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Introduction

The Annual Report 2000 for the Research Department of Statistics Norway presents the main fields of research in 2000 with complete lists of publications and staff. The Annual Report also gives a brief history of the Department and its role as a social and economic research institution. The Research Department as presented in this report, includes the Social and Demographic Research Unit which administratively is placed in another department in Statistics Norway than the Research Department. Other research activities within Statistics Norway are not included in this report. The reasons for this line of division are partly historical and partly due to the fact that the Research Council of Norway uses this definition of what constitutes a research institute within Statistics Norway.

The Research Department welcomes interest in our publications and activities in general. We are happy to provide information as well as publications to both individuals and institutions. Some of our publications, such as Discussion Papers, Economic Survey and Statistical Analyses, are available free at our website at www.ssb.no (English site: www.ssb.no/en). All paperpublications can be ordered from our Sales and subscription service or via Internet. Our website is also updated with other information about the research activities at Statistics Norway.

Oslo, February 2001

Ådne Cappelen
Head of Research Department

Brief history of the Research Department

The research activities of Statistics Norway have roots far back in the history of the institution. The statistical bureau of Norway was founded in 1876 by separating a small statistical office from the Ministry of the Interior.

The first Director General of Statistics Norway, Anders N. Kiær (1876-1913), took an active part in the international statistical cooperation and was a pioneer in the use of representative samples as a basis for statistics, especially with regard to income statistics. The research activity of Statistics Norway in the early years was modest and mostly related to analysis of data from the population census and income statistics. Later on after the turn of the century, statistical investigations of social issues and poverty conditions became an important area of research. After World War I Statistics Norway started to publish regular economic surveys.

A separate Research Department was not established, however, until 1950. In the years just preceding 1950 intensive efforts had taken place in establishing National Accounts, based on production statistics as the primary data source. The pioneering national accounts work of this period was an empirical research frontier which later would provide a basis for macroeconomic modelling and other planning and policy oriented tools. The national accounts system was completed in the early 1950s. At that time as one of very few, which integrated detailed annual input-output tables within the national accounting framework.

During the 1950s the research activities of the Research department comprised in addition to national accounts, tax research, monthly and annual economic surveys, and other research activities often directed towards improving methods of economic planning in the postwar period. Towards the end of the 1950s the first macroeconomic model of Statistics Norway—the MODIS I model—was developed as a simple input-output model, but large in relation to the computer capabilities of the time.

Throughout the 1960s and 1970s models of the MODIS family, ever increasing in size continued to be developed and used intensively by policy makers. In addition, applied general equilibrium modelling was included as an important research activity. The 1960s also initiated an era of computer based tax models run by the Research Department as a service directed primarily towards the Ministry of Finance and the Storting (Parliament). Around 1980 a new breed of macroeconometric models were finally developed.

In the 1970s natural resource accounts and energy economics became new adopted research fields, later on after 1980 petroleum economics followed. During the 1980s and even today, a major emphasis is placed on developing microsimulation models, combining advances in computer technology, econometric methods, and data availability. These models are useful vehicles for the analysis of societal change as a result of demographic development, economic growth and government policy.

In its present form, the Division and Demographic Research was established in 1991 as a separate division for research activities within the Department of Social Statistics. In a historical perspective, however, the present unit continues a more than 100 year long tradition of social and demographic research within Statistics Norway.

The Research Department celebrated its 50th anniversary in 2000. In 2001 Statistics Norway will have excisted for 125 years. These milestones have spurred studies of the history of our institution and the relation between statistics and society by economic historians.

General research objectives

The general objectives of the research activities within Statistics Norway are fourfold:

Enhanced empirical knowledge
Statistics alone is an insufficient source of information for understanding social and economic development. Analysis of statistical data by means of relevant theory and analytical methods and the use of models give empirical insight and deeper understanding of the phenomena under consideration.

Analytical tools for monitoring economic and environmental development
An important use of empirical insight gained is embodied in the design of tools for government planning, usually in the form of simulation models. Modelling activities are carried out in close contact with user interests and with emphasis on government planning needs.

Feed-back to the statistics
Researchers in the Statistics Norway have a unique position close to the sources of data. This provides special opportunities for exploitation of the data expertise in Statistics Norway, for special organization of data material and links to other sources, and for influencing methods of collection of primary data. The analytic use gives feed-back effects to the statistical work and may improve the quality of official statistics.

Cumulating competence
Adequate expertise and scientific competence are obvious prerequisites for successful performance of research tasks. The research activity shall give results that can be utilized in the Norwegian society and provide documentation to secure that high scientific standards in the analyses have been maintained.

Main findings 2000

A micro simulation model for *welfare analysis of tax policy* has been applied to rank twelve different direct and indirect taxes and subsidies according to their distributional efficiency. Increased child benefit for the third child and more ranked first, reduced surtax on gross income ranked last and reduced tax on food and electricity ranked in between. The ranking is robust to the choice of equivalence scale used when aggregating the standard of living over all individuals to a welfare measure favouring both less inequality and larger average standard of living.

The analyses of the *Cash for care* (Norwegian Home Care Allowance) Reform from 1998 show that the positive, direct effects on income inequality from the new transfer system dominate the effects from behavioural responses. An analysis of the short term effects in the labour supply of mothers, found a small decline in the paid work probability for most mothers after the reform, except among those at the highest educational level. Moreover, the adaptations of mothers with education at the middle university level have become more similar to the adaptations of the lowest educational group. This trend was most pronounced for mothers with teacher training education. Model simulations predict that the long term negative effects on female labour supply probably will be larger than the observed short-term effects. (Female Labour Supply when Mothers Choose Mode of Non-parental Care)

The register based analyses of *recent fertility trends* indicate more pronounced trends towards divergent fertility patterns within younger cohorts of women, also among women with educational attainment at university or college level. Women with an educational specialisation for female dominated occupations and professions (e.g. nurses, teachers), have on the average more children and are less likely to remain childless than women with other types of education at the same level.

An analysis of *fertility patterns of immigrant women* found substantial variation in the level of fertility between immigrant women from different regions of the world. There is a converging trend towards the national fertility patterns with increasing duration of stay in Norway. There is however, also substantial variation between different immigrant groups with regard to the tempo of this convergence (Register analyses of recent fertility trends).

The observed rise in *income inequality* during the 1990s may to some extent be explained by a change in the dividend policy of the corporations, induced by the tax reform in 1992. When the total return from shares is taken into account, we find a smaller increase in the overall level of inequality and in particular a smaller increase in the contribution to inequality from share ownership (Tax Reforms, Dividend Policy and Trends in Income Inequality)

Higher *immigration* may have a positive effect on future labour supply and ease the future burden in financing the National Insurance System. A high share of young adults among the immigrants coming to Norway is the main factor behind the result, outweighing lower labour force participation rates than among Norwegians in the same age groups (Analyses based on the MOSART-model for the Norwegian Employment Commission and the Ministry of Finance)

Comparative national and cross-national analyses of the performance of local *labour markets* show interesting differences between the Nordic capital regions. Oslo distinguishes clearly from other Nordic capitals by lower local recruitment, higher in-migration to jobs, higher job-to-job transition, relatively high recruitment from the educational system, but rather weak transition from unemployment to job. (Educational strategies for territorial competitiveness)

The introduction of a gas power plant in Norway will have two contradictory effects on *emissions of greenhouse gases in Europe*: New electricity producing capacity, with lower short run marginal cost than the existing ones, may contribute to a decrease in prices and thereby increase demand. Higher electricity use and production drive total emissions upwards. On the other hand, the new generation may substitute existing production, which also happen to be high polluting, thus reducing emissions. Is the substitution larger than the income effect? In the short run, total emissions decrease, i.e. the substitution effect dominates the income effect, while in the longer run the opposite seems to be the case. Accumulated emissions are close to zero. No clear conclusion could be drawn. A Norwegian gas power plant could both increase and decrease European emissions of greenhouse gases.

The link between *morally motivated behaviour and social welfare* can be handled by standard economic theory and used to analyse possible influence from political instruments on moral motivation. We show that economic incentives may well curtail moral motivation. A fee for not participating in voluntary work may in certain instances reduce the participating rate in such projects. The reason is that the perception of the fee is that you may ransom yourself from voluntary participation. According to interviews, both voluntary work and sorting at source by households seems to confirm this theoretical result. Another test on a new smoking law in Norway shows that this may have changed the moral motivation concerning smoking behaviour. Non-smokers seem to be exposed to less passive smoking even in situations beyond the smoking law.

Economic and environmental effects of trade liberalisation according to the WTO- and EEA agreements as well as an EFTA agreement on fisheries have been studied using an AGE model for Norway (MSG-6). The trade reform scenario is compared with a hypothetical scenario based on the previous trade policy regime. Trade liberalisation increases real income and raises the welfare related to consumption and leisure by close to one percent. Higher consumption has a cost in term of increased emissions of several pollutants, including the Kyoto gases. Changes in the composition of consumption, domestic production and use of input factors also have a negative effect on the environment.

Like in most other OECD-countries, *labour demand in Norway has shifted from unskilled to skilled* persons over time. Based on an econometric model of the cost shares of Norwegian manufacturing, we find that skilled biased technical change seems to be the main reason for the substitution of skilled for unskilled labour over the last 25 years. However, also changes in relative wages and in the stock of capital have stimulated demand for skilled labour.

Factors explaining business cycles in Norway during the 1990s have been studied by means of a disaggregated quarterly model of the Norwegian economy (KVARTS). The analysis confirms results for earlier periods, showing that shocks from international product markets have been counter cyclical, while shocks from petroleum investments have had a pro-cyclical effect. Fiscal policy has mainly had a counter cyclical effect on the economy, except towards the end of the cyclical upturn. The analysis also shows that impulses from interest rates and exchange rates were pro-cyclical during the middle 1990s, indicating that monetary policy had a destabilising effect on the economy during these years.

Organization of Statistics Norway

Per 1 February 2001

Chairman of the Board
Åge Danielsen

Director General
Svein Longva

Department of Economic Statistics
Olav Ljones

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- **Environmental Statistics** – Svein Homstvedt
- **Energy and Industrial Production Statistics** – Bjørn Bleskestad
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- **Public Finance and Credit Market Statistics** – Anna Rømo
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- **Social Welfare Statistics** – Berit Otnes
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Research Department
Ådne Cappelen

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- **Resource and Environmental Economics** – Torstein Arne Bye
- **Macroeconomics** – Knut Moum
- **Microeconometrics** – Jørgen Aasness

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- **Information and Publishing** – Anne Skranefjell
- **International Consulting** – Bjørn K. Wold

The Division for Public economics provides analyses within the following research areas: 1) Analyses of the effects on private incomes and public revenues from taxes and transfers, 2) Analyses and projections of household composition, labour force, education and social security, and 3) Analyses of regional economics and local government expenditures. The studies are mainly based on Statistics Norway's micro data and consist of econometric analyses as well as developing and utilising micro simulation models. To analyse labour market imbalances, regional development and local government expenditures, macro models are also used. Different ministries are the main users of the analyses, and the Division has for many years had the responsibility for providing the Ministry of Finance and the Storting (Parliament) with analyses of taxes and the social security system.

Taxes and transfers

Our major tool in analyses of personal income distribution and effects on public revenues from changes in the tax system have traditionally been the tax-benefit model LOTTE. This model is a static microsimulation model based on a sample of detailed income tax returns for about 40 000 individuals, with additional information from administrative registers and interviews. The individual records can be aggregated to households and married couples, and the results can be weighted in terms of consumption units. For any change in the tax system the model simulates tax revenues, disposable incomes, and average and marginal tax rates for individuals and households. Model results comprise effects on tax revenues and income distribution of specified policy changes. The model is extensively used by the government, especially the Ministry of Finance, and by the Storting (Parliament).

The LOTTE-system also includes a tax law module that is used to calculate taxes, disposable incomes, marginal tax rates etc. for households with given characteristics. Recently the model system is extended with a module for indirect taxation, which makes it possible to analyse the effects of direct and indirect taxes simultaneously. The present version of this module is based on the consumer price component of the macro model MSG-6 developed at The Division of Macroeconomics. Based on simulation results from this model we have made a ranking of the distributional efficiency of various indirect and direct taxes. One result from this study is that increasing the child benefit is distributionally more efficient than lowering the VAT on food.

In the last years various effects of the Norwegian tax reform of 1992 have been studied. This reform comprised substantial increases in the net-of-tax rate for high-income earners and small changes at lower income levels, and serves as a "natural experiment" that can be used to derive estimates of income responses to changes in net-of-tax rates. Our estimates of the elasticity of taxable income with respect to the net-of-tax rate are substantially lower than similar estimates from analyses on U.S. data. In another project we discuss the trends in tax progressivity from 1991 to 1995 and use the results from tax-benefit model simulations in order to improve the understanding of trends in tax progressivity.

Development of labour supply modules for simulations of behavioural effects of changes in taxes and transfers has been another important field of research in the last couple of years. These studies emphasise that non-pecuniary benefits might be at least as important as hours of work for individual behaviour in the labour market. It is assumed that households choose from a finite set of job "packages", which are characterised by wage rate, (offered) hours of work and non-pecuniary attributes. Three projects apply this framework, one baseline model and two more complex ones. One of the sophisticated models also includes the choice of childcare arrangements in the mothers' decision making framework. This model is currently employed in an evaluation of a recent reform of the transfer system for families with children - the home care allowance reform. Another model considers that preferences for working hours might be correlated over time, and in the estimation of this model we apply an unbalanced panel data set.

We have also examined the degree of intertemporal comparability of national estimates of income inequality when data are based on income tax records. The problem of comparability is particular crucial when major tax reforms have taken place and pre- and post-reform income data are used as basis for comparing trends in income inequality. The conventional wisdom that the increase in inequality in Norway during the 1990's was due to an increase in inequally distributed capital incomes is questioned by the analysis, which pays particular attention to the definition and measurement of income from shares. The rise in income inequality coincided with the implementation of a major tax reform that affected the financial incentives in the corporate sector and the income shifting incentives in small enterprises. Our empirical results suggest that the observed rise in income inequality during the 1990's to some extent can be explained by a change in the dividend policy of the corporations, induced by the tax reform in 1992. When the total return from shares is taken into account, we find less, but still, increase in the overall level of inequality and in particular less increase in the contribution to inequality from share ownership.

Documentation: DP 284, DP 287, REP 2000/14, ØA 3/2000, 6/2000, [33], [40], [55], [61], [83].

Population, education, labour market and social security

Analyses and projections of household composition, labour force, education and social security are centred around the MOSART model. MOSART is a dynamic cross-sectional stochastic microsimulation model with the calendar year as time unit. The model starts with a one-percent representative sample of the Norwegian population in 1993 based on administrative data, including public pension entitlements in the form of annual labour market earnings since 1967 when the current social security system was introduced. The life span of each individual is simulated with respect to migration, death, births, household formation, education, labour supply and income, disability pension and retirement. Public pension benefits are calculated from the simulated life courses, and the current version of the model also includes a simple simulation of income and wealth in general, taxes, transfers, savings and inheritance. The model simulates the entire population for one year, before entering the next year, enabling inter-personal relations and external constraints on the number of events in the simulation. The length of the projection period depends on the purpose of the analysis, usually lying somewhere between year 2010 and 2060. The MOSART model is extensively used by government ministries, especially The Ministry of Finance, in analysing long-run developments in the labour force, public disability and old age pension schemes.

Simple OLG-models have been developed to see whether they can supplement the projections made by the MOSART model. In MOSART changes in the economy are exogenous, while in an OLG-model they are explicitly modelled as the result of optimising agents. One of the models looks at the effect on economic growth when there is a health sector in which there is little technological progress, while another looks at the effect on growth when there is interaction between fertility and education.

In order to analyse the possibility of disequilibrium in different segments of the labour market a simple submodel to the macroeconometric model MODAG and the microsimulation model MOSART is established. In this model supply and demand for different kinds of labour by education are compared by using the number of persons as the unit of measurement. To analyse labour market imbalances in the health and social welfare sector in more detail, a special model is constructed giving projections for supply and demand for 18 professional groups. A corresponding model is constructed for the educational sector to analyse labour market imbalances for four groups of teachers.

Documentation: SES 101, ES 2/2000, [43], [73], [74].

Regional economics and local government expenditures

The regional macroeconomic model REGARD is used to support the analyses and projections of the development in regional labour markets and migration. The present economic part of the model is a simple submodel to the macroeconometric model MODAG where national figures for gross production, gross investments and employment in 28 industries are distributed to 19 counties by coefficients from the most recent regional national accounts from 1997. A demographic model block takes care of internal migration and labour force participation. The model provides projections of labour market imbalances, illuminating the implications for regional employment, labour force and population growth of a given macroeconomic scenario and from changes in economic policy. In 2000 the model was used in the preparation of economic surveys for four Norwegian regions. The model was also used in regional analyses for the next Norwegian Government Long-term Programme (2002-2005) and for the next report to the Parliament on regional policy.

A research project, "Educational strategies for territorial competitiveness", investigating regional labour market mobility patterns in Nordic countries continued in 2000 by cooperation with researchers in Finland, Iceland and Sweden. The main approach has been to make comparative analyses of the performance of some local labour markets based on gross-stream data. Results from the project were used in analyses for the Norwegian Employment Commission. The project continues in 2001 including analyses of urban and regional labour market mobility as well as the effects from local tax policy and competition

In analysis of local government expenditures a macro model MAKKO is used to project employment and the number of clients in local public services in Norway. At the aggregate level, MAKKO contains submodels for services provided by local governments, like kindergartens, primary and secondary education, health care and care for the elderly.

A microeconomic model KOMMODE has been developed to analyse the fiscal behavior of local governments. A linear expenditure system has been applied to the estimation of price and income elasticities for eight service sectors. The econometric model treats budget deficits and expenditures in different service sectors as endogenous variables. Moreover, the model accounts for heterogeneity in local tastes and production costs. A number of projects that applies KOMMODE in analyses of income distribution, efficiency and economies of scale, are in progress. The model has also been applied to derive a classification of municipalities.

A project on the municipal allocation of home care services across individuals was in progress in 2000. The results show how service production depends on characteristics of the clients and the economic conditions for the municipalities. The estimated model of service supply to individuals is applied in analyses of distribution and efficiency in care for the elderly and disabled.

In a PhD project, started up spring 2000, fiscal externalities between local governments are in focus. In the first project we study the effects of competition for capital on local governments' fiscal adjustment. For this use we have gathered a database where private investment are included at the municipal level, together with the traditional economic, demographic and political variables.

Documentation: REP 2000/3, DP 288, NOT 2000/10, ØA 9/2000, [48], [69], [70], [71], [92], [97].

Hedonic price indices

A project "Price indices for capital goods - part 2" started in the later part of 1999. The project is partly financed from Eurostat, and the intention is to make a final report in May/June 2001. The primary aim in the project is to study what methods are suitable for estimating indices for capital goods. In the first part of the project five particular products were selected to represent these kinds of goods. A market analyses for each of the five products is finished, and data collection is completed for half of the products. The rest of the study will be concentrated on analytical work where, among other things, separate indices using different methods will be estimated.

Documentation: [72]

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An important objective of the Research Department the last two decades has been to develop and apply models to analyse the interactions between economic development, energy extraction and use, and environmental consequences. In the last five years we have focused on the functioning of a deregulated Nordic electricity market and the development of a European gas market. Consequences for Norway following the implementation of instruments to restrict the emissions of greenhouse gases according to the Kyoto Protocol have been studied in various analyses. Methodological issues concerning valuation of the environment and calculating the petroleum wealth has also been important subjects, as has analyses of the economic consequences of different waste policies. The last three years we have also focused on economic modelling of moral and social norms.

The European and Nordic energy markets

The Norwegian electricity market was deregulated in 1991. This implied a major change for an industry that has been regulated for hundred years. The empirical evidence of the impacts of this deregulation is still to be documented and is an important area for further analyses.

The Swedes deregulated their electricity market in 1996, followed by the Fins in 1997. Denmark and the rest of Western Europe seem to follow suit. The large power production capacities developed during the regulated period will be part of a competitive market and contribute to lower prices. Changes in the external conditions alter the relative profitability of the different power production technologies. Changes in power exchange become more important and this again may influence both prices and price variation by period of use. To be able to analyse elements of these issues we develop macro economic models for Norway linking the economy and the electricity market on a yearly basis, and Nordic electricity market models including time of use and production aspect. These models have been used to study policy issues like the economic consequences of stabilising the Norwegian electricity consumption, balancing exports and imports of electricity in the long run, and the profitability of gas powered plants.

Two major electricity-consuming sectors are dominant in the Norwegian electricity market. The residential sector constitutes one third of the total market, and its share is increasing. This has challenged politicians to find instruments to reduce the households electricity consumption in Norway. The power intensive industry utilises one fourth of total electricity consumption. This industry has so far had long term contracts with low electricity prices. Under a market regime this may change, which again may have major impact on the demand for electricity from this industry.

During the last four years we have also applied micro economic theory, and household specific and firm specific data to estimate the households and firms responses to price changes.

Documentation: DP286, REP 2000/26, [28], [66], [75], [85].

Climate treaties, the Norwegian economy and national wealth

The close link between the Nordic electricity market and the central European electricity market implies a direct link between the extraction of gas from the continental shelf, and the electricity markets both in Europe and the Nordic countries. To deal with this interaction in our analysis of energy markets we follow three lines: First, we have access to a large disaggregated macroeconometric model taking into account the interaction between economic development, energy markets and environmental problems, like emission to air. Second, together with the Frisch centre we have developed a partial equilibrium model for the Western European energy market, emphasising the trade in gas and electricity between the countries. Third, a partial energy market model allows studying consequences of imperfect markets on energy prices, demand, production and trade. These models also enable us to study the European energy market impact of different regimes for fulfilling the Kyoto protocol.

Restrictions on the emissions of greenhouse gases, through for instance the Kyoto protocol, may influence the Norwegian economy along two main dimensions: It will influence the competitiveness of Norwegian industries, and it may reduce the petroleum rent which is very important for the Norwegian national wealth. The question is how much. The models described above may be utilised to analyse the first issue. To answer the second question, dynamic models describing the supply of oil, gas and coal and the demand for these primary energy sources are applied. The model solution depends on both extraction cost, transport tariffs and taxes. This model also includes different kind of market solutions allowing for analyses of possible OPEC market power etc.

Documentation: DP 245, [18], [44], [63].

Positional goods, norms, economic activity and the environment

Recently there has been much discussion internationally on the environmental Kuznets kurve; the claim that above some level of per capital income, further growth will benefit the environment. Most studies in this literature are based on cross-sectional studies, comparing different countries at any one time, while there is a lack of time series analysis and linkages to empirical economic models. Since Norway early developed resource accounts and emissions inventories and also has linked environmental issues to economic models, we are in a position to study these questions in a time series perspective. Which environmental conditions have improved with growth and what explains the observed changes in pollution over time?

It has long been recognised that there are important linkages between growth and search for status or positional goods. This link has important implications for an optimal environmental policy, as resources may be wasted in everybody's effort to 'keep up with the Jones's', a struggle with few or no benefits.

Social and moral norms are important for any society to function well. Many externalities are at least partially controlled by norms. What generates these norms? Can the use of economic incentives or other public policy measures to control the same externalities crowd out environmental norms, and increase the cost of controlling the externality, or will such policy measures reinforce the norms?

Regarding moral norms, policy may change individuals' perception of their personal responsibilities, and thus also change morally motivated behavior. We have integrated this perspective in an economic model of consumer behaviour (DP 290). The mechanisms of the model are illustrated using newly collected interview data on households' recycling behaviour and voluntary community work. When it comes to social norms, the social approval from others is a crucial motivating factor, and this leads to somewhat different mechanisms. We have employed a theoretical model of the development of social norms for considerate smoking behaviour and used it to analyse the effects of the Norwegian smoking law amendments in 1988. The analysis is illustrated using survey data. The conclusion is that a substantial shift in the enforcement of social norms for considerate smoking has taken place in Norway.

Economic activity generates waste. Model analyses shows that this may be an increasing burden in the future. The question then is whether this challenge should be met by general or more specific policy instruments. General instruments may be taxes on materials to reduce waste in the context of material balances. More specific policies may be to influence the rate of recycling, burning of waste for energy purposes etc. A decision of instruments should be based on comprehensive studies comparing minimum cost of all the alternatives.

Documentation: DP 275, 277, 279, 282, 290, Reprints 160, 172, ES 4/2000, [20], [21], [22], [23].

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The purpose of macroeconomic analysis within Statistics Norway is to study the structure and development of the Norwegian economy by exploiting internal and external data sources and by developing and utilising macroeconomic models. Key users of the models are the Ministry of Finance and the Storting (Parliament), although general availability to the public of models and results is emphasised. Business cycle analysis reports are published quarterly. Current work can be reported under three headings: Business cycle analysis, Macroeconometric models and econometric analysis and General equilibrium models.

Business cycle analysis

The Research Department publishes an annual economic survey of the preceding year and three quarterly surveys in parallel editions in Økonomiske analyser and Economic Survey. They are also available on Internet. Besides presenting the quarterly national accounts, these surveys also offer a brief presentation of the main international economic trends and forecasts of the macroeconomic development for the Norwegian economy. The forecasts are constructed using the quarterly macroeconometric model KVARTS (see below).

The Research Department is a member of AIECE (Association d'Institutes Européens de Conjoncture Economique) and of the now UN-based LINK system, which links national macro models to a global model. The LINK forecasts provide an important source of information in our forecasting activity. To appraise international economic developments, the Research Department also employs the NIGEM model of the National Institute of Social and Economic Research in London, UK.

Documentation: ØA 1/20000, 5/20000, 6/2000, 9/2000, ES 1-4/2000,[32], [67], [68], [71], [77].

Macroeconometric models and econometric analysis

Most of the macroeconomic research is centred around the development and use of the two large macroeconometric models – KVARTS and MODAG. The KVARTS model is used for forecasting and analysis in our business cycle reports. The model is also used to provide alternative scenarios for the Government appointed Expert Committee for Income Settlements in connection with the annual nation wide wage and income negotiations. In addition, the KVARTS model has been a central tool in various counterfactual/historical studies of Norwegian business cycles, and for policy analysis. The MODAG model is based on annual data and mainly used by the Ministry of Finance for forecasting and policy analysis. Both models are updated using the most recent final national accounts data. The input-output structure and base year of the models is updated every year, presently to the final accounts for 1997. The models have the same input-output structure and level of disaggregation, and comprise at the moment 28 sectors of production and 46 commodities.

For most private production sectors (22) a set of factor demand equations are specified based generally on Cobb-Douglas production functions but with nested CES-elements for energy commodities (electricity and fuels). The factors specified are labour, energy, other material inputs, and three components of capital inputs (machinery, transport equipment and structures). For each commodity we specify an exogenous world market price, and two endogenous prices (for exports and the domestic market). The modelling of import shares and export volumes is based on the Armington approach.

Households supply labour which is disaggregated by gender and age to take account of large differences in labour market behaviour for various groups. There are substantial "discouraged worker effects" and moderate after tax real wage effects in the aggregate labour supply. Household demand is specified using a macroconsumption function and a housing investment equation, both depending on household income, wealth and an after tax real interest rate. The allocation of household demand on consumer categories is based on a dynamic version of the AIDS system.

Based on the input-output structure and the commodity disaggregation, indirect taxes and subsidies are specified in great detail. The same goes for direct personal taxation where the model tax rates are aggregated from a microeconomic model which links the actual tax structure to the large microdatabase of recent tax forms. The Norwegian economy is characterised by a comprehensive public transfers system and the link between labour market variables and parts of these transfers are modelled econometrically while transfers to old age pensioners are treated in a simpler way.

In 2000 work have been centred around the following topics: Producer behaviour, price and wage formation, import modelling and factors contributing to the cyclical fluctuations in Norway during the last 15 years. We have also studied the Saudian Arabian economy and participated in a modelling project for the Icelandic economy.

Documentation: Reprint 159, 168, 170, REP 2000/6, 2000/7, 2000/9, DP 268, 270, 283, 289, 292, 293, DOC 2000/11, 2000/14,NOT 2000/28, 2000/57, 2000/60, ØA 3/2000, 5/2000, 6/2000, 3/2000, [7], [8], [11], [24], [38], [58] [78].

General equilibrium models

The research department has for more than 20 years developed and used successive versions of a Multi-Sectorial Growth (MSG) model. The most recent model, labelled MSG-6, exists in several versions reflecting the need for different model users to design the model simulations according to their particular priorities. The most sophisticated versions include endogenous labour supply and intertemporal consumer and producer behaviour based on perfect foresight. A special feature of the MSG-6 model is that the production functions of industries reflect the production function of an endogenous number of heterogeneous firms. Thus, the link between firm and industry behaviour is explicitly specified.

In 2000 work have been concentrated around the following projects: environmental consequences of trade reforms, efficiency and welfare effects of changes in the taxation of housing, taxation and the effective rates of assistance of industries and the impact of taxation on educational choices.

Documentation: Reprint 158, DP 266, NOT 2000/22, ES 1/2000, [9], [30], [45], [46].

Staff

Moum, Knut, Director of Research

Boug, Pål, Economist
Bjertnæs, Geir H, Economist
Bjørnstad, Roger, Economist
Bye, Brita, Research Fellow
Choudhury, Robin, Economist
Drzwi, Wenche, Senior Executive Officer
Eika, Torbjørn, Research Fellow
Fæhn, Taran, Research Fellow
Holm, Inger, Senior Executive Officer
Holmøy, Erling, Senior Research Fellow*
Hungnes Håvard, Economist
Haakonsen, Laila, Executive Officer
Johansen, Per Richard, Senior adviser
Jørgensen, Jørn-Arne, Economist
Lerskau, Lisbeth, Senior Executive Officer
Lindquist, Kjersti-Gro, Research Fellow*
Naug, Bjørn, Research Fellow
Ouren, Jørgen, Adviser (EDB)
Skjerpen, Terje, Senior Research Fellow
Strøm, Birger, Adviser
Wold, Ingvild S, Economist
Åvitsland, Turid, Economist

* On leave.

The Division of microeconometrics has the following basic aims: (1) Obtain knowledge of the Norwegian economy by econometric analyses of micro data collected by Statistics Norway; (2) Application of the microeconometric estimates and hypotheses in macro- and microeconomic simulation models developed in Statistics Norway; (3) Analyses of economic policy problems based on (1-2); (4) Adaptation and development of theories and methods related to (1-3); (5) Development of microdata, databanks and statistics related to (1-3); (6) Cumulating competence in econometrics; (7) Publishing results, with emphasis on international journals.

Labour market

Labour market studies are focused on developing empirical models of labour supply, models for structural multistate duration analysis, and equilibrium models of labour supply and demand in a matching market. Analyses of earnings functions are in progress.

The labour supply models are designed to account for non-standard budget constraints (such as kinked and non-convex tax systems), and non-pecuniary job-attributes (such as type of work). A framework for multistate duration analysis, is currently being considered for publication in an international journal. This framework is applied to analyse labour supply of married women in an intertemporal context.

Documentation: DP 265.

Welfare and inequality

The labour supply model developed in the project above has been applied extensively for welfare analysis of tax reforms. The labour supply model and tax reform analyses have also been applied to other countries, in particular Italy. A joint project with the Nordic countries comparing the development of inequality of disposable income in Denmark, Finland, Norway and Sweden during the recent 15 years, when inter alia unemployment rose dramatically, has been completed.

Documentation: DP: 271, 272, 276; Reprints: 165, 167, 174, 176; [1], [2], [3], [4], [41], [42], [59], [60].

Consumer behaviour

Systems of household demand functions are estimated, tested, and implemented into a network of macro- and microeconomic simulation models, and used for policy analysis.

Statistics Norway carried out their first household expenditure survey in 1888 and has collected such data every day since January 1, 1973. The survey design includes a module of two-year rotating panels since 1975. In a long term project we construct and document detailed datasets from these surveys, including expenditures on 700 items, and combine them with price data from the consumer price index and income data from tax files.

Two ongoing PhD projects exploit the detailed databanks from the Household budget surveys. One is studying the demand for tobacco with focus on the substitution between manufactured and hand rolled cigarettes. The other is studying the development of the level and composition of consumption in Norway and its effects on the environment and welfare.

A household consumer demand model, based on a five level quasi-homothetic utility tree with demographic effects has been calibrated, exploiting inter alia our microeconometric estimates and national accounts data. This demand system, with 29 goods including 15 transportation goods, has been aggregated across all Norwegian households, implemented in an applied general equilibrium model (MSG-6), and applied for analysing environmental problems. Indirect consumer demand for emissions of greenhouse gases is analysed.

The consumer demand model above has also been implemented in a microsimulation model with 15 000 households (Lotte-konsum) for welfare analysis of tax policy. Various direct and indirect taxes and subsidies are ranked according to their distributional efficiency.

Documentation: DOC 2000/16, NOT 2000/81, ØA 9/2000, [31], [93], [94], [95].

Producer behaviour and productivity

Studies are conducted on R&D, education, scale economies, investment, job creation and productivity. Studies on job creation and the relationship between job creation and innovation have been completed. Work is going on to develop a new framework for studies of the relationship between R&D, profits and productivity. A PhD project studies "skills as as a factor of production". Completed studies have examined returns to education across cohorts, sectors and over time, and the relationship between productivity, wages and education profiles at the plant level, on the basis of a matched panel with plant and individual worker information. Further studies look at the relationship between firm-specific seniority and wages, and heterogeneity in returns to education.

Documentation: DP 291; Reprints: 151, 152, 156,166; DOC 2000/2; NOT 2000/56; [16] [17], [33], [56], [76], [82].

Discrete and continuous choice

Many important choice settings can be formulated as discrete and continuous choice processes where heterogeneous decision makers face different and partly unobservable choice constraints. This is a typical challenge with which the theory of discrete choice is concerned.

The research activity in this field includes the development of theory and methodology for structural analysis of data generated by individual choice from a continuous or finite set of alternatives. In particular, we focus on topics such as

- characterisation of transition probabilities for individual choices;
- modeling two-sided search/matching behaviour in markets with flexible contracts and limited information;
- characterisation of models for discrete and continuous choice;
- development of models of consumer demand for commodities with unobservable quality attributes;
- application of the methodology in empirical analysis, and in the construction of price indexes;
- stochastic models for choice among strategies when the outcomes are uncertain.

Documentation: DP 264; Reprint 157; DOC 2000/1; [10].

Econometric methods for panel data

Parallel to empirical studies of panel data in the areas mentioned above, studies on methods and models for panel data are carried out. Topics covered include latent variables, measurement errors, unbalanced panel data, and heterogeneity in coefficient structure including stochastic coefficients. Furthermore, an approach is developed using ML estimation of VAR models for panel data with dynamic processes for the latent components, using ECM and Kalman filter techniques.

Documentation: DP: 268, 291, 292; [6], [54].

Staff

Aasness, Jørgen, Director of Research

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Hægeland, Torbjørn, Research Fellow
Klette, Tor Jakob, Professor*
Larsen, Erling Røed, Economist
Lind, Jo Thori, Economist
Raknerud, Arvid, Research Fellow
Sommervoll, Dag Einar, Mathematician
Wangen, Knut Reidar, Economist
Wennemo, Tom, Adviser (EDP)

* Part time.

The general objective is to analyse demographic development and changes in economic and social living conditions of the population. The research activities combine a microanalytical approach focusing on demographic and socioeconomic processes, with a macro level approach directed at describing changes in social and demographic structure. Research results from demographic analyses also serve as input for revising model structure and parameters of forecasting and simulation models in Statistics Norway. The division is responsible for BEFREG (Statistics Norway's model for national and regional population projections).

Population projections

BEFREG—population projections 1999-2050
The most recent set of projections was published in 1999 for the whole country and each municipality. Assumptions and results from three main and eight additional variants were published and is available on the home pages of Statistics Norway. A project to revise the model started in 2000. The next projections are planned to be made in the fall of 2002 for the period 2002-2050.

Stochastic forecasts
A method has been developed for computing predictive intervals for future age-specific fertility. Similar work on mortality is in progress. The ultimate aim is to produce confidence intervals around the outcomes of national population forecasts for Norway. A final research report will become available during the first half of 2001.

Documentation: [14], [27], [49], [50], [51].

Demographic research

The division has a general responsibility for monitoring and analysing trends in population development, both at the national level and in a comparative context. A substantial part of research activities over the recent years has focused on structural changes in central demographic processes, in particular fertility and family formation (nuptiality), including the effects of changes in female labour force participation and in family policies. Retrospective surveys have been major data sources for these analyses, in particular the Family and Occupation Study 1988. It is increasingly important to supplement these surveys with more recent data, in particular to utilise the increased supply of register-based data sources. The organisation and use of data from different registers is an important part of the activities of the division, and we are also advising external colleagues in such matters.

A recent study of change and stability in fertility preferences over the period 1977 -1999, combines data from the Fertility Survey 1977 and the Family and Occupation Study 1988 with individual data records from the birth register. Two new projects started in 2000 with external funding from the Norwegian Research Council. The doctoral thesis project "Fertility, education and social change: Increased diversity in life course strategies?" takes its point of departure in the analyses that have been carried out under the project "Register analyses of recent fertility trends " since the start in 1998. The project " Family formation and breadwinner models: More gender equality and increasing social disparities?" focuses on changes in the family formation process in a gender perspective and starts with an analysis of trends in the family formation patterns of men, based on register data of registered births (recognised fatherhood) for selected male birth cohorts (born 1940 - 1980).

However, with increased use of register data, the lack of data about cohabitation is an increasing problem. Since 1994, basic survey data on consensual unions are collected on a regular basis through Statistics Norway's Omnibus Surveys. These cross-sectional data sets however, provide only rudimentary insight into the processes and the role that cohabitational unions presently have in the family formation process. At present we are working with several projects to improve the supply of data in this area. Extended use of register data about cohabiting couples who have children together and collecting more survey data about all cohabiting couples are part of the plans. These improvements will make it possible to expand statistics as well as analyses about family patterns.

Documentation: SA 35, Reprints 153, 169, ES 2/2000, SSP 3/2000 (b), [53], [65], [79], [80], [98].

Family formation in post WWII Norway demographic change, historical and sociological perspectives
The main objective of this project is the growth in consensual unions, which is considered as the most important change in the family formation pattern in the post-war period. The analysis is interdisciplinary combining demographic data, sociological theory and historical knowledge.

Documentation: SSP 3/2000 (a), [39], [57].

Register analyses of recent fertility trends
From mid-1998 the division launched a new project on the recent developments of fertility trends. The project is based on a continuation and extension of earlier analyses on register data for the period 1935-1990. For more complex analyses of fertility trends and new patterns of family formation, population register information are linked to various sources containing explanatory variables (education, income, immigration status). Activities in 2000 include a study of differential patterns of

fertility by educational attainment (level and type) and an analysis of fertility among immigrant women.

Documentation: REP 2000/25, SSP 6/2000, [19], [100].

Mortality and residential history – recent Norwegian experiences
Underlying many studies examining associations between regional patterns of mortality and hypothesised causal factors, is the assumption that residence in a region at the time of death can be equated with prevailing exposure to local conditions. Migration violates this assumption. The main objective of this project is to explore the relationship between residential history and regional mortality for Norwegian men and women, using a life history approach.

Immigration and social change

During the 1990s, the Department of Social Statistics has carried out the so-called «Immigration Statistics Project», with financial support from and in collaboration with the Ministry of Local Government and Regional Development. From 1993 to 2000, yearly opinion data on attitudes towards refugees and immigrants have been collected and published. From the Survey of immigrant level of living, a final report was published in 1998, and as an effect of that project we are involved in a parallel one in Denmark. In 2000, we also started work on different aspects related to the integration process of immigrants. Preliminary notes have been presented concerning secondary (internal) migration for refugees and on measurement of discrimination.

Documentation: SA 33 (contribution by Svein Blom), [99].

Residential concentration of immigrants
A project to analyse the development of immigrant concentrations in Oslo and to uncover social causes and effects of such concentrations was initiated in 1998, supported by the IMER-programme of the Research Council in Norway. By means of register data, the inter- and intra-urban migration patterns of different population groups in the time interval 1988-1998 are being analysed with regard to demographic and socioeconomic variables, and the significance of cultural preferences in the choice of dwelling area, as opposed to economic factors, are investigated by means of interview data from the 1996 Survey of immigrant level of living. The project will be finalised in 2001.

Documentation: Reprints 164.

Social research

The activities under this heading are increasingly focusing on more specialised analyses and research projects and less on general social reporting. Analyses of living conditions of particular population groups and analyses of effects of social welfare policies constitute a larger part of our research activities in this field. Generally, it is a goal to engage in projects that combine socio-economic and demographic aspects. It is also a challenge for the division to combine commissioned research activities with continued and cumulative research efforts on distribution processes and changes in social and demographic structures, e.g. through analyses on generational changes in the level of living over the life course or on gender differences in the outcomes of social processes.

In 2000 several members of the staff were engaged in the project "Moving towards the Good Society?" for the Ministry of Finance. This project builds on an earlier project initiated for the Governmental Value Commission (Verdikommisjonen) in 1999. The main focus is on the development with respect to the level and distribution of living conditions, contrasted with the development in attitudes and societal ideals of the population. The report of the project was submitted to the Ministry of Finance in 2000 as input to the work with the next Long term program (for the period 2002-2005) and will be published when the Long term program is presented early in 2001.

Documentation: [81].

Welfare changes, living conditions and social integration. Norway 1973-1995
The project studies the development and consequences of social integration in Norway the last 20-25 years. Are there tendencies towards social isolation and disintegration, and for which groups? Can such tendencies explain the growth in «new» welfare problems, like suicide and violence? The project has also given input to the work on the project "Moving Towards the Good Society?" (see above).

Documentation: SA35, SSP 3/2000, 5/2000, [29].

Parents' time use and time use preferences. Variety, change and conceptual discussions
The project discusses changes and variations in Norwegian parents' time use patterns and time use preferences. The main focus is on unpaid work, in particular differences and new divisions between groups of women and groups of men as far as the organisation of unpaid work is concerned. The research activities include a theoretical discussion of various understandings of different activities included in unpaid work, and of the concepts and measures used in various data sources.

Documentation: Reprints 150, SSP 5/2000 (a) and (b), [35].

Labour market adjustment during lone parenthood
The project studies the employment pattern of Norwegian lone parents during the last decades as compared to groups of married/cohabiting mothers and fathers. The analysis will partly be based on time series of cross sectional data; Labour Force Surveys and several other sample surveys. In addition, individual employment careers before, during and after lone parenthood will be analysed, using Statistics Norway's register based longitudinal data on individuals (FD-Trygd). The analysis will map early effects of changing social benefit regulations on the employment of lone parents. Some comparisons will be made to other countries.

Documentation: [15].

Evaluating the cash-for-care reform: Impacts on female labour supply, child-care demand and the division of household labour
The project is part of an extensive evaluation of a new Norwegian family policy programme: the cash-for-care benefit - a cash transfer to parents of children aged 1-2 who do not use subsidised day-care. Our project addresses short-term effects on mothers' employment, day-care use and parents' division of household work. We estimate a model of discrete choice where employment and child-care choices are assumed to be made simultaneously, and where the division of household work follows from these choices. The analyses are based on data from two sample surveys that were designed to evaluate the cash-for-care reform, one conducted just before and one just after the introduction of the programme. The main report will be published early 2001.

Documentation: DOC 2000/13.

Early exit out of the labour force – main focus on firm characteristics
Empirical studies of retirement behaviour generally focus on the influence of economic factors such as pensions, social security benefits, wages and wealth. The intention of this project was to study retirement decisions when both individual and firm characteristics, such as firm size, worker turnover, union membership, firm specific and general training, are considered. Main emphasis was put on exits into early retirement, but medically related retirement and unemployment were also considered as separate exits. This project was finalised December 2000 and the main report will be published early 2001.

Living conditions of the agrarian population
The project was part of a joint project with Division of Public Economics: "Living conditions and income distribution of the agrarian population". The project analysed the living conditions of the Norwegian agrarian population relative to the living conditions of the Norwegian population in general, at individual and household level. The project also included a longitudinal analysis of the income development of the agrarian population over the period 1989-1995, based on data from Tax and Income registers. The project was finalised in 2000 with the reporting of the main results of the longitudinal analyses. A summary of the analyses of income structure and income development will be published in 2001.

Documentation: ØA 3/2000, 8/2000.

Housing consumption, capital accumulation and housing standard in a life course and generation perspective.
The project analyses the development and changes in housing standard (consumption), housing expenditure, home-ownership and corresponding capital accumulation of the Norwegian population over the last three decades, based on longitudinal data from the periodical surveys on Housing Conditions (1967 -) and Level of Living (1973 -). The project utilises a life course and generation approach, where the respondents of each survey are grouped into fixed ten- year birth cohorts (synthetic cohort design).

Staff

Østby, Lars, Director of Research, (until 1 August*)
Skrede, Kari, Director of Research (from 1 September**)
Barstad, Anders, Research Fellow
Blom, Svein, Research Fellow
Brunborg, Helge, Senior Research Fellow
Foss, Aslaug Hurlen, Mathematician (from 15 September)
Hansen, Liv, Executive Officer
Hetland, Arve, Senior Executive Officer (Graduate Student, Informatics), until 20 August (leave of absence)
Keilman, Nico, Senior Research Fellow (part time)
Kitterød, Ragni Hege, Research Fellow
Kjeldstad, Randi, Senior Research Fellow
Lappegård, Trude, Sociologist
Lyngstad, Jan, Research Fellow
Løwe, Torkil, Sociologist
Noack, Turid, Research Fellow
Nymoen, Erik H., Geographer
Rønsen, Marit, Research Fellow
Sevaldson, Per, Adviser (former Director of Research, Sociodemographic Research Unit). Died 26 August 2000.
Tysse, Tone Ingrid, Economist

*) From August 2000, Senior Research Fellow in the Department for Social Statistics, and associated with the Division for Social and Demographic Research

**) until August 31, Senior Research Fellow in the Division

Administration

Personnel and budget

The total staff in the Research Department in 2000 was 79 in total number of persons. The distribution by division is given by the table below.

The financial resources of the research activities stem partly from the government budget as allocated within Statistics Norway. About 41 per cent of total expenditures in 2000 are project financed. The bulk of the project revenues comes from research grants from the The Research Council of Norway and from contracts with Ministries, primarily the Ministry of the Environment, the Ministry of Finance, the Ministry of Petroleum and Energy, the Ministry of Local Government and Regional Development and the Ministry of Foreign Affairs.

Staff

Ådne Cappelen, *Assistant Director General, Head of Research Department*

Frenger, Petter, *Senior Research Fellow*
Roll-Hansen, Hege, Research Fellow (Stat. history)
Søbye, Espen, *Adviser (Stat. history)*
Aaberge, Rolf, *Senior Research Fellow, Professor*

Malo, Solfrid, *Senior Executive Officer*
Salvesson, Sigmund G., *Clerical staff*
Skoglund, Anne, *Clerical staff*
Vaagen, Otto Gerhard, *Head of Administration*
Walseth, Aud, *Clerical staff*

Distribution of operating costs in 2000. 1000 Nok

	Government Budget	Project	Total
Personnel	20 368	11 898	32 266
Office expenses etc.	2 503	3 761	6 264
Research Department	**22 871**	**15 659**	**38 530**
Social and Demographic Research	3 032	4 127	7 159

Personnel in Research Department in 2000

Division/Unit	Government Budget	Project	Total
Head of Department and Administration	10	0	10
Public Economics	11	7	18
Resource and Environmental Economics	14	7	21
Macroeconomics	15	6	21
Microeconometrics	6	3	9
Research Department	**56**	**23**	**79**
Social and Demographic Research	7	9	16

Scientific competence structure of persons working in the Research Departement

	Research Department	Social and Demographic Research
Senior Research Fellow, Professor	3	1
Senior Research Fellow	4	3
Research Fellow	21	6
Economist	21	1
Geographer		1
Mathematician	2	1
Sociologist		2
Adviser	4	

Statistics Norway Publications

Statistics Norway monographs are published in the series Social and Economic Studies and Statistical Analyses, other research reports and documentation in the Report series or as Documents/Notater. The Discussion Papers series comprises research papers intended for international journals or books. There is also a Reprint series of journal articles and book chapters by staff employees. The Research Department publishes two periodicals: Økonomiske analyser, in Norwegian with 9 issues a year, and Economic Survey, in English with 4 issues a year.

Social and Economic Studies (SES)

103 **Bjerkholt, Olav:** Kunnskapens krav. Om opprettelsen av Forskningsavdelingen i Statistisk sentralbyrå. (The demands of science. The establishment of the Research Department of Statistics Norway)

Statistical Analysis (SA)

34 *Naturressurser og miljø 2000* (Natural resources and the environment 2000).

35 *Sosialt utsyn 2000* (Social survey 2000).

39 **Søbye, Espen:** *Statistikk og historie* (Statistics and history).

Reports (REP)

2000/3 **Langørgen, Audun:** *En analyse av kommunenes hjelp til mottakere av hjemmetjenester* (The local government distribution of home-care on recipients).

2000/6 **Naug, Bjørn E.:** *Importandelene for industrivarer: En økonometrisk analyse på norske data* (The import shares for manufactures: An econometric study on Norwegian data).

2000/7 **Cappelen, Ådne and Robin Choudhury:** *The Future of the Saudi Arabian Economy. Possible Effects on the World Oil Market.*

2000/9 **Hungnes, Håvard:** *Beregning av årsrelasjoner på grunnlag av økonometriske kvartalsrelasjoner* (Deriving annual equations from quarterly estimated regressions).

2000/10 **Hægeland, Torbjørn og Jarle Møen:** *Betydningen av høyere utdanning og akademisk forskning for økonomisk vekst. En oversikt over teori og empiri* (The importance of higher education and academic research for economic growth. An overview).

2000/14 **Benedictow, Andreas:** *Inntektsforholdene i landbruket: 1992-1997* (Analyses of income structure and development in Norwegian agriculture: 1992-1997).

2000/21 **Torsvik, Marius:** *Etterspørsel og utgifter til pleie og omsorg* (Demand and expenditures for health care services).

2000/25 **Lappegård, Trude:** *Mellom to kulturer. Fruktbarhetsmøstre blant innvandrerkvinner i Norge* (Between two cultures - fertility pattern among foreign women in Norway)

2000/26 **Johnsen, Tor Arnt, Finn Roar Aune and Alexander Vik:** *The Norwegian Electricity Market. Is There Enough Generation Capacity Today and Will There Be Sufficient Capacity in Coming Years?*

Discussion Papers (DP)

264 **Dagsvik, John K.:** *Multinomial Choice and Selectivity.*

265 **Li, Yun:** *Modeling the Choice of Working when the Set of Job Opportunities is Latent.*

266 **Holmøy, Erling and Torbjørn Hægeland:** *Aggregate Productivity and Heterogeneous Firms.*

267 **Kverndokk, Snorre, Lars Lindholt and Knut Einar Rosendahl:** *Stabilisation of CO2 concentrations: Mitigation scenarios using the Petro model.*

268 **Biørn, Erik, Kjersti-Gro Lindquist and Terje Skjerpen:** *Micro Data on Capital Inputs: Attempts to Reconcile Stock and Flow Information.*

269 **Aslaksen, Iulie and Charlotte Koren:** *Child Care in the Welfare State: A critique of the Rosen model.*

270 **Bjørnstad, Roger:** *The Effect of Skill Mismatch on Wages in a small open Economy with Centralized Wage Setting: The Norwegian Case.*

271 **Aaberge, Rolf:** *Ranking Intersecting Lorenz Curves.*

272 **Roemer, John E., Rolf Aaberge , Ugo Colombino, Johan Fritzell, Stephen P. Jenkins,Ive Marx, Marianne Page, Evert Pommer, Javier Ruiz-Castillo, Maria Jesus SanSegundo, Torben Tranaes, Gert G.Wagner and Ignacio Zubiri:** *To what Extent do Fiscal Regimes Equalize Opportunities for Income Acquisition Among citizens?*

274 **Thomsen, Ib, Li-Chun Zhang and Joseph Sexton:** *Markov Chain Generated Profile Likelihood Inference under Generalized Proportional to Size Non-ignorable Non-response.*

275 **Bruvoll, Annegrete and Hege Medin:** *Factoring the environmental Kuznets curve. Evidence from Norway.*

276 **Aslaksen, Iulie, Tom Wennemo and Rolf Aaberge:** *"Birds of a Feather Flock Together": The Impact of Choice of Spouse on Family Labor Income Inequality.*

277 **Aslaksen, Iulie and Kjell Arne Brekke:** *Valuation of Social Capital and Environmental Externalities.*

279 **Nyborg, Karine and Mari Rege:** *The Evolution of Considerate Smoking Behavior.*

280 **Søberg, Morten:** *Imperfect competition, sequential auctions, and emissions trading: An experimental evaluation.*

281 **Lindholt, Lars:** *On Natural Resource Rent and the Wealth of a Nation. A Study Based on National Accounts in Norway 1930-95.*

282 **Rege, Mari:** *Networking Strategy: Cooperate Today in Order to Meet a Cooperator Tomorrow.*

283 **Boug, Pål, Ådne Cappelen and Anders R. Swensen:** *Expectations in Export Price Formation. Tests using Cointegrated VAR Models.*

284 **Fjærli, Erik and Rolf Aaberge:** *Tax Reforms, Dividend Policy and Trends in Income Inequality: Empirical Evidence based on Norwegian Data.*

286 **Aune, Finn Roar, Torstein Bye and Tor Arnt Johnsen:** *Gas power generation in Norway: Good or bad for the climate? (Revised version)*

287 **Benedictow, Andreas:** *An Econometric Analysis of Exports of Metals: Product Differentiation and Limited Output Capacity.*

288 **Langørgen, Audun:** *Revealed Standards for Distributing Public Home-Care on Clients.*

289 **Skjerpen, Terje and Anders Rygh Swensen:** *Testing for long-run homogeneity in the Linear Almost Ideal Demand System. An application on Norwegian quarterly data for non-durables.*

290 **Brekke, Kjell Arne, Snorre Kverndokk and Karine Nyborg:** *An Economic Model of Moral Motivation.*

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