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Economic Research in Norway: Institutions, resources, personnel and publishing

Report to the evaluation panel

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Preface

The Research Council of Norway regularly conducts evaluations of selected research fields. This working paper was commissioned by the Research Council of Norway and has been prepared as a background document for an expert committee planned to start an evaluation of economic research in Norway work autumn 2006.

The report is authored by Langfeldt. Kristoffer Rørstad assisted in preparing the data. Randi Søgnen, Dag Aksnes, Kirsten Wille Maus and Vera Schwach commented on the draft report.

Oslo, June 2006

Petter Aasen

Director

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Executive summary

This report was prepared as a background document for the evaluation of economics research in Norway, planned to start autumn 2006. It presents data on the personnel, economic resources and international publishing related to Norwegian economics research. In most cases, data for 2003 were the most current information available when writing the report.

Personnel in Norwegian economic research

Personnel in economic research are spread on all different kinds of Norwegian research institutions: universities, specialised university institutions, state university colleges, as well as research institutes outside higher education institutions. In 2003 there were in total 775 researchers in Norway with educational background in economics. Of these, 357 worked at one of the 20 units selected for the evaluation.

The Research Council of Norway (RCN) selected the units to be evaluated based on their numbers of researchers in the fields – i.e. present research and not educational background was decisive. A minimum of 5-6 researchers with doctoral level competence, active in the field of economics (including financial economics), was required. The 20 selected units belong to 17 different organisations: six universities, two specialised university institutions, three state university colleges and six research institutes.

In addition to researchers with educational background in economics, the 20 selected units also employ researchers with a wide range of other educational background, e.g. sociologists, mathematicians, natural scientists and engineers. The total scholarly personnel at these units amounted to 732 persons in 2003. The proportion of economists at the relevant units varied from 17 to 92 percent. It should be noted that in some cases educational background might not be a good indicator for present research activities, and has not been decisive for the RCN when selecting the units to be evaluated. In addition, some of the staff members might have an educational background in economics not registered in official statistics. When presenting statistics on the selected units we therefore include all scholarly personnel, not only the registered economists.

Looking at all scholarly staff at all the involved units we find that 34 percent are professors, 40 percent are researchers or postdocs, 17 percent holds a recruitment positions (PhD students and research assistants) and 8 percent hold a teaching position. Moreover, 51 percent of the more senor staff hold a doctoral degree. There are however, large variations between the research units in composition of the personnel. The proportion of the staff holding a recruitment position varies from zero to 53 percent. Within the higher education sector, the proportion of professors varies from 31 to 81 percent of all scholarly staff at the department or centre. The proportion of the more senior staff holding a doctoral degree varies from 9 to 100 percent.

The average age of the R&D personnel at the included units was 44 years in 2003. There is moderate variation in average age between the different kinds of institutions – ranging from an average age of 43 at the research institutes to 46 at the State University Colleges. No unit had an average age above 50. Whereas the overall age distribution seems good, there is a clear gender gap in the personnel. In 2003 only 23 percent of the staff members were female, varying from 6 to 49 percent between the research units (figures including recruits). At some of the units there were no *female economists*. Moreover, only 8 percent of all professors were female (figures including all professors at all involved units regardless of educational background).

In sum, the personnel in Norwegian economic research are spread across many different research units, and there are large variations between the research units in the composition of the personnel. But in general, the availability of recruits seems good, whereas the proportion of female researchers is low.

Economic resources

According to official statistics, the Norwegian higher education sectors spent 138 million NOK on economic research in 2003. Of these 138 millions the Specialised University Institutions spent 67 million NOK, whereas the Universities spent 41 million NOK and the State University Colleges spent 30 millions. For the research institutes we have no figures for economic research only.

At the universities 66 percent of the economics R&D expenditure comes from general university funds (GUF), whereas at the State University Colleges 91 percent is GUF and at the Specialised University Institutions 79 percent is GUF (2003 figures). Compared to this, the research institutes have a low share of their income from core funding. The core funding of the four institutes involved in the evaluation varied from 0 to 18 percent in 2005. The two public agency research departments involved, on the other hand, have quite different income structures and are far less dependent on external projects funds.

International publishing

The report includes figures from a general bibliometric analysis of Norwegian economics, that is, an analysis of all indexed international publication in the field regardless of which units have been selected for the evaluation. We find that, compared to country size, Norwegian economics has a reasonably high production of international journal articles, but is below the world average in citations. On the other hand, the average citation score has increased substantially, from 62 percent of the world average in the period 1981–1985 to 87 percent of world average in 2001–2004. This score is now slightly above the EU average.

A small number of institutions account for the majority of the Norwegian publications. The 10 institutions which have published more than 20 papers in the period 1991 to 2004 cover 83 percent of the Norwegian ISI-indexed papers in economics in the period (916 of 1100 papers). The University of Oslo and the Norwegian School of Economics and Business Administration

have by far the highest publications rates and account alone for 410 of the papers. Also when counting citations we find that a small number of institutions account for a large proportion of the citations. These are mainly the same institutions as those accounting for the majority of the papers.

We also find an increase in co-authorship. In 1991, 38 percent of the papers in Norwegian economics had more that one author, whereas 65 percent were co-authored in 2004. Looking at citation rates for one-authored papers versus papers with different kinds of co-authorship, we see that one-authored papers have a higher average citation rate than papers co-authored with other Norwegians. The highest average citation rate, however, is found in the group of papers co-authored with North-America. Also papers co-authored with Nordic colleagues have a substantially higher average citation rate than one-authored papers.

1 Institutions and units in Norwegian economic research

The purpose of the present report is to provide central background information for the Research Council of Norway's evaluation of Economic Research 2006–2007. Below we first present the institutions and research units selected for the evaluation, and an overview of some of the data provided for the selection process. In the following chapters we present statistics on scholarly personnel and economic resources related to Norwegian economic research in general and for the selected research units in particular. Some outcome data – publication and citation analyses – are also provided (Chapter 4).

1.1 Research units selected for the Research Council of Norway's evaluation of Economic Research 2006–2007

The Norwegian higher education system consists of different kinds of institutions: universities, specialised university institutions and state university colleges. These institutions are regulated by the same Act[1], but there are different requirements that need to be fulfilled to obtain the different statuses (accreditation requirements) and the statuses imply different degrees of independence. Universities may for instance freely develop doctoral degrees programs, whereas specialised university institutions and state university colleges need a special accreditation before offering a doctoral degree in a new area.[2]

In addition to the higher education institutions, there are research institutions outside higher education (i.e. units without teaching obligations). These research institutes obtain some core funding from the Government (in most cases allocated by the Research Council of Norway), but for most of them the major part of the activity is based on 'external' funds allocated to their specific research projects, such as Research Council projects grants, commissioned research projects and European Framework Program projects. The institutes have different origin and different ownership. Many of them are independent foundations, whereas some are state institutions or organised as limited companies ('AS').

The units to be included in the evaluation of economic research span all these different kinds of organisational frames. The 20 units to be included belong to 17 different organisations. Of these, six are universities, two are specialised university institutions, three are state university colleges and six are research institutes. In selecting the units, the Research Council of Norway required a minimum of 5-6 researchers with doctoral level competence active in the field of economics

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1 LOV 2005-04-01 nr 15: Lov om universiteter og høyskoler.

2 State university colleges also need a special accreditation before offering a master degree. The accreditation is the task of an independent government body "The Norwegian Agency for Quality Assurance in Education" (NOKUT), established 2003.

(including financial economics).[3] Their present research, not educational background, was decisive.

Universities

The departments of economics at Norway's four oldest universities are four of the units to be evaluated:

- *Department of Economics* at the *University of Oslo* (UiO, established 1811)
- *Department of Economics* at the *University of Bergen* (UiB, established 1946)
- *Department of Economics* at the *Norwegian University of Science and Technology* (NTNU, formerly the University of Trondheim, established 1968 and NTH established 1910)
- *Department of Economics and Management* at the *University of Tromsø* (UiT, established 1968).

Other university units to be included are:

- *Institute of Health Management and Health Economics* at the *University of Oslo* (HELED established 1986, reorganised 2004)
- *Department of Economics and Resource Management* at the *Norwegian University of Life Sciences* (UMB, formally the Norwegian Agricultural University (NLH), established 1859, accredited as university from 2005)
- Several units[4] at the *University of Stavanger* (established 1969, accredited as university from 2005).

Because this report presents data prior to 2005, the *Norwegian University of Life Sciences* (UMB) and the *University of Stavanger* (UiS) are included in the statistics according to their institutional status prior to 2005: UMB as a Specialised University Institution, and the University of Stavanger as a State University College.

Specialised University Institutions

The evaluation also include four departments at Specialised University Institutions:

- *Department of Economics* and *Department of Finance and Management Science* at the *Norwegian School of Economics and Business Administration* (NHH, established 1936)
- *Department of Economics* and *Department of Financial Economics* at the *Norwegian School of Management* (BI, established 1943).

NHH and all the universities are public institutions, whereas BI is the only private higher education institution included in the evaluation.

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[3] "It is decided to restrict the evaluation of economic research in Norway to *economics*, including *financial economics*, and not to include *business and management, law and economic history." Evaluation of Economic Research in Norway. Terms of reference.* Oslo: Research Council of Norway, Draft 23.02.06

[4] Reorganisations of the departments makes our 2003 figures somewhat outdated. In the statistics we have included the units to which the majority of the relevant researchers at the University of Stavanger were affiliated in 2003: Department of Business Administration, Norwegian School of Hotel Management and Department of Petroleum Engineering.

State University Colleges

Today's State University Colleges are the result of a national reform in Norwegian higher education merging 98 previous regional colleges into 26 State University Colleges (in 1994). Three of these have departments in economics to be included in the evaluation:

- *Agder University College* (HiAgder): *Department of Economics and Business Administration*
- *Bodø University College* (HiBodø): *Bodø Graduate School of Business*
- *Molde University College* (HiMolde): *Department of Economics.*

Research Institutes

The six included research institutes differ in size, scholarly focus and formal organisation. Three are independent foundations, two are state agencies and one is a limited company:

- The *Institute for Research in Economics and Business Administration* is a limited company (SNF, established 1991, 38 researchers in 2003).
- The *Institute of Transport Economics* is an independent foundation (TØI, established 1958, 65 researchers in 2003).
- The *Ragnar Frisch Centre for Economic Research* is an independent foundation ("Frischsenteret", established 1999, 17 researchers in 2003).
- The *Institute for Social Research* is an independent foundation (ISF, established 1950, 41 researchers in 2003)
- The *Research Department at the Central Bank of Norway* is part of, and financed by, a state agency (established 1979, 12 researchers in 2003).
- The *Research Department at Statistics Norway* (SSB, established 1876, 104 researchers in 2003) is part of a state agency under the Ministry of Finance (multiple funding sources).

Below some key data on these units are presented, also giving overview of some of the units which were not selected for the evaluation.

1.2 Some key data on included and non-included units

NIFU STEP was asked to provide background information for the selection of units to be included in the evaluation. A selection of provided data is summarised in Table 1.1, showing which units fulfils different criteria of being units doing research within economics. Several of these are based on the educational background of the researchers – economists including researcher with higher degree education in economics. Table 1.1 shows which units that have a minimum of 10 economists, more than five senior economists or economists with a doctoral degree or at least half of the staff consisting of economists. The table also shows which units are classified under economics in official Norwegian R&D statistics[5], have expenditures for economics research above 5 millions NOK (in 2003), or have published more than 20 articles in journals classified under economics (by ISI-Thomson in the period 1991–2004).

[5] Units which report that more than half of their R&D is within economics are classified under economics in the statistics.

Reading Table 1.1 we need to note that data on R&D expenditures for economic research are available for the higher education sector only, not for the research institutes. Consequently, none of the research institutes may score on this criterion (marked ‘NA’). Moreover, the data on articles in economic journals was only analysed at the institutional level (not the departmental level), because the publications often do not indicate authors’ departmental affiliations. This implies that scores for all units at institutions with more than 20 articles in the field are given score on this criterion, regardless of which departments the authors were affiliated to.

Table 1.1 Norwegian institutions/departments with economic research

Institution and department/unit	Min 10 econo-mists (2003)	>50% econo-mists (2003)	Scho-larly focus[a] (2003)	>5 senior econo-mists (2003)	>5 with dr. degree (2003)	R&D >50% eco-nomy[b] (2003)	R&D >5 mill NOK[b] (2003)	>20 ISI-articles[c] 1991–2004
Universities								
UiO: Department of Economics	X	X	X	X	X	X	X	X
UiO: HELED/Centre of Health Management								X
UiB: Department of Economics	X	X	X	X	X	X	X	X
UiT: Departm. of Economics and Management	X	X	X	X	X	X	X	X
NTNU: Department of Economics	X	X	X	X	X	X	X	X
NTNU: Department of Industrial Economics and Technology Management								X
UMB/NLH: Department of Economics and Resource Management			X	X	X	X	X	
UiS/HiS: Norwegian School of Hotel Management								
UiS/HiS: Departm. of Business Administration						X		
Specialised University Institutions								
NHH: Department of Economics	X	X	(X)	X	X	X	X	X
NHH: Department of Finance and Management Science	X	X		X	X	X	X	X
NHH: Departm. of Strategy and Management	X	X		X	X			X
NHH: Dep. of Accounting, Auditing and Law	X	X		X	X			X
BI: Department of Economics		X	X	X		X		X
BI: Department of Financial Economics						X		X
BI: Department of Marketing	X			X	X			X
BI: Department of Strategy				X	X			X
BI: Departm. of Accounting, Auditing and Law								X
BI: Department of Logistics								X
State University Colleges								
HiBodø: Bodø Graduate School of Business	X	X		X	X	X	X	
HiAg: Department of Economics and Business Administration	X	X		X	X	X	X	
HiMolde: Department of Economics	X	X	X	X		X	X	
HiSTrønd: Trondheim Business School	X							
HiTel: Department of Economics and Computer Science								
HiÅ: Department of International Marketing		X						
HiØ: Faculty of Business, Social Sciences and Foreign Languages								
HiHed: "Faculty of Economics, Social Sciences and ICT"						X		
HiBus: "Department of Economics and Political Science"								
HiSF "Business Administration"		X				X		
HiSH: "Business Administration"		X						
HiTromsø: Faculty of Engineering and Economics		X						
HiLil: "Business Administration"						X		
Research Institutes								
SSB - Statistics Norway, Research Department	X	X	X	X	X	NA	NA	X
SNF - Institute for Research in Economics and Business Administration	X	X	X	X	X	NA	NA	X
TØI - Institute of Transport Economics	X		X	X		NA	NA	
Central Bank of Norway, Research Dep.	X	X	X	X	X	NA	NA	X
Frisch Centre for Economic Research	X	X	X	X	X	NA	NA	X
ISF - Institute for Social Research				X	X	NA	NA	
Agder Research				X		NA	NA	
Telemark Research Institute (TF-Bø)			X			NA	NA	
NILF - Norwegian Agricultural Economics Research Institute			X			NA	NA	

Selected units in grey. *Note that at UiS researchers from various units will be included in the evaluation. The two units included here correspond to units at which several of the relevant researchers worked in 2003.

a) X=More "Cand.oecon" than "siv.øk." working at the unit, which indicates that the unit is focused on what in Norwegian is called 'Samunnsøkonomi' (economics/public economics). More 'siv.øk.' than 'Cand.oecon', on the other hand, indicates focus on economic disciplines such as financial economics and business economics. (X)=based on department name.

b) Figures for units in Higher Education sector only.

c) In the period 1991–2004. Data on institutional level only, not on the various subunits. All subunits at institutions with more than 20 articles are consequently marked X.

2 Personnel in economic research

In this chapter we present statistics on the personnel in Norwegian economic research, including their academic positions and degrees, age-profiles and gender. Section 2.1 presents statistic for all personnel with an economic education, whereas Section 2.2 is limited to the personnel at the research units selected for the evaluation.

The data are obtained from the register providing the official Norwegian R&D statistics (the NIFU STEP Research Personnel Register). The latest available data is from 2003. In all tables *'economists'* are defined from their educational background and include persons with a higher degree education in economics (Cand.oecon., Cand.polit., siviliøkonom, Cand.merc. or equivalent). The NIFU STEP Research Personnel Register gets complete educational information on personnel educated in Norway directly from a central Norwegian higher education register ("Akademikerregisteret"). For personnel educated abroad, however, the register relies on data from their employers/research institution and this data is in some cases incomplete.[6]

2.1 Total R&D personnel with a higher degree in economics

In 2003 there were in total 775 researchers in Norway that had their educational background in economics, more precisely; a *higher degree* specified under this academic discipline. Of these 775 researchers 63 percent were employed at a higher education institution, whereas 37 percent were employed at a research institute outside higher education (Table 2.1).[7] In this section we will look at the academic positions and degrees held by these economists, as well as the age and gender profile of the staff in the different kinds of institutions.

[6] For 34 researchers at the selected units we lack information about educational background and for 43 of the social scientists we lack information about discipline (cf. Table A4).

[7] Researchers employed in private firms are not included in the figures. Only higher education institutions and research institutes are included in the NIFU STEP Research Personnel Register. For consultancy firms involved in research, such as ECON, there are no public registers.

Table 2.1 R&D personnel with a higher degree in economics, by sector and institution sector, 2003.

Sector and institution	#Economists	Percent of all economists
UiB - University of Bergen	21	2,7
UiO - University of Oslo	40	5,2
UiT - University of Tromsø	15	1,9
NTNU - Norwegian University of Science and Technology	24	3,1
Universities	100	12,9
NHH - Norwegian School of Economics and Business Administration	103	13,3
BI - Norwegian School of Management	65	8,4
UMB/NLH - Norwegian University of Life Sciences (University from Jan 05)	7	0,9
Specialised University Institutions	175	22,6
Agder University College	29	3,7
Bodø University College	25	3,2
Molde University College	13	1,7
University of Stavanger /Stavanger University College	15	1,9
Others	129	16,6
State University Colleges	211	27,2
SSB - Statistics Norway, Research Department	58	7,5
SNF - Institute for Research in Economics and Business Administration	22	2,8
TØI - Institute of Transport Economics	22	2,8
Ragnar Frisch Centre for Economic Research	14	1,8
Central Bank of Norway, Research Department	11	1,4
ISF - Institute of Social Research	7	0,9
Others	155	20,0
Research Institutes	289	37,3
Total	775	100,0

Notes: The table includes all economists regardless of their departmental affiliations. For some researchers educated abroad, the register does not contain information on academic discipline. The figures might consequently be incomplete. Researchers paid by external funds are included in the figures (in all 57 economists at the higher education institutions). As institutions might have different routines for registering such personnel, also these figures might be incomplete.

As shown in Table 2.1, the largest amount of economists is found at NHH, which employs 13 percent of the 775 economists in the register. Note that this section examines the whole workforce of economist researchers in Norway, whereas the next section examines the R&D personnel of the included units regardless of their educational background. This implies that Table 2.1 includes all economists among the R&D personnel at the different institutions, regardless of departmental affiliation (see next section for figures limited to the units to be evaluated). For NHH, for example, all 103 economists at the institution are included, and of these only the 57 work at the two departments to be evaluated. Moreover, for UiO, a total of 40 economists are shown, whereas 29 of these are employed at the Department of Economics and 5 at HELED.

The main conclusions to be drawn from Table 2.1, are that the economists work at many different institutions, that only 13 percent of them work at the four 'old' universities, and that the 'Institute Sector' employs a relative high share of them (37 percent) and so does the State University Colleges (27 percent).

Table 2.2 shows the age profile of the economists. 40 percent is below 40, and 8 percent above 60. In comparison with all R&D personnel in the Norwegian social sciences the economist are younger. Whereas the average age of the economists is 44, the average age of all social scientists is 46. 5,6 percent of all social scientists are below 30, whereas 6,2 percent of the economists are not yet 30. Also the share of economists above 60 is lower. 8 percent of the economists are above 60, whereas 9,4 percent of all social scientists are above 60.[8]

Table 2.2 R&D personnel with a higher degree in economics, by sector and age in 2003. Percentages within type of institution.

Sector	Below 30	30–39	40–49	50–59	Above 60	N
Universities	11,0	29,0	27,0	25,0	8,0	100
Specialised University Institutions	6,3	35,4	26,3	20,6	11,4	175
State University Colleges	4,3	23,7	25,1	37,0	10,0	211
Research Institutes	5,9	40,8	35,3	13,5	4,5	289
Total	6,2	33,4	29,4	23,0	8,0	775

Table 2.2 also shows some differences between the different kinds of institutions. The economists at the research institutes have the lowest average age (44,4), and the economists at the State University Colleges the highest (50,1).

Table 2.3 R&D personnel with a higher degree in economics 2003, by type of institution and gender. Percentages within type of institution.

Sector	Female	Male	N
Universities	17,0	83,0	100
Specialised University Institutions	17,1	82,9	175
State University Colleges	12,8	87,2	211
Research Institutes	29,8	70,2	289
Total	20,6	79,4	775

Table 2.3 shows the gender distribution of the economists. The large majority are males. The highest proportion of female economists is found in the research institutes where 30 percent are females. The lowest share is found in the State University Colleges where only 13 percent are female. Looking at the next table, we see that this is somewhat related to the age distribution within the different kinds of institutions. The average age of the female economists is substantially lower than the average age of the male economists. This gives a higher average age at institutions with a low share of females. Still, the female economists at the Research Institutes are on average two years younger than the female economist in the State University Colleges, and the males are 5,5 years younger (Table 2.4).

[8] Age in 2003, figures include all R&D personnel registered in 2003 with a higher degree in social sciences.

Table 2.4 R&D personnel with a higher degree in economics, average age in 2003 by type of institution and gender.

Sector	Average age female economists	Average age male economists	Total average age economists	N
Universities	36,0	45,2	43,6	100
Specialised University Institutions	40,6	45,4	44,6	175
State University Colleges	40,9	48,0	47,1	211
Research Institutes	38,9	42,5	41,4	289
Total	39,2	45,2	44,0	775

Table 2.5 shows the share of the economists that holds a doctoral degree (PhD-students not included). Whereas a large share (72 percent) of the economist at the Universities and the Specialised University Institutions have obtained a doctoral degree, a relatively low share of economists at the State University Colleges and the Research Institutes have a doctoral degree (28–29 percent).

Table 2.5 R&D personnel with a higher degree in economics 2003, by doctoral degree and type of institution. Percentages within type of institution.*

Sector	Holds a doctoral degree	No doctoral degree	N
Universities	71,6	28,4	81
Specialised University Institutions	71,5	28,5	137
State University Colleges	27,7	72,3	195
Research Institutes	28,5	71,5	267
Total	42,1	57,9	680

Note: The table shows the share of the R&D personnel with a higher degree in economics that hold doctoral degree in 2003 (regardless of research field of the doctoral degree).
*Economists holding a recruitment position (PhD students and research assistants) are not included in this table. Table A2 in Appendix 2 shows the same figures including the recruits (i.e. the share of the total 775 economist that hold such a position at the different kinds of institutions).

The table below gives some input to understanding the low share of personnel with doctoral degrees at the State University Colleges. More than half of the economists here hold what we have named a teaching position – they are Assistant Professors or Lecturers (Table 2.6). Also for the Research Institutes, the low share is related to the kind of research positions held. A substantial amount of the researchers hold what can be said to be junior positions (‘Forsker 3’ or equivalent, see Table A1 in Appendix 2).

Table 2.6 R&D personnel with a higher degree in economics (2003), by sector, gender and academic position. Percentages within gender.

Sector	Professors	Researchers and Postdocs	Recruitment position	Teaching position	N
Universities					
Males	63,9	18,1	14,5	3,6	83
Females	11,8	35,3	41,2	11,8	17
Total	55,0	21,0	19,0	5,0	100
Specialised University Institutions					
Males	60,0	6,2	17,9	15,9	145
Females	43,3	10,0	40,0	3,7	30
Total	57,1	6,9	21,7	14,3	175
State University Colleges					
Males	40,8	3,3	6,5	49,5	184
Females	18,5	3,7	14,8	60,3	27
Total	37,9	3,3	7,6	51,2	211
Research Institutes					
Males		94,4	5,9		203
Females		88,4	11,6		86
Total		92,4	7,6		289
All sectors					
Males	35,0	35,9	10,1	19,0	615
Females	12,5	53,8	20,6	13,1	160
Total	30,3	39,6	12,3	17,8	775

Professors include: Full professors, Associate Professors ('førsteamanuensis'), academic leaders (employed Deans and Chairs/Heads of departments) and University College Docents/Senior Lectures ('høgskoledosenter').
Researchers/postdoc includes: all Researchers and Postdocs regardless of source of funding.
Recruitment position includes: Research Fellows ('stipendiater') and Research Assistants regardless of source of funding.
Teaching position includes: Assistant Professors ('amanuensis'), Lectures ('førstelektor, universitetslektor, høgskolelektor')

Table 2.6 shows large differences between the different kinds of institutions in relation to academic positions held by the economists. More that half of the economists at the Universities and the Specialised University Institutions are professors, whereas more than half of the economists at the State University Colleges hold teaching positions. As Table 2.6 does not fit the positions offered at the Research Institutes (there are no professors and no teaching positions), Table A1 (Appendix 2) should be consulted for a more insight into the positions held by the economists in these institutions.

The proportion of economists holding a recruitment position is highest at the Universities and the Specialised University Institutions (19–22 percent) and lowest at the State University Colleges and the Research Institutes (8 percent). A larger share of the females than males holds a recruitment position. 21 percent of the female economists hold a recruitment position, whereas 10 percent of the males do. These figures should not be misinterpreted to say that there are more female than male recruits, which there are not. In 2003 there were 33 female and 63 male economists Research Fellows and Research Assistants – positions that indicate that the holder is a PhD student.[9]

[9] In addition there may be economics holding other positions who are working on a doctoral dissertation, e.g. 'Forsker 3' or staff holding a teaching position.

It should also be noted that the different kinds of institutions seem to have offered different opportunities for female economists to obtain a professorship. Whereas 43 percent of the female economists at the Specialised University Institutions have obtained a professorship, only 12 percent of the females at the Universities hold a professorship. Moreover, if we only count Full Professors (the only ones entitled 'Professors' in Norway), we found no female economist holding a Full Professorship at any Norwegian university in 2003. At the Specialised University Institutions we found three female Full Professors, and at the State University Colleges one.

2.2 Research units to be evaluated: Economists and other R&D personnel

The units selected for the evaluation had in total 732 researchers in 2003. Of these, 49 percent (357) were educated economists, i.e. they had a higher degree in economics. As shown in Table 2.7, the proportion of economists varies considerably between the units. Consequently the share of the activities of the units relevant for the evaluation also varies. There is however no clear relation between educational background and present research activities, and in several cases researchers trained in other fields do economic research which will be included in the evaluation. This causes some problems in providing relevant statistics. Available data only contain information about educational background and organisational units at the department level, not about research groups or research fields.

Table 2.7 Percent economists at units to be evaluated (2003). Percentages within the research units.

Unit	Percent economists	N (Total R&D staff)
Central Bank of Norway, Research Department	91,7	12
Ragnar Frisch Centre for Economic Research	82,4	17
NTNU: Department of Economics	82,4	17
NHH: Department of Economics	77,3	44
UiB: Department of Economics	73,1	26
UiO: Department of Economics	67,4	43
HiAgder: Department of Economics and Business Administration	61,5	26
UiT: Department of Economics and Management	58,8	17
SNF - Institute for Research in Economics and Business Administration	57,9	38
NHH: Department of Finance and Management Science	57,5	40
BI: Department of Economics	56,3	16
SSB - Statistics Norway, Research Department	55,8	104
HiMolde: Department of Economics	54,2	24
HiBodø: Bodø Graduate School of Business	50,0	50
UiO: Centre of Health Management (HELED from 2004)	38,5	13
TØI - Institute of Transport Economics	33,8	65
BI: Department of Financial Economics	30,8	13
UiS/HiS: Norwegian School of Hotel Management	29,2	24
UiS/HiS: Department of Business Administration	22,2	18
UMB/NLH: Department of Economics and Resource Management	18,9	37
ISF - Institute of Social Research	17,1	41
UiS/HiS: Department of Petroleum Engineering	8,5	47
Total	48,8	732

Economists = R&D staff with a higher degree in economics.

When presenting the data on the units to be evaluated we therefore *include two sets of data.* One including economist only, and one including the whole research unit for which we have data

(research institute, centre or department). For some units, data on all research staff will be the most relevant for the evaluation. For other units, data on economists only will be more relevant.

Table A4 in Appendix 2 show the education disciplines of all research staff at the included units in 2003. At the included research institutes the largest group apart from the economists was sociologists (48 researchers). At the universities and colleges, on the other hand, the economists have company by more than a hundred natural scientists, engineers and researchers with education from agricultural and fishery sciences. There were also 27 mathematicians at the selected units. It should be noted that a substantial amount of the persons for whom we lack information about educational discipline may be economists ("no information" or non specified social science in Table A4, in all 77 persons).

The following tables present the scholarly positions, academic degrees, age-profiles and gender of the research staff at the selected units. Both figures for the whole units and for economists only are presented. For academic degrees, age-profiles and gender, figures for the whole units and for economists only are presented in the same tables. For scholarly positions, only figures for the whole units are presented below, whereas the figures for 'economists only' are provided in Appendix 2. As units with a majority of economics are those most interesting to study as separate research units when evaluating economic research, we will mainly restrict our comments to these units ("departments of economics") and focus on figures for the whole department (as 'economists only' may exclude several economics researchers without a registered education within economics).

Table 2.8 R&D personnel's academic positions 2003. Percentages, research units selected for the evaluation.

Institution/unit	Profes-sors	Resear-chers and Post-docs	Recruit-ment position	Teach-ing position	N
UiO: Department of Economics	65,1	11,6	20,9	2,3	43
UiO: Centre of Health Management (HELED from 2004)	30,8	23,1	30,8	15,4	13
UiB: Department of Economics	50,0	30,8	15,4	3,8	26
NTNU: Department of Economics	58,8	5,9	29,4	5,9	17
UiT: Department of Economics and Management	52,9	5,9	35,3	5,9	17
Universities	55,2	15,5	24,1	5,2	116
UMB/NLH: Department of Economics and Resource Management	59,5	10,8	13,5	16,2	37
NHH: Department of Finance and Management Science	65,0	10,0	25,0		40
NHH: Department of Economics	54,5	11,4	29,5	4,5	44
BI: Department of Financial Economics	69,2		23,1	7,7	13
BI: Department of Economics	81,3		12,5	6,3	16
Specialised University Institutions	62,7	8,7	22,0	6,7	150
UiS/HiS: Department of Petroleum Engineering	48,9	6,4	42,6	2,1	47
UiS/HiS: Department of Business Administration	66,7		11,1	22,2	18
UiS/HiS: Norwegian School of Hotel Management	29,2	8,3	20,8	41,7	24
HiBodø: Bodø Graduate School of Business	44,0	4,0	20,0	32,0	50
HiAgder: Department of Economics and Business Administration	69,2		3,8	26,9	26
HiMolde: Department of Economics	50,0		25,0	25,0	24
State University Colleges	49,7	3,7	23,3	23,3	189
ISF - Institute of Social Research		90,2	9,8		41
SNF - Institute for Research in Economics and Business Administation		84,2	15,8		38
Ragnar Frisch Centre for Economic Research		47,1	52,9		17
SSB - Statistics Norway, Research Department		99,0	1,0		104
TØI - Institute of Transport Economics		98,5	1,5		65
Central Bank of Norway, Research Department		100,0			12
Research Institutes	0	92,4	7,6	0	277
All selcted units	34,4	40,2	17,2	8,2	732

Note: The table includes all R&D staff at the institute/centre/department. For figures only including economists, see Table A3 in Appendix 2.
Professors include: Full professors, Associate Professors ('førsteamanuensis'), academic leaders (employed Deans and Chairs/Heads of departments) and University College Docents/Senior Lectures ('høgskoledosenter').
Researchers/postdoc includes: all Researchers and Postdocs regardless of source of funding.
Recruitment position includes: Research Fellows ('stipendiater') and Research Assistants regardless of source of funding.
Teaching position includes: Assistant Professors ('amanuensis'), Lectures ('førstelektor, universitetslektor, høgskolelektor')

Table 2.8 shows the academic positions of the staff. There are substantial differences between the selected research units. Looking at research recruits – mostly including Research Fellows working on a doctoral dissertation – we find, for instance, that at the Department of Economics and Management at the University of Tromsø (UiT), 35 percent of the staff were recruits in 2003, whereas the Department of Economics and Business Administration at Agder University College only 4 percent were recruits. In the institute sector, most of the selected units have few recruitment positions. The exception is the Ragnar Frisch Centre for Economic Research where more than half of the R&D personnel held a recruitment position in 2003.[10] It should also be

[10] The institute sector may contain several (regularly employed) researchers working their doctoral dissertation withhold holding a recruitment position.

noted that some of the units at the Specialised University Institutions and the State University Colleges had no postdocs (BI, Agder University College and Molde University College). Moreover, a larger share of the staff at the Specialised University Institutions than at the Universities held a professorship.

Table 2.9 R&D personnel holding a doctoral degree 2003. Percentages, research units selected for the evaluation.

	Economists		All researchers	
Institution/unit	Holds a doctoral degree %	N	Holds a doctoral degree %	N
UiO: Department of Economics	63,6	22	61,8	34
UiO: Centre of Health Management (HELED from 2004)	33,3	3	66,7	9
UiB: Department of Economics	93,8	16	90,9	22
NTNU: Department of Economics	100,0	10	91,7	12
UiT: Department of Economics and Management	75,0	8	72,7	11
Universities	78,0	59	75,0	88
UMB/NLH: Department of Economics and Resource Management	85,7	7	71,9	32
NHH: Department of Finance and Management Science	89,5	19	86,7	30
NHH: Department of Economics	80,0	25	77,4	31
BI: Department of Financial Economics	100,0	4	60,0	10
BI: Department of Economics	62,5	8	64,3	14
Specialised University Institutions	82,5	63	75,2	117
UiS/HiS: Department of Petroleum Engineering	100,0	4	74,1	27
UiS/HiS: Department of Business Administration	25,0	4	25,0	16
UiS/HiS: Norwegian School of Hotel Management	28,6	7	21,1	19
HiBodø: Bodø Graduate School of Business	55,6	18	40,0	40
HiAgder: Department of Economics and Business Administration	46,7	15	44,0	25
HiMolde: Department of Economics	33,3	12	38,9	18
State University Colleges	46,7	60	42,8	145
ISF - Institute of Social Research	100,0	7	89,2	37
SNF - Institute for Research in Economics and Business Administation	50,0	20	46,9	32
Ragnar Frisch Centre for Economic Research	85,7	7	87,5	8
SSB - Statistics Norway, Research Department	24,1	58	20,4	103
TØI - Institute of Transport Economics	9,1	22	15,6	64
Central Bank of Norway, Research Department	72,7	11	66,7	12
Research Institutes	37,6	125	36,7	256
All selcted units	56,4	307	51,2	606

Note: The table shows the share of the R&D personnel, not including recruitment positions, that held a doctoral degree in 2003. I.e. PhD students and research assistants are not included in the table.

Table 2.9 shows the proportion of the staff at each unit who holds a doctoral degree (all R&D personnel except the doctoral student and research assistants are included in the figures). In all, 51 percent of the ("senior") staff at the selected institutions held a doctoral degree in 2003. Including only the economist we find 56 percent with a doctoral degree. The proportion with a doctoral degree is substantially larger at the universities and the Specialised University Institutions than at the State University Colleges and the Research Institutes. There are also large variations within the sectors, especially within the institute sector.

Table 2.10 R&D personnel's average age 2003. Means, research units selected for the evaluation.

	Economists		All researchers	
Institution/unit	Mean age	N	Mean age	N
UiO: Department of Economics	45,6	29	47,0	43
UiO: Centre of Health Management (HELED from 2004)	38,4	5	42,0	13
UiB: Department of Economics	43,4	19	43,8	26
NTNU: Department of Economics	38,8	14	40,5	17
UiT: Department of Economics and Management	46,7	10	41,9	17
Universities	43,5	77	44,0	116
UMB/NLH: Department of Economics and Resource Management	42,4	7	43,5	37
NHH: Department of Finance and Management Science	43,0	23	42,8	40
NHH: Department of Economics	43,5	34	43,8	44
BI: Department of Financial Economics	48,3	4	43,1	13
BI: Department of Economics	48,0	9	46,1	16
Specialised University Institutions	44,0	77	43,6	150
UiS/HiS: Department of Petroleum Engineering	42,5	4	42,6	47
UiS/HiS: Department of Business Administration	51,5	4	50,4	18
UiS/HiS: Norwegian School of Hotel Management	54,1	7	48,0	24
HiBodø: Bodø Graduate School of Business	43,4	25	44,4	50
HiAgder: Department of Economics and Business Administration	48,4	16	50,0	26
HiMolde: Department of Economics	49,8	13	44,8	24
State University Colleges	47,3	69	45,8	189
ISF - Institute of Social Research	42,9	7	45,3	41
SNF - Institute for Research in Economics and Business Administation	40,0	22	40,9	37
Ragnar Frisch Centre for Economic Research	37,6	14	36,6	17
SSB - Statistics Norway, Research Department	40,7	58	41,9	104
TØI - Institute of Transport Economics	43,7	22	46,2	65
Central Bank of Norway, Research Department	38,3	11	37,3	12
Research Institutes	40,7	134	42,8	276
All selcted units	43,3	357	43,9	731

Table 2.10 shows that the average age of the R&D personnel at the included units was 44 years in 2003. There is moderate variation between the different kinds of institutions (ranging from an average age of 43 at the research institutes to 46 at the State University Colleges), but more considerable variation between the different units. Department of Economics at the University of Oslo, for instance, had an average age of 47 in 2003, whereas the average age at Department of Economics at NTNU were 6,5 years lower. Average age is of course related with the share of the staff consisting of research recruits. This is clear when comparing for instance the average age at Department of Economics and Business Administration at Agder University College (50 years, one recruitment position, no postdocs) and Ragnar Frisch Centre for Economic Research (37 years, 53 percent recruitment positions).

In general we may say that the available data show that the age distribution and the supply of recruits in Norwegian economics might be characterised as good (Table 2.2 and 2.8 also considered, Table 2.2 shows the age distribution for all registered economists employed in research in 2003, whereas Table 2.10 shows average age for the selected units).

Table 2.11 Female R&D personnel 2003. Percentages, research units selected for the evaluation.

	Economists		All researchers	
Institution/unit	% female	N	% female	N
UiO: Department of Economics	17,2	29	16,3	43
UiO: Centre of Health Management (HELED from 2004)	40,0	5	38,5	13
UiB: Department of Economics	15,8	19	15,4	26
NTNU: Department of Economics	21,4	14	23,5	17
UiT: Department of Economics and Management	0	10	11,8	17
Universities	16,9	77	19,0	116
UMB/NLH: Department of Economics and Resource Management	14,3	7	21,6	37
NHH: Department of Finance and Management Science	8,7	23	10,0	40
NHH: Department of Economics	17,6	34	18,2	44
BI: Department of Financial Economics	0	4	15,4	13
BI: Department of Economics	11,1	9	6,3	16
Specialised University Institutions	13,0	77	15,3	150
UiS/HiS: Department of Petroleum Engineering	0	4	8,5	47
UiS/HiS: Department of Business Administration	0	4	5,6	18
UiS/HiS: Norwegian School of Hotel Management	0	7	33,3	24
HiBodø: Bodø Graduate School of Business	20,0	25	20,0	50
HiAgder: Department of Economics and Business Administration	12,5	16	7,7	26
HiMolde: Department of Economics	0	13	8,3	24
State University Colleges	10,1	69	14,3	189
ISF - Institute of Social Research	42,9	7	48,8	41
SNF - Institute for Research in Economics and Business Administation	36,4	22	34,2	38
Ragnar Frisch Centre for Economic Research	14,3	14	17,6	17
SSB - Statistics Norway, Research Department	27,6	58	32,7	104
TØI - Institute of Transport Economics	31,8	22	32,3	65
Central Bank of Norway, Research Department	27,3	11	25,0	12
Research Institutes	29,1	134	33,9	277
All selcted units	19,3	357	22,7	732

Table 2.11 shows a low share of female researchers in all sectors. The institute sector is the only one with more than 20 percent female researchers. We also see that the share of female economists (19 percent females) is lower than for the researchers in general (23 percent females). This applies for all sectors. As shown in Table 2.12 there are particularly few females in the senior positions (cf. also Table 2.6 above).

Table 2.12 R&D personnel in 2003 by gender and academic position (including only research units selected for the evaluation). Percentages.

Gender	**Professors**	**Researchers and Postdocs**	**Recruitment position**	**Teaching position**	**Total**
Males	92,1	67,3	70,6	78,3	77,3
Females	7,9	32,7	29,4	21,7	22,7
N	252	294	126	60	732

Professors include: Full professors, Associate Professors ('førsteamanuensis'), academic leaders (employed Deans and Chairs/Heads of departments) and University College Docents/Senior Lectures ('høgskoledosenter').
Researchers/postdoc includes: all Researchers and Postdocs regardless of source of funding.
Recruitment position includes: Research Fellows ('stipendiater') and Research Assistants regardless of source of funding.
Teaching position includes: Assistant Professors ('amanuensis'), Lectures ('førstelektor, universitetslektor, høgskolelektor')

3 Economic resources

In this chapter we present figures for economic research[11] based on the official Norwegian statistics on expenditures for such research. Expenditures over time, by funding sources and kind of institutions are presented. Some comparisons with expenditures within other social science disciplines are also included. As official statistics split on disciplines do not include the research institutes, most tables only include economics in the higher education institutions (for the research institutes only statistics on research expenditures in general is available).

Table 3.1 shows the economics R&D expenditure in Norwegian higher education institutions by funding sources for the period 1995 to 2003. The major funding source is the institutions' basic budgets – from 86 to 78 percent in the period (in most cases general university funds (GUF) means government appropriations, but for BI also private funds are included in this category). Apart for this, project funding from the Research Council of Norway is the largest funding source – funding from 6 to 10 percent of the expenditures. Other funding sources than this sponsor relatively small proportions of the research in economics. In 2003 other public sources funded 3 percent, industry 4 percent, other domestic sources such as private organisations and foundations funded 2 percent, and foreign sources funded 2 percent.

Table 3.1 Economics R&D expenditure in Norwegian Higher Education Sector, by funding source. Percentages 1995–2003.

Funding source	1995	1997	1999	2001	2003
General university funds (GUF)	82,2	86,4	84,3	80,5	78,1
Research Council of Norway	8,5	6,2	5,9	9,4	10,3
Other public sources	1,8	3,3	2,2	4,8	3,3
Industry	5,5	2,8	6,1	3,1	4,3
Other domestic sources	0,9	0,1	1,0	0,7	2,4
Foreign sources	1,0	1,2	0,5	1,5	1,7
Of this EU	0,0	0,3	0,0	1,1	1,0
Total percent	**100**	**100**	**100**	**100**	**100**
Total Mill NOK*	**80,0**	**88,9**	**80,1**	**104,3**	**138,3**

*Current expenditures

Table 3.2 shows differences in funding sources between the three types of higher education institutions (figures for 2003). The universities have the highest share of funding from the Research Council of Norway (RCN), with 19 percent, whereas at the Specialised University Institutions 8 percent of the research is funded by RCN, and at the State University Colleges only 4 percent is funded by RCN. Moreover, at the universities the GUF covers a lower share of the R&D expenditure than at the other institutions. At the universities 66 percent of the economics R&D expenditure comes is GUF, whereas at the State University Colleges 91 percent is GUF and at the Specialised University Institutions 79 percent is GUF.

[11] R&D – Research and Development – which is the official statistical category is used in the tables.

Table 3.2 Economics R&D expenditure in Norwegian Higher Education Sector, by funding source and type of institution. Percentages 2003.

Funding source	Universities	Specialised University Institutions	State University Colleges
General university funds	66,2	79,3	91,2
Research Council of Norway	19,0	8,0	3,6
Other public sources	7,6	1,8	0,8
Industry	5,0	4,6	2,8
Other sources	0,4	4,1	1,3
Foreign sources	1,8	2,2	0,3
Of this EU	1,5	1,2	0,0
Total percent	**100**	**100**	**100**
Total Mill NOK	**40,8**	**67,2**	**30,4**

Table 3.2 also shows that the Specialised University Institutions are the largest 'sector' as measured by official statistics for R&D expenditure within economics. In 2003 the Specialised University Institutions spent 67 million NOK on economic research, whereas the Universities spent 41 million NOK and the State University Colleges spent 30 millions. This is further analysed in Table 3.3 which shows figures from 1995 to 2003 and also splits the expenditures on some of the major institution.

Table 3.3 Current R&D expenditure in economics, Norwegian Higher Education Sector, by institution. Percentages within years 1995, 1999 and 2003.

Institution	1995	1999	2003
UiB	9,7	8,2	7,5
UiO	18,3	22,5	11,2
UiT	10,5	6,8	6,0
NTNU	11,2	11,9	4,7
Percent Universities	**49,7**	**49,4**	**29,5**
NHH	36,2	39,8	30,7
BI	2,7	2,9	4,6
UMB/NLH - Norwegian University of Life Sciences (University from Jan 05)			13,2
Percent Specialised University Institutions	**39,0**	**42,8**	**48,5**
Percent State University Colleges	**11,4**	**7,8**	**22,0**
Total percent	**100**	**100**	**100**
Total R&D expenditure, mill. NOK*	**80,0**	**80,1**	**138,3**

*Current expenditures

Note on the disciplinary coding: All R&D at units that codes more than half of their R&D under the discipline of economics are counted as economics in the official R&D statistics. This implies that reorganisations may easily change the statistics – merging or splitting departments may change which units are counted under economist and which are not counted.

According to official statistics NHH has the largest share of the total R&D expenditure in economic research at Norwegian Universities and Colleges. In the period 1995 to 2003, NHH covers between 31 and 40 percent of all R&D expenditure in economic research at Norwegian higher education institutions (Table 3.3). UiO was the second largest in 1995 and 1999, but in 2003 the Norwegian Agricultural University (now Norwegian University of Life Sciences) was included in the statistics and came up as the second largest on expenditure on economic research. This demonstrates that the R&D statistics may be very sensitive to redefinitions and reorganisations that may not only reflect changes in R&D expenditures (cf. note to Table 3.3).

The large increase in expenditures in economics from 1999 (80 mill NOK) to 2003 (138 mill NOK) should be understood with this in mind.

As mentioned above, we do not have data on expenditures for economic research in the "institute sector". For these units we therefore need to use overall funding for all research, regardless of discipline. Table 3.4 shows income by funding source for the four regular research institutes selected for the evaluation (but not the two public agency research departments, for which we do not have such data, see notes to Table 3.4).

Table 3.4 Selected research institutes: Income by funding source. Percentages 2005.

Funding source	Ragnar Frisch Centre for Economic Research	SNF – Institute for Research in Economics and Business Administration	TØI – Institute of Transport Economics	ISF – Institute for Social Research
General funds				
Core funding		6,5	7,9	17,5
Strategic Institute Programs (SIP)	10,9	4,4	5,3	4,8
Project funds				
Research Council of Norway	69,1	51,8	9,4	28,3
Other public sources	9,6	7,6	37,6	39,6
Industry		16,4	6,4	4,9
Other domestic sources		8,3	2,0	2,0
Foreign sources	3,7	4,8	16,7	2,1
Other income	6,6	0,2	14,6	0,8
Total percent	100	100	100	100
Total Mill NOK	**21,6**	**63,5**	**92,0**	**39,2**

Note: Institutes not reporting key-indicators to the RCN are not included in the table, i.e. for the Research Department at the Central Bank of Norway and the Research Department at Statistics Norway (SSB) we do not have comparable data.

Compared to the higher education institutions the research institutes have a relatively low share of their income from core funding or other general funds (such as Strategic Institute Programs). The core funding of the four institutes varied from 0 to 18 percent in 2005. The Frisch Center and SNF have relatively large shares of their income from RCN project funds, whereas TØI and ISF have the largest shares from other public sources.

Comparisons with other social sciences

Going back to the data split on research disciplines, Table 3.5 shows resources spent on economic R&D compared with other social science disciplines (higher education institutions only).

Table 3.5 Social Sciences R&D expenditure in Norwegian Higher Education Sector, by discipline and year. Mill NOK (current expenditures) 1991–2003.

Discipline	1991	1993	1995	1997	1999	2001	2003
Educational Science	45,3	53,3	115,5	165,4	200,2	221,8	253,9
Economics	**76,6**	**110,1**	**80,0**	**88,9**	**80,1**	**104,3**	**138,3**
Law and Criminology	44,9	53,2	63,0	84,8	85,5	99,8	116,9
Psychology	36,3	52,6	58,5	69,2	82,8	99,3	116,8
Sociology	23,5	25,1	33,5	35,5	35,0	44,7	55,9
Political Science	27,0	32,0	28,7	33,6	36,9	39,1	42,8
Social Anthropology	23,2	23,3	21,4	25,8	36,9	39,4	39,9
Media/Journalism and Library/Information Science	5,8	7,1	7,0	20,0	20,3	23,0	44,0
Human Geography and Urbanism /Planning	11,7	17,0	20,3	19,8	24,5	24,0	26,7
Other and non-specified Social Sciences	222,4	299,5	309,2	356,2	505,6	571,5	687,0
All social sciences	**516,6**	**673,2**	**737,1**	**899,0**	**1 107,8**	**1 266,8**	**1 522,3**

Notes:
The growth in educational sciences from 1993 to 1997 appearing from the table is mainly due to redefinitions and improved basis for the statistics.
Noting the high proportion of "other and non-specified social science" (687 of 1522 mill NOK in 2003), precaution should be taken when comparing the disciplines.[12]

In terms of economic resources, economics is one of the largest social science disciplines in Norway, and far more resources are spent on economics research than comparable disciplines such as Sociology and Political Science (Table 3.5). This is mainly due to the size of economics R&D at the Specialised University Institutions and the State University Colleges. Within the universities, economics rank behind both Sociology and Political Science in terms of R&D resources.[13] Due to redefinitions in the statistics, precaution should be taken when comparing the disciplines, see notes to Table 3.5.

Table 3.6 Social Sciences R&D expenditure in Norwegian Higher Education Sector, by funding source and selected disciplines. Percentages within disciplines, 2003.

Discipline	*GUF	**RCN	Other public sources	Industry	Other domestic sources	Foreign sources	Total mill NOK
Economics	**78,1**	**10,3**	**3,3**	**4,3**	**2,4**	**1,7**	**138,3**
Law and Criminology	75,4	13,7	5,0	0,6	1,5	3,7	116,9
Human Geography	74,2	16,0	0,1	0,0	4,6	5,1	22,3
Educational Science	71,2	3,8	19,9	0,7	3,6	0,9	253,9
Psychology	70,3	16,0	8,5	0,0	1,7	3,6	116,8
Political Science	66,4	23,1	6,1	1,8	1,3	1,3	42,8
Sociology	62,0	32,0	0,9	2,9	0,5	1,6	55,9
Social Anthropology	60,9	23,5	2,6	0,0	11,3	1,7	39,9
All Social Sciences	69,6	13,8	8,6	3,2	3,0	1,7	1 522,3

*General university funds
**Research Council of Norway

[12] The proportion of "other and non-specified social sciences" is especially high within the specialised university institutions and the state university colleges, but substantially lower within the universities. See page 36 in Kaja Wendt (2001): *Ressursinnsatsen i samfunnsvitenskapelig forskning.* Oslo: NIFU skriftserie 29/2001.

[13] Within the universities Sociology R&D amounted to 48,1 mill NOK in 2003, Political Science R&D to 41,8 mill NOK and Economics R&D to 40,8 mill NOK.

Table 3.6 shows that institutional general university funds (GUF) covers a somewhat higher share of the economics R&D expenditure, than for comparable Social Sciences disciplines. GUF covers 78 percent of the economics R&D expenditure, and 66 percent of the Political Science R&D expenditure and 62 percent of the Sociology R&D expenditure. However, this difference is mainly due to the size of economics R&D outside the universities. As shown above (Table 3.2), the universities' general university funds cover only 66 percent of their R&D expenditure in economics.

4 International publishing

In this chapter we present publication and citation data analysing the outcome of economic research in Norway. Two different data sets are used for this. The first section – *International Comparisons* – is based on aggregated data for all countries (NSI Thomson ISI), whereas the next section – *Domestic Comparisons* – is based on analysis of raw data encompassing all ISI-indexed papers with Norwegian author addresses (NCR Thomson ISI).

This implies more flexibility in the definition of "economics" in the domestic than in the international comparison. In the international data all journals classified by ISI as economics are included (in all 267 journals). For the domestic comparisons only 149 journals are included, as we have excluded all journals with multiple classifications and only included those classified exclusively as economics (see lists of journals in Appendix 1).[14]

It should be noted that, within the social sciences, ISI-indexed papers only counts for a small share of all publications. Monographs, anthologies, institutional series/research reports and also some journal articles are not covered. The importance of this can be illustrated by some figures from the evaluation of political science in Norway. The involved political scientists reported a total of 3225 publications in the studied 10 year period, whereas only 248 ISI-indexed articles were retrieved for the same period.[15]

On the other hand, economics is probably the social science most reliant on publishing in international journals and the present analysis should provide relevant information about Norwegian contributions to the most central and leading economic journals. However, caution is needed when interpreting the data. As explained below, this is particularly important when comparing between institutions.

4.1 International comparisons

Compared to country size, Norwegian economics have a reasonably high production of international journal articles (based on number of papers with Norwegian author addresses in

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[14] The purpose of this restriction is to exclude non-economics papers in more general journals from the analysis. As explained below, authors' address information in the journals often do not contain information about departmental affiliation, and a substantial number of papers authored by researchers at other departments at the studied universities would have been included in the analysis if including a wider set of journals. This could of course have been more effectively prevented by a more comprehensive analysis, using name searches (from a list of name of researchers at the relevant departments) in stead of delimitation by journal category. Such an analysis is however outside the scope of this study. Prior analyses show that a substantial share of researchers' publications may be outside the ISI-category corresponding to their departmental affiliation (L. Langfeldt 2004: Bibliometrisk analyse av faggrensene i Norges forskningsråds fagevalueringer. Oslo: NIFU Skriftserie 14/2004).

[15] *Statsvitenskapelig forskning i Norge. Status og utfordringer.* Oslo: Norges forskningsråd/Research Council of Norway, 2002.

ISI-indexed journals, see Table 4.1). USA have a very high share of the papers (authored/co-authored 93 582 of the 154 165 papers in the period), whereas Israel is the country scoring best in comparison to the size of its population.

Table 4.1 Number of ISI-indexed papers in Economics, 1981–2004, by country

Country	1981–1985	1986–1990	1991–1995	1996–2000	2001–2004	1981–2004	*Papers per mill inhabitants
USA	16 665	19 432	20 099	20 241	17 145	93 582	316
UK	2 632	2 616	3 329	4 730	4 553	17 860	296
Canada	1 612	2 115	2 256	2 260	1 904	10 147	307
Australia	922	861	991	1 318	1 337	5 429	270
Germany	427	601	703	1 169	1 588	4 488	54
Netherlands	315	487	853	1 290	1 323	4 268	260
France	404	485	677	1 209	1 362	4 137	68
Israel	615	639	539	579	515	2 887	458
Japan	335	430	497	680	705	2 647	21
Sweden	241	274	332	608	553	2 008	223
Switzerland	190	212	279	354	480	1 515	202
Denmark	153	191	289	379	383	1 395	166
Norway	***119***	***133***	***212***	***359***	***389***	***1 212***	***263***
Finland	133	203	173	265	260	1 034	199
Austria	71	97	162	227	290	847	103
All articles	**25 183**	**29 155**	**31 484**	**35 662**	**32 681**	**154 165**	

Source: National Citation Indicators/Thomson ISI/NIFU STEP. For list of included journals/journals classified as economics, see Appendix 1.
*This is a rough measure: Total numbers of papers 1981 to 2004 is divided by million inhabitants 2005.

Table 4.2 shows citation scores in economics for a selection of countries. The world average citations per paper in the field equal 100.[16] We see that Norwegian economics is below the world average in citations, but that the score has increased substantially, from 62 percent of the world average in the period 1981–1985 to 87 percent of world average in 2001–2004.

In interpreting these scores we should note that citations in economics are very unevenly distributed and all countries except six[17] score below the world average (when we include all years from 1981 to 2004 in the calculations). This is because USA contributes to a high share of all the ISI-indexed papers (as author or co-author) and thereby counts for a large part of the average citation rate (see Table 4.1). So even if papers by Norwegian authors on average are not among the most cited papers, they score on about the same level or better than those from several other countries. As we see from Table 4.2, Norway scores close to the average for the EU countries.

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[16] Cf. *Det norske forsknings- og innovasjonssystemet – statistikk og indikatorer 2005: utdanning, forskning og utvikling teknologi, innovasjon.* Oslo: Norges forskningsråd, 2005, page 130.

[17] Of these, three are not included in Table 4.2 because they have a limited number of papers in the period: Bermuda with in total 3 articles in the period 1981 to 2004, Chile (199 articles) and Portugal (335 articles). With such low numbers of papers, the average citation score is very sensitive to highly cited papers.

Table 4.2 Relative citation index: Average citations per papers in economics, 1981–2004, by country. World average = 100.

Country	1981–1985	1986–1990	1991–1995	1996–2000	2001–2004	All period
USA	124	124	126	128	131	125
Israel	119	128	122	104	97	120
Denmark	26	212	109	73	83	108
Canada	106	98	82	86	86	95
Sweden	70	81	105	112	90	88
UK	81	84	90	100	100	87
France	94	72	83	88	91	84
EU	67	74	77	82	84	74
Norway	***62***	***68***	***76***	***77***	***87***	***70***
Switzerland	53	41	73	121	113	66
Netherlands	48	49	75	89	93	62
Austria	42	53	82	77	78	61
Germany	44	57	57	85	87	58
Australia	66	46	51	63	75	56
Japan	48	42	62	43	45	49
Finland	25	18	63	59	75	39

Source: National Citation Indicators/Thomson ISI/NIFU STEP. For list of included economics journals see Appendix 1.

For some counties, Denmark being the most noticeable example, the figures in Table 4.2 seem especially sensitive to single cases. Large fluctuations between the different periods indicate that there are particular papers that have received a very high number of citations, and that these papers strongly influence the country's average for the period.

4.2 Domestic comparisons

In the following tables we present publication and citation scores by authors' institutional affiliation. It should be noted that institutions are identified from the author addresses given in the journals. In cases where such information is lacking, or faulty registered by ISI, the article is not included in the analysis. Moreover, only articles in economic journals are included, not articles published in journals indexed for other fields. The effects of these restrictions may be illustrated by comparing with the results of an available bibliometric study for BI based on ISI-searches for all relevant researcher names. For the period 1995 to 2003, that study found 194 ISI-indexed articles by personnel employed at BI. Of these only 69 were in journals indexed as economics, whereas the rest were in other fields. [18] Restricting the search by institution and economic journals the present study found 58 articles from BI in this period. Reading the tables below, it should therefore be taken into consideration that there may be differences between the units regarding the amount of missing registration of institutional addresses and in the propensity to publish economic research in journals not indexed as economics. Consequently, there are clear weaknesses in the presented figures in terms of comparing the different institutions. More detailed analysis (including name searches) would be needed in order to get reliable data.

[18] Dag W. Aksnes 2004: *Siteringsindikatorer for Handelshøyskolen BI. En analyse basert på publikasjoner i ISI-indekserte tidsskrifter i perioden 1995–2003.* Oslo: NIFU STEP Arbeidsnotat 14/2004.

Table 4.3 shows that a small number of institutions account for the majority of the publications. There are 10 institutions that have published more than 20 papers in the period 1991 to 2004. These 10 institutions – UiO, UiB, NTNU, UiT, NHH, BI, SSB, SNF, the Central Bank of Norway and the Ragnar Frisch Centre – cover 83 percent of the Norwegian ISI papers in economics in the period (916 of 1100 papers). UiO and NHH have by far the highest publications rates and account alone for 410 of the papers.

It should be noted that the figures include all units at the various institutions. Authors' addresses often do not specify department or other sub-institutional affiliation. Consequently, the tables in this section include all papers from e.g. UiO and NHH regardless of the authors' departmental affiliation (also this weakness could be handles by doing name searches, as indicated above).

Table 4.3 Number of ISI publications 1991–2004 by author's institutional affiliation

Institution	1991–1995	1996–2000	2001–2004	Total
UiO - University of Oslo	55	86	90	231
UiB - University of Bergen	25	45	33	103
NTNU - Norwegian University of Science and Technology	7	26	30	63
UiT - University of Tromsø	8	8	9	25
Total Universities	95	165	162	422
NHH - Norwegian School of Economics and Business Administration	29	79	71	179
BI Norwegian School of Management	18	24	37	79
UiS/HIS - University of Stavanger (University from Jan 05)*	0	6	14	20
Bodø University College	5	1	8	14
UMB/NLH - Norwegian University of Life Sciences (University from Jan 05)*	1	8	5	14
Agder University College	2	2	5	9
Molde University College	0	1	7	8
Østfold University College	3	0	1	4
Harstad University College	0	0	2	2
Buskerud University College	0	0	1	1
Sør-Trøndelag University College	0	1	0	1
Ålesund University College	0	0	1	1
Total Specialised University Institutions and State University Colleges	58	122	152	332
SSB - Statistics Norway	14	35	34	83
SNF - Institute for Research in Economics and Business Administration	25	34	22	81
Central Bank of Norway, Research Department	11	13	20	44
Ragnar Frisch Centre for Economic Research (Established 1999)	0	4	24	28
NUPI - Norwegian Institute of International Affairs	3	3	4	10
ISF - Institute for Social Research	3	2	2	7
ARENA - Centre for European Studies	0	0	6	6
CICERO - Center for International Climate and Environmental Research	3	2	1	6
NOVA - Norwegian Social Research	0	3	2	5
CMI - Chr. Michelsen Institute	2	1	1	4
SINTEF - The Foundation for Scientific and Industrial Research at the Norwegian Institute of Technology	2	1	1	4
TØI - Institute of Transport Economics	0	1	3	4
25 others with 1–3 articles in the period	9	10	16	35
Total Institute Sector	**72**	**109**	**136**	**317**
Industry/Service Sector	**12**	**7**	**10**	**29**
Total	**237**	**403**	**460**	**1100**

*Institutions are categorised according to their status in the period 1991–2004.

Notes: Articles, notes and review articles in journals categorised as economics only are included. Items categorised by ISI as book reviews, editorials or corrections are not included. Articles with authors from multiple Norwegian institutions are counted once for each registered institution. Not including co-authorships the number of articles is 841, not 1100.

Also when counting citations we find that a small number of institutions account for a large proportion of the citations (accumulated citations 1991–2004, Table 4.4). These are mainly the same institutions as those accounting for the majority of the papers.

Table 4.4 Citations to Norwegian economics, ISI publications 1991–2004 by author's institutional affiliation

Institution	N (ISI-articles)	Sum citations	Average citations per article	Average XCR**	Max citation to one article
UiO	231	946	4,10	5,26	71
UiB	103	385	3,67	4,47	59
NTNU	63	153	2,39	2,74	17
UiT	25	99	3,96	6,38	35
Total Universities	**422**	**1583**	**3,75**	**4,79**	**71**
NHH - Norwegian School of Economics and Business Administration	179	541	2,96	3,70	59
BI Norwegian School of Management	79	216	2,73	5,12	29
UiS/HiS - University of Stavanger (University from Jan 05)*	20	24	1,20	1,53	6
Bodø University College	14	22	1,57	3,30	6
UMB/NLH - Norwegian University of Life Sciences (University from Jan 05)*	14	94	6,71	4,42	79
Agder University College	9	62	6,89	3,99	55
Molde University College	8	12	1,50	1,50	4
Østfold University College	4	32	8,00	9,05	29
5 others with 1 or 2 articles in the period	5	4	0,67	0,75	2
Total Specialised University Institutions and University Colleges	**332**	**1006**	**3,03**	**3,94**	**79**
SSB - Statistics Norway	83	231	2,78	4,13	16
SNF - Institute for Research in Economics and Business Administration	81	242	2,99	4,82	33
Central Bank of Norway, Research Department	44	254	5,77	4,47	44
Ragnar Frisch Centre for Economic Research (Established 1999)	28	24	0,86	1,19	9
NUPI - Norwegian Institute of International Affairs	10	143	11,92	7,58	90
ISF - Institute for Social Research	7	33	4,71	5,53	16
ARENA - Centre for European Studies	6	16	2,67	2,82	10
CICERO - Center for International Climate and Environmental Research	6	29	4,83	5,37	11
NOVA - Norwegian Social Research	5	11	2,20	1,76	7
CMI - Chr. Michelsen Institute	4	32	8,00	5,42	31
SINTEF - The Foundation for Scientific and Industrial Research at the Norwegian Institute of Technology	4	41	10,25	2,58	34
TØI - Institute of Transport Economics	4	10	2,50	1,17	5
25 others with 1–3 articles in the period	35	99	2,83	3,62	17
Total Institute Sector	**317**	**1165**	**3,65**	**4,12**	**90**
Industry/Service Sector	**29**	**64**	**2,21**	**3,16**	**25**
Total	**1100**	**3818**	**3,47**	**4,30**	**90**

*Institutions are categorised according to their status in the period 1991–2004.
** XCR (expected citation rate) indicates the average citation rates of the involved journals/issues (average number of citations including all articles in the issues the various institutions have published in).
Notes: Articles, notes and review articles in journals categorised as economics only are included. Items categorised by ISI as book reviews, editorials or corrections are not included. Articles with authors from multiple Norwegian institutions are counted once for each registered institution. Not including co-authorships the number of articles is 841, not 1100.

Citation distributions are in general very skewed. A large proportion of papers are never cited, some are cited a few times, and a few get a very high number of citations. When we compare average citations for small numbers of papers, the result is highly sensitive to highly cited papers. In Table 4.4 different measures are included to facilitate comparisons. In addition to the number of papers, the number of citations, and the average number of citations per paper, we have included the maximum number of citations any economic paper from the institution has obtained and the "expected citation rate" (XCR). The expected citation rate indicates the average citations rate for the involved journals (see definition in the notes to the table) and may be used to assess how good a set of papers score compared to what may be expected from where they are published.

Comparing the average citations to the Norwegian papers with the expected citation rate (XCR) in Table 4.4 we see that all sectors score below the average for the involved journals (cf. the previous section showing that Norway and most countries score below the world average in this field). Also all the institutions with more than 20 papers in the period score below the average XCR. On the other hand, some institutions with a low number of papers score better than the average XCR. These institutions (e.g. NUPI and UMB/NLH) have highly cited papers that greatly increase their average citations per paper.

4.3 Co-authorship

Table 4.5 shows an increase in co-authorship in Norwegian economics. In 1991 38 percent of the papers had more that one author, whereas in 2004 this had increased to 65 percent. Moreover, in 1991 the average number of authors per paper was 1,5, increased to 1,9 in 2004. The average number of addresses per paper, on the other had, have increased substantially more – from 1,5 in 1991 to 2,9 in 2004. This high increase in addresses in comparison to authors, may indicate two thing. Firstly, there may have been a high increase in multiple institutional affiliations. Secondly, and perhaps more important, an increased focus on international publication and bibliometric indicators may have made authors more cautious to include all their affiliations in the papers they publish.

Table 4.5 Co-authorship Norwegian economics, by publication year, ISI publications 1991–2004.

Year	Total number of articles	Percent of articles that are co-authored	Average number of authors per article	Maximum number of authors per article	Average number of addresses per article
1991	37	37,8	1,46	4	1,54
1992	34	35,3	1,50	3	1,59
1993	36	44,4	1,64	4	1,67
1994	39	41,0	1,49	3	1,56
1995	43	58,1	1,70	3	1,77
1996	46	50,0	1,70	4	1,74
1997	67	43,3	1,55	4	1,57
1998	65	58,5	1,80	4	2,80
1999	68	48,5	1,72	10	2,69
2000	66	53,0	1,77	6	2,82
2001	69	59,4	1,87	5	2,90
2002	85	57,6	1,82	5	2,94
2003	106	67,0	2,07	15	2,90
2004	80	65,0	1,90	8	2,88
Total	**841**	**54,0**	**1,76**	**15**	**2,41**

Source: ISI/NCR for Norway. Articles, notes and review articles in journals categorised as economics only are included. 19 items categorised as book reviews, editorials or corrections are not included.

Table 4.6 shows the geographical distributions of the co-authors. The whole period taken together, 28 percent have (only) Norwegian co-authors, 4 percent have co-authors form other

Nordic countries (and no co-author outside the Nordic countries), 11 percent have European authors outside the Nordic countries, 7 percent have North-American co-authors and 3 percent have co-authors from multiple continents (and 46 percent have no co-authors). There are some variations between the years, but no clear tendencies of change in the geographical distribution of the co-authorships.

Table 4.6 Co-authorship Norwegian economics, by publication year and country, ISI publications 1991–2004, percentages within years

Year	One author	Co-authors from						N
		Norway	Nordic countries	Other European	North-America	Other parts of the world	Multiple continents	
1991	62,2	24,3	2,7	5,4	5,4			37
1992	64,7	26,5	2,9	2,9	2,9			34
1993	55,6	11,1	5,6	13,9	8,3		5,6	36
1994	59,0	20,5		2,6	10,3	5,1	2,6	39
1995	41,9	30,2	2,3	18,6	4,7		2,3	43
1996	50,0	23,9	8,7	10,9	4,3	2,2		46
1997	56,7	19,4	4,5	10,4	7,5		1,5	67
1998	41,5	30,8	4,6	12,3	4,6	1,5	4,6	65
1999	51,5	25,0	2,9	11,8	4,4		4,4	68
2000	47,0	31,8	1,5	10,6	9,1			66
2001	40,6	30,4	5,8	11,6	7,2	1,4	2,9	69
2002	42,4	27,1	7,1	10,6	5,9		7,1	85
2003	33,0	34,9	4,7	11,3	8,5	2,8	4,7	106
2004	35,0	31,3	5,0	11,3	8,8	2,5	6,3	80
Total	**46,0**	**27,5**	**4,4**	**10,7**	**6,8**	**1,2**	**3,4**	**841**

Source: ISI/NCR for Norway. Articles, notes and review articles in journals categorised as economics only are included. 19 items categorised as book reviews, editorials or corrections are not included.

Table 4.7 shows citation rates for one-authored papers versus papers with different kinds of co-authorship. We see that one-authored papers have a higher average citation rate than papers co-authored with other Norwegians. The highest average citation rate, however, is found in the group of papers co-authored with North-America. Also papers co-authored with Nordic colleagues have a substantially higher average citation rate than one-authored papers, whereas papers co-authored with other European colleagues only have a slightly higher citation rate than one-authored papers. Moreover, both papers co-authored with North-American and with Nordic colleagues score clearly above the expected citation rate, whereas one-authored papers or European co-authored papers does not.

It should, however, be emphasised that we need to be cautious when drawing conclusions based on average citations rates. As stated above, the general distribution of citations are very skewed and a few number of highly cited papers may have high impact on the average citation rate for one category of papers. The figures in Table 4.7 also show very high standard deviations for the Nordic and North-American co-authored papers.

Table 4.7 Co-authorship and citation rates in Norwegian economics, ISI publications 1991–2004

Co-authorship	Average cites per article	Cites per article: Std. Deviation	Maximum cites to one article	Average expected citation rate	Maximum expected citation rate	N
One author	3,71	8,428	90	4,92	52,25	387
Norwegian co-authorship	2,46	3,768	29	3,67	68,88	231
Nordic co-authorship	6,11	10,839	48	4,72	23,74	37
European co-authorship	4,13	7,016	46	4,18	43,33	90
North-American co-authorship	6,40	14,056	79	4,81	29,08	57
Co-authors in other parts of the world	6,30	12,517	40	4,00	20,33	10
Co-authors from multiple continents	2,93	4,472	16	4,03	17,09	29
Total	**3,70**	**7,974**	**90**	**4,44**	**68,88**	**841**

Source: ISI/NCR for Norway. Articles, notes and review articles in journals categorised as economics only are included. 19 items categorised as book reviews, editorials or corrections are not included.
The expected citation rate (XCR) is the average number of citations including all articles in the issues the article was published in. 'Average expected citation rate' is the average of all these averages.

4.4 Frequently used journals

In the final table we look closer at the international economic journals in which Norwegian authors publish most frequently. Trying to find differences in the publication profiles of the various Norwegian institutions doing research in economics, we have calculated number of papers in the different journals. All institutions with more than 20 ISI-indexed papers in the period 1991 to 2004 have been included[19] and Table 4.8 specifies all journals that have at least 8 papers from these institutions. The bottom row displays the percentages of the papers which are in journals used less than 8 times by this group of institutions – a high percentage indicating that the institutions have a publication profile deviating from the rest of the group. We see that three institutions have more than 40 percent of their papers in journals outside those displayed in the table: BI, NHH and NTNU.

Starting on top of Table 4.8, we see, not surprisingly, that *Scandinavian Journal of Economics* is the most frequently used journal, with in total 93 papers from the 10 institutions included in the analysis. This is the most frequently used journal for six of the ten institutions. Also some more specialised journals like *Journal of Health Economics* and *Energy Economics* come quite high up on the list.[20] *European Economic Review, Journal of Public Economics* and *Applied Economics* are also among the frequently used journals.

[19] We have not found it meaningful to make 'profiles' for institutions with fewer papers.

[20] Note that all papers from the institutions are included and that some of them may come from departments not included in the evaluation.

Table 4.8 Number of articles in different journals by author's institution, ISI publications 1991–2004

Journal	UiO	UiB	NTNU	UiT	NHH	BI	SSB	SNF	NB	FS	Total
Scandinavian Journal of Economics	**29**	7	5	0	**18**	4	**10**	**10**	**7**	**3**	93
Journal of Health Economics	15	4	2	**6**	0	3	0	2	0	2	34
European Economic Review	10	2	4	0	9	1	1	4	3	0	34
Journal of Public Economics	8	6	0	0	8	0	4	3	0	2	31
Energy Economics	4	5	1	1	5	0	5	5	3	1	30
Applied Economics	3	3	**6**	2	5	3	2	3	0	2	29
Environmental & Resource Economics	5	1	3	2	2	0	8	6	0	1	28
Resource and Energy Economics	9	1	0	1	2	1	4	5	0	2	25
Journal of Environmental Economics and Management	8	2	0	1	4	1	4	2	1	1	24
International Journal of Industrial Organization	3	7	0	0	5	1	1	5	1	0	23
Economics Letters	11	2	0	0	3	1	3	1	1	0	22
Journal of Population Economics	3	6	0	0	4	2	2	1	0	3	21
Journal of Economic Behavior & Organization	5	2	0	1	1	3	2	4	0	1	19
Insurance Mathematics & Economics	4	**9**	1	0	2	0	0	0	0	0	16
Journal of Economics-Zeitschrift Fur Nationalokonomie	4	1	0	2	2	2	1	1	0	1	14
Journal of Productivity Analysis	7	1	0	0	4	0	1	1	1	0	15
Journal of Economic Dynamics & Control	4	3	2	0	2	0	0	4	0	0	15
Economica	7	1	1	0	2	0	1	0	1	0	13
Oxford Bulletin of Economics and Statistics	2	2	**6**	0	0	0	0	0	4	0	14
Oxford Economic Papers-New Series	7	1	2	0	1	0	2	0	0	0	13
Journal of Banking & Finance	1	0	0	0	2	**7**	0	0	3	0	13
Economic Modelling	2	0	1	0	0	0	5	0	3	1	12
International Tax and Public Finance	3	0	0	0	5	0	2	0	0	1	11
American Economic Review	3	3	0	2	1	0	0	1	0	0	10
Journal of Policy Modeling	0	0	1	0	4	0	3	1	1	0	10
Games and Economic Behavior	2	1	0	0	4	0	0	1	1	0	9
Economic Journal	2	2	0	0	2	0	0	0	0	2	8
Journal of Development Economics	2	1	2	0	0	0	1	2	0	0	8
Social Choice and Welfare	2	0	0	0	3	0	1	1	1	0	8
Journal of Business Research	0	0	0	0	4	4	0	0	0	0	8
Journal of Business Ethics	0	0	0	0	1	**7**	0	0	0	0	8
Sum articles in selcted jounals (journals with at least 8 articles)	165	73	37	18	105	40	63	63	31	23	618
Sum articles in non-selected journals (journals with less than 8 articles)	66	30	26	7	74	39	20	18	13	5	298
Total number of articles	231	103	63	25	179	79	83	81	44	28	916
Percent of articles in "non-selected" journals	28,6	29,1	41,3	28,0	41,3	49,4	24,1	22,2	29,5	17,9	32,5

Notes: Articles, notes and review articles in journals categorised as economics only are included. Items categorised by ISI as book reviews, editorials or corrections are not included. Articles with authors from more than one of the institutions in the table are counted once for each institution. Not including co-authorships the number of articles is 737, not 916.

Acronyms:
UiO - University of Oslo
UiB - University of Bergen
NTNU - Norwegian University of Science and Technology
UiT - University of Tromsø
NHH - Norwegian School of Economics and Business Administration
BI - Norwegian School of Management
SSB - Statistics Norway
SNF - Institute for Research in Economics and Business Administration
NB - Central Bank of Norway, Research Department
FS - Ragnar Frisch Centre for Economic Research

Appendix 1 Journals included in the statistics

Journals coded as 'Economics' in NSI deluxe/ISI Thomson (267 journals in economics)

ABACUS-A JOURNAL OF ACCOUNTING AND BUSINESS STUDIES
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Appendix 2 Tables

Table A 1 R&D personnel with a higher degree in economics by academic position, Selected Research Institutes, 2003. Frequencies.

Institute	Senior Researchers	Resear-chers	Postdoc	Research Fellows	Total econo-mists
ISF - Institute of Social Research	7				7
SNF- Institute for Research in Economics and Business Administration	14	6		2	22
Ragnar Frisch Centre for Economic Research	7			7	14
SSB - Statistics Norway, Research Department	20	37	1		58
TØI - Institute of Transport Economics	13	9			22
Central Bank of Norway, Research Department	7	4			11
Total	**68**	**56**	**1**	**9**	**134**

"Senior Researchers" includes "Forsker 1", "Forsker 2" or equivalent.
"Researchers" includes "Forsker 3" or equivalent.

Table A 2 R&D personnel with a higher degree in economics 2003, by doctoral degree and type of institution. Percentages within type of institution.

Sector	Holds a doctoral degree	No doctoral degree	N
Universities	58,0	42,0	100
Specialised University Institutions	56,6	43,4	175
State University Colleges	25,6	74,4	211
Research Institutes	26,4	73,7	289
Total	37,0	63,0	775

Note: The table shows the share of the R&D personnel with a higher degree in economics that hold doctoral degree in 2003 (regardless of research field of the doctoral degree).

Table A 3 Economists' academic positions 2003. Percentages, research unit selected for the evaluation.

Institution/unit	Profes-sors	Resear-chers and Post-docs	Recruit-ment position	Teach-ing position	N
UiO: Department of Economics	65,5	10,3	24,1		29
UiO: Centre of Health Management (HELED from 2004)	20,0	20,0	40,0	20,0	5
UiB: Department of Economics	42,1	36,8	15,8	5,3	19
NTNU: Department of Economics	57,1	7,1	28,6	7,1	14
UiT: Department of Economics and Management	60,0	10,0	20,0	10,0	10
Universities	54,5	16,9	23,4	5,2	77
UMB/NLH: Department of Economics and Resource Management	71,4	28,6			7
NHH: Department of Finance and Management Science	73,9	8,7	17,4		23
NHH: Department of Economics	55,9	14,7	26,5	2,9	34
BI: Department of Financial Economics	100,0				4
BI: Department of Economics	77,8		11,1	11,1	9
Specialised University Institutions	67,5	11,7	18,2	2,6	77
UiS/HiS: Department of Petroleum Engineering	100,0				4
UiS/HiS: Department of Business Administration	75,0			25,0	4
UiS/HiS: Norwegian School of Hotel Management	42,9	14,3		42,9	7
HiBodø: Bodø Graduate School of Business	52,0	4,0	28,0	16,0	25
HiAgder: Department of Economics and Business Administration	68,8		6,3	25,0	16
HiMolde: Department of Economics	53,8		7,7	38,5	13
State University Colleges	59,4	2,9	13,0	24,6	69
ISF - Institute of Social Research		100,0			7
SNF - Institute for Research in Economics and Business Administation		90,9	9,1		22
Ragnar Frisch Centre for Economic Research		50,0	50,0		14
SSB - Statistics Norway, Research Department		100,0			58
TØI - Institute of Transport Economics		100,0			22
Central Bank of Norway, Research Department		100,0			11
Research Institutes	0	93,3	6,7	0	134
All selcted units	37,8	41,7	14,0	6,4	357

Professors include: Full professors, Associate Professors ('førsteamanuensis'), academic leaders (employed Deans and Chairs/Heads of departments) and University College Docents/Senior Lectures ('høgskoledosenter').
Researchers/postdoc includes: all Researchers and Postdocs regardless of source of funding.
Recruitment position includes: Research Fellows ('stipendiater') and Research Assistants regardless of source of funding.
Teaching position includes: Assistant Professors ('amanuensis'), Lectures ('førstelektor, universitetslektor, høgskolelektor').

Table A 4 Units to be evaluated: R&D personnel (2003) by their educational discipline.

Sector, institution and department	Economics	Sociology	Political Science	Social Anthropo–logy	Psychology	Educational Sciences	Human geography	Media or Library Science	Law and Criminology	Social Science (not specified)	Humanities	Mathematics	Statistics	Natural Science	Natural Science/ Mathem. unspecified	Medical Sciences	Engineering	Agricultural/ Fishery Science	No information	Total
UiO: Department of Economics	30						1			3		4	1	1	2				1	43
UiO: Centre of Health Management (HELED from 2004)	5		3													4			1	13
UiB: Department of Economics	19			1						2		1	1				2			26
NTNU: Department of Economics	14																2		1	17
UiT: Department of Economics and Management	10													1				6		17
Universities	78		3	1			1			5		5	2	2	2	4	4	6	3	116
UMB/NLH: Department of Economics and Resource Management	7	1								2	2				3			21	1	37
NHH: Department of Finance and Management Science	23											6		2	4		1		4	40
NHH: Department of Economics	34									3	4			1	1				1	44
BI: Department of Financial Economics	4									2	2				2		1		2	13
BI: Department of Economics	9	1										2	1		2				1	16
Specialised University Institutions	77	2								7	8	8	1	3	12		2	21	9	150
HiBodø: Bodø Graduate School of Business	27									5	3	4		3			4	1	3	50
HiAgder: Department of Economics and Business Administration	16			1					3	3	1				2		0			26
HiMolde: Department of Economics	13									5		1		2	2		1			24
UiS/HiS: Department of Business Administration	4	2						1	3	4				1			2	1		18
UiS/HiS: Norwegian School of Hotel Management	9				1	2		1		2	2			2		2			3	24
UiS/HiS: Department of Petroleum Engineering	4									1		1		12	5		17		7	47
State University Colleges	73	2		1	1	2		2	6	20	6	6		20	9	2	24	2	13	189
ISF – Institute of Social Research	8	17	4	4			1	1	1	1	4									41
SNF - Institute for Research in Economics and Business Administration	22	4					4	1		3		1		1					2	38
Frisch Centre for Economic Research	14									1									2	17
SSB - Statistics Norway, Research Department	58	10	1				2	1		3	1	7	7	6	5		1		2	104
TØI - Institute of Transport Economics	23	13	3		4					3			2	6			9		2	65
Central Bank of Norway, Research Dep	11																		1	12
Research Institutes	136	44	8	4	4		7	3	1	11	5	8	9	13	5		10		9	277
Total	364	48	11	6	5	2	8	5	7	43	19	27	12	38	28	6	40	29	34	732

All registered R&D staff included, also persons without a higher degree.