

**EXTERNAL EVALUATION OF
THE RESEARCH OF THE BANK OF FINLAND**

by

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EXECUTIVE SUMMARY

The Bank of Finland is to be commended for its process of conducting periodic reviews of the Bank's research activities. These reviews can play an important role in helping the Bank achieve its goal to be an active and constructive member of the European System of Central Banks, with cutting-edge skills in the areas of monetary policy analysis, financial market research and in the knowledge of emerging markets important for the Finnish economy, especially Russia and China.

The previous review, conducted in 2009, made several recommendations that focused on the organization of research activities within the Bank. Overall, the Bank has successfully implemented the recommendations of that report. Two previous research programs, macroeconomics and financial markets, have been merged into a single program which aims at gaining a deeper understanding of the links between financial markets and the macroeconomy. This reorganization and the definition of the research focus appear to have been successful in increasing the perceived relevance of research for those involved in the policy process. Given rapid changes in the macroeconomic and financial environment, as well as in the challenges facing policy makers, it will be important to continuously monitor, and potentially redefine, the research focus at the Bank.

The Bank's Forecasting Unit is separate from the Research Unit. Yet the Forecasting Unit is an important consumer of research, and the challenges that it faces can often motivate research projects. While there appears to be general satisfaction with the present structure, it is important to monitor the interactions of these two units to ensure cooperation is maintained and potentially improved.

While the recommendations of the 2009 review have largely proved successful, our assessment is that the Research Unit is too small to adequately meet the various demands on it. Contributing policy-relevant work, publishing in highly regarded refereed journals, and serving as public intellectuals are all important contributions of the Research Unit, but the current staff is too small to meet expectations along all of these dimensions. We echo the 2009 review in noting that the research staff is small, and we recommend expanding the number of full-time members of the Unit.

The previous review recommended that the Bank recruit economists from the international job market for PhD economists, and the Research Unit has successfully implemented this recommendation. We encourage the Bank to continue this strategy, but we also recommend that standards for the “tenure review” be made clear to all new hires and that a more formal mentoring system, perhaps involving visiting scholars as well as senior staff members, be developed to help ensure newly hired PhD’s are able to launch successful research careers. The “post-tenure” review process for continuing research staff members also needs to be clear, with expectations for performance outlined and good performance rewarded.

The Bank of Finland Institute for Economies in Transition, BOFIT, continues to be a valuable asset for the Bank, playing an important role in monitoring developments in Russia and China as well as serving as an important center for research activities focused on transition economies. Both BOFIT and the Research Unit would benefit though if they increased their interactions with the Finnish academic community.

Measured in terms of refereed publications by Bank of Finland authors, the overall productivity of the Research Unit and BOFIT has remained roughly constant since the last review. However, based on the Bank’s system of ranking journals, we find that over half of these publications were in the lowest tier journals. There should be a concerted effort to raise the average quality of research publications. The benefits of research at central banks come primarily from research with very high academic standards. We believe increasing the weights assigned to Tier 1 and 2 journals in the internal evaluation system can help signal the importance placed on research that meets high standards.

Finally, the Bank appropriately seeks to support research activities that are relevant from the point of view of the strategic goals of the Bank. During our interviews, we received different answers when we asked individuals to describe the Bank’s strategic goals. It would be useful if these goals were clarified to ensure all staff in the Research Unit and BOFIT have a shared understanding of these goals and the way they can best contribute to achieving them.

We therefore make the following recommendations:

- 1) *Gradually increase the size of the Research Unit (excluding visiting scholars, research fellows, and scientific advisers) to 15.*

- 2) *Make the rules and regulations of the “tenure process” clear and transparent to newly hired PhD economists. This should involve an academic assessment of the candidate’s research achievements.*
- 3) *Establish a system for mentoring newly hired PhD economists.*
- 4) *Improve the annual review process of research staff. Make clear what post-tenure expectations are. Good performance should be rewarded, especially after the tenure review.*
- 5) *Increase the number and availability of research assistants.*
- 6) *Increase the interaction of the Research Unit and BOFIT with Finnish academics.*
- 7) *Increase the target quality of research publications, especially in top field journals.*
- 8) *Revisit the journal ranking system to ensure it reflects changing reputations of the journals, as well as the Bank’s interest in certain areas.*
- 9) *Increase the weights assigned to Tiers 1 and 2 in the Bank’s ranking system.*
- 10) *Clarify the strategic goals of the Bank as they relate to the role of the Research Unit to ensure there is a shared view on how research can best contribute to and be relevant for achieving these goals.*

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1. INTRODUCTION

The Board of Management of the Bank of Finland decided in 2014 to commission an external evaluation of its research activities, and invited the three authors of this report to act as evaluators. We agree with the views expressed by the previous evaluators that employing an external review process to assess research activities at the Bank of Finland provides a clear signal of the Bank's commitment to promoting strong research designed to support policy making. The present review constitutes the fourth such external review. The earlier reviews, conducted in 1999, 2004, and 2009, are available at <http://www.suomenpankki.fi/en/tutkimus/esittely/evaluaatio/pages/default.aspx>.

The terms of reference for this review, set out in Appendix I, state that:

“The Bank of Finland aims to be an active and constructive member of the European System of Central Banks. Developing a high-quality research function is seen as essential for achieving this objective. Bank of Finland's research function should enable the bank to make a significant impact not only nationally, but also at the European and international level. Bank's expertise should cover the most important strategic aspects of central banking and monetary policy, focusing on certain key priorities.

In particular, the Bank aims at possessing cutting-edge skills meeting international standards in the focal areas of monetary policy analysis, financial market research and in the knowledge of emerging markets important to the country, especially the Russian and Chinese economies. In addition to meeting the requirement of policy relevance in these focal areas, the Bank's research should aim at producing research reports that will in the end be published in refereed international academic journals.”

According to the terms of reference, the evaluation should yield an assessment of the relevance of the research activities from the point of view of the strategic goals of the Bank, and the scientific quality of the Bank's research output as a whole.

The current report is based on information about staff and organizational arrangements as of March 2015 when the review team held its site visit. The structure of the report is as follows. Section 2 reviews the main recommendations of the 2009 evaluation. Section 3 considers the organization of the research activities of the Bank of Finland. Section 4 examines the quantity and scientific quality of the research output and section 5 its relevance from the point of view of the strategic goals of the Bank. Section 6 contains our overall assessment and recommendations.

2. REVIEW OF THE 2009 EVALUATION

The previous research assessment of the Bank of Finland covered the period 2004-2009. The final report noted that “the research output of the Bank of Finland has improved substantially over the last five years, but there is still significant room for improvement to meet the high standard of the goals set by the Board.” The report made the following recommendations to achieve these goals:

- 1) *The Bank of Finland review process constitutes best practice among central banks and should be continued.*
- 2) *The Bank of Finland’s priority research areas are still appropriate, but may be fine-tuned in the ways elaborated in the report.*
- 3) *The internal rotation system into the Research Unit should end.*
- 4) *The research function should be organized into a new model that creates more synergies between staff work and pure research.*
- 5) *Shift the hiring norm to recruit researchers from the international market.*
- 6) *The marketing of the research department should be overhauled.*
- 7) *The visitors’ program could be restructured.*
- 8) *Incentives within the Institute for Economies in Transition (BOFIT) and the Research Unit should be aligned.*

Many of these recommendations have been acted upon and implemented. We next briefly comment on some details of the recommendations, and how the Bank has followed them.

We applaud the Bank of Finland for continuing the practice of the research assessment, which increases transparency, and hopefully leads to better quality research, and ultimately, via spillovers, positively affects the policy work at the Bank and the European System of Central Banks.

The Bank has responded to recommendation 2) by combining two separate research programs (macroeconomics and financial markets) into one single program which aims at gaining a deeper understanding of the links between the financial markets and the macroeconomy. This refocusing has followed at least partially from the weaknesses of macroeconomic modeling, including policy analysis,

exposed by the recent financial crisis. Thus, financial frictions are currently at the center of the model development at the Bank. We commend these efforts in responding to changes in the economic environment and building better models. Because of the rapidly changing world, it is important, however, to continuously monitor (and possibly redefine) the research focus at the Bank.

We find that recommendations 3) and 5) have been successfully implemented. We are especially glad to see that the Bank has made a very good start in hiring two qualified candidates from the international job market for PhD economists, and a third one has joined the Bank in the fall of 2015. These new hires have been given a 5-year contract with the understanding that 80% of their workload is in research. We strongly encourage that this practice be continued.

The Bank has responded to recommendation 4) by improving synergies between policy work and research. This has been implemented by a reallocation of research economists' time. Currently, research economists have roughly 30% of their time allocated to policy work, which is typically closely related to their research. But it seems that there is still some work to be done in creating synergies between policy work and research, especially with regard to the connections between the Research Unit and the other (mainly policy) units.

In addition, the Bank has implemented a system whereby members of the research staff operate as "public intellectuals" to assist and inform the Board and the senior management. This involves giving presentations of the recent literature, and briefing the Board on topics of its choice. The members of the Board seemed to be satisfied with this system, which allows for greater interaction between research work and policy making.

Finally, the Bank has reorganized the research function by establishing a steering group for research. The steering group is chaired by the Board member responsible for research and has six other members, including the Head of Research and one member from the Financial Supervisory Authority. The steering group provides the institutional backup to ensure that the allocation of resources to research and policy work runs smoothly and efficiently.

The Bank has made progress in response to recommendation 6), with an easily accessible section of the website devoted to research, which includes personal homepages for research staff.

In recommendation 7) the evaluators suggested that the visitors' program should have two objectives. First, the program should help improve the quality of the research environment by bringing new ideas and perspectives to the research staff. Second, visitors could be an asset in recruiting mainly via spreading information about the Bank and its research activities. They noted that research papers produced by visitors without involving the Bank's own staff are not that valuable, and suggested bringing in fewer high quality people, rather than maximizing the overall number, including at least one very prominent visitor each year.

The Bank has made some improvements to the visitors' program. There is a large research output from the outside visitors, but in many publications the staff of the Bank is not involved. We believe using the visitors' program to promote collaborative research is important. Also, the goal of having at least one very prominent visitor per year has not been fully achieved.

Recommendation 8) concerned the activities of BOFIT. The evaluators noted that there was not much cooperation between BOFIT and the Research Unit. The proposed alignment of incentives has not really happened, mainly because BOFIT has a different objective from research, focusing on practical policy work with a strong emphasis on monitoring closely the Russian and Chinese economies.

3. ORGANIZATION OF RESEARCH ACTIVITIES

The Bank of Finland is governed by the Parliamentary Supervisory Council and the Board. The Board (currently three members) is responsible for the administration of the Bank, and the Parliamentary Supervisory Council for overseeing the administration and other activities of the Bank, and for other statutory tasks.

The Bank has seven departments. The Research Unit and the Institute for Economies in Transition (BOFIT) belong to the Monetary Policy and Research Department. The Forecasting Unit, which also belongs to the same department, hosts the Bank's DSGE model, which is used for forecasting and policy analysis. Thus, research activities are located in three units within the Monetary Policy and Research Department.

One can question if this organization of the research activities is optimal or even appropriate. For example, some individuals we interviewed felt there was not enough cooperation between BOFIT and the Research Unit. However, BOFIT has a distinctive role: there is a lot of policy and monitoring work, so it is not straightforward (without a precise plan) to suggest that BOFIT and the Research Unit should be merged.

One may also question whether it is a good arrangement that the Forecasting Unit is separated from the Research Unit. On the one hand, the Forecasting Unit could draw upon the expertise provided by the Research Unit. On the other hand, issues raised by the Forecasting Unit could motivate research projects. Whether the current separation allows such interactions is an open issue.

Although we are not proposing a change in the current arrangements, we believe that the Bank should monitor the organization structure to ensure it continues to meet the Bank's strategic goals. Also, it would be important, especially from the point of view of research, to think seriously of ways to improve cooperation between these units.

There is a (not unanimous) view that the Research Unit has become a bit too separated from the rest of the Bank, and specifically from the Financial Stability and Statistics Department, which is a heavy user of

research in the area of macro-prudential regulation. There also seems to be some feeling of disconnect between the policy work and the Research Unit. The question is whether there is some organizational way to improve things between research and policy at the Bank. One suggestion we heard was to reinstitute the old rotation system, where “policy economists” spend some time at the Research Unit. The previous evaluation team suggested that this rotation system should be ended, and the Bank subsequently followed this advice. We concur with the previous reviewers that returning to the old system is not the solution. But we think that it is important to find ways to improve the connection between the Research Unit and the other research-dependent departments of the Bank. One possibility would be to set up more ad hoc horizontal teams, similar to the examples of such teams we were provided, drawn from different departments to work on specific topics for a limited period of time.

The number of people in the Research Unit is quite small, varying in the range of 12-14 during the assessment period. 60-70% of their time is supposed to be devoted to research. At the time of our site visit, in addition to the Head of Research there were 3 research advisers, 5 research economists, 2 visiting scholars, and 5 research fellows and scientific advisers. The fellows and advisers visit the Unit regularly, and at least one of the advisers spends one to two days per week in the Unit.

We believe that the Research Unit is too small given (i) the Bank’s desire that research should have a significant impact at the European and international level, (ii) the huge range of open research questions raised as a consequence of the Global Financial Crisis and subsequent developments internationally and within the euro zone, and (iii) the fact that one needs a minimum critical mass of researchers to be effective. Thus, we recommend an increase in the full-time permanent staff in research.

Recommendation 1: *Gradually increase the size of the Research Unit (excluding visiting scholars, research fellows, and scientific advisers) to 15.*

The Bank has been successful in recruiting PhD economists in the international job market. Discussions with staff members suggest that not everyone knew what was expected during the initial 5-year contract to get a permanent position. This is a weakness as it is important for newly recruited economists to have a clear understanding of the requirements in terms of publications, policy work, etc. for getting “tenure.”

Recommendation 2: Make the rules and regulations of the “tenure process” clear and transparent to newly hired PhD economists. This should involve an academic assessment of the candidate’s research achievements.

If the Bank is to successfully hire and retain economists, clear expectations are important, but so too is a system to ensure that junior economists are properly mentored. This can be done by senior economists who are permanent members of Research Unit or by external scientific advisers (or both).

Recommendation 3: Establish a system for mentoring newly hired PhD economists.

Expectations of higher research quality must be supported by appropriate incentives and a review process that rewards staff for good research performance not just as part of the tenure review process for new hires but also for post-tenure evaluations. Staff should have a clear understanding of what is expected after tenure in terms of research productivity but also for contributions to other aspects of the Research Unit’s goals.

Recommendation 4: Improve the annual review process of research staff. Make clear what post-tenure expectations are. Good performance should be rewarded, especially after the tenure review.

There were concerns expressed by at least some researchers that there are not enough research assistants to support their work. It makes a lot of sense to have more of these around, since it frees some valuable time for the researchers, and makes the Research Unit more attractive for recruitment purposes. A cost effective way to do it would be to have assistants with temporary contracts (no more than 2 years), particularly students who have received a Master’s degree and plan to continue their graduate studies toward a PhD degree; such individuals assistants could derive a large benefit from their research assistantships at the Bank.

Recommendation 5: Increase the number and availability of research assistants.

The Research Unit has a regular seminar series that brings in outside academics and central bank economists. Between January 2009 and June 2015, 76 seminars were held, which is essentially one per

month. However, in the years 2011 to 2014 there were only 35 seminars. It is important to maintain an active program of seminars, and the low numbers that were common for a few years should not be repeated.

BOFIT has had a very active seminar series, with 196 held over these six and a half years. In the years 2009 to 2011 a majority of these were presentations by BOFIT staff or affiliated researchers. For the last two and a half years, the presentations have been primarily by outside speakers. This is a good development as it allows Bank researchers to interact with outside scholars.

Both the Research Unit and BOFIT have been active in hosting conferences, with each unit hosting 2-3 per year. These have been of high quality, with major researchers from universities and international organizations participating. These events provide means of increasing the visibility of research conducted at the Bank of Finland, and can also provide opportunities for younger economists at the Bank to gain an audience for their research.

Many research-oriented central banks have close relations with academic economists in their country, region or city. This is a cost-efficient way to lever up the research resources of central banks and to encourage the contribution of outsiders to the issues faced by them. At the same time, it enhances the reputation of the central bank in their natural environment, and provides a positive externality on the universities.

In our view, the relationship between the Bank of Finland researchers and the Finnish academic economists could be profitably strengthened, via consulting and visiting arrangement like those used by other central banks in Europe and the US, as well as through the more active participation of academics in seminars and conferences. This could bring nontrivial benefits to both parties.

Recommendation 6: *Increase the interaction of the Research Unit and BOFIT with Finnish academics.*

4. QUANTITY AND SCIENTIFIC QUALITY OF RESEARCH

The terms of reference for the external review asked specifically that we assess “the scientific quality of the Bank’s research output as a whole.” To assist in addressing this issue we requested and were provided data on working papers and publications by Bank economists and visiting scholars.

A first pass at scientific quality can be obtained by looking at the position of the Bank of Finland among central banks in the European Union (EU) according to the Research Papers in Economics (RePEc) classification of top European institutions: <https://ideas.repec.org/top/top.europe.html>. Table 1 shows the ranking of the top 10 European central banks as of September 2015, leaving out the European Central Bank (ECB) which comes first, together with their capital key (share of the capital of the ECB computed as the average of the shares of the respective Member States in the total population and gross domestic product of the EU).

Table 1: Top 10 Central banks in the European Union in the RePEC classification

RePEC ranking	Capital key (%)
1. Bank of Italy	12.31
2. Bank of France	14.18
3. Bank of England	13.67
4. Bank of Spain	8.84
5. Bank of The Netherlands	4.00
6. Bank of Sweden	2.27
7. Deutsche Bundesbank	18.00
8. Bank of Portugal	1.74
9. Bank of the Czech Republic	1.61
10. Bank of Finland	1.26

The ranking of the Bank of Finland appears broadly in line with the size of the country (the striking outlier is the Bundesbank), but it is above the central banks of Belgium (with a capital key of 2.48),

Ireland (1.16), Austria (1.96), Greece (2.03), Poland (5.12), and Luxembourg (0.20), in this order, with the rest of the central banks of the EU (including the Bank of Denmark) not appearing in the RePEC classification. Outside of the EU, the Swiss National Bank is placed between the Bundesbank and the Bank of Portugal, and the Bank of Norway between the central banks of Greece and Poland.

Going beyond these rankings, to assess research quality we read selected journal publications, and computed the total number of publications as well as the number of publications adjusted for journal quality (using the ranking system of the Bank of Finland, which is very similar to the one used by the ECB).

Table 2 presents summary measures of the Bank's publication output over the 2009-2015 period. This information was provided by the Bank and covers published or forthcoming articles as of April 2015. We restrict attention here to English language publications that appeared in journals listed in the Bank's ranking system and which had at least one in-house Bank of Finland author. Thus, we exclude working papers and publications solely authored by visitors to the Bank. Table 2 shows how publications are distributed among the Research Unit, BOFIT, and the rest of the Bank. It also shows the breakdown according to the Bank's ranking of journals. The results are presented in terms of annual averages obtained by dividing the total number of publications by 6.5 years. There may be some overlap with the previous external review as papers listed as forthcoming and included in the last review show up as publications in our count.

The Bank uses a ranking system for journal publications, with journals classified in four tiers. Tier 1 has the top-5 journals *American Economic Review*, *Econometrica*, *Journal of Political Economy*, *Quarterly Journal of Economics*, and *Review of Economic Studies* plus *Review of Economics and Statistics*, *Journal of Finance*, and *Journal of Monetary Economics*. These same eight journals are ranked at the top in the ECB's publication ranking system. Tier 2 has 30 journals, including almost all the remaining top field journals plus the *Economic Journal* and the *Journal of the European Economic Association*. Tier 3 has 61 mostly field journals, and Tier 4 comprises all other refereed journals plus book chapters if they have undergone a refereeing process. For evaluation purposes, the Bank assigns weights of 8, 4, 2, and 1 to Tiers 1 through 4, respectively.

**Table 2: Publications in refereed journals
Annual averages 2009-2015¹**

	Research Unit ²	BOFIT	Other	Total
Number of papers	11.08	7.85	2.15	21.08
Rank 1 (weight 8)	0.15	0	0.15	0.31
Rank 2 (weight 4)	1.08	0.15	0.46	1.69
Rank 3 (weight 2)	4.15	2.15	0.92	7.23
Rank 4 (weight 1)	5.69	5.54	0.62	11.85
Average weight	1.76	1.33	2.57	1.69

1. Includes forthcoming articles for 2015 as of April 2015. Annual average based on 6.5 years.
2. Includes cases of joint affiliation with the Research Unit.

According to Table 2, Bank of Finland staff has published an average of 21 articles per year over the period 2009-2015, a number that is essentially unchanged from the level reported by the previous review team for the 2004-2009 period (and from the 2004 review report as well). Authors with a Research Unit (RU) affiliation account for roughly half of all publications, though this may be slightly inflated as we have included under RU all papers with at least one author listing RU as his or her unit, as well as papers for which a single author lists multiple units if one was RU.

The comparison with the previous external review shows a remarkable improvement of BOFIT, from 4.0 to 7.85 average articles per year, which is compensated by a very significant fall from 18.0 for the former two units (Macroeconomics and Financial Markets) to 11.08 corresponding to the new Research Unit. Still, the number of articles per Research Unit member per year is 0.9, a figure higher than the 0.6 papers per research staff member per year reported in the 2011 external review of the Directorate General Research of the European Central Bank (ECB).

Over the 2009-2015 period, 10 percent of the Bank of Finland publications appeared in Tier 1 or 2 journals, with the bulk of those in Tier 2 journals. This compares unfavorably with data reported in the 2011 external review of the ECB Directorate General Research which found that 40 percent of

publications appeared in Tier 1 or 2 journals. At the other end, 56 percent of the Bank of Finland publications were in Tier 4 journals, compared to 17 percent for the ECB.

Over this period there were only two Tier 1 publications, in the *Journal of Monetary Economics* and in the *Review of Economics and Statistics*, but only the latter was authored by a member of the Research Unit (the other by a member of the Board). Of the eleven articles in Tier 2 journals, three appeared in the *Journal of Money, Credit and Banking* and two in the *International Journal of Central Banking*, both highly appropriate outlets for central bank research. One article appeared in the *American Economic Journal: Macroeconomics*. While this is a relatively new journal, it has risen rapidly in reputation (15 in the RePEc ranking and a Journal Citation Report impact factor of 3.78) and should be viewed as at least equivalent to the Tier 1 rated *Journal of Monetary Economics* (whose impact factor is 1.73).

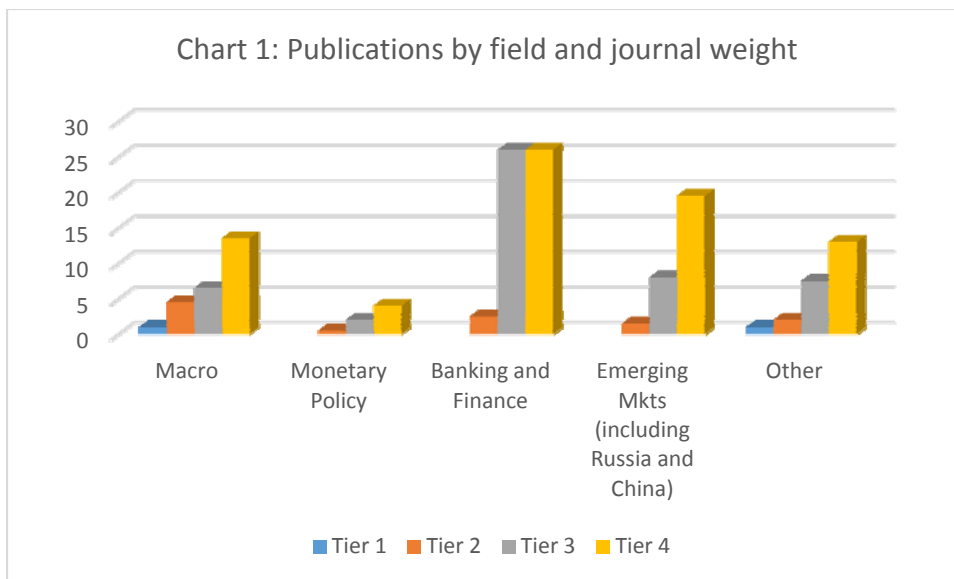
Forty seven papers were published in 22 different Tier 3 journals, but seven journals accounted for thirty of these publications. The most common outlets were *Journal of Banking and Finance* (6), *Journal of Financial Stability* (6), *Economics of Transition* (4), *China Economic Review* (4), *Scandinavian Journal of Economics* (4), *Journal of Economic Dynamics and Control* (3), and *Economic Letters* (3). These outlets reflect, in part, the focus of research in BOFIT.

Publications in Tier 4 journals were distributed over a very large number of outlets, with the seventy seven papers appearing in 59 different journals. Only *Economic Systems* (6), and *Comparative Economic Studies*, *Applied Economic Letters*, and *Pacific Economic Review* (all with 3 each) had more than two papers by Bank of Finland authors.

Looking now at the last row of Table 2, the average score of the publications during the 2009-2015 period (using the weights of 8, 4, 2, and 1 assigned to Tiers 1 through 4, respectively) was 1.69. As noted in the previous review, the BOFIT publications have a lower average score, but as also noted in there, this in part reflects the fact that the more focused research of BOFIT is more difficult to publish in the more widely-read journals. Still, only one BOFIT publication appeared in a Tier 2 journal (*Journal of Comparative Economics*).

Chart 1 provides some indication of the distribution of publications across broad topic areas and across journal tiers. Publications were classified as dealing with topics in either macroeconomics, monetary

policy, banking and finance, emerging markets, or other based on their title. Classifying papers based on their title provides a rough division at best, but it does give some indication of the focus of the published work. Many papers dealt with topics in more than one area and these were given partial weights (for example, a paper on banking in Russia counts as one half for banking and finance and one half for emerging markets).



Banking and finance is the most active area of research at the Bank, in line with the explicit focus of the Research Unit on “the interaction of the macroeconomy and the financial markets and their stability.” However, a significant number of papers in the banking and finance category dealt with financial markets in Russia and China and so may be well aligned with the mission of BOFIT but less so with a focus on the interactions of financial market with the macroeconomy more generally. In contrast, relatively little Bank research deals with monetary policy topics and several of the papers falling into this classification dealt with aspects of Chinese monetary policy. Interestingly, there appeared to be no work on monetary policy in a currency union or on fiscal and monetary policy interactions in a currency union, highly relevant topics for the members of the Eurosystem.

To complete the previous analysis of research quality, in addition to the Bank of Finland journal rankings we examine the performance using as weights the Journal of Citation Reports (JCR) impact factors. This

was also done by the previous external review and therefore is useful for assessing changes in research productivity. The results are in Table 3. The first row coincides with the first row of Table 2, showing the average number of papers in Tiers 1-4 journals. The second row shows the average number of papers in JCR journals, a smaller number given that lower quality journals do not appear in the JCR database. (An exception worth noting is the *International Journal of Central Banking*, a Tier 2 journal on the Bank's scale, but which is not included in the JCR rankings.) The third row shows the articles in JCR journals weighted by their impact factors, and the last row shows the average journal impact, obtained by dividing the numbers in the third and the second rows.

**Table 3: Publications in JCR ranked journals
Annual averages 2009-2015¹**

	Research Unit ²	BOFIT	Other	Total
Papers in Tiers 1-4 journals	11.08	7.85	2.15	21.08
Papers in JCR journals	6.00	4.62	1.69	12.31
Papers in JCR journals weighted by impact factor	6.16	3.93	1.76	11.85
Average journal impact	1.03	0.85	1.04	0.96

1. Includes forthcoming articles for 2015 as of April 2015. Annual average based on 6.5 years.
2. Includes cases of joint affiliation with the Research Unit.

The results in Table 3 show a marginal improvement over the results reported in Table 1 of the previous external review. For the 1999-2009 period, 53 percent of the publications appeared in JCR ranked journals, while the corresponding figure for 2009-2015 has risen to 57 percent. In terms of average journal impact, there has been a small reduction from 1.0 to 0.96, which is mainly explained by the higher number of BOFIT publications which have lower average impact than the publications of the Research Unit. The average impact of BOFIT articles, though, has risen since the last review from 0.75 to 0.85.

Summing up, the research output in terms of the average number of papers published in the period 2009-2015 has not changed relative to the level reported in previous evaluations, although this figure results from the increase in the output of BOFIT which compensates the decline in the output of the Research Unit. More importantly, there has not been an improvement in the average quality of the papers, measured by either the Bank's ranking system for journal publications or the impact factor of JCR publications.

We believe that the benefits of research at central banks come primarily from research with very high academic standards. Publications in Tier 4 journals, which currently comprise 56 percent of the Bank's research output are simply not good enough. Thus, we recommend aiming at publishing papers in higher quality journals.

Recommendation 7: Increase the target quality of research publications, especially in top field journals.

The journal ranking system employed by the Bank is a very useful tool to signal that quality and not just quantity is important in measuring research output. However, the usefulness of such a system is lessened to the degree that the underlying classifications and weightings are not appropriately designed. The Bank's ranking system has 38 journals in Tiers 1 and 2, the top two categories. These 38 include the *B.E. Journal of Macroeconomics*, with a JCR impact factor of 0.389. In contrast, the *Journal of Economic Growth*, with a JCR impact factor of 3.042 which places it 18th out of over 300 JCR ranked journals, is in Tier 3. Other examples of potential misalignments are the *Journal of Financial Economics* (Tier 2, with an impact factor of 4.05), *AEJ: Macroeconomics* (Tier 2, with an impact factor of 3.78), *Journal of the European Economic Association* (Tier 2, with an impact factor of 3.33), and the *Review of Financial Studies* (Tier 2, with an impact factor of 3.17). These five journals are all highly regarded, and would be excellent outlets for Bank research, and each has a higher JCR ranking than the *Journal of Monetary Economics*, which is a Tier 1 journal with an impact factor of 1.73.

To be sure, we are not advocating deciding on the rankings on the basis of JCR impact factors, but attention should be devoted to making sure that the rankings used by the Bank reflect the journals' relative academic standing as well as the Bank's special interest in specific research fields. For example, given the Bank's desire to promote research that addresses the interactions of the macroeconomy and

the financial markets and their stability, the journal ranking system should properly reward publications in journals that specialize in these areas.

Recommendation 8: *Revisit the journal ranking system to ensure it reflects changing reputations of the journals, as well as the Bank's interest in certain areas.*

More importantly, to give appropriate signals to the staff on the desire to aim at higher quality publications, more weight should be given to journals in Tiers 1 and 2.

Recommendation 9: *Increase the weights assigned to Tiers 1 and 2 in the Bank's ranking system.*

5. RELEVANCE OF RESEARCH

The terms of reference for the external review also asked us to assess “the relevance of the research activities from the point of view of the strategic goals of the Bank.” In attempting to address this issue, we asked senior management and individual members of the Research Unit to provide us with their understanding of the Bank’s strategic goals.

Our questions on this topic elicited numerous responses, including “to be an influential member of the Eurosystem,” “second to none,” “among three best,” and “constructive member of the euro zone providing good input and ideas.” All these statements of the Bank’s strategic goals are consistent with the objective of promoting research excellence that contributes to the Bank’s role as a member of the Eurosystem. However, the fact that there did not seem to be a clear and commonly shared language to describe the Bank’s strategic goals can potentially lead to confusion. Therefore, we recommend that staff and senior management share a common understanding of the goals of the Bank and the role of research in furthering those goals.

Recommendation 10: Clarify the strategic goals of the Bank as they relate to the role of the Research Unit to ensure there is a shared view on how research can best contribute to and be relevant for achieving these goals.

We asked many of those we interviewed whether they felt the research conducted in the Bank was relevant. Respondents seemed to be generally satisfied with its relevance. In fact, the view was expressed that the research work has become more relevant for policy makers in the post-Global Financial Crisis environment. Most internal “consumers” of research (senior management, staff from other units) seemed satisfied with the relevance of the research and with the role of research staff as “public intellectuals” who can contribute to the overall environment of the Bank. Some expressed the view that the level of input of the research staff into the policy process was satisfactory now, in part because issues of financial stability were higher on the research agenda. However, some individuals we met with felt the Research Unit had too little of a requirement to contribute to policy objectives, that research was disconnected from policy work, and that the Research Unit has become too separated.

Many of the individuals we spoke with expressed a need for more research involvement with policy issues related to financial stability. At the same time, it was recognized that there were resource constraints that limit the possibility of generating more policy motivated and relevant research. The Bank could allocate more of the existing resources in research to work on projects that feed directly into policy work, but this will make the Research Unit less able to attract good economists in the international market, and it is unlikely to produce a sustainable increase in high-quality policy-relevant research.

The desire for a larger research contribution on financial and macro-prudential issues did not appear to reflect unhappiness with the current level of input from research to policy departments, or any dissatisfaction with the existing working relationships. Instead, it stemmed simply from the fact that there is so much work to be done in these areas. The Research Unit's stated focus on "the interaction of the macroeconomy and the financial markets and their stability" should be quite supportive of work on macro-prudential topics, but the small size of the research staff is the chief limitation on the ability of the Research Unit to provide more policy-relevant research in this area. In fact, the working relationship between the Research Unit and Financial Stability and Statistics Department seems to be functioning better than it had in the past.

We fully support the focus on real-financial interactions, which is an area in which good research can make a major contribution both to the academic literature and to policy design. Whether this stated focus has translated into publications addressing issues in this area is less clear. Limiting attention only to articles published in Tier 1-3 journals, the classification used in Chart 1 to assess the distribution of research across broad topic areas indicates roughly 20% of these publications were on macro topics, 5% on monetary policy, 45% on banking and finance, 15% on emerging markets, and 15% on other topics. The heavy concentration on banking and finance is potentially consistent with work examining the interactions of the macroeconomy and financial markets, but most of the banking and finance papers that overlap with another category do so with work on emerging markets. Among the Tier 1 and 2 papers, only two seemed to deal with topics that centered on the interactions between the real and financial sides in ways that were clearly aligned with the stated focus. Thus, there is more that can be done in aligning research activity with the stated focus. One way to ensure more work is done in this area is to use the hiring process to target individuals working on the Bank's priority topics.

In general, the comments we received reflected the competing demands on a small research staff. Involvement in policy-related projects, playing a role as a public intellectual, and contributing research that is published in Tier 1-3 journals can be mutually reinforcing activities as successful researchers at central banks are typically there because of a basic interest in policy issues. However, a research staff cannot be all things to all people. Currently, the Research Unit seems to be doing a good job at balancing these competing demands: there is general satisfaction with the contributions of the research staff, while the staff themselves seem satisfied with the current organization of research and their roles within it.

However, balancing the demand on the Research Unit may become more difficult if, as we recommend, the Unit strives to increase the share of research published in highly ranked journals. It will be especially important to protect newly hired PhD economists from demands on their time that conflict with their ability to launch successful research careers. Doing so will be the best way to retain the type of staff who will also be the most valuable over the years in contributing to policy issues.

During our interviews, there was some discussion of whether the BOFIT should be located at the Bank at all, or whether it should move to another institution (e.g., the University of Helsinki). In this discussion, however, no serious arguments were raised to having BOFIT located outside the Bank. In fact, the management of the Bank seemed to be quite happy about the fact that BOFIT is located at the Bank praising the visibility BOFIT brings to it.

The work at BOFIT is not completely focused on research. It has a role in policy work, and a strong emphasis on the monitoring and observing especially the Russian and Chinese economies. The relevance of the research conducted at BOFIT should thus be assessed based on the duties and requirements that it has. During the assessment period, by far the majority of the published research of the unit has been on Russia and China. The distribution between them is quite even. The research conducted at BOFIT has thus been very relevant for its functions.

During the review period, there was only one Tier 2 publication by a permanent member of the BOFIT group, and none in Tier 1. Improving the quality of research work at BOFIT would benefit also its other functions. As noted above, the more focused research of BOFIT is an obstacle for achieving a higher level in quality as measured by the Bank's journal ranking system or standard citation rankings of journals.

But ultimately, the quality of recruitments and the creation of appropriate incentives are the key vehicles for improving the quality of research.

The 2009 review report stated that “setting the research agenda for BOFIT is more challenging”. They were questioning if there can be long-term success in doing research on China. Part of the warning stemmed from the fact that the issues of the Chinese economy were being studied in many competing institutions all over the world. The assessment team speculated that over the long term the Bank is likely to scale back its research efforts on China. During the assessment period it is hard to see that there has been any scaling back. In contrast, Russia is and will be very important to Finland’s economy and Finland’s location gives it a comparative advantage as a center for research on the Russian economy. We encourage the Bank to ensure sufficient resources are devoted to monitoring and conducting research focusing on Russia. The growing global importance of countries such as India as well as the African continent will make them more important players in the near future, and also therefore more important for Finland. Based on BOFIT’s past work and the experiences of its researchers, we think that it should be well prepared to tackle the economic issues of those areas, too. Thus, it may be appropriate to broaden the focus of BOFIT while continuing to be a world center for research on the Russian economy.

6. OVERALL ASSESSMENT AND RECOMMENDATIONS

The Bank of Finland is to be commended for its process of conducting periodic reviews of the Bank's research activities. These reviews can play an important role in helping the Bank achieve its goal to be an active and constructive member of the European System of Central Banks, with cutting-edge skills in the areas of monetary policy analysis, financial market research and in the knowledge of emerging markets important for the Finnish economy, especially Russia and China.

We also commend the Bank of Finland for implementing the recommendations of the previous review, conducted in 2009. Of special relevance is the success in starting to recruit PhD economists in the international job market. Having done this, it is now important to clarify the review process for research economists, both at the tenure and post-tenure stage. In addition, there are still challenges in promoting synergies between the research and the policy units. But perhaps the most important point of our review is that the Bank of Finland should aim at achieving higher standards in its research publications. The 2009 review concluded the quality of peer reviewed publications had improved since the previous review. It appears to have stayed unchanged (perhaps fallen in the Research Unit while risen in BOFIT), but certainly does not show significant improvements since the last review.

We next summarize our main recommendations in the order discussed in our report.

The consequences of the Global Financial Crisis for banking and financial sector regulation, including the design of tools for macroprudential policies, the experiences with extremely low interest rates and balance sheet policies, the fiscal issues associated with austerity programs and the appropriate design of fiscal policies within a currency union have raised important issues that affect central banks and that call for new research. It is difficult to see how the Bank of Finland can effectively contribute to this research and serve a constructive role in the European System of Central Banks with its current size. Expanding the number of research economists would allow the Bank to develop greater depth in critical areas (e.g., financial and real-side interactions), helping to avoid the problem that, with small groups involved in an area, a single departure can be very disruptive.

Recommendation 1: Gradually increase the size of the Research Unit (excluding visiting scholars, research fellows, and scientific advisers) to 15.

The Bank has been successful in hiring in the international market, but recruiting and retaining good PhD economists will be aided by ensuring there are clear expectations about the tenure process. While it is reasonable to give weight to policy work as well as research accomplishments in evaluating staff, economists who do not establish a clear portfolio of high-quality academic publications before tenure are unlikely to be productive researchers post-tenure. And if tenure is based primarily on a candidate's research record, then the Bank should ensure new hires are provided with the best possible opportunity to succeed. A system for mentoring newly hired PhD economists, perhaps involving external academic visitors as well as senior Bank staff, can often be critical in allowing them to launch a successful research career. In addition, expanding the availability of research assistants can contribute to the productivity of staff economists, both on their individual research projects and on collaborative projects. It is also a way to support promising young economists who may then go on to earn PhDs. Thus, our next four recommendations are the following:

Recommendation 2: Make the rules and regulations of the “tenure process” clear and transparent to newly hired PhD economists. This should involve an academic assessment of the candidate's research achievements.

Recommendation 3: Establish a system for mentoring newly hired PhD economists.

Recommendation 4: Improve the annual review process of research staff. Make clear what post-tenure expectations are. Good performance should be rewarded, especially after the tenure review.

Recommendation 5: Increase the number and availability of research assistants.

It would be of great service to the Finnish academic community, especially outside Helsinki, if the relations between the Bank's research function and the Finnish economics academic community could be strengthened. The model here could perhaps be the arrangements that have been in place since the mid 1970's between the Federal Reserve Bank of Minneapolis and the Department of Economics of the

University of Minnesota. Improving the interaction between the Finnish academia and the Bank at large would bring about nontrivial further benefits to both parties.

Recommendation 6: Increase the interaction of the Research Unit and BOFIT with Finnish academics.

The next three recommendations deal with raising the overall quality and international visibility of research at the Bank. There should be a concerted effort to raise the average quality of research publications. As noted above, the benefits of research at central banks come primarily from research with very high academic standards.

Recommendation 7: Increase the target quality of research publications, especially in top field journals.

Recommendation 8: Revisit the journal ranking system to ensure it reflects changing reputations of the journals, as well as the Bank's interest in certain areas.

Recommendation 9: Increase the weights assigned to Tiers 1 and 2 in the Bank's ranking system.

Our final recommendation seeks to ensure that senior management and staff economists have a shared view of the role of the Research Unit. There should be a common understanding of the Bank's strategic goals and how these goals translate into expectations for the Research Unit's role in meeting these goals. Greater clarity will help ensure resources within the Unit are best managed in the face of competing demands.

Recommendation 10: Clarify the strategic goals of the Bank as they relate to the role of the Research Unit to ensure there is a shared view on how research can best contribute to and be relevant for achieving these goals.

Appendix I
TERMS OF REFERENCE FOR THE EXTERNAL EVALUATION OF
THE RESEARCH ACTIVITIES OF THE BANK OF FINLAND

1. Purpose of the evaluation

The Bank of Finland aims to be an active and constructive member of the European System of Central Banks. Developing a high-quality research function is seen as essential for achieving this objective. Bank of Finland's research function should enable the bank to make a significant impact not only nationally, but also at the European and international level. Bank's expertise should cover the most important strategic aspects of central banking and monetary policy, focusing on certain key priorities.

In particular, the Bank aims at possessing cutting-edge skills meeting international standards in the focal areas of monetary policy analysis, financial market research and in the knowledge of emerging markets important to the country, especially the Russian and Chinese economies. In addition to meeting the requirement of policy relevance in these focal areas, the Bank's research should aim at producing research reports that will in the end be published in refereed international academic journals.

To facilitate the achievement of these strategic objectives, the Board of Management of the Bank of Finland has decided to ask for an external evaluation of the research activities of the Bank. The purpose of this evaluation is to provide an objective basis for developing the research function of the Bank further. In particular, the evaluation should yield an assessment of:

- The relevance of the research activities from the point of view of the strategic goals of the Bank.
- The scientific quality of the Bank's research output as a whole.

The evaluators shall conduct their work freely and objectively and shall render impartial judgment and make recommendations for improving the research performance of the Bank of Finland to the best of their professional abilities. Research evaluation should preferably be concluded and report submitted to the Bank by the beginning of November 2015.

2. Evaluators

The Bank has invited three experts, Prof. Mikko Puhakka (Oulu Business School, University of Oulu), Prof. Rafael Repullo (Centro de Estudios Monetarios y Financieros), and Prof. Carl Walsh (University of California, Santa Cruz).

Appendix II
LIST OF INDIVIDUALS INTERVIEWED

Zuzana Fungacova (Adviser, BOFIT)
Adam Gulan (Research Economist)
Markus Haavio (Research Economist)
Pentti Hakkarainen (Deputy Governor)
Seppo Honkapohja (Board Member)
Esa Jokivuolle (Senior Adviser, Research Unit)
Karlo Kauko (Research Economist)
Juha Kilponen (Head of Office, Monetary Policy and Research Department)
Ilkka Korhonen (Head of BOFIT)
Erkki Liikanen (Governor)
Elisa Newby (Head of Office, Banking Department)
Maritta Paloviita (Research Economist)
Laura Solanko (Senior Adviser, BOFIT)
Juha Tarkka (Adviser to the Board)
Jouni Timonen (Head of Office, Financial Markets and Statistics Department)
Tuomas Välimäki (Head of Monetary Policy and Research Department)
Fabio Verona (Research Economist)
Jouko Vilmunen (Head of Research)
Kimmo Virolainen (Head of Financial Markets and Statistics Department)
Laurent Weil (Research Fellow, BOFIT)

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