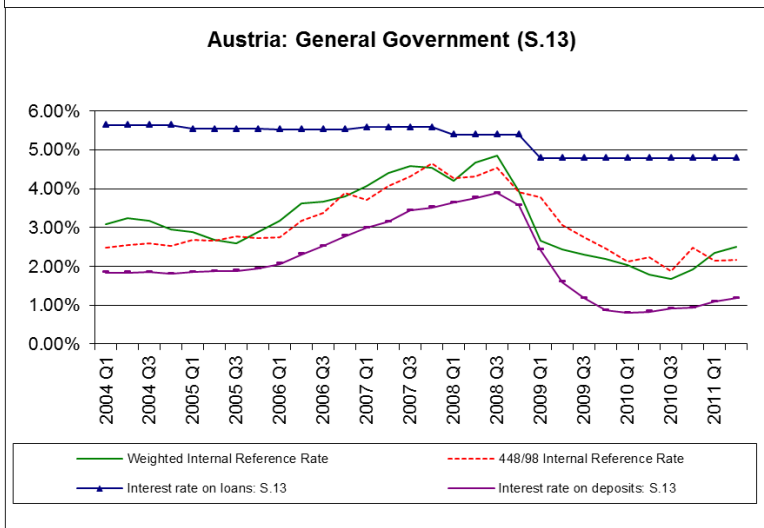
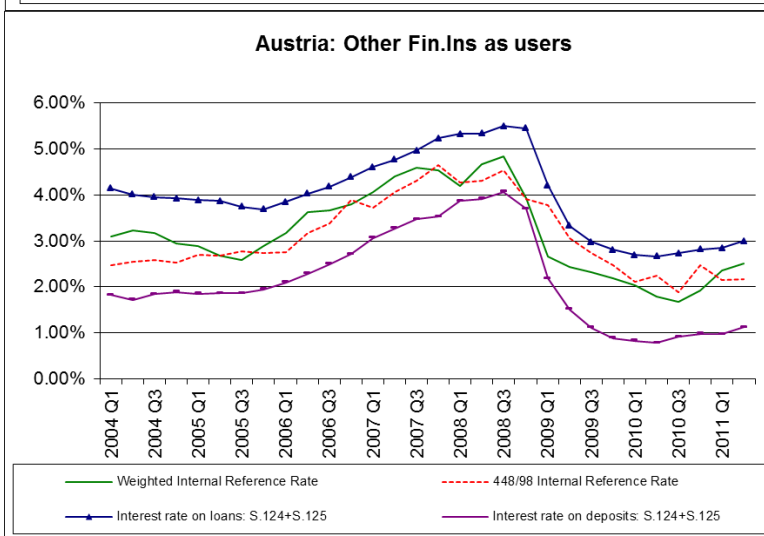
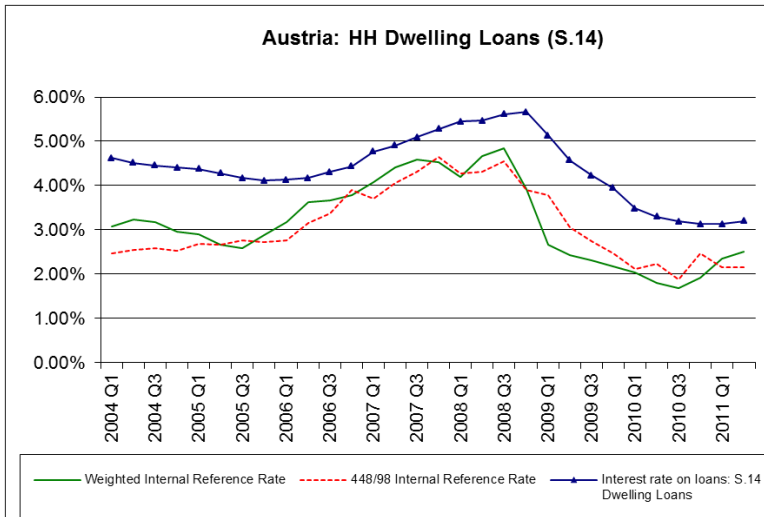
In summary, the results of FISIM test for the Netherlands showed that the method using Internal and External Weighted Average Reference Rates may be seen a modest improvement compared to the currently method according to the Regulation 448/98. This is mainly determined by solving the issue of occurrence of negative FISIM on deposits, and modest reduction of volatility (see the chart below).



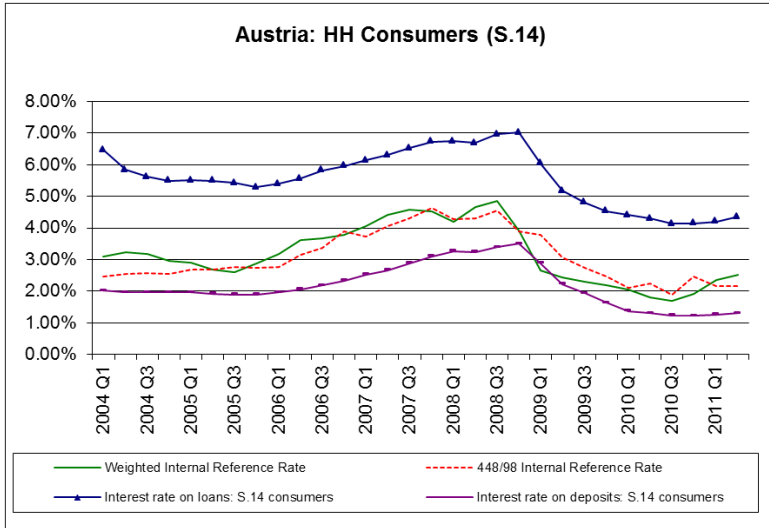
Austria:

The Internal Weighted Average Reference Rate fitted relatively implied rates on loans and deposits for most user sectors.

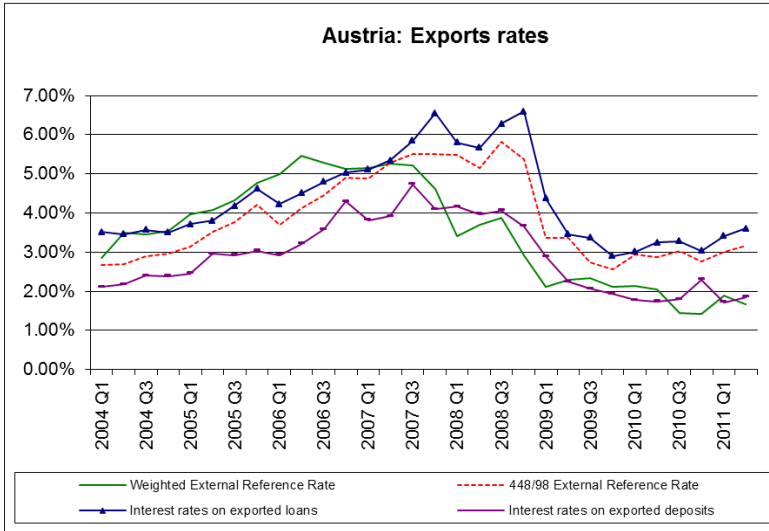




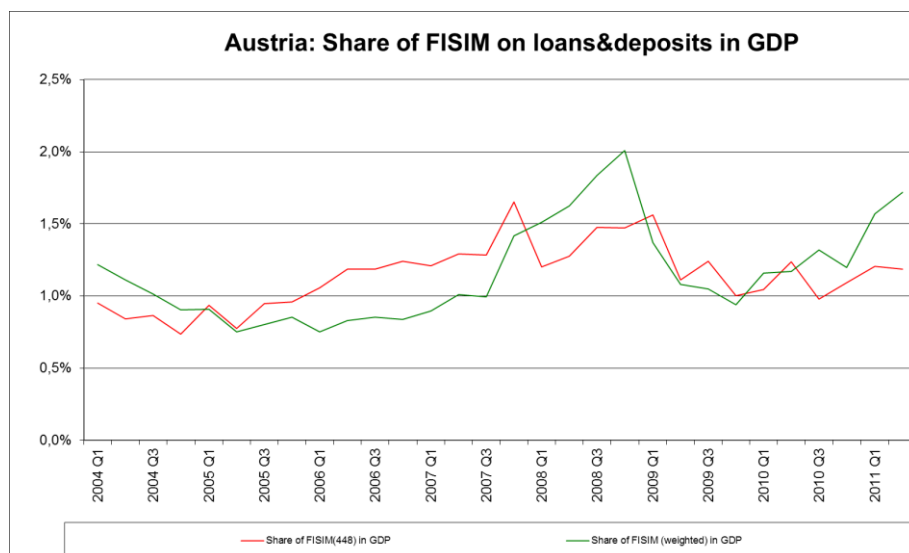
In case of households as consumers the Internal Weighted Average Reference Rate fitted relatively implied rates on loans and deposits until the period of the financial crises, after which some continued (although modest) occurrences of negative FISIM were observed. This issue, however, could be solved by further improving the weighting scheme, where at present the short-term weight dominates.



The exception, where the Weighted Average Reference Rates did not fit very well between implied rates on loans and deposits are observed in FISIM Exports, where External Weighted Reference Rate would need to be recalculated using an improved weighting schemes by currencies.

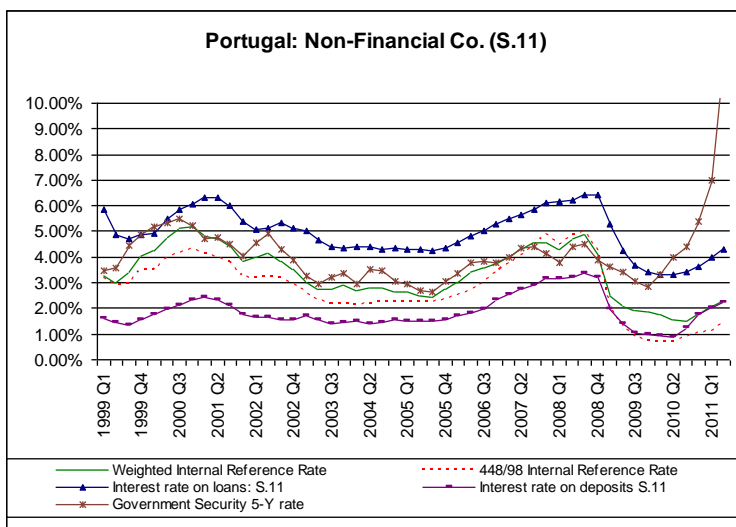
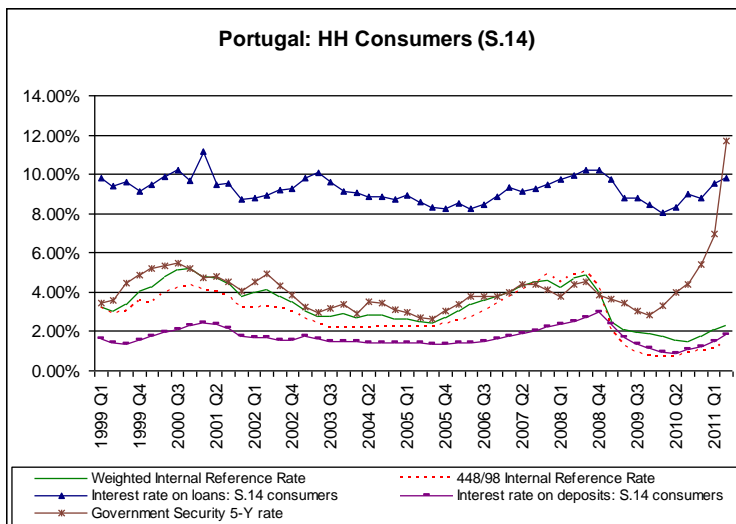


In summary, the Internal and External Weighted Average Reference Rates seem to well fit between implied rates on loans and deposits. Only a modest one-off negative FISIM on deposits to Households Consumers occurred in 2009 Q1 when using the Weighted Average Reference Rates. The volatility of FISIM allocated to GDP was very modestly decreased.



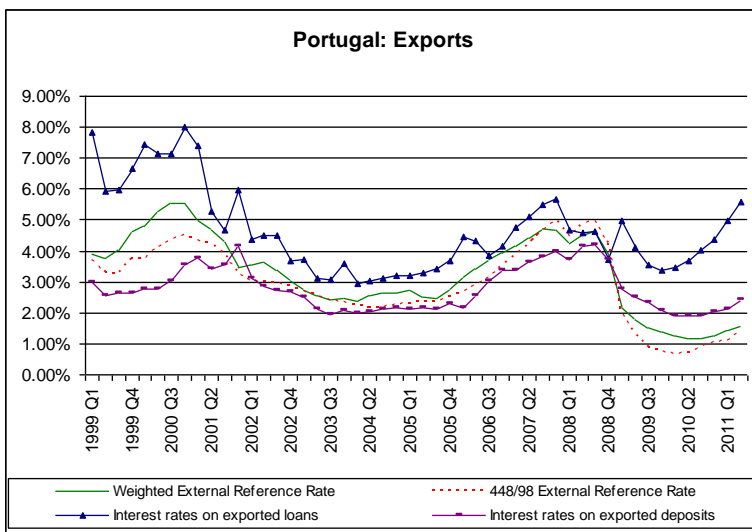
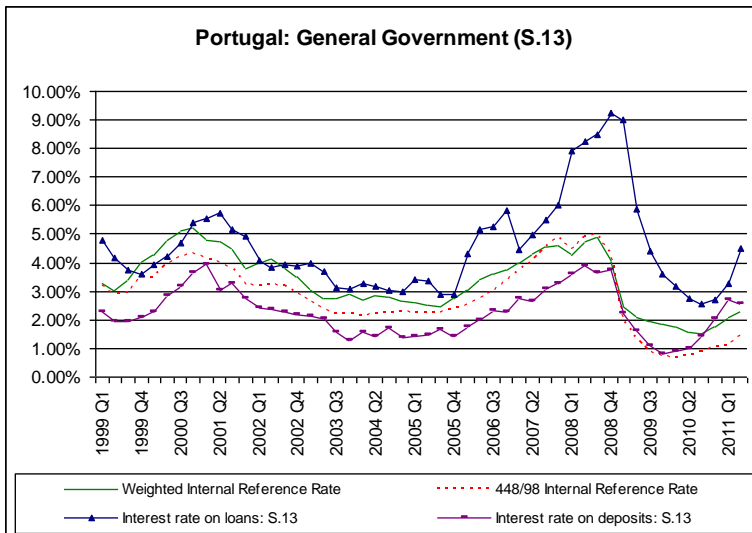
Portugal:

The Internal and External Weighted Average Reference Rates fitted rather well between implied rates on loans and deposits. Continued occurrence of negative FISIM on deposits was solved; and only one-off significant occurrence of negative FISIM remained in 2008;

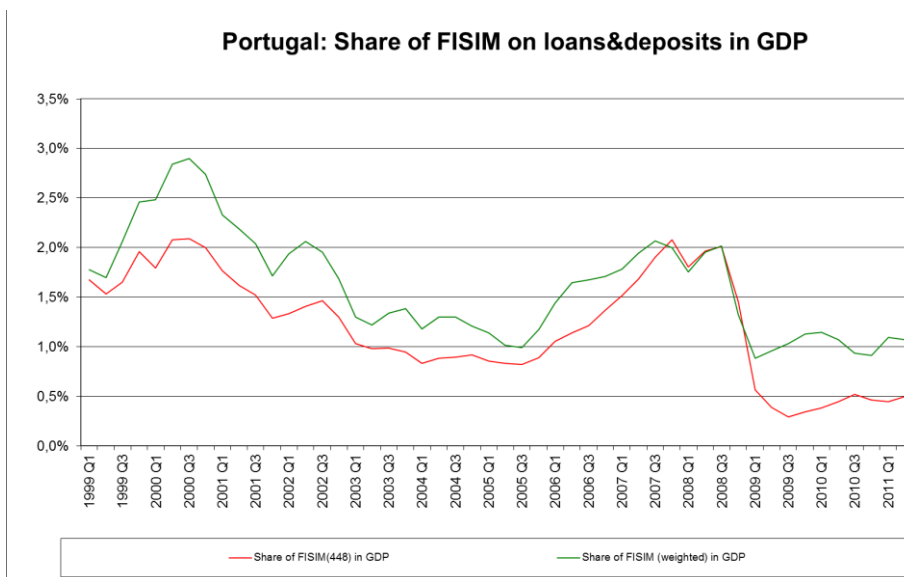


Some exceptions, where the Internal and External Weighted Average Reference Rates do not fit very well between implied rates on loans and deposits are observed in FISIM allocated to:

- General government (S.13) – where the Weighted Rate was higher than the rate on loans for a short period (1999-2000), and where Weighted Rate was lower than the deposit rate, resulting in negative FISIM. This however, is an acceptable side effect as S.13 may obtain preferential rates, and its contribution to FISIM output is modest;
- Exports - where External Weighted Reference Rate was lower than the deposit rate (from 2009), resulting in negative FISIM. However, the negative FISIM on deposit was reduced when using the Weighted Rate compared to the Reference Rate 448/98, which should be considered as improvement. Further improvements of the cross-border flows and weighting scheme of the External Weighted Average Reference Rate may be necessary.



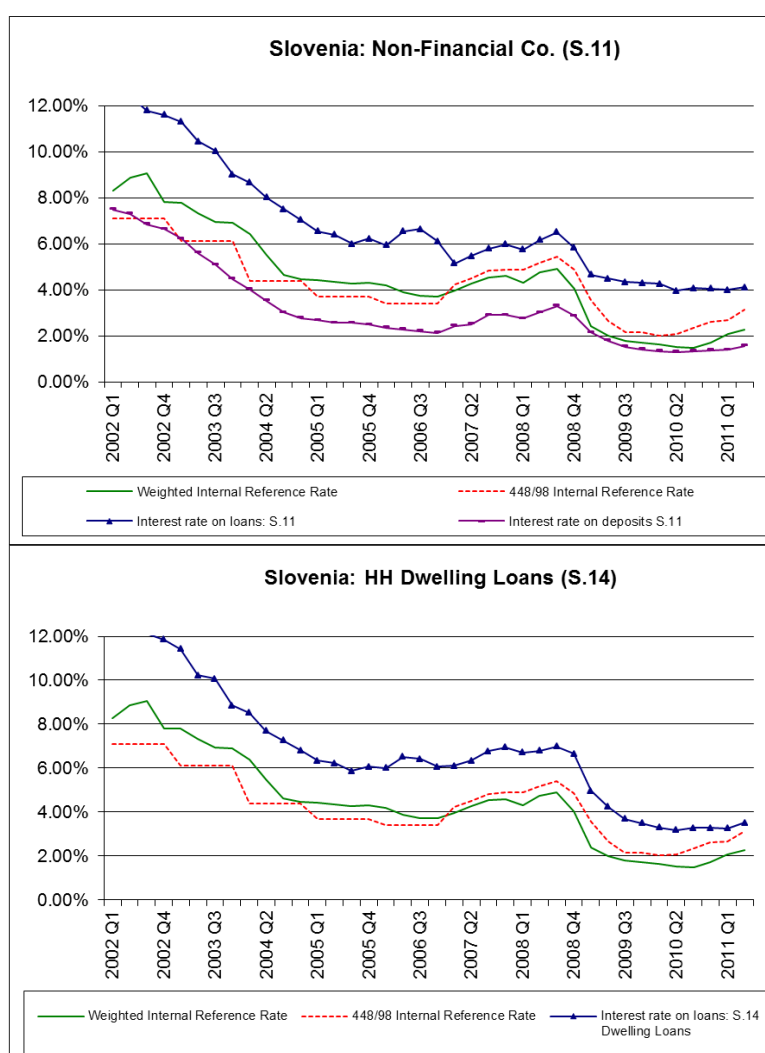
In Summary, the method in calculating FISIM using the Internal and External Weighted Reference Rates leads to an improvement by solving the occurrence of negative FISIM on deposits, and to more stable FISIM allocated into GDP. It should be noted that the government security rate has rather peculiar dynamics from 2009 Q3.

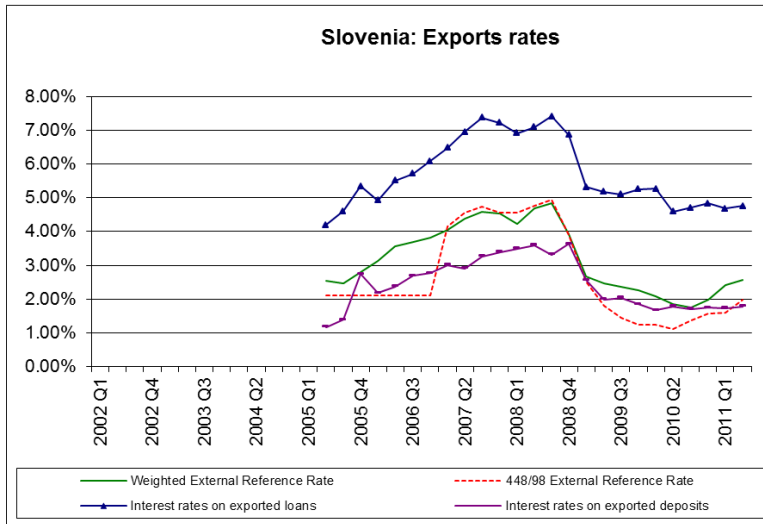


Slovenia:

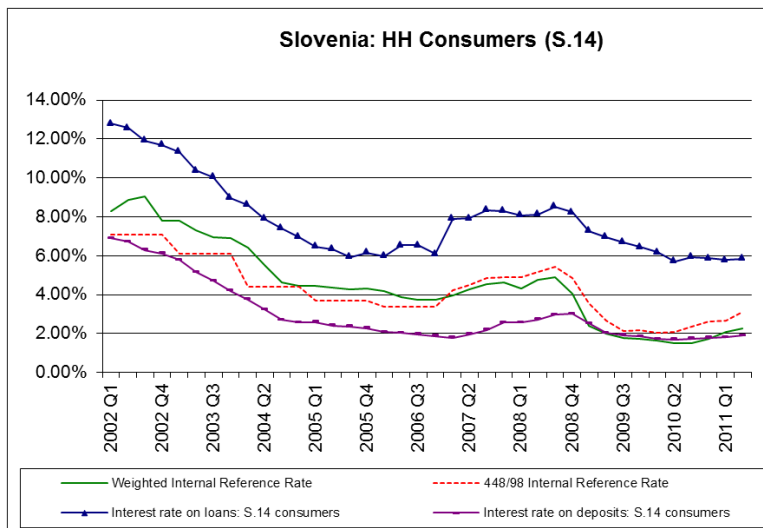
Slovenia joined the Euro Area in 2007, thus STIBOR 3-months for short-term domestic operations and derived swap type rate of 5 year for long-term domestic operations were used until 2006 Q4, and from 2007 Q1 EURIBOR 3 month and ISDAFIX euro 5 year were used accordingly. For cross-border operation, EURIBOR 3 month and ISDAFIX euro 5 year were used accordingly, for short- and long-term operations.

The Internal and External Weighted Average Reference Rates fitted relatively well implied rates on loans and deposits for some sectors, like non-financial corporations (S.11), Households as owners of dwellings, ad non-resident consumers (related to FISIM exports). The Internal and External Weighted Average Reference Rates fitted better between the implied rates on loans and deposits compared to the rates 448/98 currently used in the FISIM calculations solving occurrence of negative FISIM on deposits in some periods before 2007.

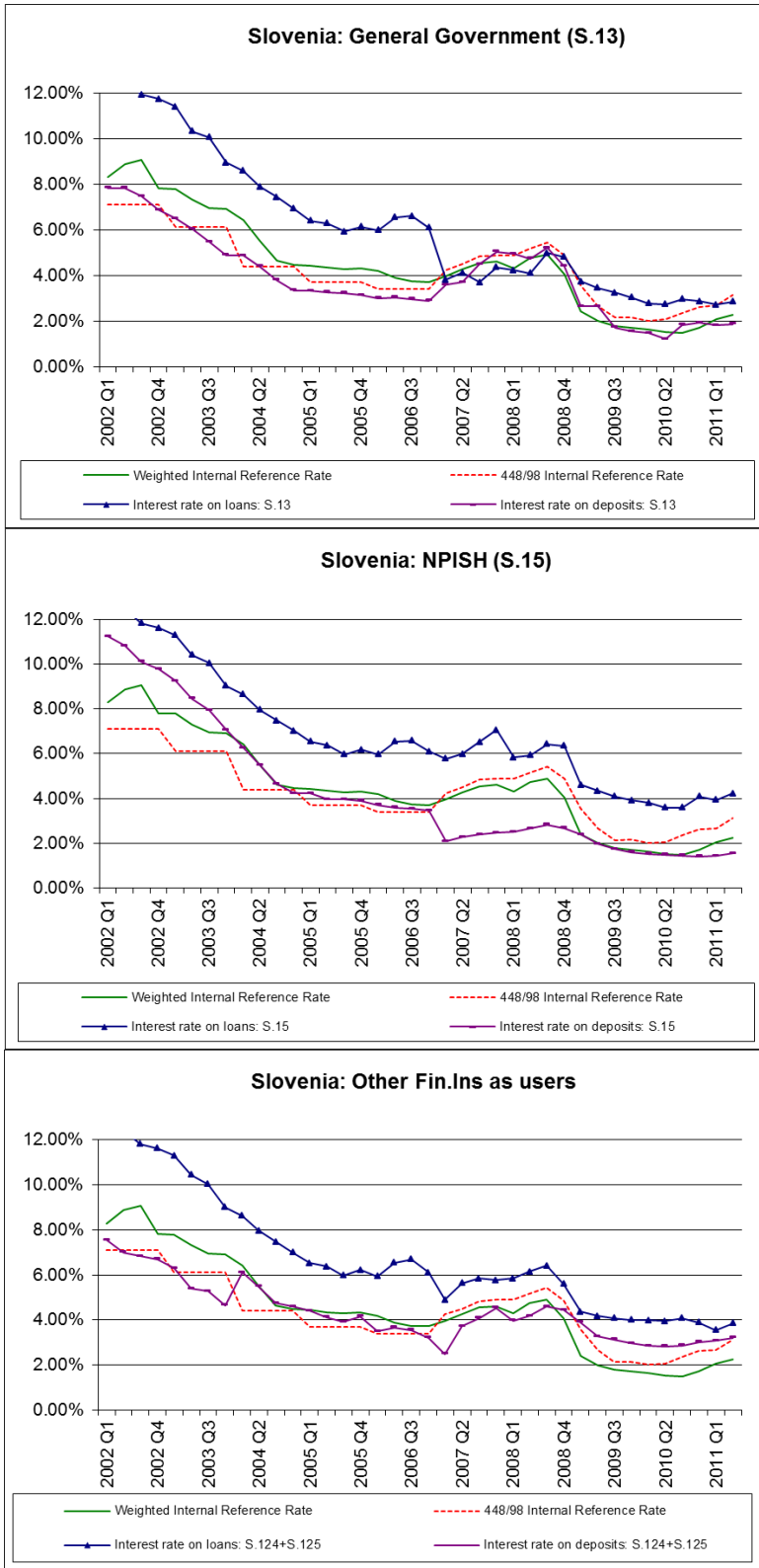




In case of households as consumers the Internal Weighted Average Reference Rate fitted relatively implied rates on loans and deposits until the period of the financial crises, after which some continued (although modest) occurrences of negative FISIM were observed. This issue, however, could be solved by further improving the calculations for the weighting scheme, where at present the short-term weight dominates.



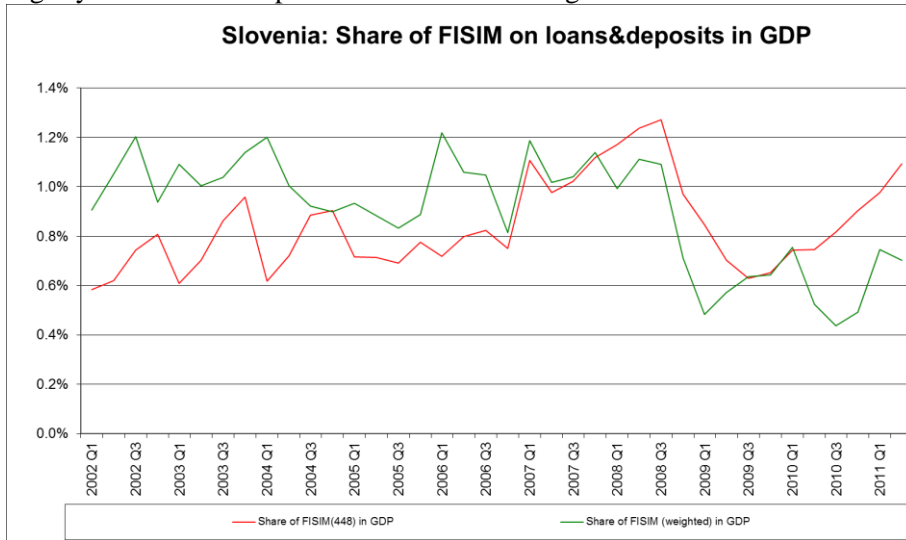
From 2007, there were some exceptions, where the Weighted Average Reference Rates did fit slightly better than the 448/98 rates between implied rates on loans and deposits were observed in FISIM allocated to General government (S.13), NPISH (S.15) and to Other FIs consumers, where the implied rate on loans the deposits rate were very close one to another. Thus, it was difficult for any reference rate in well-fitting between the two implied rates, which may be caused by high participation of loans and deposits with fix rates or preferential rates in case of the S.13 sectors. It is worthwhile noting that in case of S.15, the occurrence of negative FISIM on deposits in the period of 2004-2007 was solved when using the Weighted Average Rate.



In summary, the test results of FISIM showed that for the periods before 2007, the Weighted Average Reference Rates may be seen as a modest improvement compared to the method currently used by solving some occurrences of negative FISIM on deposits.

From 2007, FISIM calculated with the Weighted Rates in some cases generated sporadic occurrences of negative FISIM, but this could be improved by further work to improve the weighting scheme after

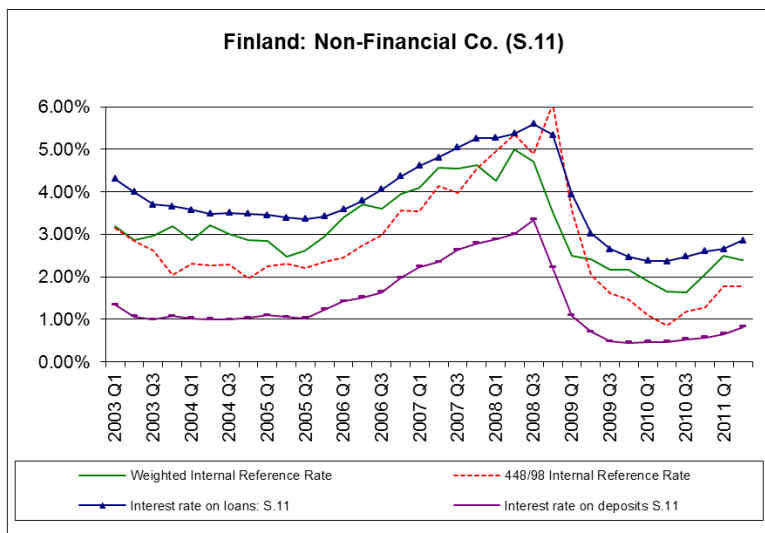
2007. It should be noted, that FISIM calculated using the Weighted Rates and allocated to GDP was slightly less stable compared to the method using the Reference Rates 448/98.

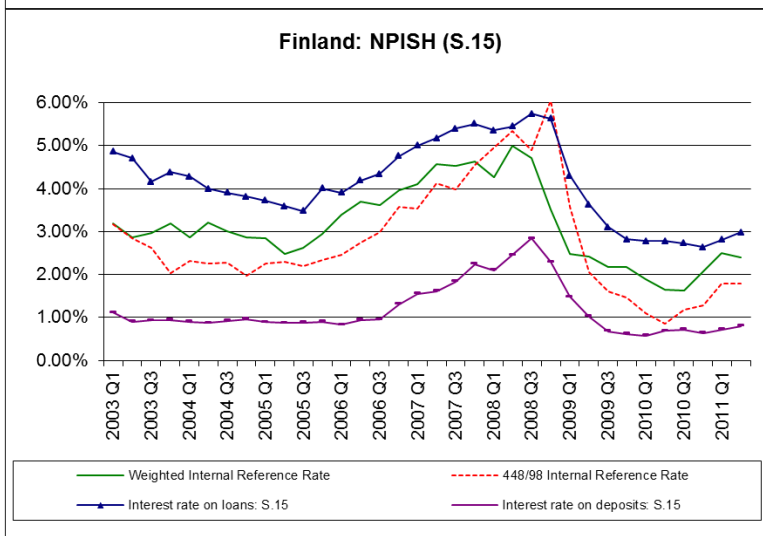
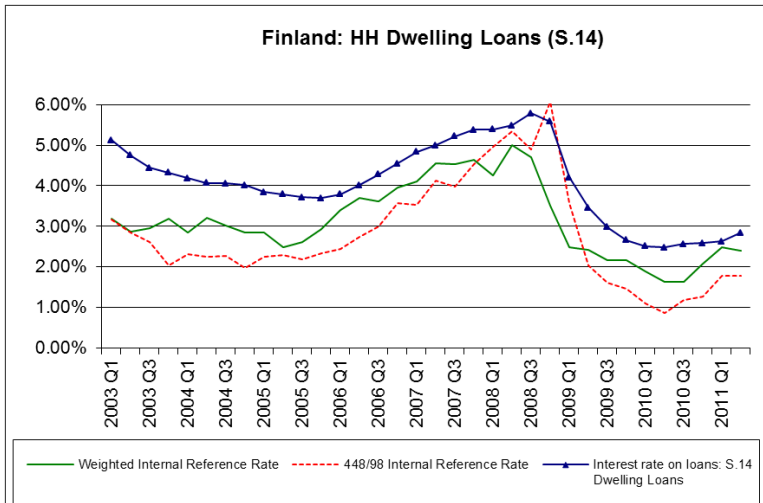


Finland:

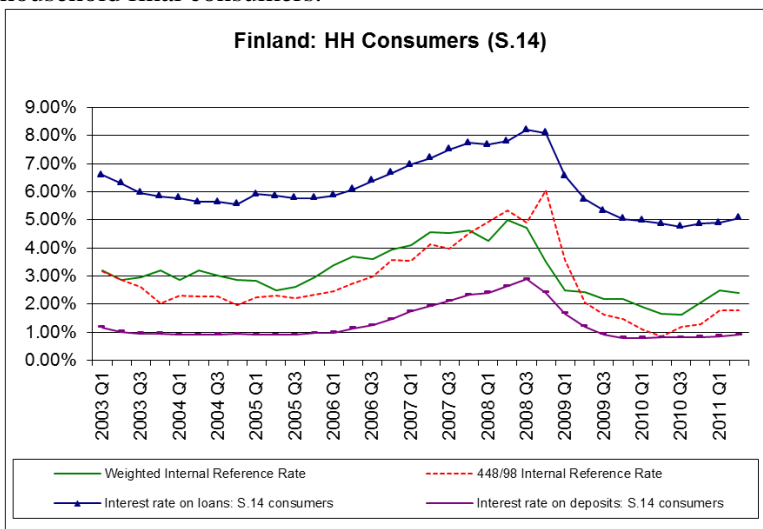
The Internal Weighted Reference Rate seems to be more stable compared to the volatile Internal Reference Rate defined by the Regulation 448/98.

In the wake of the financial crises, the volatile Internal Reference Rate 448/98 resulted in occurrences of negative FISIM on loans allocated to mainly to non-financial corporations and dwelling loans.



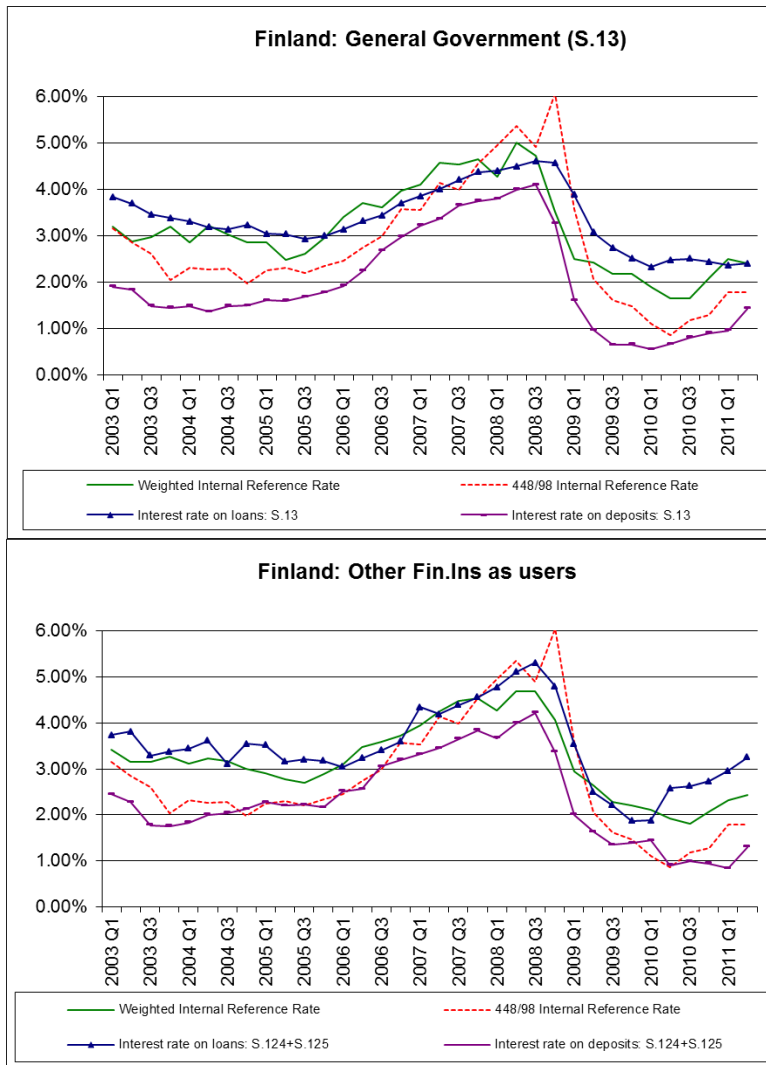


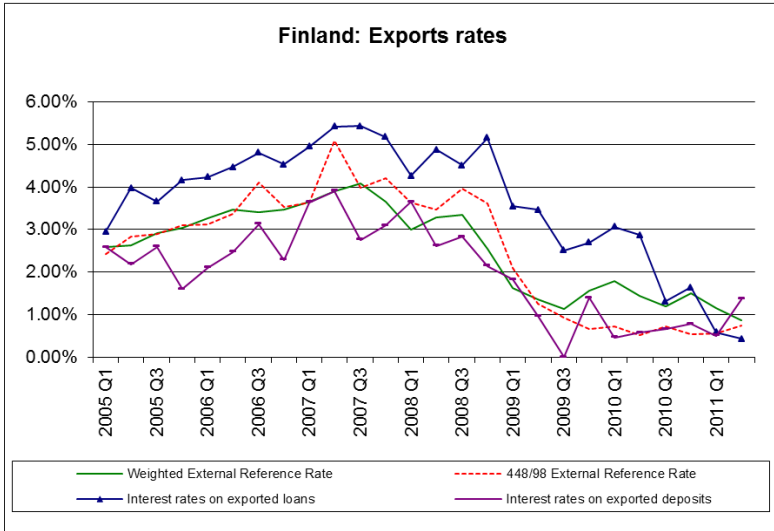
Although no occurrence of negative FISIM on deposits was observed allocated to household final consumers calculated with the currently used 448/98, FISIM calculated with the weighted average rate can also be considered an improvement leading to more stable estimates of FISIM allocated household final consumers.



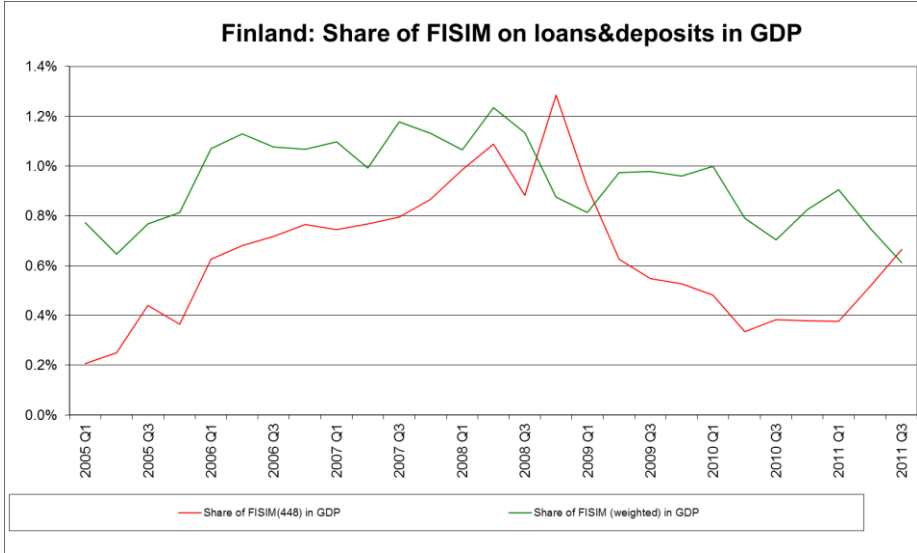
Some exceptions, where the Weighted Average Reference Rates did not fit very well between implied rates on loans and deposits are observed in FISIM allocated to:

- General government (S.13) and Other FIs consumers – the implied rate on loans the deposits rate were very close one to another, thus it was difficult for any reference rate in well-fitting between the two implied rates, which may be caused by high participation of loans and deposits with fix rates or preferential rates in case of the S.13 sectors. It should be noted that the contribution of these consumers to FISIM output is modest.
- Exports - where External Weighted Reference Rate did not fit well for most periods, and thus further work is needed in developing a representative External Weighted Average Reference Rate (see recommendation 4 of the European Task Force on FISIM).





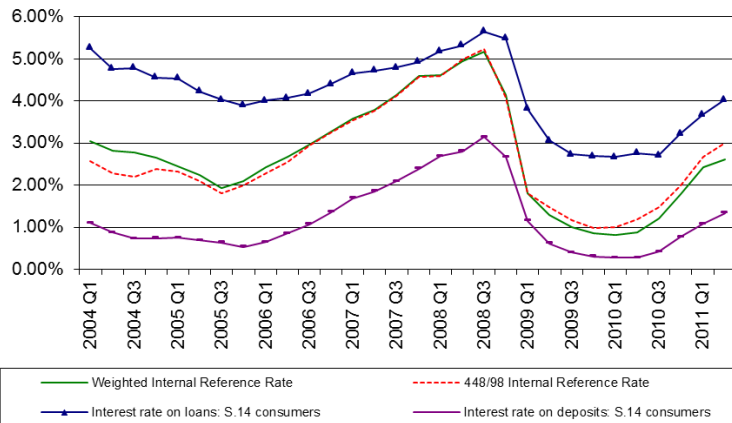
In Summary, the method in calculating FISIM using the Internal and External Weighted Reference Rates solved the sporadic occurrence of negative FISIM on loans, but most importantly leading to more stable FISIM allocated into GDP.



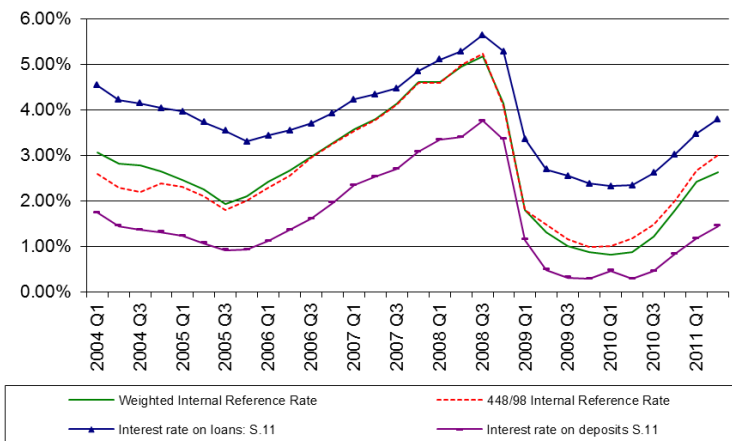
Sweden:

The Internal and External Weighted Average Reference Rates fitted rather well between implied rates on loans and deposits. It must be stressed, that Weighted Average Reference Rates was only slightly different from the 448/98 rate, which implies that the transactions in Sweden in loans and deposits are short-term oriented.

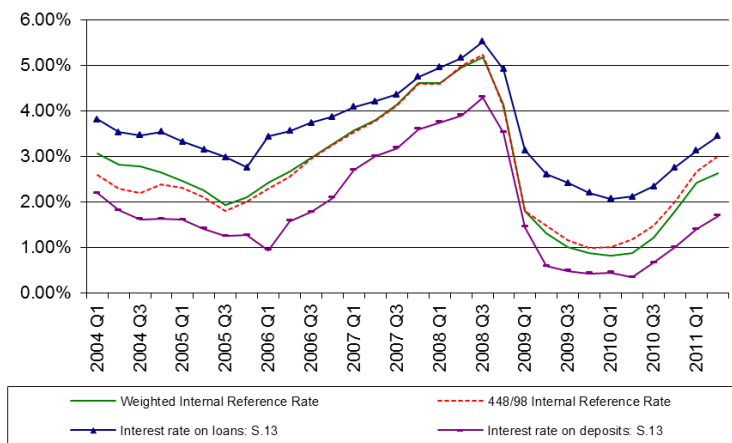
Sweden: Sweden: HH Consumers (S.14)

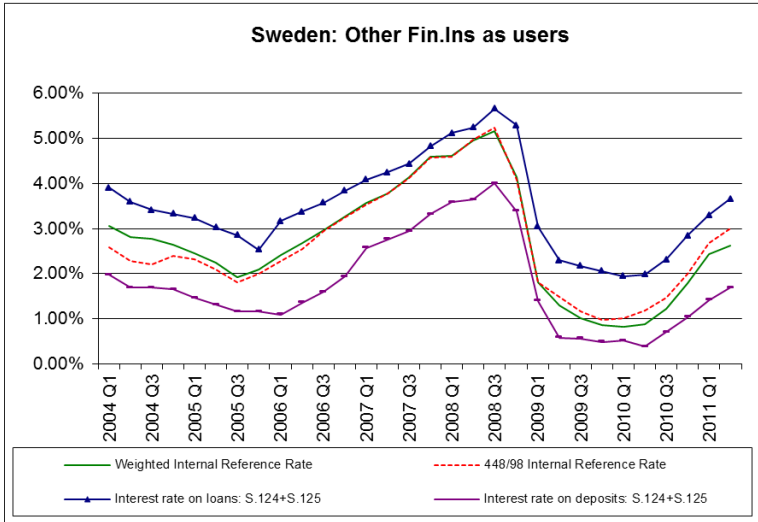


Sweden: Non-Financial Co. (S.11)

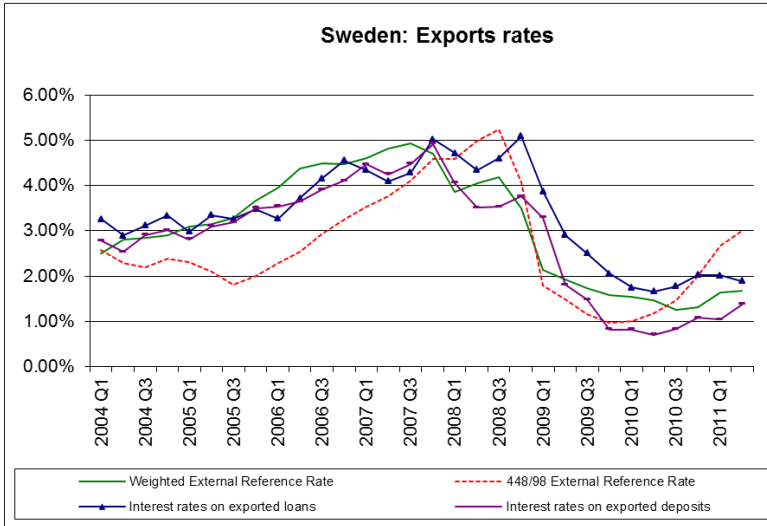


Sweden: General Government (S.13)

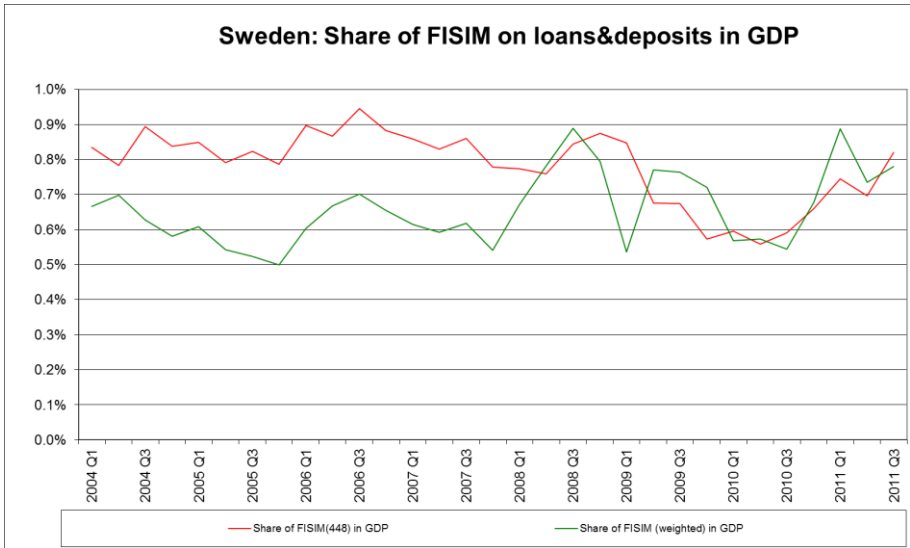




An exception, where the Weighted Average Reference Rates did fit well between the implied rates on loans deposits was in FISIM exports, where the implied rate on loans the deposits rate were very close one to another. Thus, it was difficult for any reference rate in well-fitting between the two implied rates.



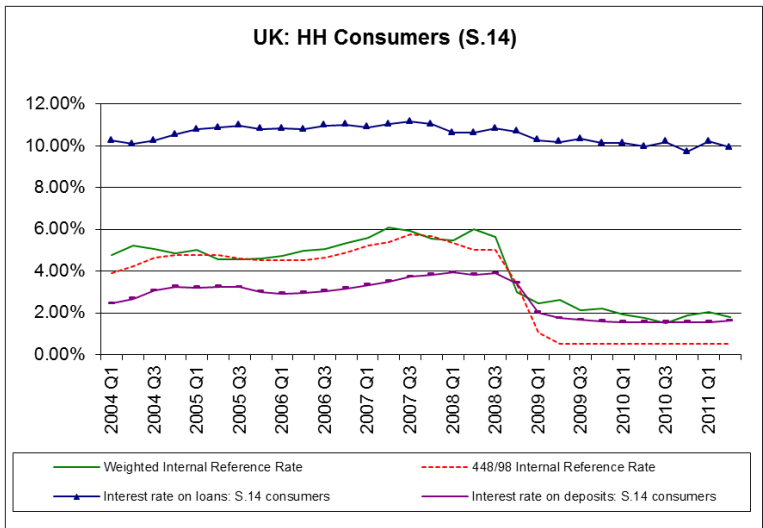
In summary, the test results of FISIM test showed that the method using the Internal and External Weighted Average Reference Rates provided similar results, as the method currently used. It should be noted that the Weighted Average Reference Rates is more volatile compared to the Reference Rate 448/98, as a result FISIM calculated using Weighted Rate allocated to GDP is more volatile.

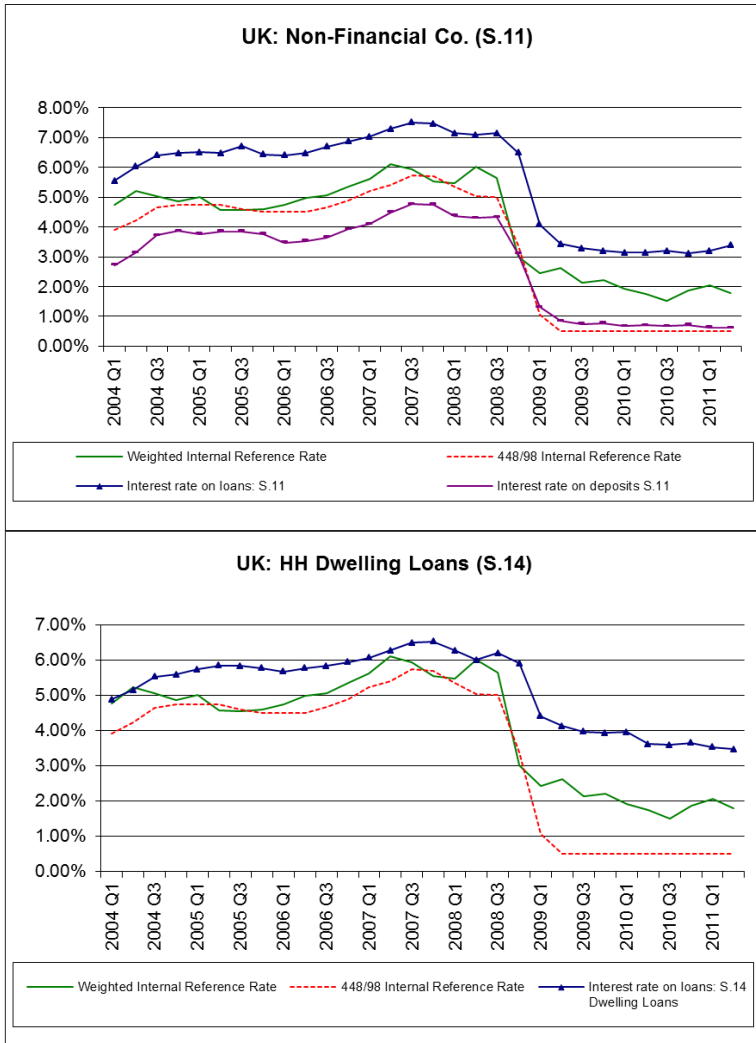


The United Kingdom:

The results of FISIM analysis in the UK refer to Monetary Financial Institutions (MFIs), which cover the substantial majority of FISIM output in the UK.

The Internal and External Weighted Reference Rates fitted well between implied rates on loans and deposits. Continued occurrence of negative FISIM on deposits is solved, except for one-off occurrence of negative FISIM on deposits in 2008 Q4.

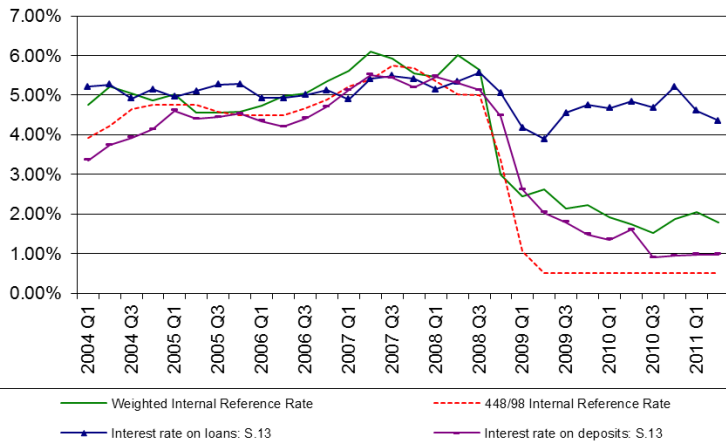




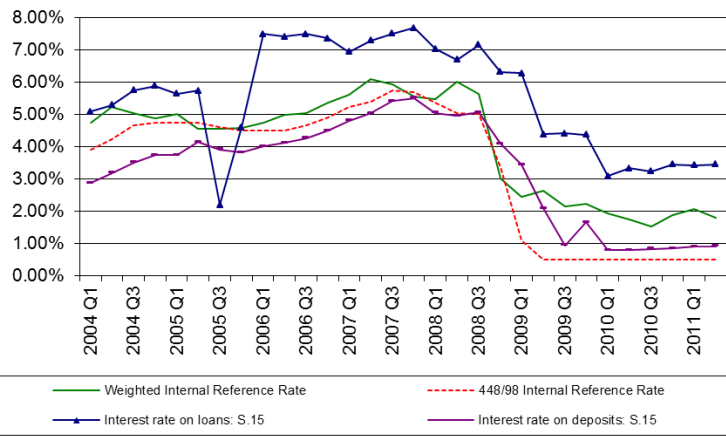
Some exceptions, where the Weighted Average Reference Rates do not fit very well between implied rates on loans and deposits are observed in FISIM allocated to:

- General government (S.13) and NPISH (S.15) – where the weighted rate is higher than the rate on loans for a short period (2007-2008) resulting in negative FISIM. This however, is an acceptable side effect as S.13 may obtain a preferential loan rates, and its contribution to FISIM output is modest;
- Other FIs consumers - where the implied rates on loans and deposits are close one to another, and it is very difficult for the Weighted Rate in well-fitting between the two implied rates, which may be caused by high participation of loans and deposits with fix rates. However, the contribution of these consumers to FISIM output is modest;
- Exports - where the implied rates on loans and deposits are close one to another and volatile, thus it is difficult for the Weighted Rate in well-fitting between the two implied rates, which may include some inter-FIs flows. Further improvements of the cross-border flows and weighting scheme of the External Weighted Average Reference Rate are necessary.

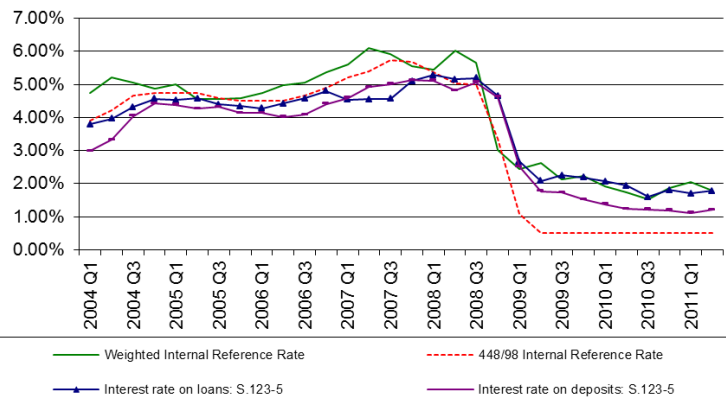
UK: General Government (S.13)

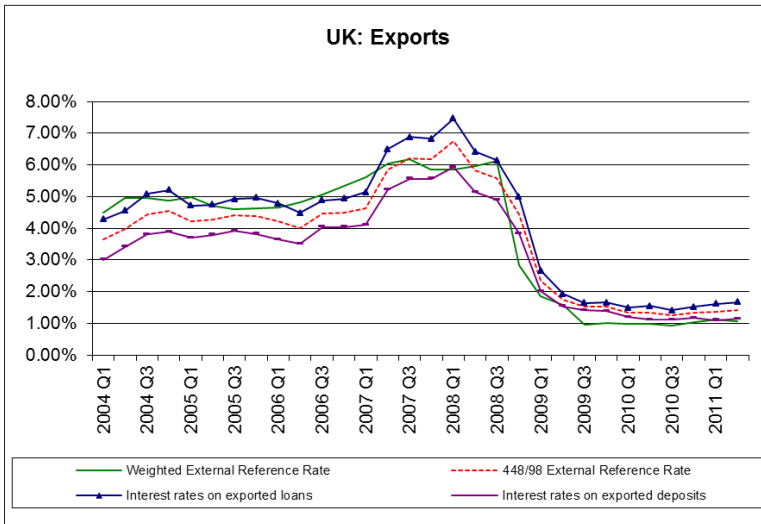


UK: NPISH (S.15)

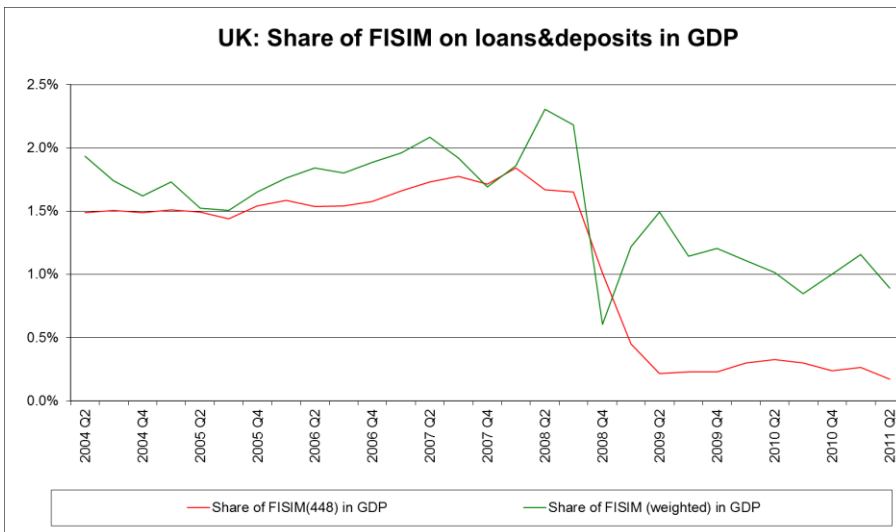


UK: Other Fin.Ins as users



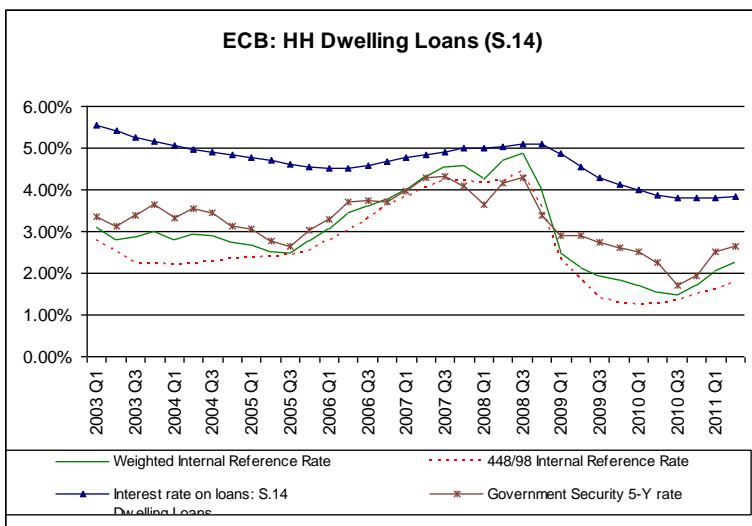
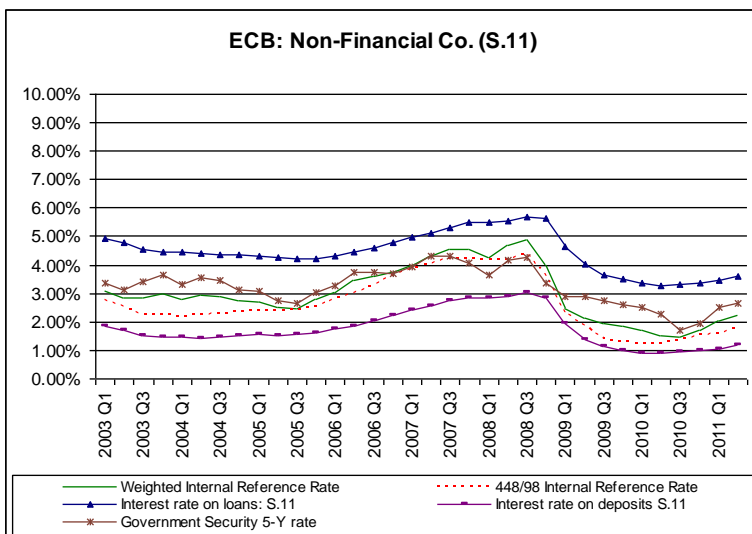
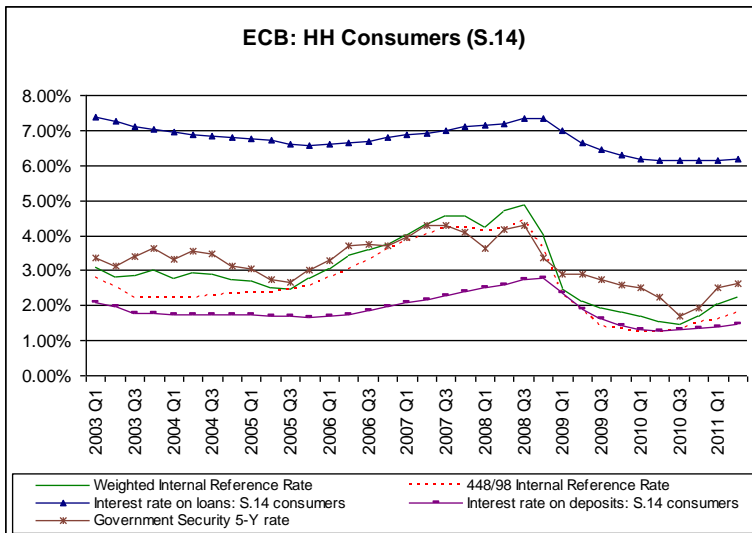


In summary, the results of FISIM test for the UK showed that the method using Internal and External Weighted Average Reference Rates solved the issue of continued occurrence of negative FISIM on deposits, which significantly reduced FISIM contribution to GDP in the aftermath of the recent financial crisis (see the chart below). The volatility of FISIM was also improved, when using the Weighted Average Reference Rates on both deposits and loans.

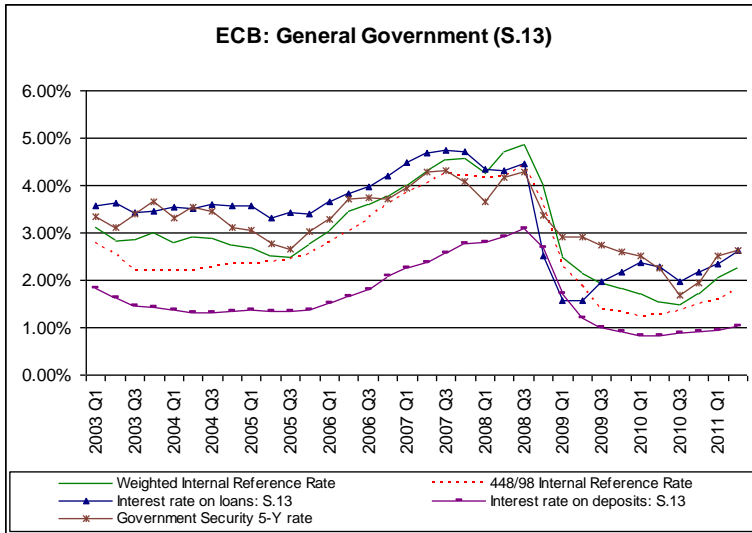


ECB on Euro Area Member States

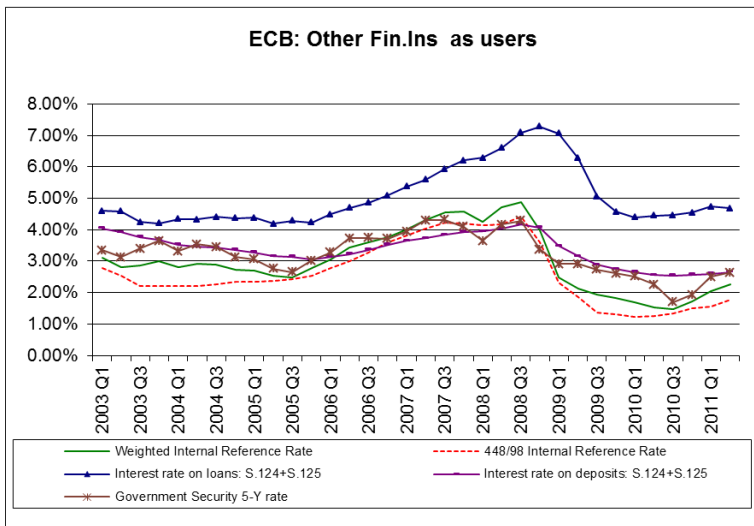
The Internal Weighted Average Reference Rate fits rather well between the implied rates on loans and deposits. The weighted reference rates solve the problem of continued occurrence of negative FISIM on deposits allocated to household final consumer between 2009 Q1 and 2010 Q2.



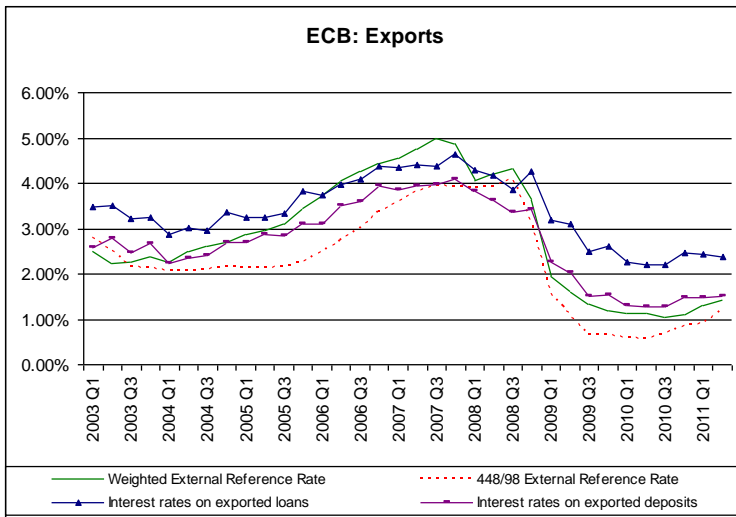
It is interesting to note that negative FISIM occurs on loans to general government sector. This could be due to preference loan rate received by this sector, which at the end of 2008 was lower than the deposit rate.



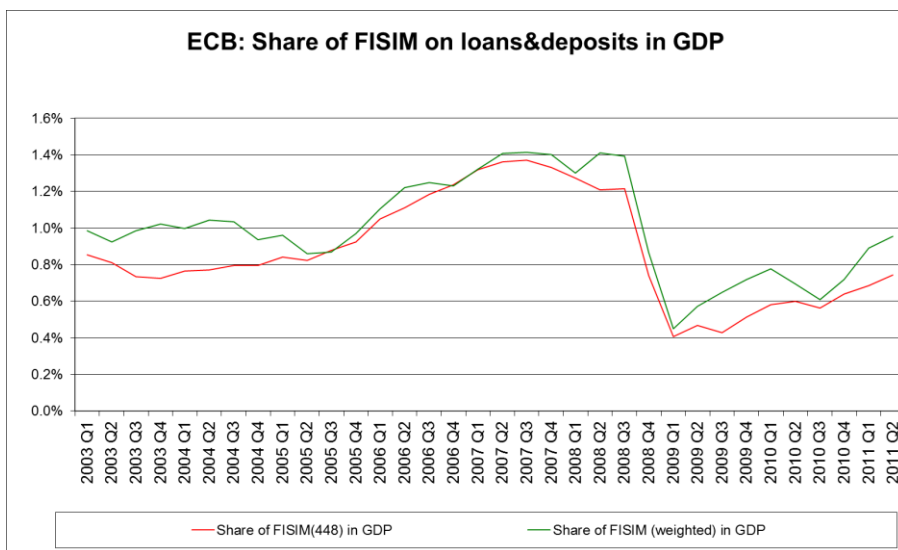
The Internal Weighted Average Reference Rate provided no solution to problems in measuring FISIM allocated to other Financial Institutions as users, as the deposit rates are quite high and fixed rates may mostly be applied.



Similarly, the External Weighted Average Reference Rate provided no solution to problems in measuring FISIM exports, as the rates on loans and deposits are very close one to another and volatile, which caused in some cases negative FISIM on loans and some other cases negative FISIM on deposits.



In summary, the test results of FISIM test showed that the Internal and External Weighted Average Reference Rates solved the issue of continued occurrence of negative FISIM on deposits. In general, the Weighted Average Reference Rates fitted well between implied rates on deposits and loans. The share and the volatility of FISIM allocated to GDP have modestly increased, when using the Weighted Average Reference Rates compared to the rate 448/98 currently used.



Luxembourg:

Some detailed data were provided with small exceptions, but according to the form provided, it would require a number of adjustments for feeding into the test exercise. Due to currency specific calculations the analysis will be performed after consultation with NSI.

Malta

Substantial number of variables could not be provided, and commented that was unsure about the reliability of the results obtained.

Poland

Data were provided for 2010 Q1 -2010 Q4, thus it was not possible to make the necessary analysis.

Romania

Data provided were not complete, thus it was not possible to make the necessary analysis.

Slovakia

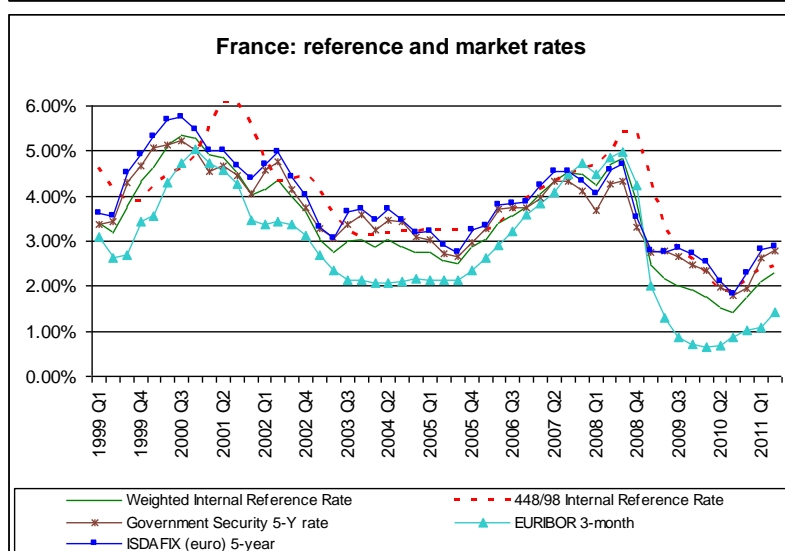
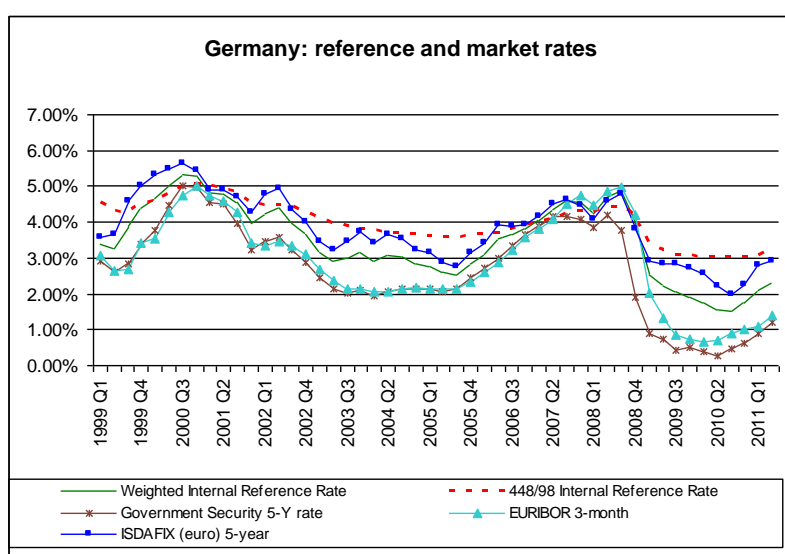
No data were provided on short- and long-term interest and stocks were not complete, thus it was not possible to make the necessary analysis.

1.2.2. The Reference Rates as defined by the Regulation 448/98 and the market rates

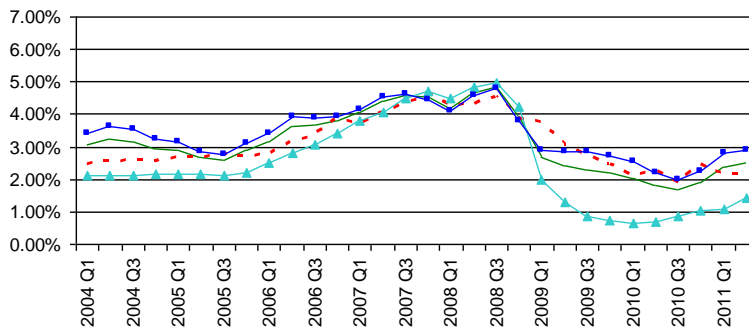
The results of the FISIM test on maturity showed that in some MSs the Internal and External Reference Rates calculated in line with the EC Regulation 448/98, are not necessary short-term. Two classes of such MSs were identified.

In the first class of MSs, the Reference Rates defined by the Regulation 448/98 have long-term tendency over the total tested period, and in some periods exceeding the 5 year swap-type rate (ISDAFIX 5-Year). This group included for example the following MSs: Germany, France, Austria, the Netherlands, Estonia, and to some extent Czech Republic and Lithuania.

The comparison between various rates for the above mentioned countries is best illustrated by the charts below.

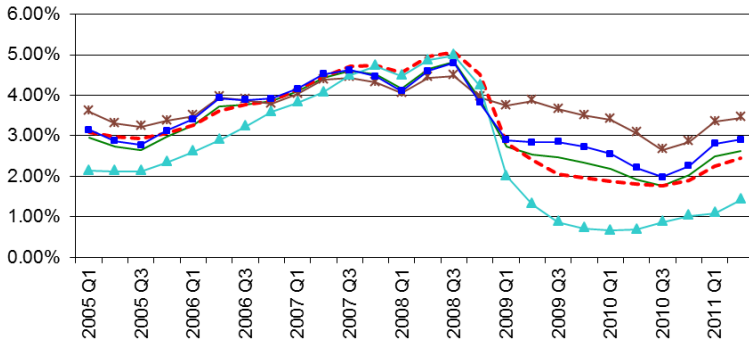


Austria: reference and market rates



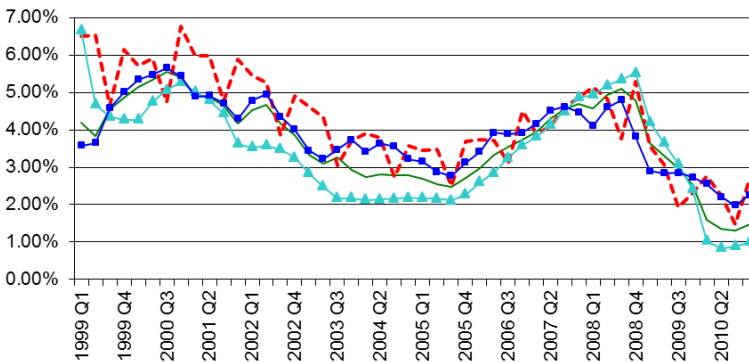
— Weighted Internal Reference Rate - - - 448/98 Internal Reference Rate
▲ EURIBOR 3-month ■ ISDAFIX (euro) 5-year

The Netherland: reference and market rates

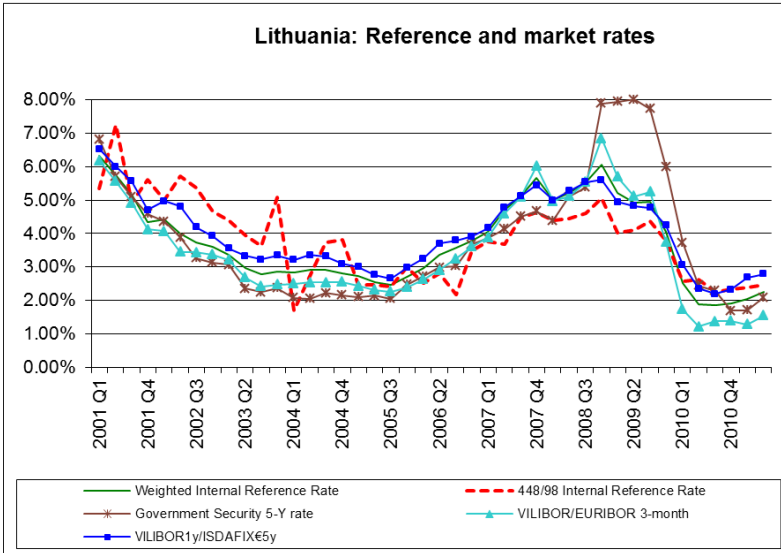
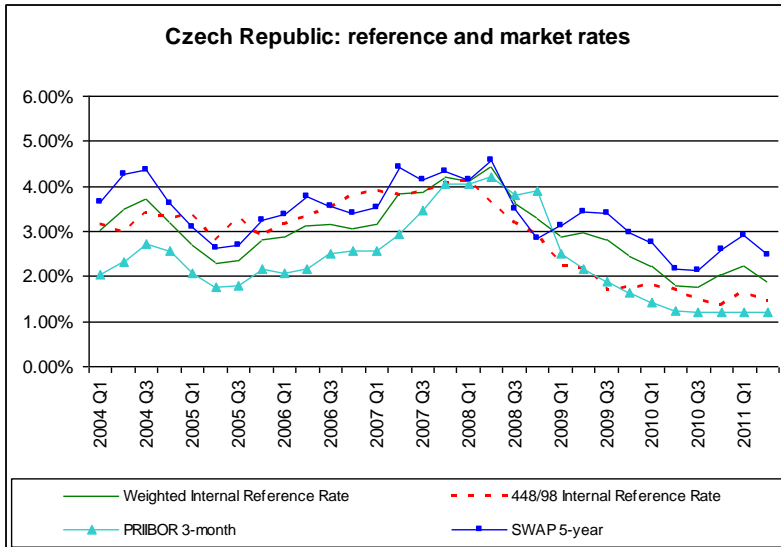


— Weighted Internal Reference Rate - - - 448/98 Internal Reference Rate
* Government Security 5-Y rate ▲ EURIBOR 3-month
■ ISDAFIX (euro) 5-year

Estonia: Reference and market rates

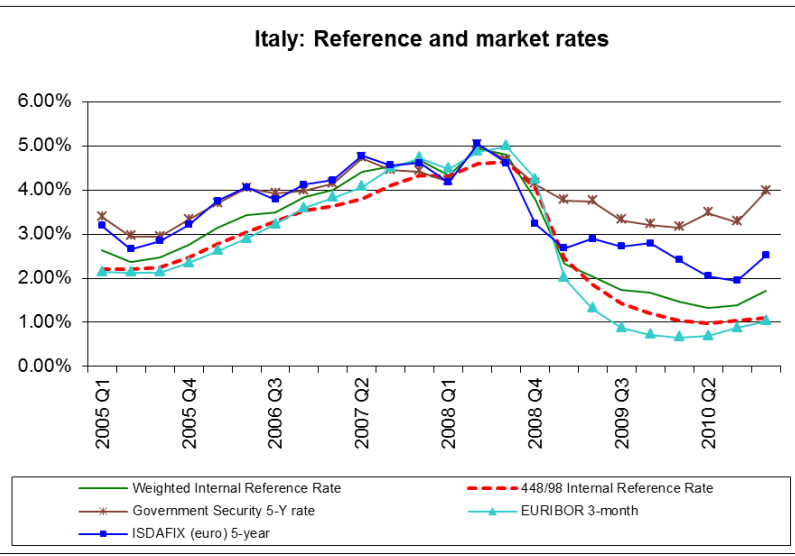
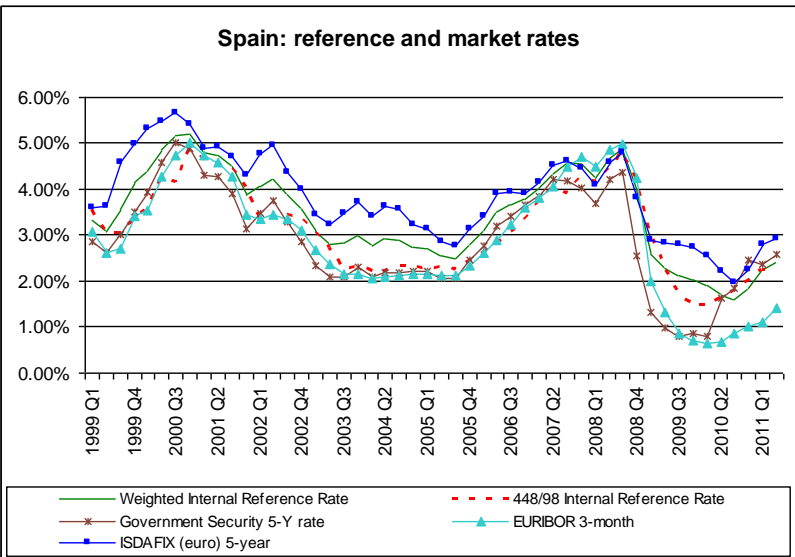
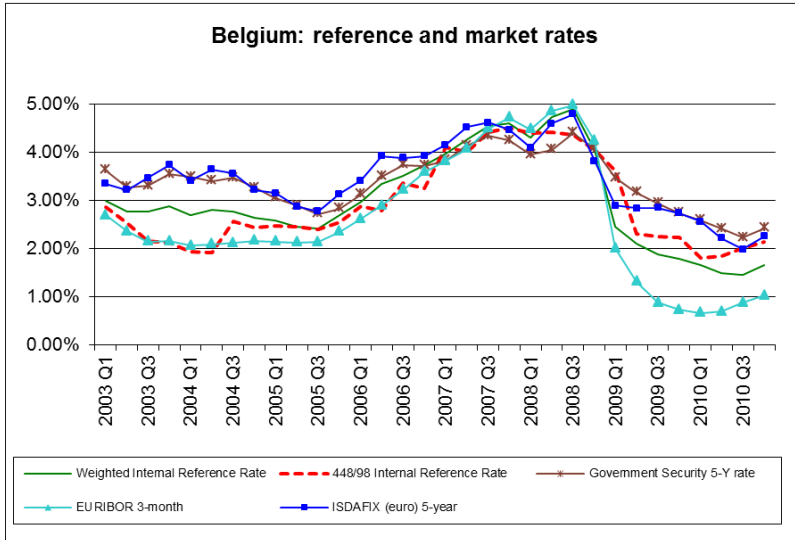


— Weighted Internal Reference Rate - - - 448/98 Internal Reference Rate
▲ TALIBOR/EURIBOR 3-month ■ ISDAFIX (euro) 5-year

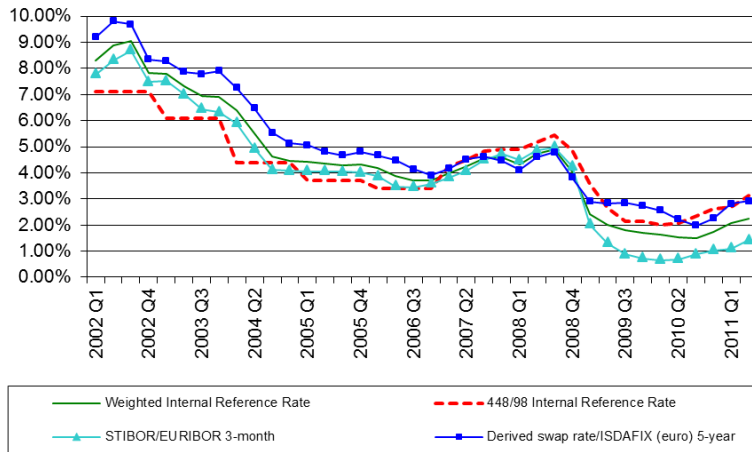


In second class of MSs, the Reference Rates as by the Regulation 448/98 were, as expected, short-term, but mostly until end-2008. From of end-2008, the Reference Rates 448/98 increased showing long-term tendency. This group included for example the following MSs: Belgium, Spain, Italy, Slovenia, Finland, and Sweden.

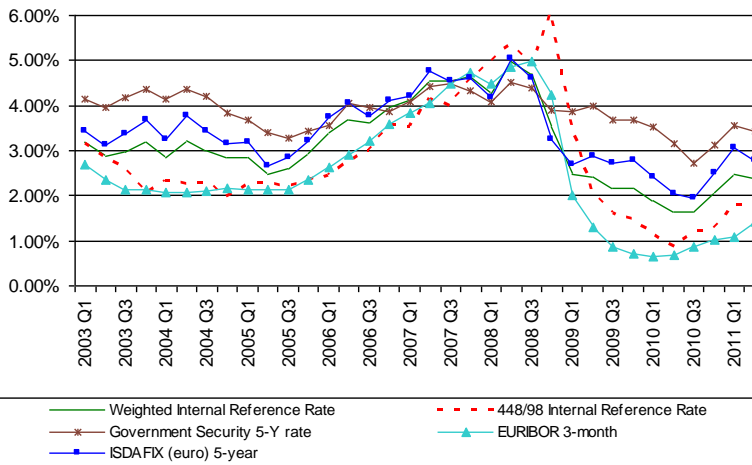
The comparison between various rates for the above mentioned countries is best illustrated by the charts below.



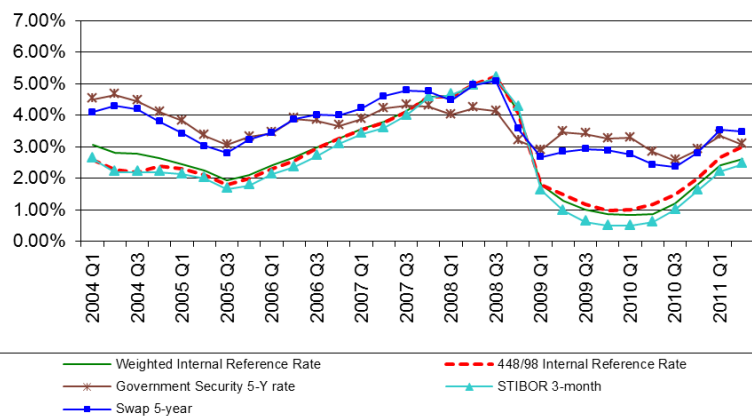
Slovenia: Reference and market rates



Finland: reference and market rates



Sweden: reference and market rates



1.3. The impact of the tested methods on GDP and volatility

To verify and compare the stability of the results of FISIM calculated using the Reference Rates 448/98 and using the Weighted Average Reference Rates, an Index of Volatility can be calculated according to the formula:

$$\frac{\text{absolute (impact on GDP}_{\text{yearn+1}} - \text{impact on GDP}_{\text{yearn}})}{\text{impact on GDP}_{\text{yearn}}}$$

The analysis for the MSs analysed are best illustrated by Table 1 below. The table shows that the impact (share) of FISIM to GDP, calculated using the Internal and External Weighted Average Reference Rates decreased in most MSs.

The analysis of indices of volatility for FISIM calculated using the Weighted Average Reference Rates showed no substantial differences. In most MSs, the Index of Volatility decreased modestly.

Table 1: Average impact on GDP of FISIM calculated with Reference Rates according to the Regulation 448/98 and Weighted Reference Rates

Countries	Share of FISIM to GDP		Index of Volatility		Time-Span
	448/98 rate	Weighted rate	448/98 rate	Weighted rate	
Belgium	1.2%	1.1%	15.0%	10.8%	2003Q1 - 2010Q4
Czech Republic	0.7%	0.8%	12.0%	15.6%	2004Q1 - 2011Q2
Denmark	0.8%	0.9%	11.1%	9.0%	2003Q1 - 2011Q2
Germany	1.3%	1.1%	6.3%	8.6%	1999Q1 - 2011Q2
Estonia	0.9%	0.8%	10.7%	9.5%	1999Q1 - 2011Q2
Spain	1.0%	1.3%	17.9%	16.0%	1995Q1 - 2011Q2
France	0.9%	0.8%	8.5%	11.9%	1999Q1 - 2011Q2
Italy	1.2%	1.3%	6.7%	5.3%	2005Q1 - 2010Q4
Lithuania	0.4%	0.5%	30.3%	28.7%	2001Q1 - 2011Q3
The Netherlands	1.4%	1.4%	7.3%	7.2%	2005Q1 - 2011Q3
Austria	1.1%	1.2%	11.9%	11.7%	2004Q1 - 2011Q2
Portugal	1.2%	1.6%	11.2%	10.0%	1999Q1 - 2011Q2
Slovenia	0.9%	0.8%	12.5%	14.9%	2002Q1 - 2011Q2
Finland	0.6%	0.9%	19.7%	11.5%	2005Q1 - 2011Q3
Sweden	0.8%	0.7%	7.2%	12.3%	2004Q1 - 2011Q3
The UK	1.1%	1.5%	11.7%	16.0%	2004Q2 - 2011Q2
ECB (euro area)	0.6%	1.0%	8.5%	10.2%	2003Q1 - 2011Q2
Summary					
<i>No of decreases</i>	6		10		
<i>No of increase</i>	10		7		

1.4. Other alternatives for calculating the Reference Rates

The alternatives, which are analysed and presented in this section were not studied in depth, as they did not correspond to the recommendations of the Task Force, although were discussed during the meetings in 2010-2011.

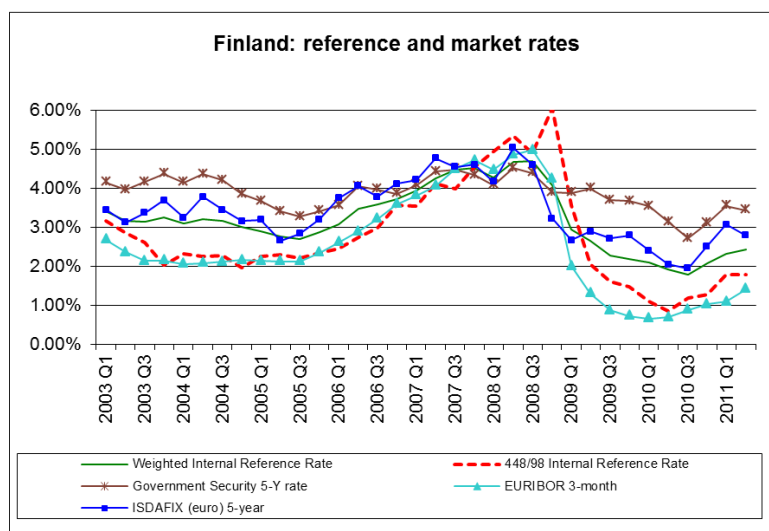
However, Eurostat considered that it could be useful to present them in order to provide a better and somewhat more complete view on the FISIM test on maturity.

1.4.1. Government rates blending in the calculation of the Reference Rate

According to our simulations, the government security rate would fit quite well between the implied rates on loans and deposits in a number of countries, as presented in this section.

It is worthwhile noting that in some non-EU countries the Government Security rate is blended into the calculations of the Reference Rate, like in the US.

The analyses of FISIM, using an alternative reference rate calculated as a simple average of EURIBOR 3-month rate and Government Security 5-year rate, are presented below for Finland. This method using the government security rate in the calculation of the reference leads to some improvement compared to the methods currently applied (Regulation 448/98).



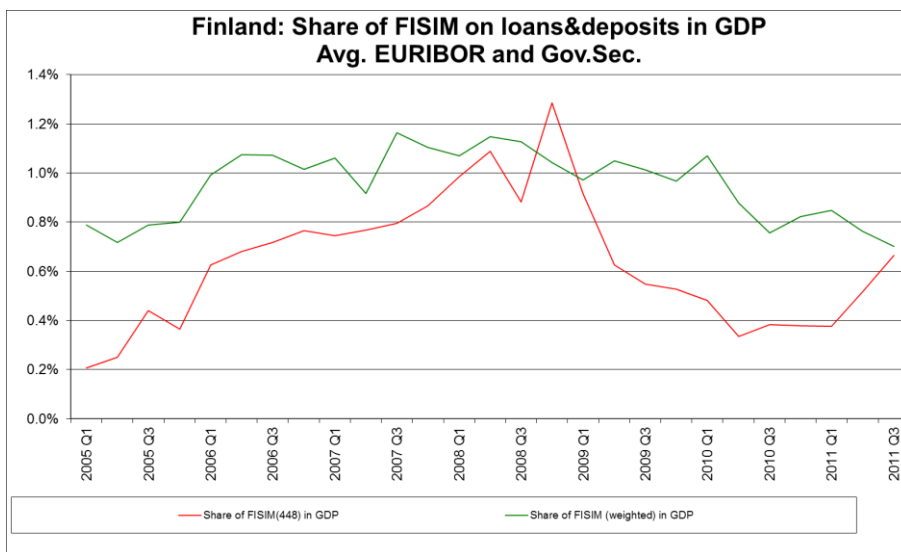
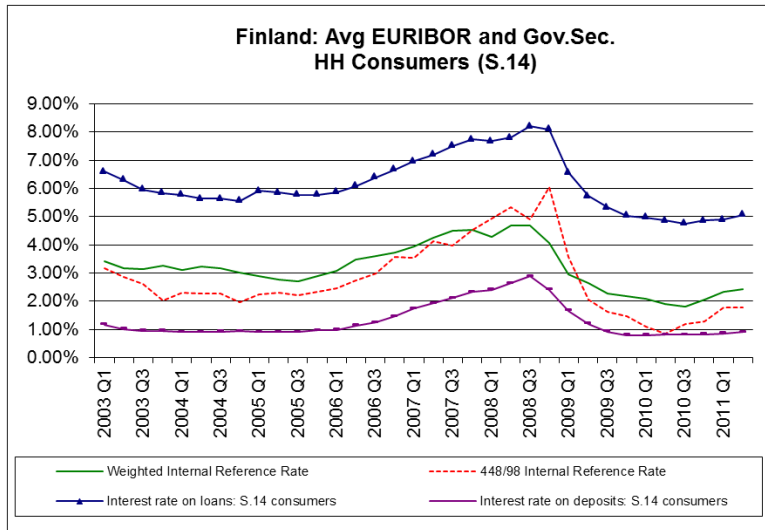


Table 2: Average impact on GDP of FISIM calculated with Reference Rates according to the Regulation 448/98 and Weighted Reference Rates calculated with Government securities

Countries	Share of FISIM to GDP		Index of Volatility		Time-Span
	448/98 rate	Weighted rate with Gov. Sec.	448/98 rate	Weighted rate with Gov. Sec.	
Finland	0.6%	1.0%	19.7%	8.6%	2005Q1 - 2011Q3

It must be stressed, however, in the erratic economic context, that the statistical data on government securities rates provided for this test by the EU MSs showed that these rates are not a good alternative for most of the European countries.

Clearly, the results showed that the government rates may not be considered a risk-free rate, as in many cases the government securities rates are volatile and erratic mainly in the aftermath of the financial crisis.

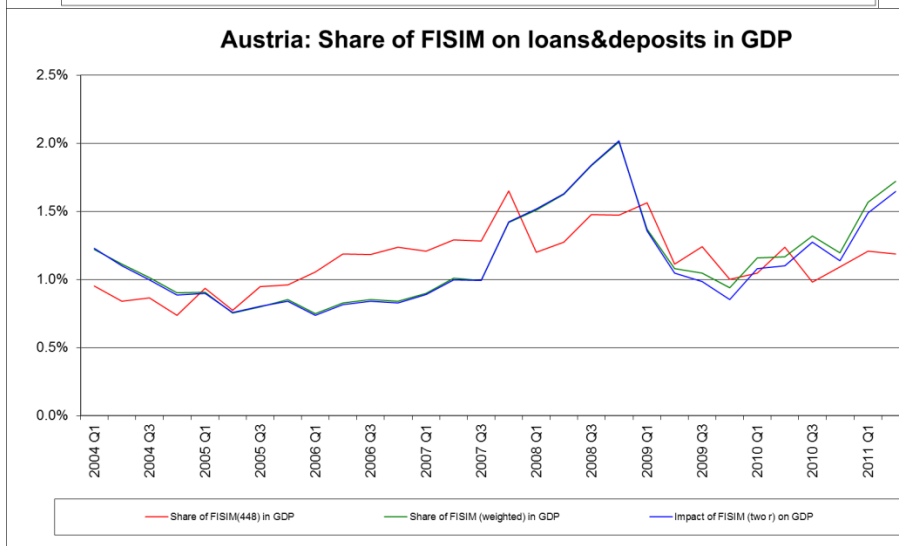
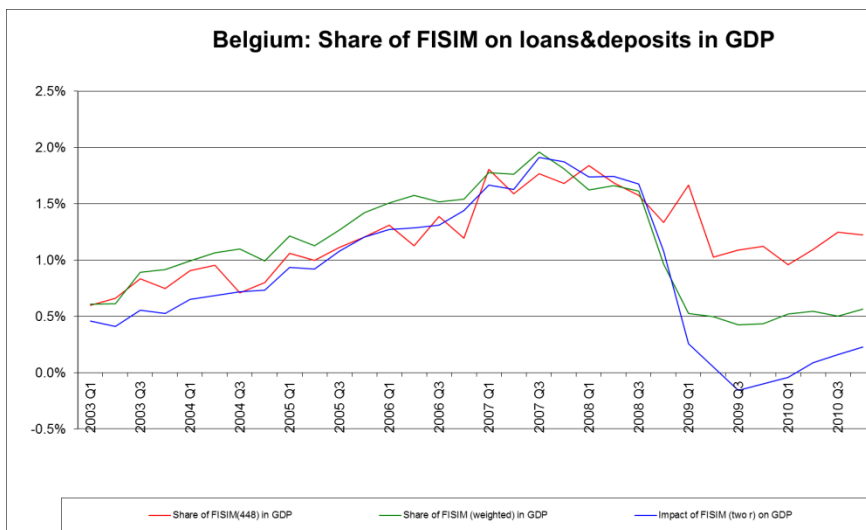
1.4.2. Two separate Reference Rates for short- and long-term operations.

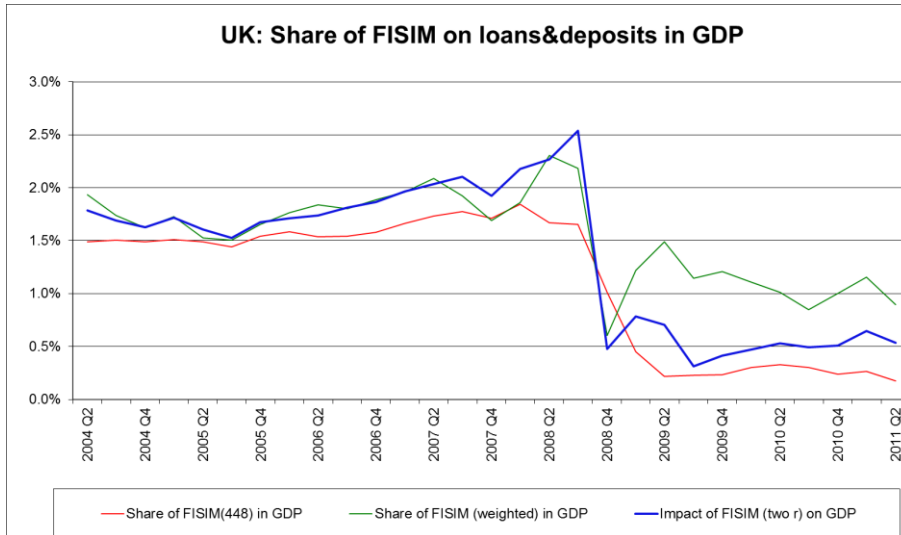
In most countries, there is unavailability of sectorised interest data separately for short- and long-term operations. These countries used a number of assumptions to derive the required detailed interest data.

Furthermore, as noted by the European Task Force and the CMFB, liquidity transformation and term premia should not be eliminated from FISIM. The approach using separate Two Reference Rates for short- and long-term operations would lead to this elimination.

Eurostat tested this approach on 3 countries and it proved to be very data intensive.

The elimination of the term premia from FISIM lowers the impact of FISIM on GDP as compared to the results of the Weighted Average Reference Rate and the method 448/98 currently used. This is best illustrated by the following graphs.





The results, although subject to quality and assumptions used, shows that FISIM calculated using two Reference Rates is more volatile compared to the method 448/98 currently used.

Countries	Share of FISIM to GDP		Index of Volatility		Time-Span
	448/98 rate	Two rates	448/98 rate	Two rates	
Belgium	1.2%	0.9%	15.0%	18.0%	2003Q1 - 2010Q4
Austria	1.1%	1.1%	11.9%	12.4%	2004Q1 - 2011Q2
UK	1.1%	1.4%	11.7%	15.0%	2004Q1 - 2011Q2

1.5. Conclusions on FISIM test on maturity and the Weighted Average Reference Rates

This section summarises the analysis and finding on the FISIM test on maturity presented in this chapter taking into account the criteria given by the Task Force on FISIM, namely criteria are met:

- a) Continued occurrence of negative FISIM on deposits is solved;
- b) Better reflects exposure to financial shocks/crisis;
- c) Reduction in the volatility would be welcomed.

The method using the Weighted Average Reference Rates produced results that were slightly better or similar compared to the current method based on the Regulation 448/98.

This can mainly be characterised by the Weighted Average Reference Rates that:

- well fits between the implied rates on loans and deposits,
- solves the continued occurrence of negative FISIM on deposits and sometime negative FISIM on loans,
- the FISIM allocated to GDP in majority of MSs was more stable.

The problems caused by recent financial crisis in measuring FISIM results in mainly in continued negative FISIM on deposits. This problem was largely solved by using the weighted reference rate, however, in end-2008 or in beginning-2009 (depending on the country) when the crisis erupted the negative FISIM on deposits still occurs. During this period the behaviour of the market rates was very erratic, e.g. short-term rates exceeded the level of the long-term rates, the gap between the central bank rates and the interbank rates widen. These phenomena affect the calculation of the weighted reference rates.

Although this one-off occurrence of negative of FISIM is an acceptable side effect of the calculations, it could be solved by further improving the short- / long-term weights.

Some other alternatives for the Weighted Average Reference Rates were considered in the section 1.4.

It is worthwhile noting that the final report of the European Task Force on FISIM stated that the advantage of the method using the single Weighted Average Reference Rate is that it blends market rates of different maturities of loans and deposits used in the calculations of FISIM. This method meets the expectations expressed by various members of this Task Force, for example:

- It meets the expectations of those who criticised the current Reference Rate legislated in the Regulation 448/98 as being short-term oriented, as it relies on interbank relationship that by definition is mainly short-term.
- It meets somewhat the approach adopted in the US to calculate FISIM, where the Reference Rate blends an effective rate on government security;
- It somewhat meets the approach proposed by ECB, where they recommended variety of maturity matched reference rates, e.g. government bond rates for long-term operations, and EONIA and EURIBOR rates for short-term operations.

It must, however, be stressed that the method using a single Reference Rate for both loans and deposits does not lead to the elimination of the term premium and recognises the maturity transformation as inherent to FIs.

From a practical perspective, it should also be emphasised that this Weighted Average Reference Rate method appeared to be neither data-intensive nor complexity- increasing in calculating FISIM.

2. THE FISIM TEST ON DEFAULT RISK

2.1. Background

According to the report of the European FISIM Task Force, among various types and degrees of risks that could be excluded from the measure of FISIM, the exclusion of the risk that compensates for expected losses on loans going into default would a possible way forward.

The questionnaires distributed among the Task Force Members in April 2011 confirmed that source data on write-offs and provisions for bad and doubtful loans necessary to calculate default risk adjustments are mostly available. However, The Task Force recommended that the method to calculate the default risk should further be analysed in more detail.

2.2. Results of the test on default risk

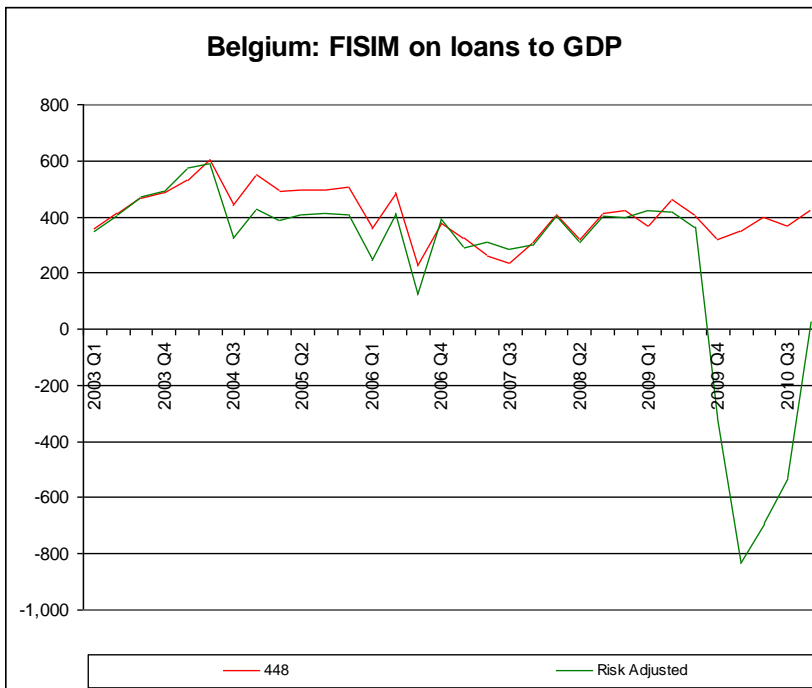
The results showed that the test on default risk could not be carried out. This is because many countries reported no sufficient detailed level of their source data, and this was leading toward comparability problems between MSs.

The results could be summarised as follows:

Belgium

Data on write-offs and provisions are available from 2004Q1 onwards. For provisions there is only one global series, and for write-offs there is no distinction between households as consumers, producers and owner occupiers.

There is no distinction between write-offs and write downs. The latter are not definitively lost for the bank, and can lose (partly or completely) their "write down status" afterwards, which explains that the series can be negative.



Czech Republic

Data availability is very weak, where write-off includes not only loans, but also other receivable.

Denmark

Data can only meaningfully be reported from 2006. Some institutes have made revisions to their data recently, while others are unable to revise although they believe that there are errors in the numbers. The negative and the very volatile data can only be explained by errors in the numbers. Hence, the figures must be interpreted with caution.

Germany

According to information given by the Deutsche Bundesbank no valid data are available in this respect.

Estonia

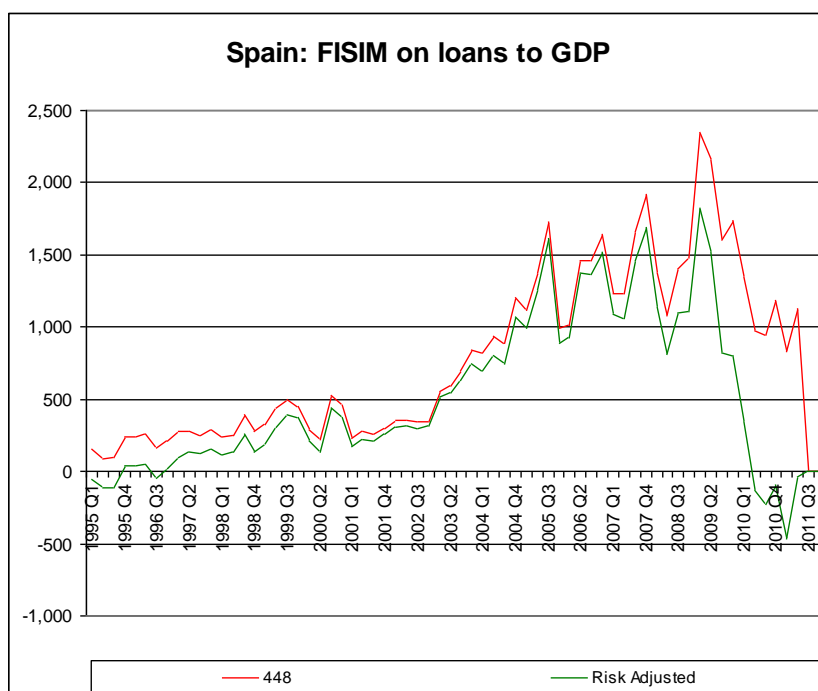
Report on overdue and/or impaired loans, and report on changes in claims written off the credit institution's balance sheet were used. Write-offs and provisions from non-resident financial corporations were not possible to derive. Data are available from 2007 onwards only.

Spain

The available information is net write-off/write-down. When the amounts returned to the asset are greater than the amounts write-off/write-down, the net amount has negative sign. The source of this dataset is MFI balance sheet statistics.

The results in the calculations of the FISIM for Spain are that the risk-adjusted FISIM allocated to GDP is similar to the non-adjusted except from 2009, when risk-adjusted FISIM values are negative for the sum of loans and deposits.

The conclusion is that in period of crisis when the write-off increases we have ‘over-correction’ whit the credit default risk adjustment.



France:

Sectorised provisions for bad and doubtful loans and write-offs are not available in the mandatory report from banks to the prudential authority. Only stocks of doubtful loans net from provisions by sectors are available.

Excluding risk from FISIM calculation results in slightly diminishing its level with a negligible impact on nominal GDP growth on the basis of reporting elements used for the compilation.

Italy:

Write-offs on loans are collected only are collected half-yearly since 2010 onwards with detailed enough sectorisation. Provisions (for bad and doubtful loans) are available without sectoral breakdown.

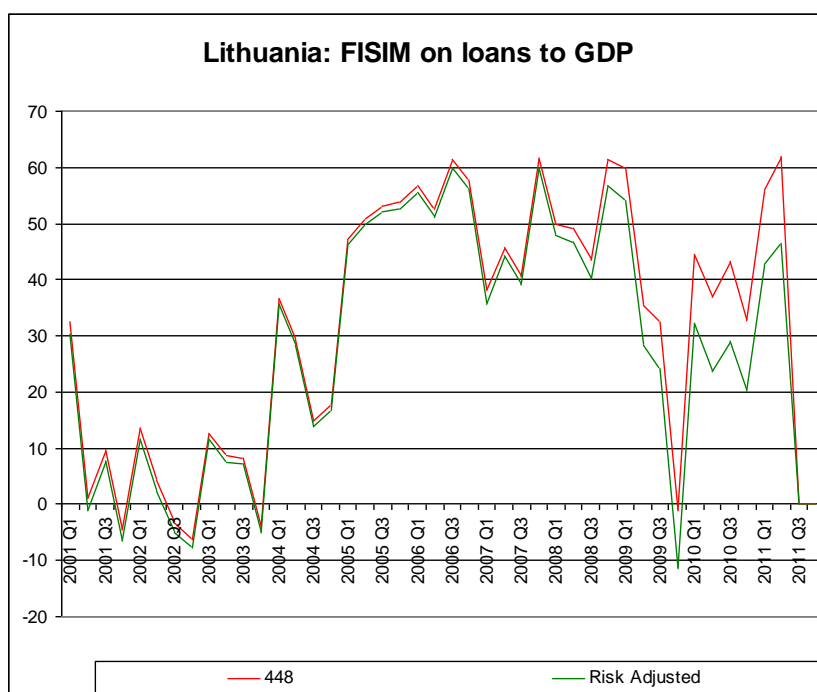
Latvia

Revaluation Adjustments are reported on Write-offs/Write-downs of Loans and Price Revaluation of Securities. The results presented were incorrect.

Lithuania

The detailed sectorised quarterly information on write-offs for loans is available from 2005. Breakdown of provisions by sectors was derived using that information and breakdown of write-offs for bad loans.

The value of FISIM on loans allocated to GDP, calculated according to the current method and the method that excludes default risk almost doesn't differ in the period from 2000 until 2008. The impact of risk adjustment on FISIM on loans allocated to GDP occurs from 2008 (especially from 2010). Risk adjustment reduces FISIM on loans allocated to GDP by about 18 % in 2010.



Luxembourg

There are no sources for write-off of loans or provisions for bad or doubtful loans on a sector basis neither from the BCL nor from the CSSF.

The only information on this subject is collected by the CSSF and consists of the “depreciation” of certain assets regrouped as portfolios (ex: hold for transactions, hold until maturity etc.). However not all loans are considered in these “depreciation” portfolios and there is no ventilation by counterpart, not even a ventilation for domestic or non-domestic.

Malta

Data are not available on sources for write-off of loans, and data on provisions is not available by sector or by residency.

The Netherlands

The write-offs are available by resident user sectors, but the provisions cannot be partitioned into sectors.

Poland

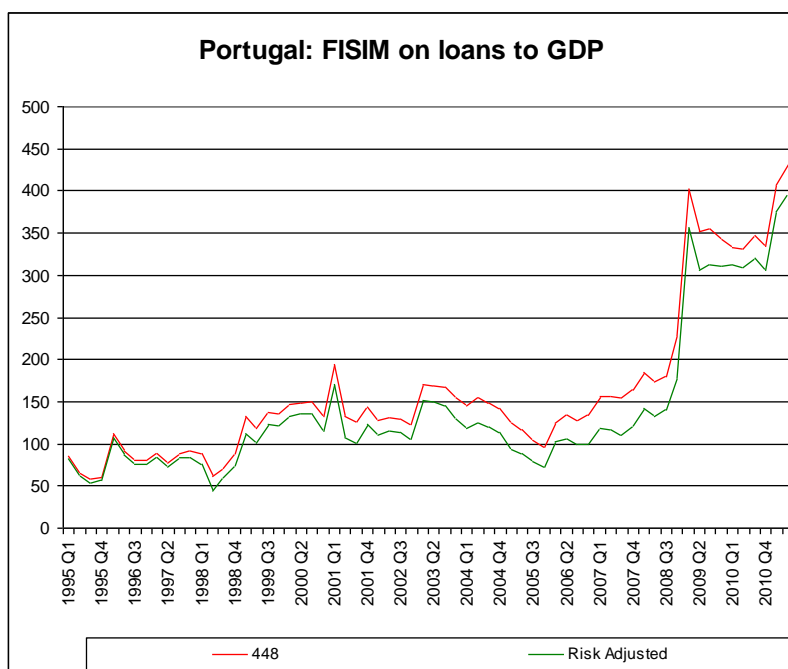
No data on provisions. Some data exist on domestic write-offs from 2009 with limited sectorisation.

Portugal

Institutional sector and purpose breakdown is only available for write-offs. For provisions for bad and doubtful loans only total amounts are available.

Risk adjustments reduce the current FISIM estimates; the differences are relevant although not considerable. The conclusion on the lower values of default risk adjusted FISIM compared with the FISIM estimates not adjusted for default was more or less expected, but surprisingly it has not differed significantly with the awake of the financial crisis.

Further thoughts are needed on this subject, given the results obtained. One relevant issue is a cost/benefit analysis on the possibility of adjusting FISIM for default risk.



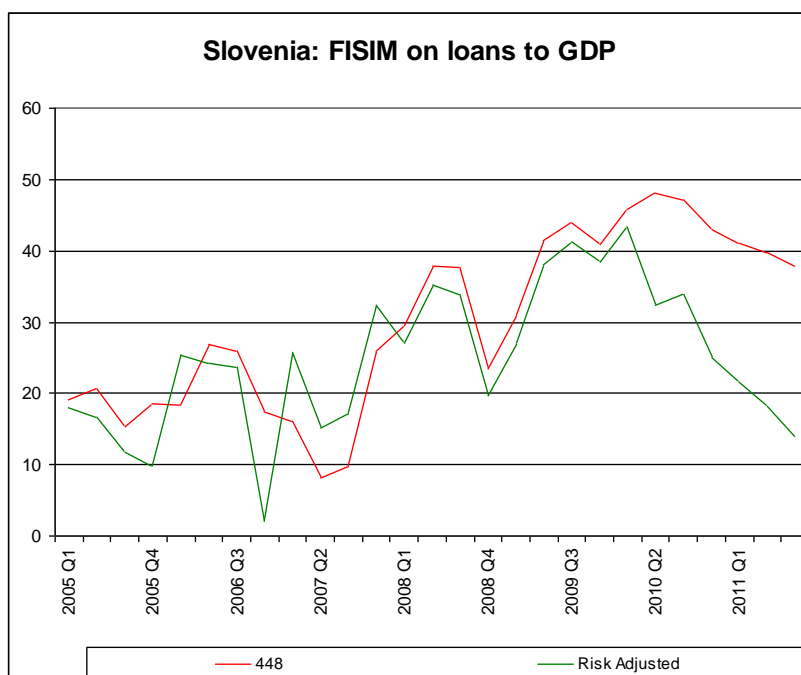
Romania

Some data provided, but further investigation is needed.

Slovenia

Data on write-offs and provisions were available for a limited period from 2005 onwards, not the whole period from 1995Q1 requested by the questionnaire.

The results in the recent period seem plausible; FISIM without the default risk are lower than original FISIM and much more so in the most recent period of increased risk. The quality of data before 2008 needs investigation.



Finland

It was stated the required data is available from Financial Supervisory data collection with the frequency of every 6 months. However, the results could not be analysed as FISIM adjustments were in many periods negative.

Sweden

The data from MFI statistics contains all the relevant information for domestic FISIM.

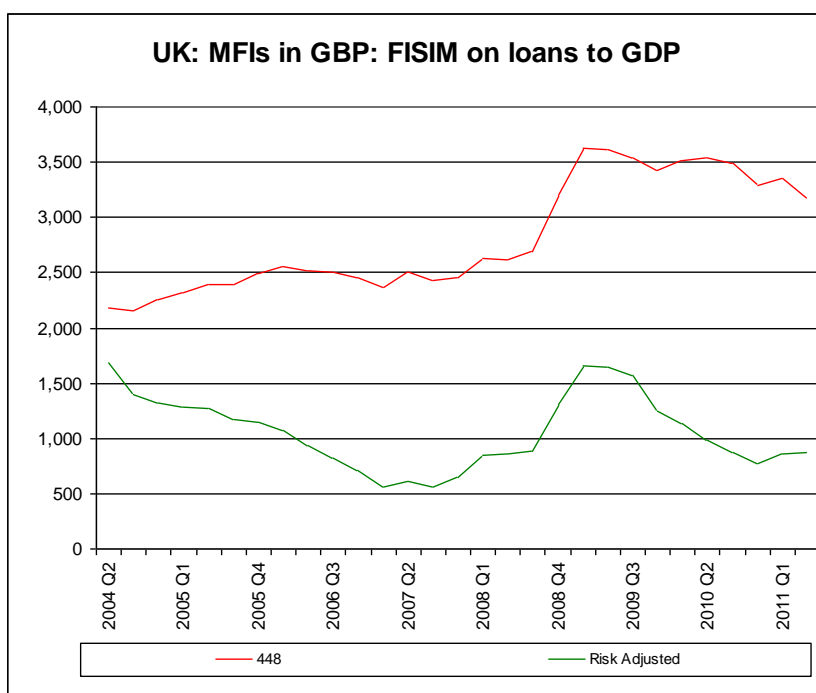
The balance of payments data contain no information on write offs and provisions for bad and doubtful loans.

However, it was stated that probably there was not enough information for the model to work.

The UK

To risk adjust FISIM accurately we needed write-offs and provisions data by sector which is available on the BoE's Form PL. We do not collect a further split of the household sector by consumers, dwellings and unincorporated business. We therefore used proportions calculated using data on the BoE's Form WO to allocate total HH provisions and write-offs to each of these three sub-sectors.

Compared to the maturity adjustment, risk adjusting FISIM is a much simpler task. There is a risk that risk adjusting may push FISIM to be more negative. If the goal is to accurately reflect expected losses, the risk weighting is clearly higher in times of distress and therefore the risk adjustment looks to be doing the job.



ECB on Euro Area aggregates

The ECB made a general remark on credit default risk adjustment, stating that:

- Even in case an appropriate measure of credit default risk was found, a very important drawback of this overall approach relates to the fact that interbank unsecured interest rates are not really risk-free any longer since the abrupt of the financial crisis. Take a short-term loan to an NFC; the interest margin is the difference between the interest rate and the Euribor and therefore it excludes the default risk of the lender (the MFI). Suppose now that default risk adjustment is performed by deducting the default risk of the borrower (the NFC in this case); the margin will then be too small as it excludes both the default risk of the lender and the one of the borrower.
- This means that should default risk adjustment be performed, the default risk of the lender should be added back to the margins to avoid an 'over-correction'.
- Conditional to this consideration, the ECB would be in favour of default risk adjustment, provided the availability of relevant data in individual countries.

2.3. Conclusions on FISIM test on default risk

The results show clearly that there are considerable problems with the availability of detailed sectorised information in substantial majority of the MSs. Even though data on write-offs or provisions for loans were available for total economy in a number of countries, the sectoral breakdown was derived using alternative source data or assumptions.

There were cases where the information on write-offs on loans was bundled with write-downs on loans, and cases where write-offs information was collected for all bad and doubtful debts (loans and securities bundled together).

The results (see the charts above) showed very little comparability between MSs. In some MSs, the risk adjustments were modest and sometimes constant over time, and in some other MSs the adjustments were significantly reducing FISIM, sometimes leading to negative FISIM.

The results on the FISIM test on default risk eliminated from the calculations of FISIM margin proved to be inconclusive, in particular due to unavailability of sectorised source data on write-offs and provisions for bad and doubtful loans in most countries.