Planer og meldinger 2009/7

Research Department

Statistics Norway
Annual Report 2008

Statistisk sentralbyrå • Statistics Norway
Oslo–Kongsvinger

Contents

Introduction

The Annual Report 2008 for the research activities of Statistics Norway presents the main fields of research with a complete listing of publications and staff. Research activities reported here takes place in the Research Departments and the Statistical Methods and Standards Unit which administratively is currently part of the Department of ITC and Methods in Statistics Norway.

2008 was a productive year for research in Statistics Norway. Several of our younger employees finalized their Ph.D and we increased the number of international journal publications quite a bit. This is in line with the recommendations we received from the research council evaluation panel a year or so ago. We aim to strengthen our international cooperation networking activities in the years ahead.

In terms of economic development 2008 turned out to be an extremely turbulent year. The Norwegian economy entered 2008 with very low unemployment and with a history of very high growth. Due to immigration the population increased a lot but also fertility rates have picked up in recent years and are now close to reproduction levels. However, 2008 ended with a gloomier outlook. Although Norway did not suffer significantly negative growth rates in the fourth quarter, our forecasts for 2009 year suggest that Norway is far from immune to the international financial crisis. Due to Norway's production structure Norway has suffered a very large terms of trade loss not only due to our large petroleum sector but also because of substantial production of other staples or semi-manufactured goods. So while Norway may do well in terms of real growth our real disposable income will probably fall more than in most countries. But given the large surpluses on government budgets and the current account, Norway should be in a better position than many countries to conduct policies that will counteract the effect of the downturn.

Statistics Norway welcomes interest in our publications and activities in general. We are happy to provide information as well as publications to individuals and institutions. All in house publications such as Discussion Papers, Economic Survey, Reports and Statistical Analyses are available free at our website www.ssb.no (English site: www.ssb.no/en). Our research website (http://www.ssb.no/english/ research/) is also updated with other information on the research activities at Statistics Norway.

Oslo, April 2009
Ådne Cappelen
Director of Research

Taxation, Inequality and Consumer Behaviour

The Unit for Taxation, Inequality and Consumer Behaviour is responsible for developing and applying the tax-benefit model system LOTTE and other static micro simulation models. Our research focuses on micro econometric studies, modelling of consumer behaviour and analyses of the distribution of income and wealth.

Main areas of research

Much of the econometric research aims at the parameterisation of our micro simulation models. The LOTTE model system now consists of three modules: a module for simulations of personal income taxes, LOTTE-Skatt, a module for indirect taxation, LOTTE-Konsum, and a module describing the labour supply effects of changes in the personal income tax, LOTTE-Arbeid. The research unit is also involved in other applied fiscal policy analyses, based on micro data. Important research areas are the role of housing markets – for example for estimation of the CPI, for measurement of income inequality and for household saving – and investigation of behavioural and distributional effects of the tax system and of tax reforms.

Main findings

The tax-benefit model LOTTE system has been extensively used by the Storting (Parliament) and the Ministry of Finance. Documentation of the model system LOTTE is now accessible on web-site, and a shorter version of the model documentation was published in a book, focusing on the main features of the three parts of the micro simulation model system LOTTE: LOTTE-Skatt, LOTTE-Konsum, and LOTTE-Arbeid.

A number of papers aimed at informing the international audience were published in 2008. A paper was published in *Journal of Urban Economics*, employing and improving a Case-Shiller repeated-sales model, to investigate the efficiency of the Norwegian housing market. The constructed index clearly shows auto-correlation, so the Martingale hypothesis is rejected and the market cannot be said to be efficient. In addition, we construct comparison tests with other asset classes to explore differences in Sharpe ratios. The effect from taxes on educational choices (and thus on the economy's skill composition) is discussed in a paper published in *European Journal of Political Economy*. A proportional labour tax induces too many workers with high innate ability to choose education that is associated with high consumption and relatively low effort. This increases mismatching of skills and aggregate unemployment in the society.

Documentation:

We also denote some of the main findings from papers published in working paper series of Statistics Norway and other institutions. Two papers published in the working paper series of CESifo discuss effects of taxes on businesses' choice of organizational form, from a firm level and an individual level perspective, respectively. The results (WP no. 2393) show that corporations respond to tax incentives and change tax regime in order to reduce tax payments. But persistent cohort effects in the choice of tax regime and substantial unobserved corporation-specific effects indicate that non-tax factors matter as well. Moreover, tax induced organizational shifts are clearly documented in WP no. 2273. When employing observations of Norwegian owners of small businesses and their organizational forms in the period from 1993 to 2003, we show that certain features of the dual income tax system in combination with certain features of the business (human capital intensive businesses) generated organizational shifting, generating substantial income gains for the people involved. A third paper published in the CESifo WP series (no. 2468) discusses parents motivations for transfers to children inter vivos, suggesting that parents' struggle between altruism and equal division give testable hypotheses: the degree of altruism should be stronger in one-child families and we expect the altruism motive to dominate the equal divisions at low levels of recipients' income. We find support for both these hypotheses. A paper published in Statistics Norway's Discussion Paper (DP 555) series discusses the tax on use of electricity in Norway. It assesses alternative, internationally legal, designs of the system in terms of their effects on efficiency and distribution, including industrial objectives. Among the reforms we explore, removing the exemptions would be the most effective way of raising revenue, but it would be politically costly by deteriorating the competitiveness of today's favoured industries. An entire abolishment of the electricity tax, and replacing revenue by increased VAT, would generate a more equal distribution of standard of living and, at the same time, avoid the trade-off between efficiency and competitiveness. In DP 545 we discuss procedures for revenue estimation of changes in the personal income tax. Using partial equilibrium revenue estimates of the 2006 tax cuts in the personal income tax in Norway as an example, we show that estimates of costs of cuts differ substantially when different effects are brought into consideration, even in a short-term time perspective. Estimates of revenue effects which take labor supply responses and effects through indirect taxation and the payroll tax into account are presented and contrasted with estimates obtained by current procedures. Further, in DP 547, we discuss discrimination in housing rental markets. We find that tenants born abroad pay a statistically significant and economically important premium for their dwelling unit. Tenants of African origin pay the highest premium. We have also contributed to a paper on emission trade (DP 542). We find that linkage of different countries' domestic permit markets for pollution rights into a single international market alters governments' incentives, and may trigger adjustments of the number of allocated permits. Interestingly, in a non-cooperative equilibrium, international emission trading is likely to increase the total emissions. We also would like to denote that theoretical and empirical results in the literature of optimal indirect taxation have been reviewed in Documents 2008/19. The first part focused on the theoretical contributions and discussed the role of indirect taxation in the presence of a proportional, a linear or an unrestricted direct tax respectively. The second part focused on the empirical contributions, ending up with pointing at some weaknesses of parts of the literature.

Documentation:

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Climate and Energy Economics

The Climate and energy research group focuses on how national, international and natural external conditions influence the value of national energy resources, the efficiency in the energy markets and development of climate policy instruments. The research covers studies of the behaviour of firms and households and their adaptation to energy and environmental policy, the integrated energy market and general equilibrium models, and the interaction between efficient policy instrument formulation to curb greenhouse gas emissions, reduce environmental consequences and to achieve other policy goals.

Main findings

We explore how the EU could benefit from a broader participation through specific bilateral agreements with developing countries in the post-Kyoto period. The EU may consider cooperation (merger) to act strategically in the permit market. We show how the profitability of a merger depends on whether the merged agents are on the same side of the market as the preexisting dominant agent(s).

Linkage of different countries' domestic permit markets for pollution rights into a single international market alters governments' incentives, and may trigger adjustments of the number of allocated permits. Recent contributions show that climate agreements with broad participation can be implemented as weakly renegotiation-proof equilibria in simple models of greenhouse gas abatement where each country has a binary choice between cooperating (i.e., abate emissions) or defecting (no abatement). We show that this result carries over to a model where countries have a continuum of emission choices. If global emissions are to be cut significantly, it is not sufficient to cut emissions in developed countries. Emissions must be cut also in developing countries. However, we have shown that the Clean Development Mechanism does not have a viable future if global emissions are to be stabilised at a level that prevents substantial global warming.

Documentation: DP 530, N&M 2008, DP568, DP 542, [97], [48], [15], ØA 3/2008

The economic literature prescribes separate tax or cap-and-trade systems to internalize negative environmental externalities and subsidies to internalize positive externalities such as R&D. However, policy is not straightforward because of the influence on cost and competition and concerns for regional employment, economic activity within certain industries, and any distributional effects. Tax discrimination, subsidies and regulations then undermine the efficiency of energy instruments. To balance any environmental concerns, other instruments, including green and white certificates, have been created. We show that these work as simple combinations of taxes and subsidies. Energy-related taxes might vary heavily between countries. A review indicates that taxation varies tremendously across Western countries, which suggests divergence in the theory on efficient means and energy-related policy. Finally, a study of the Norwegian energy and climate policy includes a range of instruments. Still, these instruments are concerned with a few goals. Industrial and employment concerns are important part of the climate and energy policy, and in particular the differentiated carbon taxes imply indirect subsidies of some polluters, while other pay excess taxes through higher rates than the efficient level.

Documentation: [12], Report 28/2008, ØA 5/2008.

In rich economies, emissions of many pollutants show a decoupling from economic growth. One possible mechanism is that emission intensive products are increasingly imported or decreasingly exported. This implies pollution leakages to other countries. We hypothesize that decoupling in a rich and open economy, Norway, is associated with such leakages. We find little evidence in support of this.

Rather, the decoupling of emissions from economic growth observed over the past twenty years was associated with falling pollution leakages, and while forecasts indicate a weaker decoupling than in the past, leakages increase in the future. Documentation: [14]

Aggregation problems emerge when households react differently to changes in prices and income over time. Thus, the composition of demand on different consumer groups over different time periods is important to determine how total consumption will change when prices and income changes. A method for aggregation over time and consumers has been developed. A micro simulation model developed to analyze household energy consumption solving problems with aggregation in Norwegian household electricity consumption. This model is used to simulate the effect on welfare in various household groups of an increase in the electricity tax. The model is also used to simulate the historical development in household electricity consumption during the period 1975 to 2004.
Documentation: DP *537*, Report 6, Master thesis UiO, Notater 34.

The consumption of storable goods does not necessarily equal purchases during a period because of changes in stock. In many cases, we have information about expenditures only, not consumption. A method is developed to obtain an estimate of consumption and changes in stock when only expenditure data are available. Household energy consumption is used as an illustration, applying data from the Norwegian survey of consumer expenditure.

Documentation: DP 575.

When planning the need for power, both with respect to capacity of transmission and production, one need information about the variation in power demand over time. To increase the information about variation in consumption during the year, a report is written describing the consumption patterns over time in different sectors, using hourly metered data for 8759 household, industry and trade costumers. This data is also used to estimate the effect of changes in prices and temperature on the hourly consumption pattern in different sectors. Finally a report is written discussing the price policy of power suppliers with respect to how changes in the spot and forward prices on the Nordic power exchange, Nord Pool, is carried through to the end-user prices.

Documentation: Report 50, Report 54, ØA 6, Notater 69.

Social and moral norms and the opportunity cost of time will affect household recycling efforts. A model is developed to describe how norms affect the recycling decision through feelings of self-respect, guilty conscience and warm-glow as well as respect in, and sanctions from, the community and applied to describe Norwegian household recycling efforts.
Documentation: [19]

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Macroeconomics

The unit is engaged in empirical studies of the Norwegian economy – structure and development - in a macroeconomic perspective. The research is mainly based on Statistics Norway's short-term statistics and national accounts data, and development and use of econometric time series methods and models. Important external users of the models are Ministry of Finance, Ministry of Labour and Social Inclusion and Stortinget (the parliament).

Main areas of research

Economic surveys and forecasts are published quarterly in parallel editions in Økonomiske analyser (ØA) and Economic Survey (ES). The latter is only published electronically. The forecasts are constructed using the quarterly macroeconometric model KVARTS. The Research Department is a member of AIECE (Association d'Institutes Européens de Conjuncture Economic) and the UN-based Project LINK, linking several national macro models to a global model.

Documentation: ØA 1/2008, 3/2008, 4/2008, 6/2008, ES 1/2008, 2/2008, 3/2008, 4/2008, SSP 5-6/2008, [44], [47], [70], [71], [72], [73], [76], [100], [101] and [102].

The unit develops and uses two large macro-econometric models - the quarterly model KVARTS and the annual model MODAG. Except for the difference in data frequency, the economic content of the two models is almost identical. The KVARTS model is used for forecasting and economic 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. The MODAG model is mainly used by the Ministry of Finance for forecasting and policy analysis, and by the unit itself in assisting parties in the Standing Committee on Finance and Economic Affairs in the parliament. Both models have been central tools in various historical/counterfactual studies of the Norwegian economy. In 2007 both models were rebased to the revised national accounts data for 2006 published in 2008. The econometric equations in KVARTS are in general under continuous revision. Lately the work has been centred around the following topics: Household consumption, import prices and Statens pensjonsfond – Utland.

Documentation: Sosiale og økonomiske studier: 111. Rapporter: 2008/18, 2008/21, 2008/29 and 2008/39. DP: 556 and 562. Documents: 2008/12. Notater 2008/21, 2008/48 and 2008/62. ØA 2/2008, ØA 5/2008, [9], [10], [24], [43], [46], [95] and [107].

Main Findings

The demand and supply of labour by education have been projected up until 2025. The conclusion is that demand for labour with high education will continue to increase, while the need for those with less education will fall. These trends are in the literature explained by an increase in the use of technology that substitutes unskilled labour and complements skilled labour. Nevertheless, the demand and supply of labour by length of educational seems to balance fairly well, even without increased frequencies among students to enter higher education. The reason for this is that those who leave the labour force will have considerably lower education compared to those who will enter.

Documentation: Rapporter 2008/29

Over the last 20 years we have seen large-scale substitution of imports from high cost countries to low cost countries. This has been a major contributor to low consumer price inflation in the same period. An export price indicator including price level effects is constructed, and a relation is estimated for Norwegian import prices on clothing. Price and exchange rate pass through is found to be somewhat larger and the Pricing to market effect of domestic costs somewhat smaller compared to the aggragated import price equation in MODAG and earlier findings for industriall products.

Documentation: Notater 2008/48

A new documentation of MODAG was published in 2008. The book, which is a product of a comprehensive cooperation between the Division of Economics at the Ministry of Finance and the Unit for macroeconomics at the Research Department of Statistics Norway, attempts to provide a near complete documentation of the model, as it was available in Oktober 2007. This model version with 2004 as the base year differs substantially from previous versions as exchange rates and import prices now are endogenously determined by the model. Building on earlier documentation and covering unpublished work, the book seeks to give materials to readers who look for a general overview of the model as well as to readers who utilise the model in their daily work. Hence, the book provides a detailed description of the various parts of the model. At the same time, a bird's eye perspective of the model is provided.

Documentation: Sosiale og økonomiske studier 111

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Labour Market and Firm Behaviour

The central aim of the unit is to obtain new knowledge of the functioning of the labour market and firm's behaviour through econometric analyses of Statistics Norway's microdata, and to use this knowledge in analysing economic issues. In connection with this work, the unit also contributes to the development of relevant theories, methods and databases.

Main areas of research

- The relation between labour supply and business cycle conditions
- Labour supply effects of tax reforms
- Barriers to increasing female employment
- Firms' demand for heterogeneous labour
- Efficiency, growth and firm exit
- Measurement of capital and innovations
- Effects of fiscal incentives to R&D
- The choice of and returns to education
- Indicators for the performance of schools
- Education and inequality: Sorting, resources and outcomes
- Price index methods
- Econometric methods

Some highlights 2008

The effects of R&D tax credits on patenting and innovations

Norwegian business spending on R&D is low by OECD standards. To stimulate business R&D, in 2002 the Norwegian government introduced a tax-based incentive, SkatteFUNN. We analyze the effects of SkatteFUNN on the likelihood of innovating and patenting. Using a rich database for Norwegian firms, we find that projects receiving tax credits result in the development of new production processes and to some extent the development of new products for the firm. Firms that collaborate with other firms are more likely to be successful in their innovation activities. However, the scheme does not appear to contribute to innovations in the form of new products for the market or patenting.

Documentation: DP 565

A Labor Supply Modeling emphasizing Job-type as Choice Variable

Traditional labor supply analysis is based on the assumption that workers only have preferences over consumption and hours of work, and are able to choose consumption and hours freely within the budget constraint. Recently, various discrete choice versions of the traditional approach (with discrete hours) have become popular, but the basic assumption above is still maintained. Neither of these two approaches allows for agents'preferences over qualitative job-specific or choice restrictions facing the agents in the labor market in terms of restricted choice sets of job opportunities. In this paper we argue for an alternative modeling framework that differs from the standard models of labor supply in that the notion of job choice is fundamental. Specifically, the worker is assumed to have preferences over a latent worker-specific choice set of jobs from which he chooses his preferred job. A job is characterized with fixed (job-specific) working hours, wage rate and non-pecuniary attributes. As a result, observed hours of work and wage rate are interpreted as the job-specific (fixed) hours of work and wage rate associated with the chosen job. The discussion in this paper focuses on interpretation of different versions and extensions of the alternative framework, theoretical and practical advantages, and how this approach relates to familiar existing approaches in the literature.

Documentation: DP 550

Engel elasticities

Estimation of standard errors of Engel elasticities within the framework of a linear structural model formulated on two-wave panel data is considered. The complete demand system is characterized by measurement errors in total expenditure and by latent preference variation. The estimation of the parameters as well as the standard errors of the estimates is based on the assumption that the variables are normally distributed. Considering a concrete case it is demonstrated that normality does not hold as a maintained assumption. In the light of this standard errors are estimated by means of bootstrapping. However, one obtains rather similar estimates of the standard errors of the Engel elasticities no matter whether one sticks to classical normal inference or perform non-parametric bootstrapping.

Documentation: DP 532

Benefit shifting: The case of sickness insurance for the unemployed

This study describes the probability of transition from unemployment with unemployment insurance (UI to sickness insurance (SI), using a proportional hazard duration model and a large register-based dataset. The combination of limited UI duration and the fact that SI rights do not depend on remaining UI, creates an incentive to use SI to effectively extend UI. The separate effects of elapsed unemployment duration and of UI duration on hazard rates are identified through a reform of the UI system. The estimated hazard rate for transition from unemployment to SI increases sharply the last months before UI exhaustion. The spikes are larger for diagnosis for mental illness, and vary across individuals, but are present for all groups and all diagnoses.

Documentation: **Henningsen, M.:** Benefit Shifting: The Case of Sickness Insurance for the Unemployed. *Labour Economics* **15** (6), 2008, 1238-1269. [21]

Performance Pay and Within-Firm Wage Inequality

This paper examines the impact of performance-related pay on wage differentials within firms. Our theoretical framework predicts that, compared to a fixed pay system, pay schemes based on individual effort increase within-firm wage inequality, while group-based bonuses have minor effects on wage dispersion. Theory also predicts an interaction between performance-related pay and union bargaining, where union power reduces the impact of performance pay on wage dispersion. The empirical contribution utilizes two recent Norwegian employer surveys, linked to a full set of employee records. A longitudinal sub-sample allows for identification based on fixed establishment effects. Introduction of performance-related pay is shown to raise residual wage inequality in nonunion firms, but not in firms with high union density. Our findings suggest that even though performance-related pay appears to be on the rise, the overall impact on wage dispersion is likely to be small, particularly in European countries with strong unions.

Documentation: DP 535

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Public Economics

The aim of the unit is to analyse the most important factors behind the development in public revenues and expenditures. Growth in tax revenues, transfers and demand for public services are strongly dependent on demographic factors, development in supply of labour, economic growth in general and its allocation. Main research issues include fiscal sustainability assessments, effects on incentives, social efficiency, income distribution and the government budget of reforms in the social security and the tax system, as well as evaluation of the successfulness of different kinds of social policy. An important objective for the research is to provide quantitative information.

The on-going research projects may be categorized as follows:

1. Microeconometric studies of individual and aggregate labour supply behaviour, especially how labour supply responds to changes in the tax system and several welfare schemes.
2. Theoretical and empirical studies on income distribution. Specifically, the distributional effects of various welfare schemes are taken into account.
3. Micro simulation of the effects on individual public pension benefits, income distribution and government pension expenditures of changes in demography and the social security system. These studies are based on the dynamic micro simulation model, MOSART. The model is also used by the government in current work on the specifications of the new public pension system.
4. Detailed analyses on the forces driving government consumption expenditures, including demography, service standards, relative prices and efficiency in local government service production. The empirical models used include MAKKO and KOMMODE. The latter model includes endogenous allocation of expenditures to various service sectors.
5. Analyses of fiscal sustainability. These are carried out both within a Generational Accounting framework, as well as by a more sophisticated computable general equilibrium (CGE) model. So far such studies have used the CGE model MSG6 to study the long run fiscal effects of ageing, pension reforms and other policy reforms intended to mitigate the fiscal effects of ageing, as well as tax reforms. The unit has started developing Generational Accounts and a new Overlapping Generation (OLG) model in order to improve the analyses within this field.
6. Regional economics. Here the analyses focus on regional labour mobility and economic development within Norwegian regions. The model REGARD is used in some of these projects.

In 2008 the unit, represented by at least 1 co-author, has published or has got accepted 3 articles in international journals with referee, 12 Discussion papers from SN, 5 reports from SN, and 6 other papers. Contracts related to work on the models MOSART, KOMMODE, MAKKO and the Generational Accounts were fulfilled.

Selected findings 2008

Why Educated Mothers don't make Educated Children? A Statistical Study in the Intergenerational Transmission of Schooling

More educated parents are observed to have better educated children. From a policy point of view, however, it is important to distinguish between causation and selection. Researchers trying to control for unobserved ability have found conflicting results: in most cases, they have found a strong positive paternal effect but a negligible maternal effect. In this paper, I evaluate the impact on the robustness of the estimates of the characteristics of the samples commonly used in this strand of research: samples of small size, with low variability in parental education, not randomly selected from the population. The part of the educational distribution involved in any identification strategy seems to be a key aspect to take into account to reconcile previous results from the literature.

Documentation: DP 563: Chiara Pronzato

Targeting Public Services through Unequal Treatment of Unequals
When private goods are publicly provided, government authorities have to determine the distribution of services on recipients. In this paper, the public service provider is assumed to maximize utility defined over service supply to different target groups, given a budget constraint. The production technology is target group specific and depends on the ability of each target group to produce service outcomes. Three benchmark allocation principles are identified: equality of treatment (ET), equality of outcome (EO) and equality of marginal cost (EMC). These principles can be considered to be consistent with special cases of a public preference model, which allows for compromises between different allocation principles. The condition of technological dominance implies that there is a clear-cut equity-productivity trade-off, whereas violations of this condition may reduce the significance of the trade-off.

Documentation: DP 558: Audun Langørgen

Will the Norwegian pension reform reach its goals? An integrated micro-macro assessment
The Norwegian pension reform of 2006 intends to (1) improve long run fiscal sustainability by reducing the growth in public old-age expenditures, (2) strengthen labour supply incentives, and (3) maintain the main redistributive features of the present system. We assess to what extent the reform is likely to achieve these three goals, using two empirical models iteratively: We combine a detailed dynamic micro simulation of individual benefits and government pension expenditures with a CGE-model, which captures behavioural effects and equilibrium repercussions. We find that the pension reform improves fiscal balances substantially. Compared to a no-reform scenario, the payroll tax rate can be cut by 10 percentage points in 2050. Increased employment contributes more to the fiscal improvement than the reduction in pension expenditures. However, these changes are basically level effects; the reform has a surprisingly small effect on the growth rate of the necessary tax burden starting in 2020. In particular, the growth rate of public pension expenditures is hardly affected. Stronger government finances and higher employment is obtained at the expense of a significant increase income inequality among old age pensioners.

Documentation: DP 557: Erling Holmøy and Kyrre Stensnes

Top incomes in Norway
Based on data back to 1875 the paper traces the evolution of the top of the income distribution over a period when Norway industrialised and then became oil-rich, making a comparison with other countries. A primary goal of the chapter is to provide a new data series and to spell out the issues involved in its construction. Specifically, it examines to what extent income inequality at the top of the distribution in Norway has increased, as it has in Anglo-Saxon countries. In sum, the Norwegian experience has been broadly similar over the twentieth century to that in the UK and in Sweden (but not Germany) in that top shares, and the concentration among top incomes, have first fallen and then risen. Note, however, that the top shares rose less sharply in Sweden than in Norway between 1990 and 2006. Moreover, the figures for Norway also – intriguingly – suggest that the nineteenth century may have been rather different.

Documentation: DP 552: Rolf Aaberge and Anthony B. Atkinson

The Impact of Local Public Services and Geographical Cost of Living Differences on Poverty Estimates

Despite a broad consensus on the need to account for the value of public services and geographical cost of living differences on the measurement of poverty, there is little reliable evidence on how these factors actually affect poverty estimates. Unlike the standard approach in studies of the distribution of public services, this paper employs a method for valuing sector-specific local public services that accounts for differences between municipalities in the costs and capacity to produce public services. Furthermore, recipient frequencies in various demographic groups are used as the basis for determining the allocation of the value of these services on citizens of the municipalities. Geographical differences in living costs are accounted for by using municipal housing price indices or by replacing the country-specific poverty line with municipal-specific poverty lines. Applying Norwegian register data for the period 1993-2001, we find that disregarding the value of local public services and geographic cost of living differences yields a misleading picture of poverty.

Documentation: DP 551: Rolf Aaberge, Audun Langørgen, Magne Mogstad and Marit Østensen

Simulated Maximum Likelihood using Tilted Importance Sampling

This paper develops the important distinction between tilted and simple importance sampling as methods for simulating likelihood functions for use in simulated maximum likelihood. It is shown that tilted importance sampling removes a lower bound to simulation error for given importance sample size that is inherent in simulated maximum likelihood using simple importance sampling, the main method for simulating likelihood functions in the statistics literature. In addition, a new importance sampling technique, generalized Laplace importance sampling, easily combined with tilted importance sampling, is introduced. A number of applications and Monte Carlo experiments demonstrate the power and applicability of the methods. As an example, simulated maximum likelihood estimates from the infamous salamander mating model from McCullagh and Nelder (1989) can be found to easily satisfactory precision with an importance sample size of 100.

Documentation: DP 540: Christian N. Brinch

Non-parametric Identification of the Mixed Hazards Model with Interval-Censored Durations

Econometric duration data are typically interval-censored, that is, not directly observed, but observed to fall within a known interval. Known non-parametric identification results for duration models with unobserved heterogeneity rely crucially on exact observation of durations at a continuous scale. Here, it is established that the mixed hazards model is non-parametrically identified through covariates that vary over time within durations as well as between observations when durations are interval-censored. The results hold for the mixed proportional hazards model as a special case.

Documentation: DP 539: Christian N. Brinch

Are Lone Mothers Responsive to Policy Changes? The Effects of a Norwegian Workfare Reform on Earnings, Education, and Poverty

The generous Nordic model of welfare is commonly viewed as an exceptional success both in terms of equality and economic growth. However, it has recently become evident that subgroups of the population with weak labour market attachment and high welfare dependency, such as lone mothers, were vastly overrepresented among the poor. This motivated a workfare reform of the Norwegian welfare system for lone mothers; activity requirements were introduced, time limits imposed, and benefit levels raised. To evaluate the welfare reform we introduce an estimator that, unlike the much used difference-in-difference approach, accounts for the fact that policy changes are typically phased in gradually rather than coming into full effect at once. We find that the workfare reform did not only increase earnings and education as well as lower welfare caseloads and by this route ease the financial burden of the government, but also reduced poverty.

Documentation: DP 533: Magne Mogstad and Chiara Pronzato

The Effects of an Upper Secondary Education Reform on the Attainment of Immigrant Youth
The national Norwegian school reform of 1994, which gave statutory right to at least three years of upper secondary education, had a significant impact on educational attainment among immigrant youth. In particular, we find that the immigrant transition rate from compulsory schooling to completion of the first year of upper secondary education improved from the pre- to the post-reform period. Using a sequential binomial logit framework, we present evidence that the improvement can be attributed to reductions in capacity constraints, rather than cohort heterogeneity. An important implication is that non-targeted educational reforms may have large impacts on the educational attainment of disadvantaged groups in general and ethnic minority youth in particular.

Documentation: DP 528: Christian N. Brinch, Bernt Bratsberg and Oddbjørn Raaum

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Research Unit for Economic Growth and Environmental Economics

The Research Unit for Economic Growth and Environmental Economics at Statistics Norway aims to provide the government with state-of-the-art, long term, economic forecasting models for the Norwegian economy. Moreover, we seek to publish research at the frontier of economics on some chosen topics within the natural resource economics, environmental economics and the economics of economic growth. For the upcoming years we will in particular focus on:

- *The economics of climate change*, in which we especially study the functioning of emission permit markets and the relationship between climate policy and technological change.
- *Further development of our long term general equilibrium model of the Norwegian economy*, for which we in particular will include a diversity of carbon abatement technology options.
- *The international markets for oil and gas*, in particular analysing market structure at the supply side of the markets and developing price predictions in the markets.
- *Sustainable development,* for which we focus on how to include the precautionary principle in sustainable development indicators and our calculation of national wealth

The numerical general equilibrium model (MSG-6) is our most applied tool. The recent version has endogenous labour supply, intertemporal consumer and producer behaviour based on perfect foresight, an integrated emissions-to-air module linked to the economic activities, and a detailed description of the electricity market. The latest version is calibrated to the 2004 National Accounts. Studies of climate policy have been performed by means of MSG-6 in 2008, and in particular, we have looked at scenarios in which Norway employs a higher carbon tax than other countries. In these studies we have combined the MSG-6 model with a bottom-up model of the Norwegian energy markets.

Main findings

A CGE model with induced technological change is developed and has been applied in studies of innovation-promoting policy alternatives. Among others, we have utilized the model to analyse the effects of innovation policies. Research and development (R&D) play a pivotal role for firm productivity, not only through developing new and better products and processes, but also through increasing the firms' capacity to learn. Accounting for the firms' capacity to absorb knowledge from abroad reinforces the welfare arguments for public support to R&D.

Our simulation model for the international energy markets, with special attention to the supply side of the oil market, has been further developed to include gas- and coal supply and an electricity sector in each region. The model has been used to analyse the future development of natural gas trade, and the effects of carbon capture and storage technologies (CCS). By the means of the same model we have also conducted a study of taxation of oil companies at the Norwegian continental shelf, and looked at different scenarios for oil and gas production in the Arctic.

Sustainable development with emphasis on natural resources management has also been analysed with point of departure in the development of Norwegian national wealth. Here we have focused on developing better methods for estimating the human capital component. Based on the Jorgenson and Fraumeni approach we provided new estimates of the value of Norwegian human capital in 2006. These studies will be extended to provide figures for the period from year 2000 until 2007.

The Kyoto Protocol and international climate policy are also examined within a game theoretic model for CO2 abatement in different regions. The research question has been to what extent rich developed countries should over-invest in technological development given that they can direct development to either suit developed countries or developing countries. Moreover, we have had studies of the allocation rules in the European quota market, the effect on policy when governments cannot commit to future carbon taxes and an optimal subsidy policy under various assumptions about technological change.

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Lars Lindholt, Research Fellow
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Social and demographic research

The general objective of the division is to analyse demographic development and changes in economic and social living conditions of the population. The research activities combine micro- and macro analytic approaches to the analyses of demographic and socioeconomic processes. On-going activities are divided into four areas: (a) Population development, migration and mortality, (b) Fertility, nuptiality and changes in family structure, (c) Immigration and social change and (d) Living conditions and social participation. 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 making population projections, including BEFREG (Statistics Norway's model for national and regional population projections) and LOGG, The Generations and Gender Programme in Norway.

Demographic research

Population development, migration and mortality

The division has a general responsibility for monitoring and analysing trends in population development, both at the national level and in a comparative context, regionally as well as internationally, including the production of population projections. We are also involved in the design of life expectancy adjustments in the new Norwegian pension system. We are cooperating with Eurostat about population forecasts and advice the Ministry of Foreign Affairs in the United Nations Commission for Population and Development. A senior researcher is currently chairing the Panel on the Demography of Armed Conflict of the International Union for the Scientific Study of Population.

Documentation: Rapp 2008/23, ØA 1/2008, ØA 3/2008, ØA 4/2008, SSP 2/2008, VG 31.1, Dagsavisen 2.22 og 30.11., [22], [23], [56], [59], [103].

Fertility, nuptiality and changes in family structure

In recent years a substantial part of the research has focused on structural changes in central demographic processes, in particular fertility, nuptiality (marriage and cohabitation) and family formation. Analyses of recent fertility trends are based on an extension of earlier analyses of register data for the period 1935-1990. For more complex analyses of fertility trends and new patterns of family formation, population register information is linked to various sources containing possible explanatory variables. The dynamics between gender equality and fertility are being analysed. We analyse the growth, types of, and attitudes to cohabitation during recent history and the family formation process in a gender perspective. One project studies cohabitants' commitment to their partnership, their propensity to marry, and the interrelations between first birth and first union formation. The division is involved in the Generations and Gender Programme coordinated by UNECE in Geneva. We have coordinated the working group on administrative records, planned and implemented the Norwegian Gender and Generation Survey in 2007-2008 (LOGG), and entered Norwegian data into the contextual database. The division also participates in several collaborative networks with other research institutions. We coordinate a Nordic network on register data analyses of family formation and effects of family policies, and participate in a network using interview data to compare family formation in Sweden and Norway. We also take part in a network on same-sex partnerships in Europe and in two consortia that have been given research grants by the European Commission (FP 7), REPRO and INFRA.

Documentation: DP 561, 564, [5], [26], [28], [33], [36], [61], [96], [105], [118].

Social research

The activities concerning social research are based on both cross-sectional and longitudinal analyses of surveys as well as administrative registers, including generational changes in the level of living over the life course, differences between various population groups, and gender differences in the outcomes of social processes. The level of living is studied both in terms of material conditions such as income, housing and labour market participation, in terms of social integration, social isolation and crime, and as time use patterns, often with a focus on the effects of social welfare policies on particular population groups. Most of this research is financed as commissioned research.

Immigration and social change

The living conditions and integration process of immigrants and refugees are studied in several projects, including an analysis of people's attitudes to immigrants and immigration, an analysis of factors promoting the integration of immigrants, a project on the naturalization of non-western immigrants, and a project on dual nationality among non-western immigrants. A larger survey on the level of living of 10 different non-western immigrant nationalities has been analysed. The fieldwork started in 2005 and was finished in 2007. A supplementary survey of young people with immigrant background from Pakistan, Turkey and Vietnam was launched in 2006. The analyses of the main survey as well as the supplementary survey started in 2007 and the first reports were published in 2008. Additional analyses are being undertaken.

Documentation: REP 2008/5, REP 2008/14, REP 2008/35, REP 2008/51, REP 2008/57, SA 103, SSP 2/2008.

Living conditions and social participation

A substantial part of the ongoing research focuses on various aspects of the living conditions of parents and children, including parents' working hours and the division of domestic labour. We also investigate women’s part-time work and employment interruptions, couples' working hours, and look at actual working hours in various types of occupations. Furthermore, we have been engaged in a project evaluating the new regulations of child maintenance implemented in 2003 by analysing the parents’ involvement with their children as well as their economic well being. We have also worked on a project on children who have little contact with their non-resident parents, a project evaluating an activation programme targeted at social security recipients, a project looking at the association between criminal careers and various circumstances of life, a project exploring the living conditions among farmers, as well as a broader project on living conditions and social integration and isolation.

Documentation: REP 2008/12, REP 2008/31, REP 2008/32, REP 2008/45, REP 2008/55, REP 2008/56, SSP 1/2008, SSP 2/2008, SSP 3/2008, Reprints 322, SSP 4/2008, [4], [62]

Main findings

- For the new population projections, published in May 2008, we estimated the effects on net immigration of unemployment level and income level in Norway compared to other OECD countries, and used this as background information for the forecast of net immigration, which was assumed to start declining from a record level in the near future.
- There are different strategies for combining work- and family-life, and families with young children use family policies in different ways. Generous family policies reduce the costs of having children. Most couples having one child also have a second child, and two-child family life seems to be compatible with an active work carrier.

- Gender equality is important for working mothers, and fathers' use of parental leave is positively associated with the chance of having a second child.
- Childlessness and multi-partnered fertility (having children with more than one partner) are increasing among Norwegian men. Men with low education are the most likely to remain childless, but still they are the most likely to have children with more than one woman. The increase in multi-partnered fertility is also highest in this group, whereas the rise in childlessness is highest among men with undergraduate tertiary education.
- Children affect fathers' working hours less than mothers' working hours, but men do curtail their actual working hours somewhat when they have young children (up to two years old), and particularly if there is only one child in the household. However, men with school-aged children work somewhat longer hours than non-fathers.
- Non-resident fathers with low income see their children less than other fathers in holidays as well as on a more daily basis. It is above all those in the lowest income group that have little contact with their children. Irrespective of income, fathers with low educational attainment have slightly less contact with their children than more well-educated fathers. Reduced health for the parents implies less contact between non-resident fathers and children on a daily basis, but not in holidays.
- According to the most recent survey on living conditions among immigrants, the housing standards among immigrants with a background from ten different countries in Eastern Europe, Asia, Africa and Latin-America have improved since 1996. The share of immigrants who lives in detached houses and the share who lives in owned dwellings have increased. Fewer live in rented accommodation and it is less common to live in cramped conditions than ten years ago. However, immigrant families still have poorer housing standards than average.
- The most recent survey on living conditions among immigrants shows that Norwegian citizenship is generally very popular and that there is widespread interest in obtaining closer ties to Norway through naturalization. The main reason for applying for Norwegian citizenship is the desire to have full rights and obligations in Norway, but other practical reasons also play a part, such as it being easier to visit other countries on a Norwegian passport. Among the few who are not interested in obtaining Norwegian citizenship, more than half state that they would apply if dual nationality was generally permitted. Keeping their original citizenship for practical reasons and ties to the country of origin are the most important reasons for not wanting to become a Norwegian citizen under the principle of single nationality.
- In a survey of youth with immigrant origin from Pakistan, Turkey and Vietnam, almost half says that religion is "extremely important in life". Among the immigrants of Pakistani or Turkish origin, religion is at least as important for young people as it is for the older. Young men of Pakistani origin are even more religiously active than older male Pakistani immigrants.
- A thesis on Changing welfare, living conditions and social integration shows that the pessimistic descriptions of trends in social attachments given by Robert Putnam and others receive limited support in the case of Norway. There has been no general decline of social integration during the last 30 years. The case is rather the opposite for friendship interaction and confiding relationships outside of family circles. More people socialise on an average day. However, trends have generally been less favourable in the 1990s and less favourable for men than for women. Why trends in the Nordic countries seemingly contrast with the US is unclear, but they are consistent with recent research showing that a generous welfare state does not necessarily "crowd out" social support and communal relations.

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Statistical Methods and Standards

The general aim of methodological statistical research is to improve the quality in collection, production and analysis of statistics. The research encompasses the following areas:

- **General survey design and estimation in survey sampling**
- **Nonresponse and imputation**
- **Variance estimation**
- **Small area estimation and registers**
- **Time series and seasonal adjustment**
- **Disclosure control**
- **Statistical standards and metadata**

Nonresponse and imputation

Research in the area of statistical adjustment to reduce nonresponse bias is a continuing activity. The emphasis is mainly on model-based methods using weighting adjustment for unit nonresponse and imputation for item nonresponse. Useful insights are gained when combining data collected in a survey with auxiliary information that exists in the administrative registers. It is important to differentiate between the bias that is due to nonresponse and that which may be caused by other non-sampling errors such as misclassification. We are currently participating in the EU 7th framework project RISQ on representativity indicators, together with researchers from Netherlands, UK, Belgium and Slovenia.

Variance estimation

Statistics Norway is increasing its efforts in giving estimates of uncertainty in official statistics, taking into consideration sampling design, nonresponse and imputation method. The research aims at developing variance estimates and related confidence intervals, of different types, not only the usual estimated sample variance (s.v.) of the population total estimator. Other measures of uncertainty are estimated conditional s.v. for post stratified and calibrated estimators, estimated model variance and estimated method variance.

Small Area Estimation

Small area estimation has been the subject of a number of studies throughout the years. A wide range of methods has been investigated including synthetic estimation, empirical Bayes methods, model-based approach and neural network.

Use of Administrative Registers and combination of sources

Use of administrative registers as auxiliary information often improves surveys by reducing the sampling variance, reducing the bias caused by non-coverage and non-response, and imposing consistency between the various sources of data. This is one way of combining information available in different data sources. Another possibility is to construct a statistical register based on which statistics can be produced by direct tabulation. This is an important field of our current research.

We have initiated a reseach program for statistical methods for register-based statistics. The topics that are currently being studied include unit errors and their effects, uncertainty in detailed statistics based on statistical registers, multi-purpose prediction and imputation of statistical registers. It is intended that the methods shall be applicable in the coming register-based census 2011.

Time Series and Seasonal Adjustments

Statistics Norway uses the X-12 ARIMA seasonal adjustment program developed by the Time Series Staff of the Census Bureau 's Statistical Research Division to make seasonal adjustments of economic time series. It has been necessary to make adds-on to make correct adjustments for Norwegian holidays. Another area of research is population forecasting.

Documentation: NOT 2008/58

Disclosure Control

Disclosure control is relatively new as a research topic in Statistics Norway. Methods for rounding in high dimensional frequency count tables have been developed. These methods were in the 2001 census and are being used in the Web StatBank Norway. There has also been work on blurring of register data in surveys by rank matching. The works have been presented at joint Eurostat/ECE meetings on confidentiality. In 2008 and 2009 Statistics Norway participates in the ESSnet for confidentiality under EU 7th framework.

Survey Design

Statistics Norway continues to study the general theory of sample surveys. The research aims at providing sound theoretical foundations for a number of sampling techniques that have been found to be useful in practice. These include the common designs used in business surveys and the two-stage sampling designs for clustered populations, as well as stratified sampling design. A calculator for optimizing sampling allocation for model based inference in business surveys is being developed.

During a given period, such as a calendar year, many surveys are conducted at a national statistical office like Statistics Norway. An important issue is how the different surveys are coordinated in a system of survey sampling, based on basic principles that are easily explained and acceptable both to the producer and users of statistics.

Statistics Norway has got the responsibility for developing a standardized sampling design framework for European Health Examination Surveys (EHES).

Documentation (EHES)

http://www.ktl.fi/attachments/suomi/julkaisut/julkaisusarja_b/2008/2008b21.pdf
http://www.ktl.fi/attachments/suomi/julkaisut/julkaisusarja_b/2008/2008b22.pdf

Statistical Standards and Metadata

General aspects

Work concerning statistical standards in Statistics Norway is decentralised so that each division is given the responsibility for classifications within their own statistical field. This concerns all aspects of the classifications unless otherwise decided by the Director General. For the purpose of coordination a Standards Committee is established. The committee acts as a catalyst and supervises statistical standard classifications. The Division for Statistical Methods and Standards serves as the secretariat of the Standard Committee and is responsible for the central work connected to standards.

Metadata

An important part of the standardization work is connected to metadata, and Statistics Norway has developed a specific strategy for development within this area. The goal is that all our metadata systems shall work together as one comprehensive system. To achieve this goal, different metadata systems have been developed and linked.

A statistical metadata web-page was released in 2008 (http://www.ssb.no/english/metadata). This web-page makes Statistics Norway's metadata, e.g. our systems for documentation of variables and standard classifications, more accessible and easier to use. New metadata(systems) will be included when relevant.

Main findings in statistical methods

A random effects mixed-modeling approach has been developed for the sizing of irregular residents in Norway. The approach has the potential of being extended to other hard-to-access populations that can not be handled by standard survey sampling methods.

A paper on some common practices of systematic sampling was published in Journal of Official Statistics.

Ideas on a theoretical framework for register-based statistics was presented at the IAOS conference in Shanghai

Research on mass imputation by restricted neighbour imputation was presented at the IAOS conference

A study on the use of predictive likelihood methods in model-based sampling is finished. This research deals with two-stage sampling where the size of the primary units are unknown before sampling. It includes new optimality results and confidence intervals based on predictive variance. Published in Biometrika.

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Administration

Personnel and budget

The total staff in the Research Department in 2008 was 98, 18 of these from the now included Section for Social and demographic research. From 2008 the Research Department is organized in 7 thematic groups. Research activities in the Section for Statistical methods and standards are not included in the above.

The financial resources of the research activities stem partly from the government budget as allocated within Statistics Norway. Total expenditures within the Research department in 2008 were NOK 91 million, 44 per cent of these expenditures was financed outside the basic governmental allocation. The bulk of these outside revenues came as research grants from the The Research Council of Norway. The balance mostly from separate contracts with Ministries, primarily the Ministry of Finance, Ministry of the Environment, Ministry of Petroleum and - Energy, Ministry of Labour and Social Inclusion, Ministry of Local Government and Regional Development and Ministry of Foreign Affairs.

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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 6 issues a year, and Economic Survey, in English with 4 electronic issues a year (http://www.ssb.no/english/ subjects/08/05/10/es/).

Statistical Analyses (SA)

97 **Claus, Gunnar, Erik Fjærli og Aud Walseth (red.):** *Inntekt, skatt og overføringer 2007.* (139 sider)

Artikkel: **Dagsvik, J.K., Z. Jia, T. Kornstad og T.O. Thoresen:** *LOTTE-Aid – mikrobasert modell for beregning av arbeidstilbudseffekter av skatteendringer.* (85-98)

99 *Natural Resources and the Environment 2007. Norway.* (279 sider)

102 *Naturressurser og miljø 2008.* (261 sider)

Aslaksen, Iulie og Per Arild Garnåsjordet: *Boks 2.2. Indikatorer for bærekraftig utvikling og føre-var-prinsippet.* (44-45)

Aune, Finn Roar og Knut Einar Rosendahl: *15.2. Europeisk energipolitikk – en modellanalyse.* (234-236)

Hagem, Cathrine: *15.3. EUs mulighet for å utøve markedsmakt i kvotemarkedet i et "post-Kyoto regime".* (237-239)

Storrøsten, Halvor Briseid: *15.4. Gratis tildeling av klimakvoter.* (240-242)

Glomsrød, Solveig: *15.5. Den grønne utviklingsmekanismen: Gir treplantasjer både klimaeffekt og fattigdomsreduksjon?* (243-245)

Bruvoll, Annegrete: *15.6. Utslepp av klimagassar – kvar skal kutta takast?* (246-248)

Bruvoll, Annegrete og Hanne Marit Dalen: *15.7. Komplisert klima- og energipolitikk.* (249-251)

Bye, Brita og Karl Jacobsen: *15.8. Differensiering av FoU-subsidier når innenlandske utslipp skal reduseres.* (252-253)

Lindholt, Lars: *15.9. Hvilken skattesats i oljesektoren gir Norge høyest inntekt?* (254-255)

Stokke, Andreas, NTNU, Gerard Doorman, NTNU og Torgeir Ericson, SSB: *15.10. Effekttariff for elektrisitetsforbruk i husholdninger.* (256-258)

Bye, Brita: *15.11. Makroøkonomiske modeller som verktøy for energi- og miljøøkonomiske analyser.* (259-261)

103 **Daugstad, Gunnlaug (red.):** *Innvandring og innvandrere 2008.*

Artikkel: **Blom, Svein:** *Holdninger til innvandrere og innvandring.* (133-148)

Reports (REP)

2008/2 **Cappelen, Ådne, Frank Foyn, Erik Fjærli, Torbjørn Hægeland, Jarle Møen, Arvid Raknerud og Marina Rybalka:** *Evaluering av SkatteFUNN – Sluttrapport.* (71 sider)

2008/5 **Blom, Svein og Kristin Henriksen (red.):** *Levekår blant innvandrere i Norge 2005/2006.* (140 sider)

2008/6 **Thilert, Kathinka:** *Husholdningsgruppers respons på endringer i forbruksavgiften på elektrisitet.* (28 sider)

2008/7 **Jansen, Eilev S. og Dag Kolsrud:** *Makromodellering av kommunesektorens økonomiske tilpasning.* (62 sider)

2008/9 **Nesbakken, Runa:** *Selveiernes boligkonsum og vekt i KPI. Estimeringer og diskusjon av metode.* (40 sider)

2008/11 **Dagsvik, J.K., T. Kornstad, Z. Jia og T.O. Thoresen:** *LOTTE-Arbeid – en mikrosimuleringsmodell for arbeidstilbudseffekter.* (30 sider)

2008/12 **Bø, Tor Petter, Ragni Hege Kitterød, Tonje Køber, Sølve Mikal Nerland og Tor Skoglund:** *Arbeidstiden – mønstre og utviklingstrekk.* (177 sider)

2008/14 **Løwe, Torkil:** *Levekår blant unge med innvandrerbakgrunn. Unge oppvokst i Norge med foreldre fra Pakistan, Tyrkia og Vietnam.* (121 sider)

2008/16 **Fiva, Jon H. og Torbjørn Hægeland:** *Resultatindikatorer i høyere utdanning. Studiepoeng, grader på normert tid og arbeidsmarkedsutfall.* (43 sider)

2008/18 **Bjørnstad, Roger, Roger Hammersland og Inger Holm:** *Arbeid og fritid – prioriteringer i det 21. århundre. Makroøkonomiske konsekvenser ved redusert arbeidstid.* (130 sider)

2008/21 **Eika, Torbjørn, Zhiyang Jia og Tom Kornstad:** *Økonomiske virkninger av to tiltak for likere lønn.* (38 sider)

1008/22 **Bye, Brita, Taran Fæhn, Tom-Reiel Heggedal, Karl Jacobsen and Birger Strøm:** *An innovation and climate policy model with factor-biased technological change: A small, open economy approach.* (53 sider)

2008/23 **Brunborg, Helge, Dennis Fredriksen, Nils Martin Stølen og Inger Texmon:** *Utviklingen i levealder og utforming av delingstall i reformert pensjonssystem.* (42 sider)

2008/25 **Brunvoll, Frode, Mads Greaker, Svein Homstvedt, Marte O. Kittilsen og Tone Smith:** *Et bærekraftig samfunn? Indikatorer for bærekraftig utvikling 2008.* (89 sider)

2008/27 **Holmøy, Erling og Erling M. Kravik:** *Virkninger på norsk næringsstruktur av endringer i generelle rammebetingelser. Betydningen av generelle likevektseffekter.* (75 sider)

2008/28 **Bye, Torstein and Annegrete Bruvoll:** *Taxing energy – why and how? The present policies across western countries.* (38 sider)

2008/29 **Bjørnstad, Roger, Dennis Fredriksen, Marit L. Gjelsvik og Nils Martin Stølen:** *Tilbud og etterspørsel etter arbeidskraft etter utdanning, 1986-2025.* (42 sider)

2008/30 **Bye, Brita, Trude Gunnes og Bodil M. Larsen:** *Konsummodellen i MSG6 ved økonomisk vekst. En analyse av utviklingen i energiforbruket og teknologisk endring.* (42 sider)

2008/31 **Lyngstad, Jan:** *Økonomisk velferd blant foreldre som lever atskilt. Forskjeller mellom grupper av mødre og fedre i 2004. Endringer 2002-2004.* (125 sider)

2008/32 **Kitterød, Ragni Hege:** *Økonomisk velferd blant foreldre som lever atskilt. Forskjeller mellom og fedre i samme bidragsrelasjon i 2004.* (108 sider)

2008/35 **Blom, Svein:** *Innvandreres helse 2005/2006.* (62 sider)

2008/36 **Hansen, Kirsten, Bård Lian, Runa Nesbakken og Thor Olav Thoresen:** *LOTTE-Skatt – en mikrosimuleringsmodell for beregning av direkte skatter for personer.* (53 sider)

2008/39 **Bjørnstad, Roger og Inger Holm:** *Makroøkonomiske konsekvenser av redusert arbeidstid for skift- og turnusarbeidere.* (33 sider)

2008/42 **Holmøy, Erling og Vibeke Oestreich Nielsen:** *Utviklingen i offentlig ressursbruk knyttet til helse og omsorgstjenester. En oversikt over relevant faglitteratur.* (56 sider)

2008/45 **Lyngstad, Jan og Ragni Hege Kitterød:** *Samvær og bidrag 2002-2004. Sluttrapport.* (41 sider)

2008/50 **Ericson, Torgeir og Bente Halvorsen:** *Kortsiktige variasjoner i strømforbruket i alminnelig forsyning. Forbrukskurver baser på timesmålte data fra Skagerak Nett.* (61 sider)

2008/51 **Løwe, Torkil:** *Living Conditions of Youth of Immigrant Origin. Young people who have grown up in Norway with parents from Pakistan, Turkey or Vietnam.* (123 sider)

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