BI

WISEflow
Europe/Oslo(CEST)
23 Jun 2022

Handelshøyskolen BI

GRA 19703 Master Thesis

Thesis Master of Science 100% - W

Predefinert informasjon

Startdato: 16-01-2022 09:00
Termin: 202210
Sluttdato: 01-07-2022 12:00
Vurderingsform: Norsk 6-trinns skala (A-F)
Eksamensform: T
Flowkode: 202210||10936||IN00||W||T
Intern sensor: (Anonymisert)

Deltaker

Navn:	Kristian F. Syversen og Ludvig Hoff Sandland

Informasjon fra deltaker

Tittel *:	Consumption inequality and publicly provided services from local government
Navn på veileder *:	Gisle James Natvik

Inneholder besvarelsen konfidensielt materiale?: Nei
Kan besvarelsen offentliggjøres?: Ja

Gruppe

Gruppenavn: (Anonymisert)
Gruppenummer: 97
Andre medlemmer i gruppen:

Consumption inequality and publicly provided services from local government

How has in-kind transfers from local government affected consumption inequality in Norway in the period 2005 to 2018?

by

Ludvig Hoff Sandland and Kristian Framås Syversen

Oslo, June 23, 2022

Supervisor: Gisle James Natvik

Study program: MSc in Business – major in Economics

Exam code:
GRA 19703 – Master thesis

Acknowledgements

We would like to express our deepest appreciation to our supervisor Gisle James Natvik for excellent feedback and advice to our master thesis. His knowledge and insight on the topic have been crucial for us. We would also like to give special thanks to Microdata.no which enabled us to do research using registry data. Thanks should also go out to Jon Fiva and Andreas Fagereng for feedback.

Abstract

This study aims to identify how consumption inequality has evolved and how in-kind transfers, or publicly provided services, from local governments affect the level and trend in consumption inequality. We have imputed consumption from registry data in the period 2005 to 2018 based on the method presented by Fagereng & Halvorsen (2017). We have added the estimated in-kind transfers for each person to the imputed consumption, where the sum of these two equals extended consumption. This has been done by constructing a method of valuation and allocation of publicly provided services from local governments. The inequality measures used in this study are the Gini-coefficient and P90/P10, which is split into P90/P50 and P50/P10.

We find that the average value of the Gini-coefficient from 2005 to 2018 is 0.2944 for imputed consumption and 0.2533 for extended consumption. The corresponding values for P90/P10 is 3.1 for imputed consumption and 2.36 for extended consumption. When measured by the Gini-coefficient, inequality has decreased by 2.35% from 2005 to 2018 for imputed consumption and 3.67% for extended consumption. The percentile measures of inequality are quite volatile and do not show a clear trend over time for imputed consumption. However, for extended consumption, P90/P10 shows a clear downward trend, with a 13.18% decrease from 2005 to 2018 (the corresponding change in P90/P10 for imputed consumption was a 2.36% increase). The findings indicate that including in-kind transfers significantly reduces the level of inequality, and that this reduction increased from 2005 to 2018.

Contents

1 Introduction and motivation

Economic inequality is a prevalent phenomenon both on a national and international scale. Economic inequality is defined by the United Nations (2015) as “how economic variables are distributed - among individuals in a group, among groups in a population, or among countries” (p. 2). Subsequent to low levels of inequality after World War two, economic inequality has largely increased both in the United States and in Europe since the mid-1970s (Piketty & Saez, 2014). Although the growth rate of inequality has slowed down, levels remain high compared to 50 years ago (Neckerman, M. K. & Torche, F., 2007). In Norway, economic inequality has also increased in the past twenty years (Aaberge et al., 2021).

With some exceptions, researchers have traditionally focused on measures of income- and wealth inequality. While this is certainly important, we would like to take a closer look at the inequality in consumption of goods and services in Norway. This is motivated by consumption being a direct input into people’s utility functions, thus yielding utility, whereas income and wealth are measures of economic opportunity, which primarily yield utility via consumption. We usually consider utility functions to be concave, and if one assumes homogeneity in utility functions, less inequality will lead to higher total utility. Larsen (2002) and to some extent Fagereng & Halvorsen (2017) are among those who have focused on consumption inequality in Norway.

The Nordic nations have relatively low levels of inequality (World Bank, n.d.-a) and the generous welfare systems are part of the reason. Cash-transfers in the welfare system can be easily identified, but a substantial share of public expenses is allocated to publicly provided goods. Since publicly provided goods, or in-kind transfers, are non-cash contributions to households, it is not as clear how these contributions reduce inequalities as it is with cash-transfers. Including the value of in-kind transfers will more accurately reflect the households’ consumption (Aaberge et al., 2021, p. 74). Therefore, we want to investigate the relationship between publicly provided goods and consumption inequality in Norway. Valuation and allocation of in-kind transfers is a growing part of the research field both on a national and international scale, but this has been done in the context of income inequality.

While wealth and income can be observed directly in registry data, consumption is not as straightforward. Statistics Norway conducted annual consumer expenditure surveys from 1975 to 2010, but with small sample sizes and unknown quality making them difficult to use for research-purposes. As presented in Fagereng & Halvorsen (2017), one can instead find a measure of consumption by imputing it from micro data. This avoids the problems associated with surveys, but necessitates exclusion of certain households that create noise, typically the very wealthiest households and business owners, to get a reasonably reliable consumption measure. Due to the availability of micro data on household income and wealth, Norway is a very lucrative country for research.

We will approach this by looking at the provision of publicly provided services from local governments (municipalities), measured by expenditure on various services. We focus on the municipalities since their expenditures make up more than half of public service production (Aaberge et al., 2021). Then we will analyze how these services, or in-kind transfers, affected consumption inequality in Norway. We are primarily interested in the years after 2000 and up until today, but data constraints lead us to focus on the period 2005 to 2018. Aaberge et al. (2019a) demonstrates that the redistributional effect of local service production has become bigger, and in 2013 the effect was bigger than the redistributional effect of cash transfers from the state. This highlights the rising importance of in-kind transfers from municipalities to their inhabitants.
This leads us to our thesis question:

How has in-kind transfers from local government affected consumption inequality in Norway in the period 2005 to 2018?

We divide the thesis question into two distinct questions:

1) *How does the level of consumption inequality in the period 2005 to 2018 change if we include the value of in-kind transfers?*
2) *How do the trends of consumption inequality in the period 2005 to 2018 change if we include the value of in-kind transfers?*

To answer these questions, we first need consumption data for Norwegian households. Using registry data on income and wealth for individuals, we impute consumption. The imputed consumption is aggregated to household level using household identifiers observable in the registry data. Consumption inequality is measured by the Gini-coefficient and P90/P10, which will be explained in chapter 4.2.

In-kind transfers to each individual are estimated based on municipal expenditure to different public service sectors (such as health care, education and elderly care). The value of the public services, that is the in-kind transfers that will be allocated, is assumed to equal the cost of supplying these services. Allocation of the in-kind transfers to individuals is estimated according to one of two approaches, depending on the service sector: the actual use approach and the insurance value approach. In short, one respectively allocates based on observed actual usage of the service or based on how likely an individual is to require usage of the service. In the registry data, we observe demographic variables, such as age, that are used to identify target groups. These target groups are groups that have the same need for a given type of in-kind transfer, so they are used to estimate in-kind transfers to individuals. In-kind transfers are aggregated to household level. The sum of imputed consumption and in-kind transfers is called extended consumption.

To properly compare households with different compositions, we use equivalence scales. Equivalence scales for cash income allow households to have economies of scale in converting expenditure into utility. We will use the EU scale in the baseline analysis. Equivalent consumption for a household will be given by consumption divided by the value of the equivalence scale[1]. When we include in-kind transfers and measure extended consumption, we must adjust the equivalence scale to account to different needs for publicly provided services, in line with Aaberge et al. (2010a). This is due to equivalence scales for cash income not being appropriate for in-kind transfers.

[1] The value of an equivalence scale for cash income for a given household will be lower than the number of household members

To answer our two questions, we compare the value of the inequality measures for extended consumption, which includes in-kind transfers, to the value of the inequality measures for imputed consumption.

Chapter two of the paper will present a literature review of the most relevant literature and present the key concepts of our analysis. In chapter three we present the data we use, the institutional setting of Norwegian local government services and descriptive statistics. The methodology of consumption imputation, valuation and allocation of in-kind transfers, and equivalence scales will be shown in chapter four. In chapter five we present data on consumption and in-kind transfers. In chapter six we present results from our analysis. In chapter seven we will demonstrate our robustness checks, and conclusions will be covered in chapter eight.

2 Literature

Economic inequality

Economic inequality is an extensively researched topic, and in Norway, Rolf Aaberge is one of the main researchers in the field. Aaberge et al. (2021) describes economic inequality in the 21. century and is in many ways a literature review on its own. The article combines some of the most important papers Aaberge has been a part of covering the topic. It discusses income inequality- and wealth inequality, the effect of tax schemes, the value of in-kind transfers and it draws comparisons to the USA. The inequality measure is done at the household-level, and Aaberge uses the Gini-coefficient to measure inequality because it gives an easy graphical interpretation on distribution. Aaberge et al. (2021) differs from much of Aaberge's earlier work, and other researchers' work because they include retained profits, value of housing services for homeowners and capital gains from real estate when measuring income. The article concludes that income inequality has increased in recent years.

Attanasio & Pistaferri (2016) studies consumption inequality in the US and points out that even though most research of economic inequality consists of income- and wealth inequality, consumption inequality deserves to be explored more. This is because they claim that measuring consumption instead of income will give a much more precise picture of households' well-being. This paper differs from Aaberge et al. (2021) not only in measuring consumption inequality, but in using the 90/10 percentile method to measure the level of inequality. Attanasio & Pistaferri (2016) compares the evolution of consumption inequality with income inequality. They find that inequality in both measures rises, but inequality in income rises much more. Finally, the article adresses some problems with comparing consumption between agents. For example, comparing people's consumption value in currency might not translate to utility because they might value different things (goods, leisure etc.) differently.

Larsen (2002) investigates consumption inequality in Norway in the 80s and 90s. For this purpose, he used The Norwegian Consumer Expenditure Surveys to get data on consumption at the household level and introduced a latent consumption model. The article highlights the benefits of measuring consumption and suggests that it could be a valuable supplement to studies on income inequality. The article concludes that consumption inequality did not rise in the 90s even though income inequality increased.

Pension assets

Halvorsen & Hetland (2021) imputed pension wealth in Norway. In 2018, the total pension fortune in Norway for residents above 17 years was 12 704 billion NOK, which was 4.3 times bigger than GDP in mainland Norway in 2018 (Halvorsen & Hetland, 2021). The pension fortune is the present value of the future cash flow of pension benefits (Halvorsen & Hetland, 2021), and the sum of a person's pension assets consists of the National Insurance Scheme, mandatory occupational pensions (OTP) and individual pension savings. In Norway, 81% of the total pension savings are assets in the National Insurance Scheme (Halvorsen & Hetland, 2021). The size of the future pension benefits is determined by the individual’s income history and the number of years in employment. Therefore, the size of the assets is highly correlated with age.

In 2018, the average pension fortune on the household level was 6.1 million NOK, the average real capital fortune was 3.7 million NOK, and the financial capital fortune was on average 1.3 million NOK (Halvorsen & Hetland, 2021). Hence, the pension fortune is by far the largest fortune component in Norwegian households, even after taxes are paid. Since everyone in the labor force has pension rights, the pension fortune is also the one that is most evenly distributed among households (Halvorsen & Hetland, 2021). Despite this, the pension fortune is not available before the individual is in pension age, which means that people don't control the pension assets as they do with other assets such as bank deposits and securities etc. However, the size of a household’s pension fortune may affect the need for and use of other savings and may therefore have an impact on the household’s financial fortune (Halvorsen & Hetland, 2021).

Due to a higher proportion of elderly and higher average pension fortunes, there was a pension reform in 2011 (Regjeringen, 2021a). It was mainly intended to lower the costs of the National Insurance Scheme to a more sustainable level. This reform gave incentives to stay longer in the labor force, as before 2011, some people would get the same pension if they left the labor force at 62 or 67. Now you get a lower pension from the National Insurance Scheme if you retire at 62 (Regjeringen, 2021a).

Imputing consumption from registry data

Statistics Norway have conducted annual consumer expenditure surveys since 1975, but less frequently after 2009 (SSB, 2013). This was the traditional way to obtain a measure of consumption at the household level. The survey was aimed at all households, but the response percentage decreased from 54.8% in 1999 to 50% in 2007 (SSB, 2013). This created non-response errors as the non-respondents are not equally distributed across the household types. Other factors making these surveys inaccurate is the fact that it is sometimes hard to recall expenditures, people can misunderstand questions, or they give the wrong answer on purpose. People also tend to underreport expenditures on alcohol, tobacco and fast-food in a direction that is more socially desirable (SSB, 2013). There is also an underrepresentation of high-income households (Fagereng & Halvorsen, 2017).

Fagereng & Halvorsen (2017) proposed a method to impute consumption by using tax registry data. With this method, one can obtain panel data on consumption for all people in Norway, and at the same time overcome biases and errors associated with using Consumer Expenditure Surveys. This is because the reporting is done by a third party, and not by a survey, which would be prone to the well-known survey biases listed above. This method allows researchers to follow the same households over long time periods and analyze how consumption evolves. Fagereng & Halvorsen (2017) use the sample period 1993 to 2011. Because of identification keys such as household numbers, this method allows for connecting other information about the households as well, such as family composition, houses, etc.

Still, there are some drawbacks when imputing consumption from registry data. The first one is that it is not possible to separate between consumption of non-durables and durables (Fagereng & Halvorsen, 2017, p. 37). The second is that some wealthy households need to be excluded in order to obtain a good measure of consumption because of measurement errors in wealth and income (Fagereng & Halvorsen, 2017, p. 38). These measurement errors may stem from measurement of business income and housing wealth (Fagereng & Halvorsen, 2017), as the main problem is to control for wealth increases that are due to capital gains (asset price changes) rather than "active" saving.

To present their work in a simplified way, they find saving by calculating the change in households saving from year to year. They then use the budget constraint C = Y - S to get the consumption, where income Y is observed in the registry data. After doing this, they have consumption on household level. To be able to find the right level of consumption using this method, it is crucial to be aware of what variables to include in income and saving. The article proposes a suitable method for doing this, which will be explained further in chapter 4 which covers methodology.

Valuation and allocation of in-kind transfers

When doing analysis on how in-kind transfers affect economic inequality, there are two important questions that need to be answered, namely how to value the transfers and how to allocate them amongst the population. Because of this, there are several factors that need to be taken into account to make a good model. For example, the production efficiency of goods and services provided by governments may differ from country to country and municipality to municipality. However, in most studies, the gross value of in-kind benefits (non-cash transfers) is assumed to equal the government expenditure. This is the consensus among the most prominent researchers in this field and is used in the articles Smeeding et al. (1993), Aaberge et al. (2010a), Paulus et al. (2010), Figari & Paulus (2015) and Verbist et al. (2012) to mention a few. This is commonly referred to as the production cost approach. This means that the value of the benefit for a child in school is assumed to equal the cost of providing education per school child.

To measure how the in-kind transfers affect economic inequality, Smeeding et al. (1993) and other researchers compute extended income, which is the households' disposable income plus the value of the benefits they gain from the non-cash income. Therefore, how to distribute the transfers among households is a very important task. Verbist et al. (2012), Paulus & Figari (2015) and Aaberge et al. (2019b) use two approaches to do this, the insurance-value approach and the actual use approach. Verbist et al. (2012) discuss the impact and distribution of these transfers and focus on education, health services and social housing. In the paper of Verbist et al. (2012), education services are distributed by the actual use approach, which means that only households with children in school age gains from these services. The value of social housing is allocated through a regression-based actual use approach (Verbist et al., 2012).

The distribution of health services, on the other hand, is more complex. Verbist et al. (2012) introduce two main approaches to allocate health services, the actual consumption- and the insurance-value approach. The actual consumption approach demands data on the effective use of health services for individuals. However, this kind of analysis is not feasible in most countries due to data availability constraints. Because of this, they use the insurance-value approach which is the approach most commonly used when allocating health services. This method imputes the "insurance value" for each individual based on characteristics like age and economic position. By using this approach, one can create a model that takes into account that for example households with old people are much more likely to use health services more frequently. In most studies on this topic, like Aaberge et al. (2010a), services like defense, police and central government administration are excluded. This is often because the literature focuses on services that are social in nature, such as in Verbist et al. (2012) and Figari & Paulus (2015), or because literature uses municipal data instead of national data as in Aaberge et al. (2019a).

Equivalence scales

Equivalence scales are widely used in the study of income inequality because it aids in comparing income between households of different compositions. This is because equivalence scales allow households to have economies of scale in converting expenditure into consumption that yields utility. They are widely used in literature on income inequality, such as Aaberge et al. (2010a), Aaberge et al. (2019a), Paulus et al. (2010), Figari & Paulus (2015) and Verbist et al. (2012). It is also used by Larsen (2002) in his paper on consumption inequality. Choice of scale is not identical across studies. Recent literature that accounts for in-kind transfers, such as Figari & Paulus (2015), Verbist et al. (2012) and Aaberge et al. (2019a), adjust the equivalence scale based on needs, as using the same equivalence scale for in-kind transfers implies that there are economies of scale for these services, which may lead to overestimating the extended income of high-need households. This draws upon the work in Aaberge et al. (2010a).

3 Data and institutional setting

3.1 Data

The analysis mainly uses registry data from National administrative registers in combination with data on expenditure from municipal accounts (local government accounts). The registry data is a combination of several registers, and includes data on demographic and economic variables such as education, unemployment, date of birth, household identifiers, municipality of residence, income from different sources, and asset types (Microdata, n.d.). This data will be used to impute the measure of consumption in our analysis, which will be used to calculate extended consumption. Additionally, these variables enable identifying the recipients of different in-kind transfers. Municipal expenditure data, which includes investment spending, is used for deriving the value of in-kind services which makes up the other half of the extended consumption calculation. Including municipal investment in in-kind transfers may be problematic due to timing issues. For example, if a health center is built in a year, the people in the health center's target group may get overestimated in-kind transfers that year. However, we include municipal investment in our analysis to get a complete measure of municipal spending.

Obtaining access to registry data, or micro data, is not an easy process since there are privacy concerns in handing out detailed data on individuals. Therefore, we do not have the ability to work with the raw data. However, Sikt (formerly NSD) and Statistics Norway provide a service called microdata.no[2] for master students and employees at institutions of higher education. This is a web-based software where we gain access to registry data without needing to deal with the privacy concerns of storing the data locally. The downside is that we cannot directly observe the data and need to write a script of commands to do our analysis. Furthermore, some variables are only available for a short time period, for instance there is no data on "shares and other securities" before 2013.

[2] www.microdata.no

For the municipal accounts data, we primarily use the "Local Government Dataset 2020" from Fiva et al. (2020). This dataset is publicly available at Jon Fiva's website[3] and contains data on fiscal policy, local government structure, elections, and demographic structure. The expenditure data in the dataset is gathered from StatBank Norway for the period 2016 to 2018 and Kommunedatabasen, a municipal database by Sikt, for the period 2001 to 2015. We needed to divide some of the expenditure categories further, which will be explained later in the paper. This necessitated data collection directly from StatBank Norway and Kommunedatabasen which we combined with the Local Government Dataset.

As presented initially, there are many advantages to using registry data. Recall errors and sampling attrition, which is particularly large at the higher end of the income distribution, is a substantial problem when conducting consumer expenditure surveys along with under-representation of high-income households and limited sample sizes (Fagereng & Halvorsen, 2017). Unlike surveys, there are no problems with sampling when using registry data as it covers all individuals. Using registry data also eliminates recall- and measurement errors. Allocating the value of in-kind transfers to find a good measure of extended consumption also needs data on an individual (household) scale, making registry data necessary.

Expenditure data at the local government level is very beneficial since it gives us detailed information about spending on different services in different municipalities. This in turn enables us to make more accurate allocations of in-kind transfers than if we were using national data. However, this means that we are not including all government in-kind transfers since the central government provides a substantial part of these transfers (Aaberge et al., 2021).

3.2 Institutional setting

Municipalities supply a substantial share of public goods (Aaberge et al., 2021). National laws and regulations impose minimum requirements for the public services produced by the municipalities and the target groups that should benefit, but the local governments can freely decide how to allocate their resources. In the

[3] https://www.jon.fiva.no/data.htm

Local Government Dataset, the expenditure categories these services are divided into are: childcare, elderly care, education, health and social services, culture, transport, central administration and other. The local governments are responsible for certain services within these categories.

The municipal childcare most importantly includes subsidized daycare for children aged 1 to 5 years. A substantial majority of children in this age group, 91.7% in 2018, are enrolled in this service (Utdanningsdirektoratet, n.d.).
Due to large demand, there was a daycare-reform in 2003 enabling more mothers of young children to be able to work full-time (Korsvold, T., 2020). The main components of the reform were to build more kindergartens and to introduce a max-price of having children there, making it affordable for more families (Korsvold, T., 2020). This reform led to a statutory right for all children aged 1 to 5 years to have a place in a kindergarten from 2009 (Korsvold, T., 2020), and it is the municipalities responsibility to ensure that the statutory right is complied with (Regjeringen, 2021b).

In 2003, 69% of children aged 1 to 5 years had a place in a kindergarten, and 89% in 2009 (SSB, 2018). This may prove that cheaper daycare and more kindergartens increase the participation rate. The participation varies across municipalities and 98.9% of all children aged 1 to 5 years attended a kindergarten in Oslo in 2020, which is relatively high (SSB, 2018). On average, the participation rate has increased from 20% in 1980 to 92.8% in 2020 (SSB, n.d.-a).

Local governments provide long-term care for elderly and disabled people both at home and in institutions. The municipality's responsibility covers the institutional premises, health- and care services in institutions, health care for home residents, and activation and services for the elderly and disabled. We divide the municipalities’ long-term care expenditures into two service sectors: “institutions” and “home care”. Both sectors aim to provide services for disabled and elderly people who need help. The institutional service sector covers institutional premises and health and care services in institutions. The home care service sector covers health care for home residents and activation and services for the elderly and disabled.

Most of the expenses in the home care service sector are allocated to people under 66 years (Kjelvik & Mundal, 2013). A part of the explanation is that half of the receivers of “health care for home residents”-services are disabled (Helsedirektoratet, 2017). The activation services are daytime services meant to increase life-quality for people who receive home care (Helsedirektoratet, 2019). The service works as a platform for socializing with other users and to do meaningful activities. These are also the most expensive home care receivers, as users under 66 on average receive 389.000 NOK per person, in contrast to the age group 80 to 89 who receive 116.000 NOK on average (Kjelvik & Mundal, 2013).

The activation services, which also are a part of the home care service sector and consist of services that help keep elderly and disabled people active, are not mandatory for municipalities to offer, but they exist in 76% of the municipalities (Helsedirektoratet, 2017). This service is received by 31% disabled people and 69% elderly people (Helsedirektoratet, 2017). In contrast to the home care services, people aged over 80 are the ones receiving most from the institutional service sector (Kjelvik & Mundal, 2013).

The municipalities are responsible for compulsory education for children aged 6 to 15 years, divided into primary- and lower secondary school. The enrollment rate in compulsory education is very close to 100%, as it is compulsory.

Within health services, excluding long-term care, general practitioners are one of the main responsibilities of the municipalities. All Norwegian inhabitants who are registered residents of a municipality are entitled to a general practitioner (Helsenorge, 2022). In addition, health services provided by the local governments include health centers for children aged 0 to 5, health services administered by schools, and in many municipalities, health centers for youth (Lov om kommunale helse- og omsorgstjenester m. m., 2011, §3-2).

In 2011, there was a change in the law concerning the municipalities responsibility of health services (Lov om kommunale helse- og omsorgstjenester m. m., 2011, §3-2). Before 2011, the municipality's responsibility was to make sure that all people permanently or temporarily living in the municipality received necessary health measures, but there were no requirements for having health centers (Lov om helsetjenesten i kommunene, 1984, §1-1). After 2011, the responsibility remained the same, but some minimum requirements were added, which are the ones described in the previous paragraph. Beyond the minimum requirements, some municipalities, such as Oslo, offer additional health centers for people up to 20 or 24 years (Oslo Kommune, n.d.). These services are included in the “Healthcenter" variable in our analysis which will be described further in the next chapters.

The social services that municipalities are required to provide, comprise the following: child welfare services, publicly provided housing and means-tested social assistance (of which parts are cash transfers).

The child welfare service is a service sector that protects and ensures that children and young people have safe conditions while growing up (Bufdir, n.d.-a). Their services include relief measures in homes, child welfare institutions, family counseling, foster care, etc. (Bufdir, n.d.-b). The child welfare law covers all people under 18 residing in Norway, and in some cases young people aged under 25 (Lov om barnevernstjenester, 1992, §1-3). Each municipality has a financial and administrative responsibility for the child welfare service sector, except child welfare institutions, that the government is responsible for (Lov om barnevernstjenester, 1992, §5-1). In 2018, the age group 0 to 6 received 22% of total child welfare measures, the age group 7 to 15 received 53% of the measures, and the age group 16 to 20 received 25% of the measures (SSB, n.d.-b).

Municipal housing is another social service sector, with the purpose to facilitate that certain target groups can rent suitable housing from municipalities (Forskrift om tildeling av kommunal bolig i Oslo kommune, Oslo, 2003, §1). Each municipality has their own mandate for the housing, but we use Oslo municipality as reference. In many municipalities, there are two types of municipal housing (Forskrift om tildeling av kommunale gjennomgangsboliger og omsorgsboliger, Gjerdrum kommune, Akershus, 2017, §2). The first one is care homes for the elderly and other groups with special service needs. These are meant for people with mental disabilities, mental illness, other disabilities or people with other special needs. The other type is transitional housing that is for people with temporary disadvantaged situations. The municipal housing is allocated to families at discretion by the local housing authority based on several criteria (Forskrift om tildeling av kommunale gjennomgangsboliger og omsorgsboliger, Gjerdrum kommune, Akershus, 2017, §20).

Another part of the municipal social services is social assistance, which is part of the NAV system. The overall goal of social assistance is to seek and find measures that can prevent social problems and facilitate and develop good social conditions in communities, alongside helping people master illness, people suffering and people with different disabilities (Lov om kommunale helse- og omsorgstjenester m. m., 2011, §1-1). This is after 2011 under the same law concerning health centers (Lov om sosiale tjenester, 1991, § 3-1). These tasks are each municipality's responsibility, and the allocation of these services are done by discretion case by case. The social assistance service sector includes financial social assistance, information, advice and guidance, the qualification program and economic- and debt counseling (NAV, n.d.). Some of these services are cash transfers.

Culture services that are funded by local governments include sports, cinemas, libraries, museums, churches and art (SSB, n.d.-c). The "other" category consists of water, sewage and water-treatment infrastructure, fire departments and management of property and industry (SSB, n.d.-c). Municipal transport expenses relate to municipal roads and other transport infrastructure (Solvoll & Thorsnæs, 2021). Municipal central administration expenses cover general administration and administration premises etc. (SSB, n.d.-c). These services are provided to all inhabitants of the municipalities and are free to use, although use of the services will differ greatly between individuals.

The last four categories (culture, other, central administration and transport) will not be a part of our analysis. The allocation for these service sectors is particularly unclear beyond allocating evenly among all inhabitants of a municipality. However, for culture this may be wrong since the use of culture services could be positively correlated with income, that is that culture is a normal good with positive income elasticity. On the other hand, many services that fall under the umbrella of culture, such as public sports arenas, are free and should not exhibit this correlation. The people who benefit from transport spending will probably also have some characteristics. Most importantly, people who own vehicles and can use the municipal roads freely should probably be allocated a larger value than those who do not own a car.

The central government and regional governments have other responsibilities, and since we do not use data on their expenses, the services they provide will not be taken into account in the analysis. Some notable examples are national defense, hospitals and specialist health services, upper secondary school, tertiary education, public transportation and regional culture services.

The types of services provisioned by local governments can be divided into categories based on how they are allocated.

- Services for children, such as schooling, health centers, childcare, and child protection.
- Services for elderly and disabled.
- Means-tested services, such as local government provided housing and social assistance.
- General services for the public, such as general health care, infrastructure, and culture.

It should be noted that general public services may be used in different capacities by different groups despite the services not being targeted at these groups. See appendix 1 for extensive information about the service sectors we include in our analysis.

Beneath are plots on the spending of municipalities as well as demographic development in the period 2005 to 2018.

Figure 3.1 presents the expenditures of the service sectors that the municipalities govern, and how their shares of the total expenditure evolve. The expenditures are aggregated to a national level.

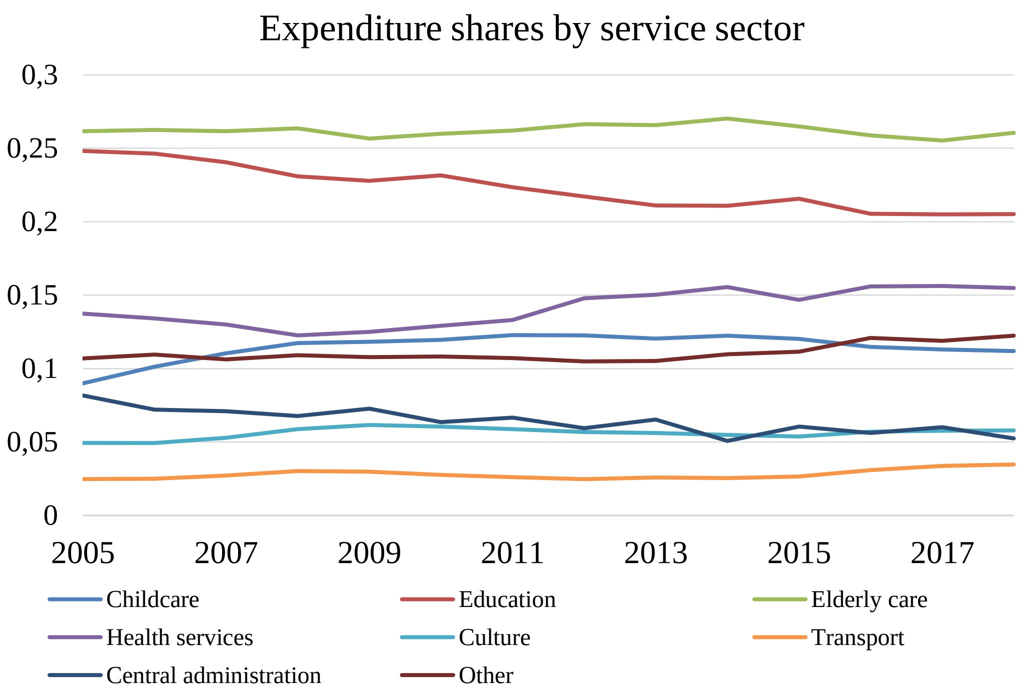

Figure 3.1. Expenditure shares by service sector, in the years 2005 to 2018.

Figure 3.2 shows the total municipal expenditures in thousand deflated by CPI (consumer price index) to constant 2011 NOK from 2005-2018[4]. The expenditures used are the ones used in our analysis, which means we have excluded culture, transport, central administration and "other". As seen in the graph, total expenditures increase in all service sectors, to different degrees. Education is the largest expense item in the whole period of interest.

[4] All CPI deflated values are in constant 2011 NOK

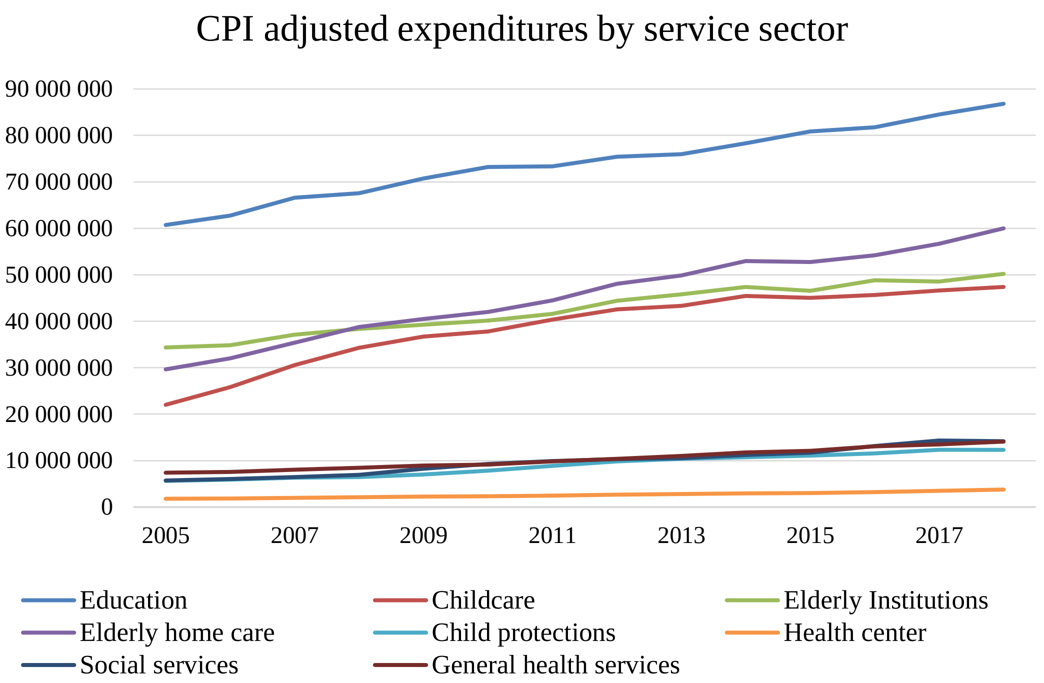

Figure 3.2. CPI adjusted expenditures by service sectors in the years 2005 to 2018. Expenditures in thousand NOK. These are the service sectors that we use in our analysis.

Figure 3.3 shows the municipal expenditure distribution per capita in thousand NOK. The P90-line represents the municipality that has higher expenditures per capita than 90% of the other municipalities and the P10-line represents the municipality that has lower expenditures per capita than 90% of the other municipalities. The median-line represents the municipality that has expenditures per capita at the median. The expenditures are CPI adjusted and are the expenditures used in our analysis. As seen in the graph, total expenditures increase throughout the period of interest, and the discrepancy between the 10th and 90th percentile rises.

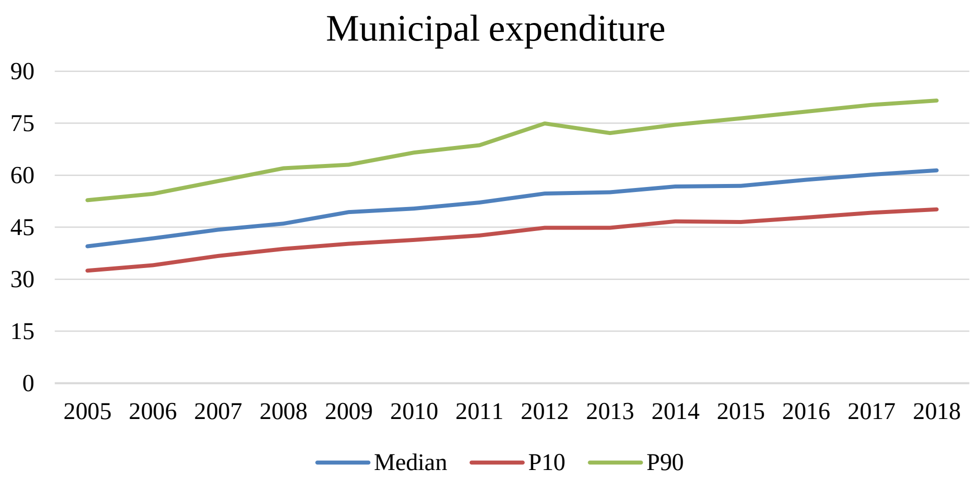

Figure 3.3 CPI adjusted total municipal expenditures per capita in thousand NOK by percentiles of the expenditure distribution of municipalities.

Figure 3.4 displays the demographic development of different age groups in the period 2005 to 2018. The groups are as follows, children: preschool age, young: school age, adults: from above school age to 65 years, and elderly are from 66 years and up. As seen in the graph, the share of elderly people is increasing in the last part of our sample.

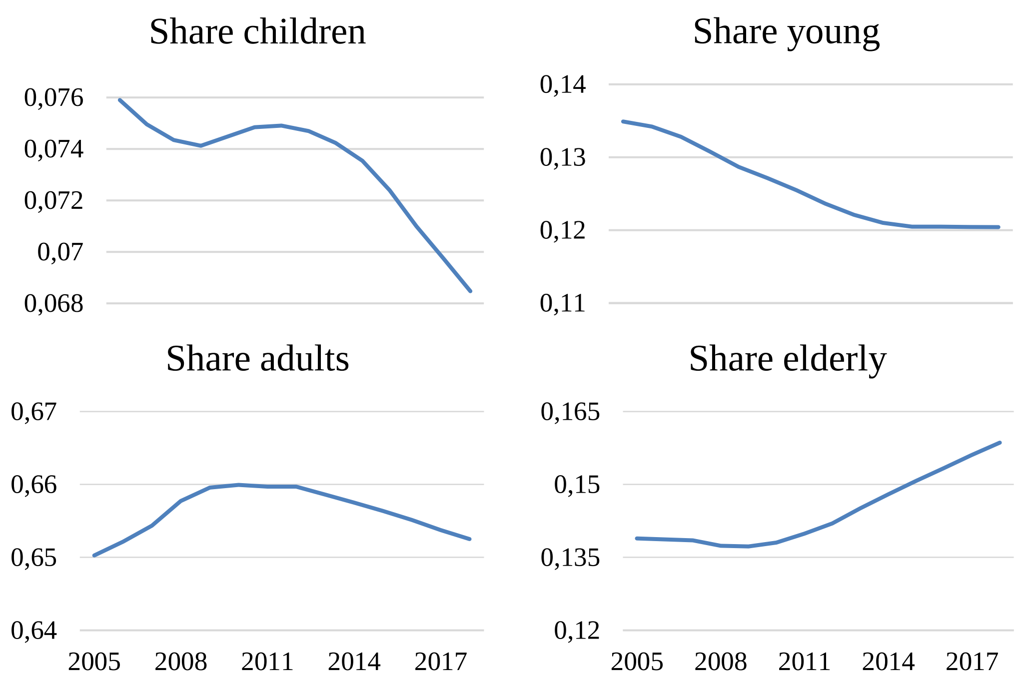

Figure 3.4 Population share by age groups. The groups are as follows: children preschool age, young: school age, adults: from above school age to 65, elderly: 66 years and above.

Below is a graph of the population in Norway in the period 2005 to 2018 (SSB, n.d.-d). The population was 4 606 363 in the beginning of 2005 and 5 295 619 in the beginning of 2018.

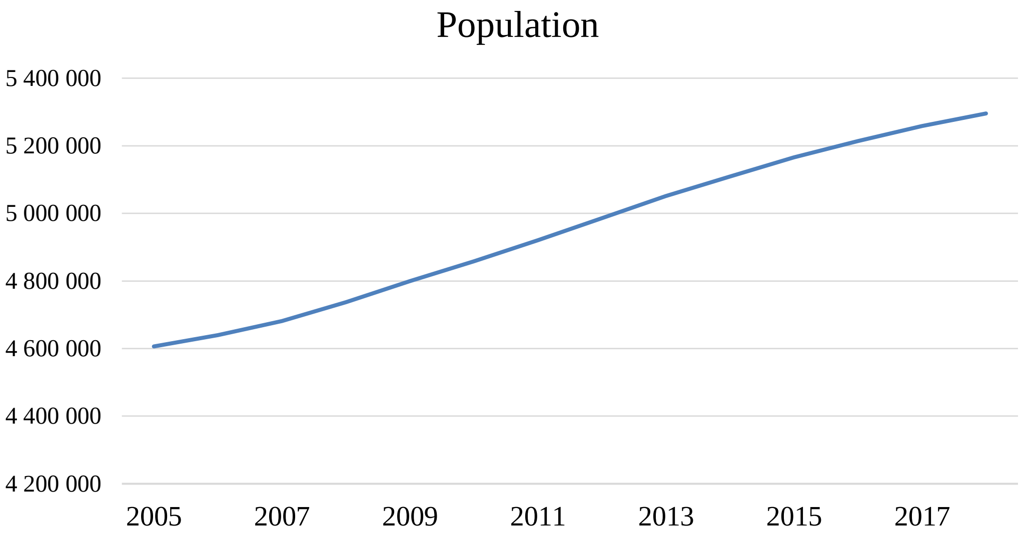

Figure 3.5 The figure shows population in Norway from 2005 to 2018.

As discussed in the previous chapter, everyone in the labor force has pension rights in the National Insurance Scheme. In 2019, there were 2,6 million people in the labor force (Regjeringen, n.d.). The pension fortune, as mentioned in the previous chapter, is the largest fortune component for most Norwegian households, and it is also the most evenly distributed one. In addition, pension fortune is highly correlated with age. Despite the fact that the size of pension fortunes may affect the need and use for other savings, the pension fortune is unobservable. Therefore, it is not included in our analysis. However, excluding it will not lead to any measurement errors in our analysis as the households cannot use the assets until pension age is reached, and then it is regarded as income. We observe and include pension income in our income expression which is what we need to make a good measure of consumption.

4 Methodology

4.1 Extended consumption

We would like to investigate how publicly provided goods from local governments affect consumption inequality, hence we need to establish how this will be analyzed. Similar to the approaches used in much of the existing literature, we will add the allocated in-kind transfers to our consumption measure. This sum of consumption and in-kind transfers will be referred to as extended consumption. A difference between our analysis and existing literature is that the papers, such as Aaberge et al. (2019a), Verbist et al (2012) and Paulus & Figari (2015), use cash income where we use consumption. However, the meaning of such a measure is still very similar. Adjusting cash income to include the value of in-kind transfers is an attempt to get a better measure of the economic resources available to households (Aaberge et al., 2021, p. 74). In the same way, obtaining our measure of extended consumption is an attempt to more accurately measure the economic consumption of goods for households regardless of whether this is financed by income and dissaving or public expenditure.

Two of the most important methodological problems to solve are consequently to obtain a good measure of consumption for each household and to get an accurate estimate of the in-kind transfers they receive. The latter can also be phrased as an accurate estimate of the publicly provided goods the households consume. The consumption measure will be presented first, followed by the valuation and allocation of in-kind transfers.

4.2 Imputation of consumption

We obtain our measure of consumption by imputing consumption based on tax registry data. We lean on Fagereng & Halvorsen (2017) and follow their methodology closely. The approach is based on the budget constraint Y=C+S, income (Y) equals consumption (C) plus saving (S). As presented in their paper, there are some challenges that arise when using tax registry data to impute consumption. The first relates to the consumption measure itself.

> In economics, consumption is modeled from two sides. On one side, it is a flow of goods and services that yields utility to the household. On the other, it is an expenditure that must be paid for within the limitations of the budget constraint. (Fagereng & Halvorsen, 2017, p. 7)

If all goods were consumed in the period they were purchased, these two sides would be identical. However, durable goods, such as cars, furniture and electronics, yield utility over several periods but are not necessarily paid for accordingly. Since we use the accounting relation, we are not able to distinguish between durable and non-durable goods which means that our consumption measure is the household's expenditure for both durable and non-durable goods, not its " […]flow of goods and services that yield utility […]" (Fagereng & Halvorsen, 2017, p. 7). Calling our measure a consumption measure therefore implicitly means that durables are assumed to be consumed in the year of purchase. This does not apply to housing transactions and other purchases of durables that are very large relative to income, which will be handled later. Other challenges are defining income and saving, as well as eliminating measurement errors (Fagereng & Halvorsen, 2017).

As discussed in Fagereng & Halvorsen (2017), theoretical income concepts and observed income are not identical. Hicks (1946) as referenced in Fagereng & Halvorsen (2017, p. 6) presents a theoretical income definition where income is what an agent can consume without expecting to be less well off than before. It is an ex-ante definition of income, whereas the income variables we observe in the registry data is ex-post, and includes any windfall gains the agents may receive. The income concept we use is labor income plus capital income plus transfers plus gifts and inheritance minus taxes, which is the same as the baseline income concept in Fagereng & Halvorsen (2017).

When using registry data on income and assets to impute consumption, saving must necessarily be determined by calculating the change in wealth. This is one definition of saving, while another is saving being given by income minus consumption (Fagereng & Halvorsen, 2017, p. 8). Unrealized capital gains are not included in our income concept and thus cannot be included in our concept of saving, since the accounting relation $Y = C + S$ would not hold. It follows that change in wealth must be adjusted for unrealized capital gains if the two definitions of saving are to yield the same result.

Saving defined as change in wealth can be decomposed as:

$$S_t = NA_t - NA_{t-1} = r_{t-1}NA_{t-1} + Y_t - C_t \qquad (1)$$

Where S is saving, NA is net worth (at the end of a period), Y is our income concept and C is consumption, and the t subscript denotes time. Saving is decomposed into two parts: passive saving ($r_{t-1}NA_{t-1}$), which is unrealized capital gains, and active saving ($Y_t - C_t$), which is the change in the asset stock. As previously indicated, the observed change in wealth must be adjusted for the passive saving in our imputation methodology. Since our income concept includes capital income, realized capital gains enter the saving equation (1) in Y_t.

In line with Fagereng & Halvorsen (2017), we do not include housing in our measure of wealth since it would be a source of measurement errors. In periods of housing transactions, the change in debt and financial assets we observe will reflect the true market value of the transactions, but since the housing value in the registry data is not based on market values it will not reflect the market price (Fagereng & Halvorsen, 2017, p. 10). Furthermore, we do not have data on housing values for primary and secondary housing before 2010, and we do not have any exact data on holiday home values. Excluding housing from the wealth measure introduces a problem of measurement error in periods with housing transactions since we only observe the change in financial assets and debt. This will be handled in the part regarding sample restrictions.

4.2.1 Active saving

We do not observe the change to the stock of different financial assets or asset classes, only the total change in wealth which includes any unrealized capital gains on the assets. Furthermore, we do not have data on single stocks or mutual fund shares as the variables in our data are limited to asset classes. These asset classes are bank deposits, securities, mutual funds and ASK (share savings account). These data limitations necessitate making strong assumptions about unrealized capital gains. Since we only observe asset classes, we assume that the returns on each asset class for each household is equal to the average return of the asset class. Additionally, we assume that the stock of the assets is unchanged throughout the year since we only observe households at the end of each year.

For the returns on the different asset classes, we lean on Fagereng & Halvorsen (2017). To calculate the gains and losses of stocks, we apply the historical annual return of the Oslo Stock Exchange[5]. Because we only have a single variable on securities, which may include stocks and bonds, we assume that households do not directly hold bonds and use the return on stocks for this variable. The historical annual return of the Oslo Stock Exchange is also used to estimate passive saving for the asset class ASK for the years we have this variable in our data.

To make a good measure of returns on mutual funds, we use data from the Norwegian Fund and Asset Management Association[6] on households' mutual fund ownership by type of mutual fund. For the equity funds, we use a 30% weight of the Oslo stock Exchange annual return and a 70% weight of the MSCI World Index annual return[7]. For fixed income funds, we use the 3-month Treasury bill rate[8]. Finally, we use the data from Norwegian Fund and Asset Management Association on mutual fund type to find a weighted average of the stock returns and bond returns. Active saving in bank deposits is calculated solely by differencing as the interest is included in our income concept.

The variables on the asset classes securities and mutual funds are not available in our data before the end of 2013, but we do have data on gross financial capital. We can extract the bank deposits, but we must assume a financial portfolio for the households to distinguish active and passive saving on the different asset classes. We solve this problem by calculating how much each asset on average makes up in the households' portfolios in the three years after 2013, which we can observe. We then apply this portfolio weighting for the years 2005 to 2013. When using this method, we assume that the shares of different asset classes in the household's portfolios are constant for these years. Hence, there will most likely

[5] Euronext (n.d.) *Oslo Børs Benchmark Index*: Table A.2.1 in appendix 2
[6] Norwegian Fund and Asset Management Association (n.d)
[7] MSCI (2022) *MSCI World Index*: Table A.2.3 in appendix 2
[8] U.S Department of the Treasury (n.d.) *Daily treasury bill rates*: Table A.2.2 in appendix 2

be discrepancies from their actual portfolios, and they will most likely be larger the further back in time from 2013 we apply the weighting.

4.1.2 Sample restrictions

Our initial sample will be a random 20% sample of Norwegian households. This is because using the entire population in microdata.no requires more computational power and causes the scripts to run substantially slower. To get the same random sample in the years 2005 to 2018, we use the same seed in the random sample selection function for all our scripts in microdata.no. The sampling is done on household level to ensure that we keep all members of each household in our sample. The first set of restrictions we make is to only keep households where the household head is between 25 and 90 years old.

Following Fagereng & Halvorsen (2017), most of our sample restrictions are related to the decision not to include housing in the wealth measure. As presented previously, the full market price is reflected in the financial assets, but we do not measure the change in the value of a household's housing. The measure will be flawed in periods of housing transactions because we only observe the financial side of the transaction, which means the consumption measure may be greatly affected. This leads to a substantial problem with measuring error in these periods as our measure of consumption could be dominated by an investment or divestment and not the consumption we wish to measure. We do not have any direct information on housing transactions in our data, making it necessary to remove households based on the information we have available, which we present when covering sample restriction three and six.

The second restriction removes households who do not have a stable composition throughout the year, measured as the number of adults in the household. This is due to measurement errors related to financial rearrangements in relation to divorces which occur due to the asymmetry described in the last paragraph (Fagereng & Halvorsen, 2017, p. 10-11). The third sample restriction is to remove households who have a change to their registered municipality of residence. This is the only data we have that directly indicates households moving residences, but naturally it does not cover primary housing transactions where households move to the same municipality, nor does it cover secondary housing – or summer home transactions. Another flaw is that change to registered address does not necessarily happen in the same period as the actual transaction (Fagereng & Halvorsen, 2017, p. 11). We still have a large problem with measurement errors after the third sample restriction as many observations with housing transactions will not be excluded.

The fourth restriction is to remove households who have income from their own business above the basic amount in the National Insurance scheme (henceforth referred to as 1G). 1G amounted to 96.883 NOK in 2018. We wish to measure consumption in households, and it is difficult to distinguish personal expenses and business expenses for these households (Alstadsæter et al., 2013). The fifth sample restriction is removing households who received large dividends, defined as greater than 1G. The reason for this restriction is the introduction of a tax reform on dividends for personal business owners, which took effect in 2006. The reform had a large effect on dividend payments prior to 2006 (Alstadsæter et al., 2013). The behavior elicited by the anticipation of the reform represents a more general problem with using dividends as a measure of business income, as the realization of business income through dividends may be lumpy (Fagereng & Halvorsen, 2017, p. 33).

There is still a measurement error problem from housing transactions after these restrictions. In addition, as argued by Fagereng & Halvorsen (2017, p. 34), since the consumption measure is based on changes in net worth, large changes to net worth caused by factors we cannot observe will affect the measure. Dealing with these outliers with sample restrictions is normal in consumption imputation studies, such as Koijen et al. (2014) in their study on Swedish data, Kniesner & Ziliak (2002) in their study on US data, and Fagereng & Halvorsen (2017). For each year, Fagereng & Halvorsen (2017) exclude households whose change in financial saving is in the top 1% and bottom 1% of the distribution, whereas Koijen et al. (2014) exclude households if their change in net worth is in the top 2.5% or bottom 2.5% of the distribution. Kniesner & Ziliak (2002) remove observations from the sample if consumption for a person increases more than 300% or decreases more than 75% from the last year. Due to there still being measurement errors from housing transactions, we use the approach of Kniesner & Ziliak (2002) for the final sample restriction. Removing observations from our sample based on extreme change in consumption will remove housing transactions if the change in financial net worth caused by the transaction is large relative to consumption. This also extends to durables with a purchase price that is large enough to cause a year-to-year consumption change larger than the restriction cutoff.

The remaining sample varies between 61- and 63 percent of the original sample from 2005 to 2018, which is comparable to the remaining share in Fagereng & Halvorsen (2017) after their sample restrictions. See table A.3.1 in appendix 3 for more extensive information on the sample restrictions.

Fagereng & Halvorsen (2017) and Koijen et al. (2014) both remove observations with negative imputed consumption. Kniesner & Ziliak (2002) remove observations with consumption below 1000$, although their analysis extends beyond simply measuring consumption. The negative imputed consumption restriction essentially means that active saving cannot exceed disposable income (Fagereng & Halvorsen, 2017, p. 34). This implies that negative income must be met with dissaving. In 2018 10395 (out of a full population of 5 327 156) people had registered negative income after tax. In studies such as Fagereng & Halvorsen (2017) and Koijen et al. (2014), the negative consumption restriction is done to reduce measurement errors. In our analysis we are not excluding households with negative consumption due to this skewing the consumption distribution by removing households from only one end of the distribution. In 2018, the restriction would remove about 1000 households (out of the sample after other restrictions of 321 986), with very similar shares the other years. Therefore, it is not very important for the results.

4. 2 Inequality measures

To measure consumption inequality, we have used two different methods, the Gini-coefficient and P90/P10. We have also divided the P90/P10 measure into P90/P50 and P50/P10. The Gini-coefficient is one of the most popular methods to measure inequality, as it gives an easy graphical interpretation on distribution, and is a coefficient between 0 and 1.

The Gini-coefficient is based on the Lorenz curve, which traditionally graphs the cumulative income or wealth by percentiles of the population. Naturally, the Lorenz curve in the Gini-coefficient we find graphs consumption, and not income. The Gini-coefficient will then be determined by the relationship between a theoretical 45-degree Lorenz curve where there is total equality and the actual Lorenz curve we observe. In this way it will be more sensitive to the middle of the distribution than the other two measures. The Gini-coefficient is widely used, such as in Aaberge et al. (2019a), Fagereng & Halvorsen (2017), Verbist et al. (2012) and Paulus & Figari (2015). The coefficient value equals zero when the economic measure is divided evenly, and it equals one when the economic measure is allocated solely to one person (alternatively household, country or any other economic unit being compared).

The P90/P10 inequality measure gives the ratio between the consumption of the person at the 90th percentile and the consumption of the person at the 10th percentile (when we measure at individual level). The person at the 90th percentile has a higher consumption than 90% of the population and the person at the 10th percentile has a lower consumption than 90% of the population. When P90/P10 equals three, it means that the former person consumes 3 times more than the latter person. This measure only uses one observation from each end of the distribution, leading the consumption of the individuals between the observations to have no effect on the measure. Moreover, individuals with a higher consumption than the 90th percentile or lower consumption than the 10th percentile are not taken into account when using this measure. We divide the P90/P10 measure into P90/P50 and P50/P10 to get a better understanding of what parts of the consumption distribution cause changes in the inequality measure.

4.3 Valuation and allocation of in-kind transfers

The different types of in-kind transfers that we allocate to the households are:

- Childcare
- Education
- Elderly care
- Health and social services

Elderly care and *health and social services* are divided into several service sectors as parts of them will be allocated differently. In addition, social cash transfers are included in our initial data and must be subtracted from health and social services. E*lderly care*, which is meant for elderly and disabled, is divided into the service sectors *home care* and *institutions for long-term care*. This is because the two are allocated differently across target groups.

Health and social services are divided into the service sectors: *health center, child welfare services, social services without cash transfers* and *general health services*. We have subtracted municipal housing because we cannot observe the recipients. In addition, we have excluded central *administration, culture, transport* and *other* which initially were in the Local Government Dataset, and will therefore not be a part of the households' extended consumption.

4.3.1 Valuation of in-kind transfers

We will present a simple model of valuation and allocation that is conceptually similar to what is presented in Paulus et al. (2010), Figari & Paulus (2015) and Verbist et al. (2012). We assume that the gross value of the publicly provided services is equal to the average cost to provide them. This is the standard in the literature, such as the works of Figari & Paulus (2015), Verbist et al. (2012), Aaberge et al (2010a) and Aaberge et al (2019a). However, this is not unproblematic as the recipient's value of receiving the services does not necessarily equal the cost of providing them. Furthermore, as Aaberge et al. (2019a, p.33) states, the production cost approach assumes homogeneity in productivity across all municipalities and service areas. This is a strong assumption since it does not allow for economies of scale in service production.

4.3.2 Allocation of in-kind transfers

There are two different approaches we are using when allocating in-kind transfers. These are to allocate the services either by actual use or by risk-related insurance value. This is what is used in the works Paulus et al. (2010), Figari & Paulus (2015) & Verbist et al. (2012). The actual use approach means allocating the value of a service based on observed usage of the service for each individual. The actual use approach is the natural way to allocate goods and services when we can observe who is using them. Education is a good example of this as we know that the first ten years of education is mandatory, and since we have data on age of households' children, we have data on usage of education for each individual. Because of this, we can allocate the municipality's average cost per student to everyone that is in school age. When using the risk-related insurance value approach, the value of a service (or in-kind transfer) for an individual is based on the usage of the service for a group of people with the same characteristics as the individual, which we call a target group. Using data on service usage by target groups (for example age groups in the case of health services), we calculate the share of spending allocated to each age group. Thereafter each individual is allocated a service value according to average spending per capita for the target group the individual belongs to.

Because we cannot observe the users of all services, such as health care and elderly care, we need to use the risk-related insurance approach for these two service sectors. Furthermore, the insurance approach is likely to be the best option even if we could observe the users. As Aaberge & Langørgen (2006) argue: "By contrast, allocating the value of health care on the actual recipients makes less sense, simply because the ill and disabled then will appear to have rather high welfare compared to those who are in good health" (p. 14). An insurance value of health services also makes intuitive sense, as the alternative to publicly provided health services would be purchasing private health insurance. When the value of health services is based on production cost, the insurance value allocated to a person is equivalent to the lowest premium the insurer (private or public) can charge and still be able to cover all claims for people with the same needs (Verbist et al., 2012, p. 16). Additionally, the utility from health services does not necessarily stem from getting treatment, but from treatment being freely available in the case of illness, which supports using the insurance approach.

The equation for estimating in-kind transfer $\hat{u}$ in service sector i to an individual in target group j in municipality m using the risk-related insurance value approach is given by the following equation when usage data is at the national level.

$$\hat{u}_{mij} = \frac{p_{ij}}{Z_j}\frac{U_{im}}{n_m} \qquad (2)$$

Where p_{ij} denotes share of spending in sector i to target group j at the national level, target group j's share of the population at the national level is denoted by Z_j[9], n_m is the population in municipality m and U_{im} denotes total spending on sector i in municipality m. While this equation is used for several service sectors, we will explain it more in-depth only for the health service sector.

When assuming that the ratios of expenditure share to population share in all municipalities equal the national average, such as in equation (2), the sum of estimated in-kind transfers may deviate from expenditures. This will be the case for the municipalities where the assumption does not hold. Deviation (of allocated in-kind transfer value from actual expenditure) for service sector i in municipality m will be given by:

$$Deviation_{im} = \sum_{j=1}^{t} \frac{p_{ij}}{Z_j} z_{jm} \qquad (3)$$

Where t is the total number of target groups for service sector i, z_{jm} is target group j's population share in municipality m and notation is as before. The interpretation of the equation is that deviation in service sector i is equal to the sum of the estimated allocated shares. Naturally, if the sum is larger than 1, allocation is greater than expenditure and vice versa. To ensure that our methodology follows the valuation assumption, we adjust all allocation shares for any deviation in our estimation by dividing all in-kind transfers by the deviation.

[9] Population data for different age groups is gathered from StatBank (SSB, n.d.-f)

General health services

For the general health service sector, we use the risk-related insurance value approach as argued previously. We have used data on how many medical consultations with general practitioners each age group has received within a year and used that as a measure for how much each group uses general health services at the national level.

From the data on consultations, we get a share of health expenditure per age group[10]. We use these age groups as the target groups and get the share of total expenditure in sector H (for health) allocated to the target group j (denoted p_{Hj}). We divide this health share by the age group's share of the national population (Z_j). The resulting "health ratio" (health share divided by population share, $\frac{p_{Hj}}{Z_j}$) is multiplied by spending per capita ($\frac{U_{Hm}}{n_m}$) to service sector H in municipality m to find an estimate of the insurance value for each person. A target group that receives a relatively large share of health services relative to their population share will have a value of the "health ratio" that is greater than one. This means that the estimated in-kind transfer for this group is larger than expenditure per capita, and vice versa for a group with relatively small usage of health services. When calculating the risk-related insurance value this way, a key assumption is that the different age groups do not differ between municipalities. This assumption is also made for long-term care, health centers and child welfare. We do not have data on medical consultations prior to 2012, therefore we assume that the "health ratio" $\frac{p_{Hj}}{Z_j}$ from 2005 to 2011 is equal to the average of this ratio's value in 2012 and 2013. See table A4.2 in appendix 4 for health ratios over time.

Home care and institutions for long-term care

We use the same approach for home care and institutions for long-term care as for general health services. Because we do not have data on individual recipients of this service, and in line with the argument regarding general health services, we use the risk-related insurance approach. The share of spending to different target groups (determined by age) is based on estimated expenses by age groups from Kjelvik & Mundal (2013), and since we only have information on spending share

[10] See table A.4.1 in appendix 4 for age groups.

for different target groups in 2011, we assume that the ratio $\frac{p_{ij}}{z_j}$ is unchanged for both home care and long-term care in institutions throughout our period.

Determining target groups by age alone is problematic for those aged 0 to 65, since we know from the institutional setting that long-term care services for this age group is largely restricted to the disabled. Due to this group requiring high spending per capita for home care, allocating solely based on age vastly underestimates in-kind transfers for the disabled and overestimates in-kind transfers for the remainder of the population aged 0 to 65. However, we cannot observe which individuals are disabled and are left with age as the only variable to determine risk of requiring service[11]. The cumulative spending shares of the target groups for those above the age of 66 is 89.3% in 2011 for long-term care in institutions (Kjelvik & Mundal, 2013). Therefore, the problem of not being able to identify the disabled is largely restricted to the home care service sector. A robustness check where we assume individuals aged 0 to 65 are allocated no home care will be presented in chapter 7.

Health center

The risk-related insurance approach is used for the health center sector. We assume that the age group 0 to 5 receives the most from this service sector as most services they provide are intended as follow-up after birth and maternity (weight controls etc.). While the services for children may benefit the parents, allocating the in-kind transfers to their children is equivalent as they are in the same household. The rest of the expenditures on health centers are allocated to the age group 6 to 20 as the health centers also have services targeted to them, including school health services. These assumptions are based on the institutional setting presented in chapter 3.

Primary- and secondary school

Expenditures on primary- and secondary school are allocated by the actual use approach to the target group children in school age, that is children aged 6 to 15

[11] An alternative could be to use a variable for disability benefits. However, this might further overestimate in-kind transfers related to home care for certain groups, since receivers of disability benefits do not necessarily have a higher risk of requiring home care.

years. As mentioned previously, primary- and secondary school is mandatory and there are very few[12] children aged 6 to 15 years who do not attend (World Bank, n.d.-b). The actual use approach is therefore approximated well by allocating according to age characteristics. We assume that average cost does not differ in this target group and allocate the average cost per school child evenly to the target group. The estimated in-kind transfer in a municipality will then be given by the following equation where notation is the same as before.

$$\hat{u}_{ijm} = \frac{U_{im}}{z_{jm} n_m} \tag{4}$$

Our assumption on even average cost may not be accurate. Aaberge et al. (2010a, p. 17) estimated that school children aged 13 to 15 required a higher level of spending than school children aged 6 to 12.

Childcare

Unlike primary- and secondary schools, childcare is not mandatory in Norway, and it is therefore not as straightforward to apply the actual use approach. However, in 2018 91.7% of the children aged 1 to 5 were attending kindergarten (Utdanningsdirektoratet, n.d.), and since we cannot observe who is not attending, we will treat everyone equally. This means that all children aged 1 to 5 will be allocated the municipality's average expenditure to childcare per child in the childcare age. Consequently, households with children in the target group that are not in childcare will have a higher estimated extended consumption than they have, and households with children in childcare will have an underestimated extended consumption. These estimation errors will be larger in the start of our period, as childcare participation for children aged 1 to 5 was 76% in 2005 (SSB, 2018)

Social assistance

After subtracting cash transfers, the social assistance service sector mainly comprises advisory services for those without work, the disadvantaged or people with substance abuse problems. It is difficult to find exact criteria for allocation as

[12] In 2005, 98,5% of all children in school age participated in primary- or secondary school. After 2012, the participation grade has been between 99,5% - 100% (World Bank, n.d.-b)

help is given at discretion. The method we use is to allocate the expenditures evenly to those who have an income and gross financial wealth below 2G and are not in education. The allocation method is an insurance approach where one target group is assumed to receive all the in-kind transfers. See appendix for what is excluded.

Child welfare services.

The value of child welfare services is allocated to three target groups: children aged 0 to 6, children aged 7 to 15 and children or young adults aged 16 to 20. This service sector is also allocated according to the risk-related insurance approach despite being able to observe some data on the recipients of the service. By the same argument as with health services, the value of child welfare services is not necessarily associated with receiving child welfare assistance, but rather by services being available if needed.

4.5 Equivalence scales

Households will differ in size and composition making it impossible to identify distributional differences without first adjusting for the size and composition. Dividing household consumption, or any other economic resource, evenly between household members is not a good option either. The most striking problem with this is that children are not comparable to adults in both income and spending. The common solution in literature is to use an equivalence scale. This involves assigning a weight to each member of a household which is summed to a household value or a combined weight to the household based on its composition and size. Using an equivalence scale to calculate equivalent consumption per capita solves the problems of just comparing per capita numbers since it allows for economies of scale within the household (Smeeding et al., 1993, p. 240). There are a few commonly used equivalence scales, such as the EU-scale (or the OECD-modified scale), the OECD scale and a square root scale (OECD, n.d.).

We will follow the existing literature, such as Aaberge et al. (2019a), Paulus & Figari (2015) and Smeeding et al. (1993), and use an equivalence scale to properly compare households. Larsen (2002) also used an equivalence scale in his paper on consumption inequality. However, the choice of equivalence scale differs somewhat in literature, and choice of equivalence scale matters for the conclusions we find, as we show in chapter 7. For example, Aaberge et al. (2019a) use the EU equivalence scale, which assigns the value 1 to the first adult, 0.5 to each additional household member older than 14 and 0.3 to each child under 14. Larsen (2002) on the other hand, uses the OECD scale, which assigns value 1 to the first adult, 0.7 to each additional household member older than 16 and 0.5 to each child under 16. Smaller weights for additional household members imply higher economies of scale within households. It is not obvious if the choice of equivalence scale should differ substantially when measuring income versus when measuring consumption. In recent literature, particularly in Europe, the EU-scale is widely used (Aaberge et al., 2022), so we will use this equivalence scale as the baseline. Equivalence scales risk overestimating income for households with high needs for services (Aaberge et al. 2019a, p. 15). This is why Aaberge et al. (2019a) adjusts the equivalence scale based on estimated needs. The same arguments hold when working with consumption.

4.5.1 Needs-adjusted scale

The needs-adjusted equivalence scale, also referred to as the NA scale, was proposed by Aaberge et al. (2010a). Since in-kind transfers cannot be assumed to be identical to cash income with respect to economies of scale, one must adjust the equivalence scale for cash income to take this into account. Otherwise, the consumption of those with high needs for public services may be overestimated (Aaberge et al., 2010a, p. 10). The NA scale will naturally be higher for households with high needs for public services compared to an equivalence scale for cash income. The use of an NA-scale when including non-cash income has been adopted by other researchers in Europe, such as the studies Paulus & Figari (2015), Verbist et al. (2012). The original theoretical framework in Aaberge et al. (2010a) was based on a linear expenditure system for local governments in which minimum required expenditure for different service sectors and target groups were estimated. The minimum required expenditures to different service sectors were summed for each target group to find an estimate of the needs for publicly provided services for each person. The NA-scale presented in Aaberge et al. (2010a) can be written as follows:

$$NA_j = \theta_r CI_j + (1 + \theta_r) NC_j \tag{5}$$

The needs-adjusted scale for a household or individual is given by the weighted average of an equivalence scale for cash transfers and the non-cash scale. The NA-scale is a relative scale in which both the value of the weight theta and the non-cash scale is determined based on the needs of a given reference group. The non-cash scale, denoted NC, for target group j is calculated by dividing the required in-kind transfers of the target group, represented by minimum expenditure parameters in Aaberge et al. (2010a), by the required in-kind transfers of the reference group. Theta is calculated by dividing the minimum required cash income, or minimum required consumption in our case, by the minimum required income from both cash and non-cash for the chosen reference group. The non-cash scale can be calculated directly for households or calculated for individuals and aggregated to household level with the same resulting scale value. The EU scale can be used as the scale for cash income as it reflects a household’s needs for cash income (Aaberge et al., 2019a, p. 16).

Studies using national data, such as Verbist et al. (2012), use average observed service standards by target group, measured in expenditure, instead of minimum expenditure requirements. Results should be unaffected by this choice since all individuals in a target group are assumed to receive the same in-kind transfers when using national averages. The ratios of expenditure between different groups should then be invariant to the two approaches (Aaberge et al. 2010b). Furthermore, Aaberge et al. (2010b) argue that observed spending reflects the needs of different groups.

> The observed pattern of public spending on education and health services across target groups is a result of complex processes where decisions made by democratic institutions play a major role. The relative spending across target groups may thus be considered as reflecting the priorities of policy decision makers and/or the expert opinion on relative needs of different target groups. (Aaberge et al., 2010b, p. 335)

In our thesis, we base minimum required expenditures on the in-kind transfers calculated in chapter 4.3.2. In line with Aaberge et al. (2010b) we assume that needs are reflected in observed spending. Since our data is on the municipal level and therefore gives us differing estimates of in-kind transfers within target groups, we cannot use averages as used in Verbist et al. (2012) or Paulus & Figari (2015). We assume that the municipality with the 5 percent lowest spending in a given service sector to a given target group represents that target group's need for that service[13]. The minimum level of cash income used to estimate the value of theta differs in literature. Verbist et al. (2012) uses half of average cash income for the reference group for this estimation, Paulus & Figari (2015) uses median cash income, while Aaberge et al. (2010a) uses the minimum pension requirement in the Norwegian social security system.

In our thesis, we choose households consisting of a single adult aged 31 to 50 with no need for social assistance as the reference group. We assume that minimum required consumption equals consumption at the 25th percentile of the target group population in our sample. Our non-cash scale for individual in target group j will then be given by:

$$NC_j = \frac{\sum_{i=1}^{s} \hat{u}_{ij}^{min}}{\sum_{i=1}^{s} \hat{u}_{ir}^{min}} \tag{6}$$

Where $\hat{u}_{ij}^{min}$ is the minimum expenditure parameter of service sector i to target group j defined by the 5th percentile spending explained above. The sum of minimum expenditure parameters across all non-cash service sectors for the target group divided by the same sum for the reference target group denoted by subscript r gives the value of our non-cash scale.

$$\theta_r = \frac{\hat{u}_{0r}^{min}}{\sum_{i=0}^{s} \hat{u}_{ir}^{min}} \tag{7}$$

The weight parameter theta is estimated by dividing minimum required consumption, denoted here as service sector 0 by the sum of minimum required consumption and in-kind transfers for the target group. Because our non-cash

[13] If we had chosen less than 5%, it would be difficult to get stable numbers over time. By choosing 5%, we do not carry the same risk of using outliers.

scale is calculated at individual level and aggregated to household level afterwards, the NA scale for household h is given by:

$$NA_h = \theta_r CI_h + (1 - \theta_r) \sum_j n_{hj} NC_j \tag{8}$$

The estimated value of theta varies between 0.9635 and 0.9758 in our baseline analysis. The value of the NA scale varies between 0.9987 at the 1st percentile of its distribution and 4.3511 at the 99th percentile. The same percentile values for the EU scale are 1 and 2.8 respectively. See appendix 7 for values over time and an example of equivalence scale values for different households.

4.5.2 Application

In the analysis we will apply the EU scale to equivalize consumption in the baseline analysis. The EU scale will also be applied to extended consumption as a point of departure, but as presented in 4.5.2, extended consumption will be equivalized using an NA scale accounts for differing needs for in-kind transfers. As a robustness check, we will use the OECD scale as the equivalence scale for cash income, both directly and as the cash income scale in the NA scale.

5 Data on consumption and in-kind transfers

This chapter will present descriptive statistics and graphs of the imputed consumption measure against national accounts, estimated in-kind transfers and the growth rate of different variables. The next chapter will present our main results, which is the different inequality findings and how these develop over time.

Figure 5.1 compares growth in imputed consumption from micro data and consumption from national accounts. Throughout the entire period, the trends are very similar. However, imputed consumption is lower than the national accounts in the start of the period, but has a larger growth rate towards the period after the financial crisis. In 2009, both consumption measures stabilized at a similar level before a large jump in imputed consumption in 2013. After the spike in 2013, imputed consumption has a lower growth rate throughout the rest of the period.

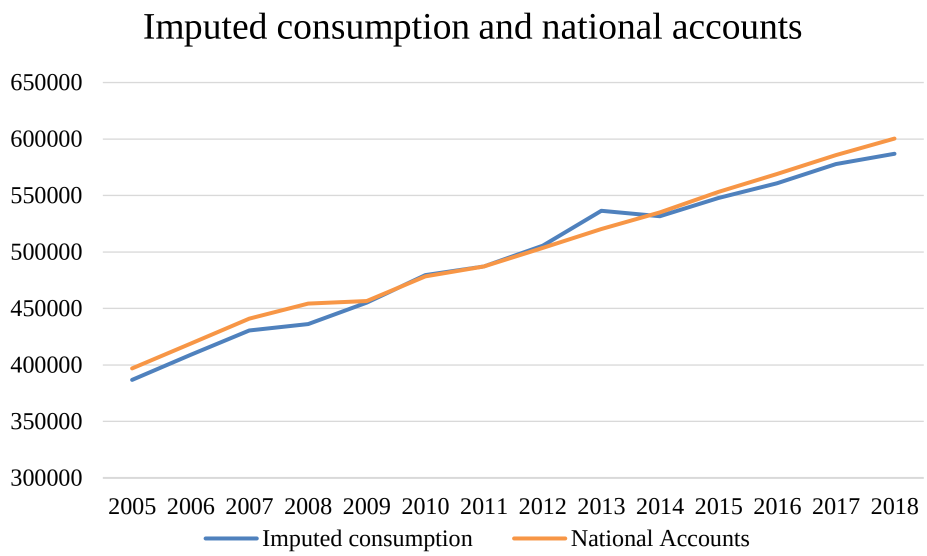

Figure 5.1 Mean imputed consumption compared to mean household consumption from National accounts. Current NOK values.

Figure 5.2 shows CPI adjusted consumption for households in our sample from 2005 to 2018. As seen in the figure, the increase in real consumption has been small, especially after 2012. There is a large disparity between households, P90 and P10, when we don't equivalize (which means to divide by the value of an equivalence scale in order to properly compare households). See table A.8 in appendix 8 for summary statistics of our imputed consumption measure.

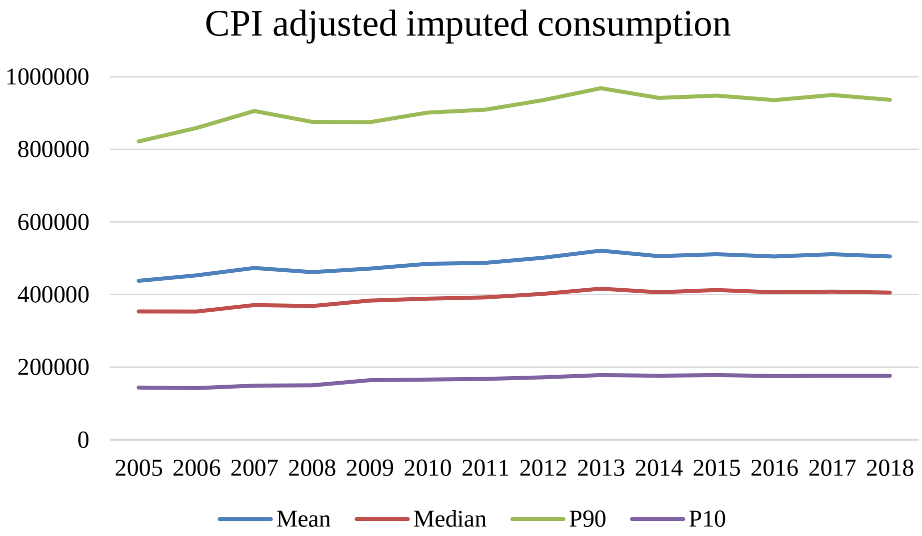

Figure 5.2 CPI adjusted consumption (2011 NOK). Mean and percentiles of the consumption distribution.

Figure 5.3 displays accumulated consumption growth in the period from 2005 to 2018. The numbers show real consumption growth, and the households are equivalized. This way of presenting data makes it easy to see when consumption has grown for different percentiles. While all households have had little or negative consumption growth since 2014, there was substantial growth after the financial crisis of 2008, especially for households with already low consumption, that is the 10th percentile. This is in line with the findings of Fagereng & Halvorsen (2017).

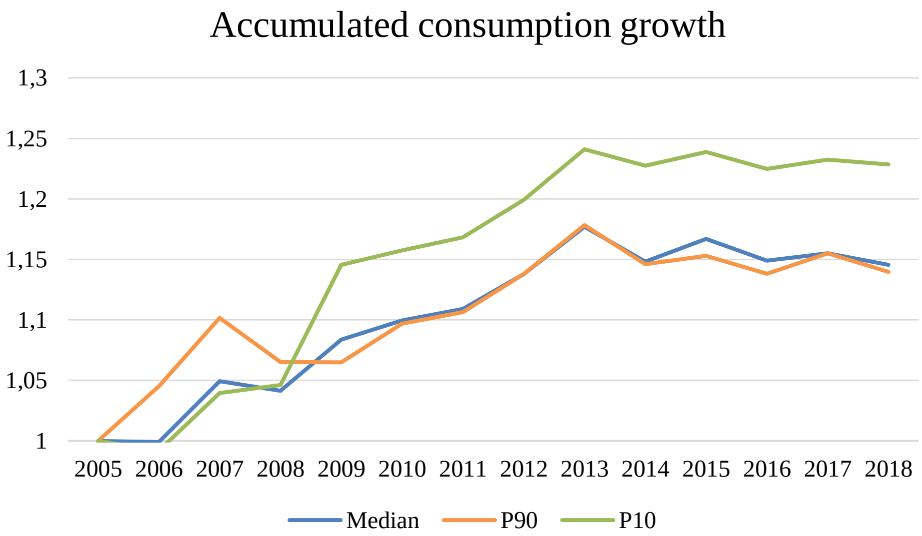

Figure 5.3 Accumulated real consumption growth at the median, P10 and P90. Percentiles are of the consumption distribution.

Year	In-kind transfers	Gini-coefficient
2005	36 052	0.59
2006	37 666	0.5894
2007	40 565	0.5903
2008	42 106	0.5883
2009	43 911	0.5895
2010	45 184	0.5877
2011	46 300	0.5851
2012	48 135	0.5832
2013	48 932	0.5792
2014	50 442	0.5775
2015	50 454	0.58
2016	51 482	0.5776
2017	52 768	0.5762
2018	53 952	0.573

Table 5.1 CPI adjusted average in-kind transfers per person (2011 NOK) and Gini-coefficient of in-kind transfers.

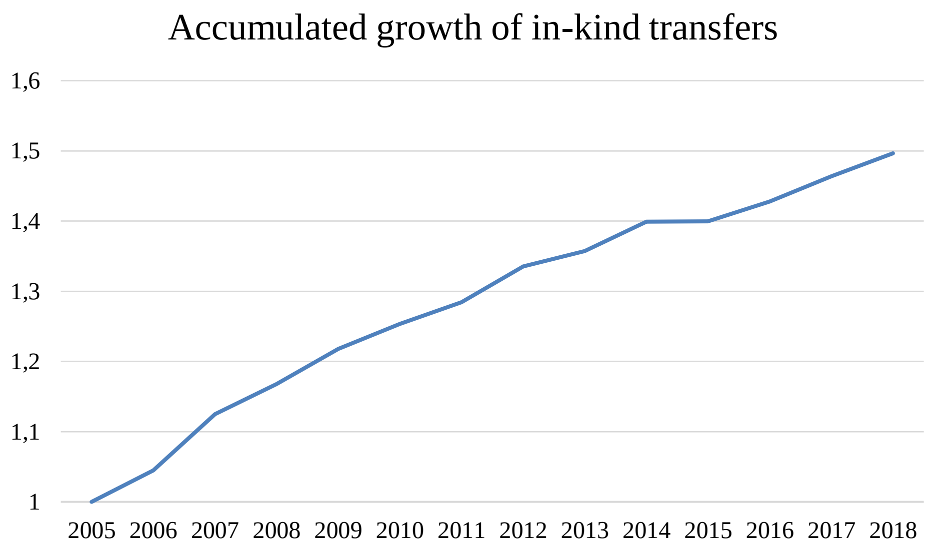

Figure 5.4. Accumulated real growth of in-kind transfers.

Table 5.1 shows the average in-kind transfers per person and figure 5.4 shows the accumulated growth of average in-kind transfers per person. As seen in the table and figure, there is a large growth in the level of in-kind transfers per capita. This is in accordance with figure 3.2 in chapter 3 which shows that there is an increase in the level of total spending of the service sectors we include in our analysis. The Gini-coefficient indicates that spending has become slightly more universal in 2018 compared to 2005. This may be due to a large increase in expenditures in the elderly care service sector, which are allocated to everyone.

Figure 5.5 shows CPI deflated averages of different consumption measures over time. The two consumption concepts are imputed consumption and extended consumption, and they are shown both unequivalized and equivalized using the EU scale and using the NA scale.

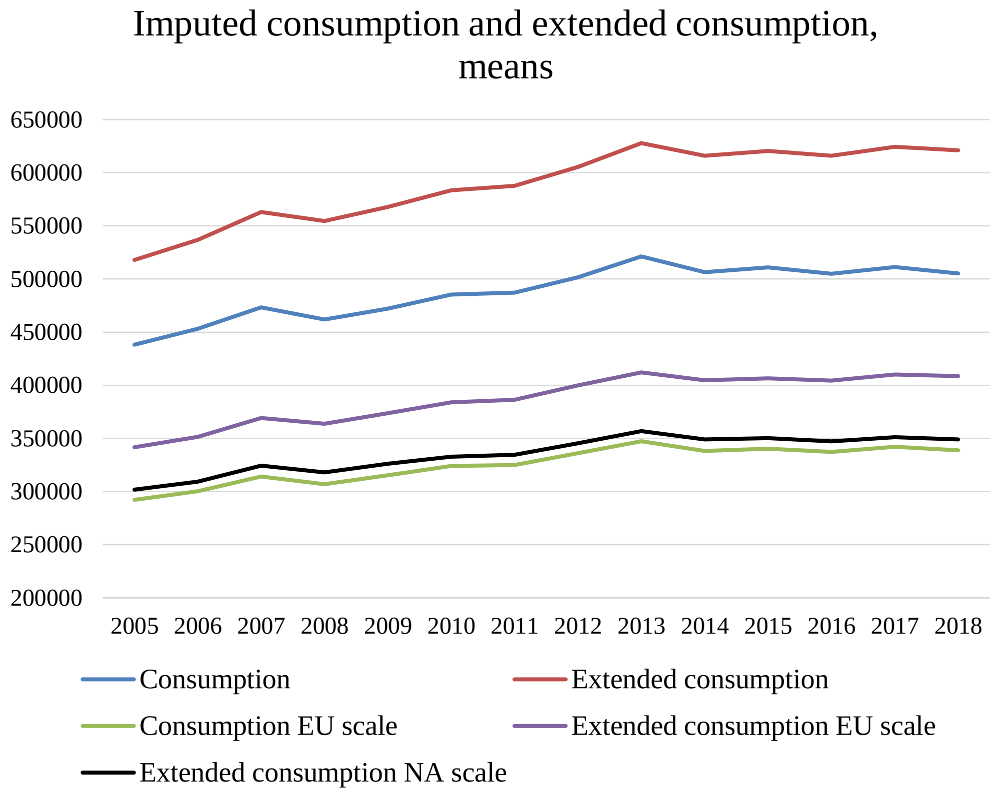

Figure 5.5 CPI deflated (2011 NOK) average consumption and extended consumption from 2005 to 2018. The blue line is imputed consumption, the red line is extended consumption, the green line is imputed consumption equivalized with the EU scale, the purple line is extended consumption equivalized with the EU scale and the black line is extended consumption equivalized with the needs-adjusted scale.

As demonstrated in figure 5.5, the difference between consumption and extended consumption increases slightly throughout the whole period. This is because, as demonstrated in table 5.1 and figure 3.2, in-kind transfers increase. The level of extended consumption decreases when equivalized and decreases further when it gets needs-adjusted.

6 Main results

This chapter will present the results of our main analysis regarding consumption inequality measures and how including the value of in-kind transfers affects these measures. It is important to note that the results must be seen in the context of the sampling restrictions we have made when imputing consumption. Households with dividends above 1G and households with income from own business above 1G have substantially higher net income on average than the remaining households[14]. The sample restrictions regarding these two groups remove about 6.5% of the original sample in 2017.

The main analysis aims to answer the research question:

How has in-kind transfers from local government affected consumption inequality in Norway in the period 2005 to 2018?

Which we decompose into:

1) *How does the level of consumption inequality in the period 2005 to 2018 change if we include the value of in-kind transfers?*
2) *How do the trends of consumption inequality in the period 2005 to 2018 change if we include the value of in-kind transfers?*

First, we present how the Gini-coefficient changes between unequivalized and equivalized consumption as well as how comparable our results are to the findings in Fagereng & Halvorsen (2017). Afterwards we will answer question 1, and present how including in-kind transfers affect the level of consumption inequality. Lastly, we will answer question 2 regarding how including in-kind transfers affect the trends in consumption inequality.

In figure 6.1 we present inequality at the household level measured with the Gini-coefficient.

[14] See table A.3.1 in appendix 3 for sample selection restrictions. See table A.3.2 for comparisons of income between households we remove due to dividends and business income and remaining households.
.

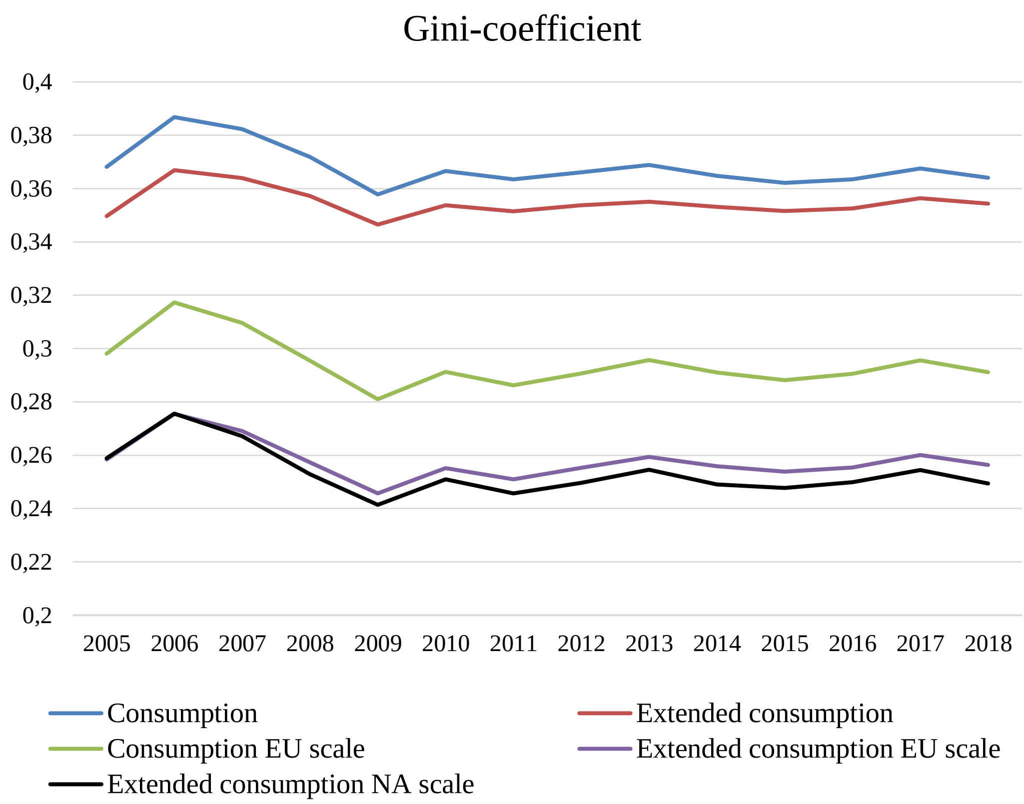

Figure 6.1 Gini-coefficient of different consumption measures over time. The blue- and orange lines are not equivalized, and respectively show inequality in consumption and extended consumption. The gray line shows consumption equivalized using the EU scale, whereas the yellow- and blue lines shows extended consumption equivalized using the EU scale and NA scale respectively.

At first glance, the clearest difference in the Gini-coefficient is caused by equivalizing consumption and extended consumption. This is natural since inequality will be higher when comparing households of different sizes. While we are not directly interested in consumption measures that have not been equivalized, it is worth comparing the consumption-inequality to Fagereng & Halvorsen (2017) to see if the results are similar. For the years that overlap with the time period in the Fagereng & Halvorsen (2017) study, our results are very comparable both in level and trend. Unequivalized consumption inequality reaches a peak around 2006, falls to a slightly lower level after the financial crisis, and stabilizes in the following years[15]. We see the same trend at the P90/P10,

[15] This is most likely not due to the tax reform on dividends since we have excluded individuals who received dividends above 1G. Furthermore, our findings are very similar to Fagereng & Halvorsen (2017) who also exclude owners of unlisted stocks which should further minimize the effects of the tax reform on the consumption measure.

P90/P50 and P50/P10[16] and is also in line with the findings of Fagereng & Halvorsen (2017).

Figure 6.2 shows inequality, measured by Gini-coefficient, P90/P10, P90/P50 and P50/P10, in the distribution of equivalized consumption and equivalized extended consumption. The main comparison is between inequality in consumption equivalized using the EU scale and inequality in extended consumption equivalized using the NA scale. As presented throughout our thesis, these two measures are the most appropriate when determining how including in-kind transfers affect consumption inequality. For reference, we have also included extended consumption equivalized using the EU scale which treats cash and non-cash income identically.

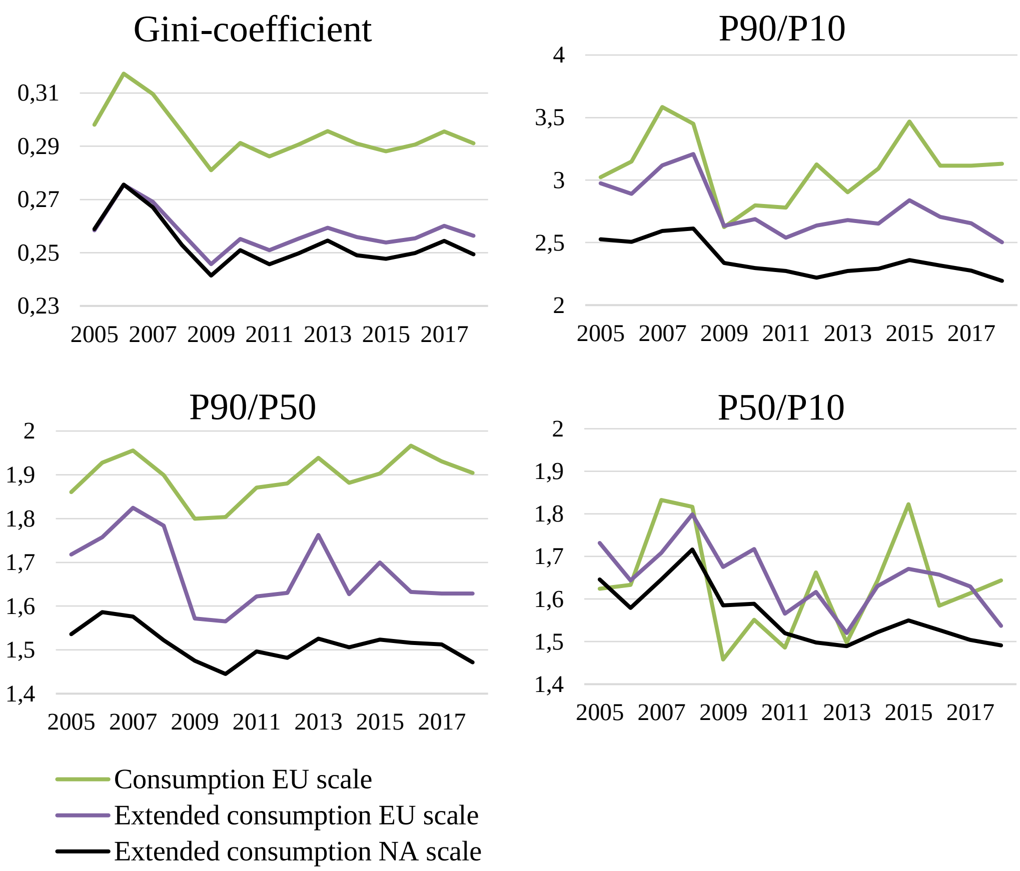

Figure 6.2 Inequality measures for different equivalized consumption concepts. The inequality measures are the Gini-coefficient, P90/P10, P90/P50 and P50/P10.

[16] See figure A.9.1-A.9.3 in appendix 9 for inequality measures on imputed consumption.

6.1 Change in the level of inequality

From figure 6.2, we see that both the Gini-coefficient and P90/P10 show a lower level of inequality for needs-adjusted extended consumption compared to consumption. The reduction in the Gini-coefficient when including in-kind transfers is 13.95% (0.0392 coefficient value) in 2005 and increases steadily over time to 14.32% (0.0417 coefficient value) in 2018. As seen in Figure 6.2, consumption inequality measured with P90/P10 is more volatile than for extended consumption, which consequently means that the reduction in inequality from including in-kind transfers is not stable over time. The reduction in P90/P10 is 16.36% (0.49 absolute value) in 2005 and 29.9% (0.94 absolute value) in 2018. On average over our period, P90/P10 for extended consumption is 23.34% lower than for consumption. From the graphs showing P90/P50 and P50/P10 in Figure 6.2, we see that the level change in P90/P10 over the period can almost entirely be attributed to changes in P90/P50. However, P50/P10 of extended consumption relative to P50/P10 of consumption is lower on average, particularly towards the end of the period. Level differences in the P50/P10 are altogether very volatile so it is hard to draw any solid conclusions. In summary, inequality in extended consumption becomes increasingly lower than inequality in consumption which can be seen in context with the increased average in-kind transfers.

It is worthwhile to investigate how the results might differ if we use the EU scale for extended consumption compared to the scale which takes needs for in-kind transfers into account. When using the Gini-coefficient, the difference is small, but increases towards the end of the period leading to lower. When using percentile measures, the difference is much larger, and this is particularly pronounced in the P90/P50 measure. This finding for percentile measures is somewhat puzzling. Including in-kind transfers while keeping equivalence scale unchanged reduces inequality, but reducing the extended consumption of high needs households through using the NA scale further reduces inequality.

As presented earlier, households with high needs for in-kind transfers will have their extended consumption overestimated when not using an equivalence scale that takes these needs into account. Moreover, since the EU scale assumes economies of scale, this overestimation is likely to be higher in households with more members. A possible explanation for the inequality levels based on percentiles shown in Figure 6.2 is as follows. Including in-kind transfers reduces inequality as the non-cash consumption may generally be a larger share of extended consumption for lower percentiles of the distribution. However, if overestimation explained above causes household size and needs for in-kind transfers to be increasing in the percentiles of extended consumption when using the EU scale, adjusting for these needs will reduce inequality.

6.2 Change in the trend of inequality

As shown in figure 6.2, the inequality in imputed consumption only shows a clear trend when measured with the Gini-coefficient. The Gini-coefficient for consumption is 2.35% (0.007 coefficient value) lower in 2018 compared to 2005, and 8.26% (0.0235 coefficient value) lower in 2018 compared to 2006. The percentile-based measures of consumption inequality are much noisier and have no clearly defined trend, but P90/P10 is 3.58% higher in 2018 than in 2005. The same increase is 2.36% for P90/P50 and 1.2% for P50/P10. Since saving data is noisy, the tail ends of the distribution of imputed consumption may be especially affected, causing percentile-based measures to not give a clear trend result. However, we do see a reduction in percentile measures of inequality when not equivalizing[17], in line with the accumulated consumption growth presented in Figure 5.3.

Figure 6.3 shows the different inequality measures we use for needs-adjusted equivalized extended consumption. The trends shown in figure 6.3 must be seen in contrast with the trend of the green lines in figure 6.2, which show equivalized imputed consumption and were described in the previous paragraph.

[17] See figure A.9.1-A.9.3 in appendix 9 for inequality measures on consumption.

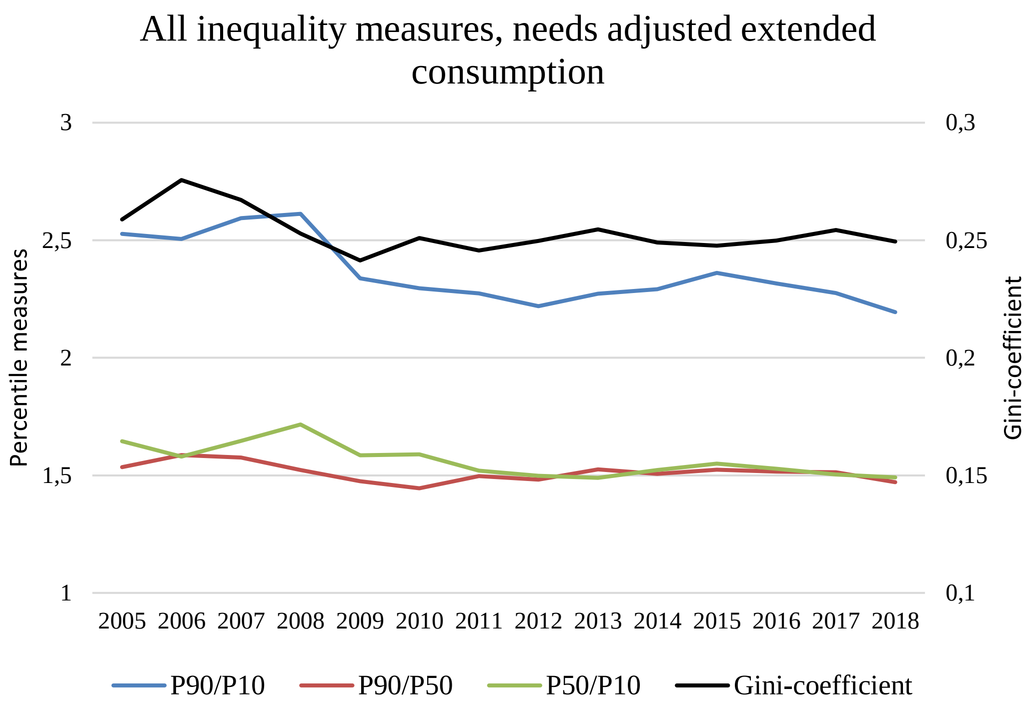

Figure 6.3 Inequality measures (Gini-coefficient, P90/P10, P90/P50 and P50/P10) for extended consumption equivalized with the NA scale. The left vertical axis shows the scale for percentile measures while the right vertical axis shows the scale for the Gini-coefficient.

The Gini-coefficient shown in Figure 6.3 has decreased by 3.67% (0.0095 coefficient value) from 2005 to 2018. The corresponding decrease in P90/P10, P90/P50 and P50/P10 is 13.18%, 4.19%, and 9.39% respectively. The decrease over time for the Gini-coefficient of extended consumption is very similar to what we saw for cash-based consumption, albeit 1.32 percentage-points larger. In contrast, the trends of the percentile measures for extended consumption do not match the trend for cash-based consumption. For all three percentile measures, the slight increase in inequality of consumption over time turned into marked decreases when including in-kind transfers. The percentage point reduction in the change from 2005 to 2018 was for P90/P10, P90/P50 and P50/P10 respectively 16.76, 6.55, and 10.59. To summarize, including the value of in-kind transfers leads to larger decreases in the Gini-coefficient over time, while it results in downward trends for the percentile inequality measures rather than increasing trends. The downward trend in P90/P10 can largely be attributed to the downward trend in P50/P10. The downward trend in inequality of extended consumption is most noticeable following the financial crisis of 2008 across all inequality measures.

7 Robustness checks

In this chapter we will present three robustness checks to the results shown in chapter 6. See table A.9.1 and A.9.2 in appendix 9 for inequality measures on robustness checks and how these compare to the baseline analysis.

Because the results we find may be affected by the assumptions made in the analysis, we have performed robustness checks related to some of these. The first is to assume that persons aged 0 to 65 years receive no in-kind transfers in the home care service sector. This will serve as a counterpoint to our main analysis where we are overestimating this in-kind transfer for this age group. The second is to use the OECD scale as the equivalence scale for consumption based on cash-income. When using this scale, one assumes lower economies of scale within households. The third is to use national average spending for each of the publicly provided service sectors instead of municipality specific spending.

Home care services

In the first robustness check, we set the share of home care services allocated to persons aged 0 to 65 years equal to zero, but leave the shares allocated to persons aged 66 to 80 years and over 81 years unchanged. This means that expenses will not be equal to allocated in-kind transfers in the home care service sector. Because the baseline analysis is overestimating in-kind transfers for individuals aged 0 to 65 years (who are not disabled), we impose this robustness check to investigate if results are heavily influenced by this overestimation. However, the analysis in this robustness check will underestimate in-kind transfers to the disabled more than the baseline analysis.

The results are broadly comparable to the baseline results, but with slightly higher levels of inequality in extended consumption equivalized with the NA scale across the inequality measures. The exception is the P50/P10 measure, where the inequality level for extended consumption is on average 1.86% lower than for consumption (compared to 4.05% in the baseline analysis). This is in line with our proposed explanation regarding percentile measures in Figure 6.2. When we remove an almost universal in-kind transfer from the analysis, those in the lower part of the extended consumption distribution will lose a larger share of their received in-kind transfers.

The reduction in extended consumption inequality over time is slightly lower in this robustness check, than in the baseline analysis shown in Figure 6.3. Expenditures for home care services have increased with 102% in real terms from 2005 to 2018, as shown in Figure 3.2 in chapter 3, and a large share is distributed evenly to those aged 0 to 65 years. Therefore, it is natural that removing this share attenuates the reduction in inequality.

OECD scale

In the second robustness check, we use the OECD scale described in chapter 4.5.1 as the scale for cash-based consumption. We do this to investigate if our results are sensitive to different assumptions about the economies of scale for cash-based consumption in households.

The results in the analysis using the OECD scale do not differ substantially from the baseline analysis. Across consumption concepts and inequality measures, inequality levels are lower when using the OECD scale. When using the Gini-coefficient, trends are largely unchanged across consumption concepts, but levels are lower overall relative to the baseline (2.42% for consumption and 2.77% for extended consumption). The reduction in inequality of extended consumption over time, measured by P90/P10, is somewhat attenuated in this analysis compared to the baseline. Additionally, inequality levels are lower across consumption concepts (7.29% for consumption and 7.7% for extended consumption). These differences are mostly related to the changes in the lower percentiles, seen in the P50/P10 measure. Lower inequality levels when assuming lower economies of scale in households indicates that average household size is increasing in extended consumption and in consumption.

National average spending

The last robustness check we impose on our analysis is to allocate the national average expenditures of each service sector provided by the municipalities. In-kind transfers are allocated the same way and to the same target groups as in the baseline analysis, but based on the national average of each service sector's expenditures. The reason behind this robustness check is to investigate if expenditures per capita in small municipalities plays an important role for our results. These typically have higher costs of providing the same services per capita than the larger municipalities because of economies of scale. Using education as an example, there are different costs between municipalities of providing a student education despite common learning objectives across the country. This means that the cost of providing the same service varies between municipalities and municipal expenditures are not necessarily linked with the value received. Because of this, students in municipalities where the cost of providing education is large will be “better off” than others as they receive more in-kind transfers. This is why we want to investigate if using average expenditures will have a large impact on our results.

Remaining in the education example when applying the average, everyone will still get educated, but some students will get more in-kind transfers than in our analysis and others will get less. Having conducted the robustness check, we see that neither the Gini-coefficient, P90/P10, P90/P50 nor the P50/P10 on in-kind transfers per person changes significantly. Both the national average and the actual municipal expenditures keep the same level and trend of inequality throughout the whole period. The Gini-coefficients we got using the average expenditures is approximately the same as the ones shown in table 1. This tells us that there are no obvious problems connected to using our assumptions of constant productivity when measuring inequality.

8 Conclusion

In this thesis, we examine the effects of including in-kind transfers from local government in the consumption measure on consumption inequality. We have imputed consumption from registry data from 2005 to 2018 based on the method presented by Fagereng & Halvorsen (2017). By constructing a method of valuation and allocation of publicly provided services from local government, we add the estimated in-kind transfers for each person to the imputed consumption and call the sum extended consumption. The inequality in imputed consumption and extended consumption is measured using the Gini-coefficient and P90/P10. The latter is also split into P90/P50 and P50/P10.

We find that including the value of in-kind transfers decreases the level of the inequality measures substantially. The average value of the Gini-coefficient from 2005 to 2018 is 0.2944 for imputed consumption and 0.2533 for extended consumption. Thus, including in-kind transfers has reduced the Gini-coefficient by 13.95% on average. The same average reduction in the P90/P10 is 23.34%, from 3.1 for imputed consumption to 2.36 for extended consumption. When P90/P10 is decomposed into P90/P50 and P50/P10, we see that most of the level reduction is due to changes in P90/P50.

We find that inequality in imputed consumption has decreased by 2.35% from 2005 to 2018 when measured with the Gini-coefficient. The corresponding decrease is 1.32 percentage points higher for extended consumption. The percentile measures of inequality are quite volatile and do not show clear trends over time for imputed consumption. However, for extended consumption, P90/P10 has a clear downward trend, with a 13.18% decrease from 2005 to 2018 (the corresponding change in P90/P10 for imputed consumption was a 2.36% increase). Most of the downward trend in P90/P10 for extended consumption can be attributed to a decrease in P50/P10.

The findings indicate that including in-kind transfers significantly reduced the level of inequality, and that this reduction increased from 2005 to 2018.

Further research into consumption inequality and publicly provided services could improve upon several aspects of our methodology. For instance, the consumption imputation can be extended to allow for durables to be consumed over time, such as in Fagereng & Halvorsen (2017). Additionally, extending the timeframe of the analysis could be interesting. Both these improvements require better data than we have available. Another study could be applying a model of in-kind transfers similar to what is used by Aaberge et al. (2019a). This model allows for economies of scale in the production of services. It would be interesting to see if the results of such a study would be consistent with our results.

Bibliography

Aaberge, R. & Langørgen, A., (2006). Measuring the Benefits from Public Services: The Effects of Local Government Spending on the Distribution of Income in Norway. *Review of Income and Wealth, 52*(1), 61-83. https://doi.org/10.1111/j.1475-4991.2006.00176.x

Aaberge, R., Bhuller, M., Langørgen, A., & Mogstad, M, (2010a). The Distributional Impact of Public Services when Needs Differ. *Journal of public economics, 94*(9), 549-562. http://dx.doi.org/doi:10.1016/j.jpubeco.2010.06.004

Aaberge, R., Eika, L., Langørgen, A., Mogstad, M. (2019a). Local governments, in-kind transfers, and economic inequality. *Journal of Public Economics, 180*. https://doi.org/10.1016/j.jpubeco.2018.09.015

Aaberge, R., Langørgen, A., & Lindgren, P. (2010b). The impact of basic public services on the distribution of income in European countries. *Income and living conditions in Europe* (329., 330-344). Eurostat. https://www.researchgate.net/publication/327831406_The_impact_of_basic_public_services_on_the_distribution_of_income_in_European_countries

Aaberge, R., Langørgen, A., & Lindgren, P.Y. (2019b). Accounting for Public In Kind Transfers in Comparisons of Income Inequality between Nordic Countries. *Nordic Economic Policy Review*, 175-209. https://www.researchgate.net/publication/327831599_Accounting_for_Public_In-Kind_Transfers_in_Comparisons_of_Income_Inequality_between_the_Nordic_Countries

Aaberge, R., Langørgen, A., & Lindgren, P. Y. (2022). A European equivalence scale for public in-kind transfers. *Discussion Papers No. 997, May 2022 Statistics Norway, Research Department.* https://www.ssb.no/inntekt-og-forbruk/inntekt-og-formue/artikler/a-european-equivalence-scale-for-public-in-kind-transfers/_/attachment/inline/3fc9ad6a-7f29-4e0b-b5d1-cc0c3b4048a9:fa6738fafe5f18937ba21a64f4ed6d4ab781091b/DP977_web.pdf

Aaberge, R., Vestad, O.L., Mogstad, M., & Vestre, A. (2021). Økonomisk ulikhet i Norge i det 21. århundre. *Rapporter /Statistisk Sentralbyrå, 2021*(33). http://hdl.handle.net/11159/6550

Alstadsæter, A., Kopczuk, W. & Telle, K. (2013). Are closely-held firms tax shelters? *Discussion papers No. 764, November 2013 Statistics Norway, Research Department.* https://www.ssb.no/en/forskning/discussion-papers/_attachment/147359?_ts=14231fd6f50

Attanasio, O.P. & Pistaferri, L. (2016). Consumption Inequality. *Journal of Economic Perspectives*, *30*(2), 3-28. https://doi.org/10.1257/jep.30.2.3

Bufdir. (n.d.-a). *Barnevern.* https://www.bufdir.no/barnevern/

Bufdir. (n.d.-b). *Tiltak i barnevernet.* https://www.bufdir.no/Barnevern/Tiltak_i_barnevernet/

Euronext. (n.d.). *Oslo Børs Benchmark Index_GI.* https://live.euronext.com/en/product/indices/NO0007035327-XOSL

Fagereng, A. & Halvorsen, E. (2017). Imputing consumption from Norwegian income and wealth registry data. *Journal of Economic and Social Measurement*, *42*(1), 67-100. https://doi.org/10.3233/JEM-170438

Figari, F. & Paulus, A. (2015). The Distributional Effects of Taxes and Transfers Under Alternative Income Concepts: The Importance of Three ‘‘I’’s. *Public Finance Review*, *43*(3), 347-372. https://doi.org/10.1177/1091142113506930

Fiva, Jon H., Askill H. Halse and Gisle J. Natvik (2020): Local Government Dataset. Available at www.jon.fiva.no/data.htm.

Forskrift om tildeling av kommunal bolig i Oslo kommune, Oslo. (2003). *Formål.* (FOR-2003-05-07-1895). Lovdata. https://lovdata.no/dokument/LF/forskrift/2003-05-07-1895

Forskrift om tildeling av kommunale gjennomgangsboliger, Gjerdrum kommune, Akershus. (2017). *Kommunale boliger.* (FOR-2017-04-19-539). Lovdata. https://lovdata.no/dokument/LF/forskrift/2017-04-19-539

Forskrift om tildeling av kommunale gjennomgangsboliger, Gjerdrum kommune, Akershus. (2017). *Prioritering av søkere.* (FOR-2017-04-19-539). Lovdata. https://lovdata.no/dokument/LF/forskrift/2017-04-19-539

Halvorsen, E. & Hetland, A. (2021). Pensjonsformue i Norge 2018. *Rapporter, 2021*(16). http://www.zbw.eu/econis-archiv/bitstream/11159/5291/1/1756017395_0.pdf

Hicks, J. R. (1946). *Value and Capital: An Inquiry Into Some Fundamental Principles of Economic Theory*. Clarendon Press.

Helsedirektoratet. (2017). *Personer med utviklingshemmings bruk av fylkeskommunale og kommunale helse- og omsorgstjenester.* (Rapport IS-2555). https://www.helsedirektoratet.no/rapporter/personer-med-utviklingshemmings-bruk-av-fylkeskommunale-og-kommunale-helse-og-omsorgstjenester/Personer%20med%20utviklingshemmings%20bruk%20av%20fylkeskommunale%20og%20kommunale%20helse-%20og%20omsorgstjenester.pdf/_/attachment/inline/8218d1db-6d18-4a19-b9c2-0a73ffccf88c:5a34687bd2cc4bcdb3922543d6562a5f47232837/Personer%20med%20utviklingshemmings%20bruk%20av%20fylkeskommunale%20og%20kommunale%20helse-%20og%20omsorgstjenester.pdf?fbclid=IwAR0lucx7hrVgMm_xhi7z0QeAMWqkoYHXWwuTj4EEVOueGuJMqxmt92q2hcM

Helsedirektoratet. (2019). *Dagaktivitetstilbud i kommunen.* (Rapport IS- 2885). https://www.helsedirektoratet.no/rapporter/dagaktivitetstilbud-i-kommunen-for-personer-med-demens-og-personer-med-utviklingshemming/Dagaktivitetstilbud%20i%20kommunen%20for%20personer%20med%20demens%20og%20personer%20med%20utviklingshemming.pdf/_/attachment/inline/9f1a2fca-1d87-4d1f-8b2a-b27183589c38:e4cbb66116f626b78a1062ebbb76e53ed339ec73/Dagaktivitetstilbud%20i%20kommunen%20for%20personer%20med%20demens%20og%20personer%20med%20utviklingshemming.pdf

Helsenorge. (2022). *Rett til fastlege.* https://www.helsenorge.no/fastlegen/om/rett-til-fastlege/

Kjelvik, J. & Mundal A. (2013). Utgifter til eldres helse og omsorg. Ramm, J. (Red.), *Eldres bruk av helse- og omsorgstjenester* (p. 39-48). Statistics Norway. https://www.ssb.no/helse/artikler-og-publikasjoner/_attachment/125965?_ts=13f8b5b

Kniesner, T. J. & Ziliak, J. P. (2002). Tax reform and automatic stabilization. *The American Economic Review*, *92*(3), 590-612. https://doi.org/10.1257/00028280260136264

Koijen, R., Nieuwerburgh, S. V., & Vestman, R. (2014). Judging the Quality of Survey Data by Comparison with “Truth” as Measured by Administrative Records: Evidence From Sweden. In *Improving the Measurement of Consumer Expenditures* (pp. 308–346). University of Chicago Press. https://doi.org/10.7208/chicago/9780226194714.003.0012

Korsvold, T. (2020). Barnehagereformen. In *Store Norske Leksikon.* Retrieved June 7, 2022, from https://snl.no/barnehagereformen

Larsen, E.R. (2002). Consumption Inequality in Norway in the 80s and 90s. *Discussion Papers, 325.* https://www.ssb.no/a/publikasjoner/pdf/DP/dp-325.pdf

Lov om barnevernstjenester. (1992). *Ansvaret for institusjoner.* (LOV-1992-07-17-100). Lovdata.
https://lovdata.no/dokument/NL/lov/1992-07-17-100

Lov om barnevernstjenester. (1992). *Hvem loven gjelder for*. (LOV-1992-07-17-100). Lovdata.
https://lovdata.no/dokument/NL/lov/1992-07-17-100

Lov om helsetjenesten i kommunene. (1984). *Kommunens ansvar for helsetjenestene.* (LOV-1982-11-19-66). Lovdata.
https://lovdata.no/dokument/NLO/lov/1982-11-19-66#KAPITTEL_3

Lov om kommunal helse- og omsorgstjenester m. m. (2011). *Kommunens ansvar for helse- og omsorgstjenester* (LOV-2011-06-24-30). Lovdata.
https://lovdata.no/dokument/NL/lov/2011-06-24-30

Lov om kommunal helse- og omsorgstjenester m. m. (2011). *Lovens formål.* (LOV-2011-06-24-30). Lovdata.
https://lovdata.no/dokument/NL/lov/2011-06-24-30

Lov om sosiale tjenester. (1991). *Generell forebyggende virksomhet.* (LOV-1991-12-13-81). Lovdata.
https://lovdata.no/dokument/NLO/lov/1991-12-13-81#KAPITTEL_3

Microdata. (n.d.). *Data fra SSB.*
https://microdata.no/discovery/datastore/?datastore=no.ssb.fdb

MSCI. (2022). *MSCI World Index.*
https://www.msci.com/documents/10199/178e6643-6ae6-47b9-82be-e1fc565ededb

NAV. (n.d.). *Sosiale tjenester og økonomisk sosialhjelp.*
https://www.nav.no/no/person/flere-tema/sosiale-tjenester

Neckerman, M. K. & Torche, F. (2007). Inequality: Causes and Consequences. *Annual Review of Sociology*, *33*, 335-357. https://www.jstor.org/stable/29737766

Norwegian Fund and Asset Management Association. (n.d.). *Historisk statistikk.* https://vff.no/historisk-statistikk

OECD. (n.d.). *Adjusting household income: equivalence scales.* https://www.oecd.org/els/soc/OECD-Note-EquivalenceScales.pdf

Oslo Kommune. (n.d.). *Helsestasjon for ungdom (HFU).* https://www.oslo.kommune.no/helse-og-omsorg/helsetjenester/helsestasjon-og-vaksine/helsestasjon-for-ungdom-hfu/#gref

Paulus, A., Sutherland, H., & Tsakloglou, P. (2010). The Distributional Impact of In-Kind Public Benefits in European Countries. *Journal of Policy Analysis and Management*, *29*(2), 243-266. https://doi.org/10.1002/pam.20490

Piketty, T. & Saez, E. (2014). Inequality in the long run. *Science, 344*(6186), 838-843. https://www.jstor.org/stable/24743922

Regjeringen. (2021a). *Spørsmål og svar om pensjonsreformen.* https://www.regjeringen.no/no/tema/pensjon-trygd-og-sosiale-tjenester/pensjonsreform/sporsmal-og-svar/id86829/#Hvorfor_pensjonsreform

Regjeringen. (2021b). *Rett til barnehageplass.* https://www.regjeringen.no/no/tema/familie-og-barn/barnehager/innsikt/Rett-til-barnehageplass/id2344761/

Regjeringen. (n.d.). *Meld. St. 32 (2020-2021).* https://www.regjeringen.no/no/dokumenter/meld.-st.-32-20202021/id2856870/?ch=2

Smeeding, T.M., Saunders, P., Coder, J., Jenkins, S., Fritzell, J., Hagenaars, A.J.M., Hauser, R., & Wolfson, M. (1993). Poverty, inequality, and family living standards impacts across seven nations: The effect of noncash subsidies for health, education and housing. *Review of Income and Wealth, 39*(3), 229-256. https://doi.org/10.1111/j.1475-4991.1993.tb00458.x

Solvoll, G. & Thorsnæs, G. (2021). Samferdsel i Norge. In *Store norske leksikon.* Retrieved May 14, 2022, from https://snl.no/Samferdsel_i_Norge

SSB. (2013). *Forbrukerundersøkelsen.*
https://www.ssb.no/inntekt-og-forbruk/forbruk/statistikk/forbruksundersokelsen

SSB. (2018). *Andel barn i barnehagen øker fortsatt.* https://www.ssb.no/utdanning/artikler-og-publikasjoner/andel-barn-i-barnehage-oker-fortsatt

SSB. (n.d.-a). *Fakta om barnehager.* https://www.ssb.no/utdanning/faktaside/barnehager

SSB. (n.d.-b). *Barnevern.* https://www.ssb.no/statbank/table/09050/tableViewLayout1/

SSB. (n.d.-c). *Kodeliste for KOSTRA regnskapsfunksjoner.* https://www.ssb.no/klass/klassifikasjoner/277

SSB. (n.d.-d). *Fakta om befolkningen.* https://www.ssb.no/befolkning/faktaside/befolkningen

SSB. (n.d.-e) *Allmennlegetjenesten.* https://www.ssb.no/statbank/table/10141/

SSB. (n.d.-f). *Befolkning.* https://www.ssb.no/statbank/table/07459/tableViewLayout2/

U.S. Department of The Treasury. (n.d.). *Daily Treasury Bill Rates.* https://home.treasury.gov/resource-center/data-chart-center/interest-rates/TextView?type=daily_treasury_bill_rates&field_tdr_date_value=2010

United Nations. (2015). *Concepts of inequality.* (Development Issues, No. 1). United Nations. https://www.un.org/en/development/desa/policy/wess/wess_dev_issues/dsp_policy_01.pdf

Utdanningsdirektoratet. (n.d.). *Barn i barnehagen.* https://www.udir.no/tall-og-forskning/statistikk/statistikk-barnehage/tall-og-analyse-av-barnehager-2018/barn-i-barnehagen/

Verbist, G., Förster, M., & Vaalavuo, M. (2012). The Impact of Publicly Provided Services on the Distribution of Resources. *Review of New Results and Methods*. OECD. https://doi.org/10.1787/5k9h363c5szq-en

World bank. (n.d.-a). *Gini Index.* https://data.worldbank.org/indicator/SI.POV.GINI?end=2019&start=1979&view=chart

World Bank (n.d.-b). *School enrollment, primary (% net) - Norway.* https://data.worldbank.org/indicator/se.prm.nenr?end=2017&locations=NO&start=2005&view=chart

Appendices

Appendix 1 – KOSTRA classification of expenses

	KOSTRA		Description
General health services	FGK9	233	Other preventive health functions
		241	Diagnosis, treatment and rehabilitation
		256	Immediately help 24-hour stay in the municipalities
Home care		234	Activation and services for the elderly and disabled
		254	health care for home residents
Institutions for long-term care		253	Health and care services in institutions
		261	Institutional premises
Health center		232	Health center and school health services
Childcare	FGK7	201	Kindergarten
		211	Strengthened offer for preschool children
		221	Kindergarten premises and shuttle
Primary- and secondary school	FGK8b	202	Primary- and secondary school
		215	After-school activities
		222	School premises
		223	School transport
		213	Adult education
Social services	FGK12	242	Advice, guidance and social prevention work
		243	Offers for people with substance abuse problems
		281	Subsistence benefit (Removed cash transfers)

		273	Work-oriented measures under municipal auspices
		276	The qualification scheme (Removed cash transfers)
Child welfare services	FGK13	244	Child protection
		251	Child welfare measures when the child is not placed by the child welfare service
		252	Child welfare measures when the child is placed by the child welfare service

Table A.1. Service sectors by category. If in red, cash transfers (measured as current expenses minus wage expenses) are excluded from the category.

Appendix 2 – Returns data

Year	OSEBX return (%)
2005	39.83
2006	34.10
2007	10.05
2008	-51.31
2009	58.90
2010	16.59
2011	-12.12
2012	16.69
2013	20.34
2014	5.93
2015	3.67
2016	15.13
2017	17.89
2018	-1.45

Table A.2.1. Historical annual return, Oslo Stock Exchange.

Year	Treasury bill 3 month (%)
2005	3.22
2006	4.85
2007	4.48
2008	1.40
2009	0.15
2010	0.14
2011	0.05
2012	0.09
2013	0.06
2014	0.03
2015	0.05
2016	0.32
2017	0.95
2018	1.97

Table A.2.2. Historical annual average of 3-month Treasury bill rate.

Year	MSCI World return (%)
2005	10.02
2006	20.65
2007	9.57
2008	-40.33
2009	30.79
2010	12.34
2011	-5.02
2012	16.54
2013	27.37
2014	5.5
2015	-0.32
2016	8.15
2017	23.07
2018	-8.2

Table A.2.3. Historical annual MSCI World return (%).

Appendix 3 – Sample selection restrictions

Imputed consumption	0	1	2	3	4	5	6
Mean	615,726	639,081	631,592	617,01	614,697	599,733	586,941
St. dev.	888,125	913,55	907,071	844,195	767,281	738,319	428,804
# of obs.	507,197	469,457	457,379	419,328	409,048	387,255	321,986
Removed obs.		37,74	12,078	38,051	10,28	21,793	65,269
p1	−2,533,560	−2,661,741	−2,639,345	−2,485,828	−1,973,800	−1,909,154	61,395
p25	247,773	269,949	267,116	268,828	270,328	267,708	289,576
p50	452,929	484,657	476,996	474,376	471,941	461,436	470,942
p75	798,44	826,831	814,643	804,313	793,711	774,872	753,895
p99	4,709,222	4,825,571	4,799,919	4,559,684	4,252,860	4,121,247	2,576,070

0 All households
1 Household head aged 25-90
2 Change in number of adults
3 Moved municipalities
4 Dividends
5 Business income
6 Extreme consumption change

Table A.3.1 Effects of sample selection restrictions in 2018. Comma is used as thousand separator. Means, standard deviations, and percentiles are in NOK (not CPI adjusted).

Comparison of households, sample restrictions	**Dividends > 1G**	**Dividends < 1G**	**Business income > 1G**	**Business income < 1G**
Imputed consumption	1 389 033	615 941	923 781	619 493
Net income	1 635 737	579 332	896 321	582 976

Table A.3.2 Comparison of imputed consumption and net income for households below and above restriction cutoff regarding dividends and income from own business. Values are in NOK (not CPI adjusted) for 2017.

Appendix 4 – Share of services to target groups for insurance approach

Consultation share from data by age group								
Year	**0-5**	**6-15**	**16-19**	**20-29**	**30-49**	**50-66**	**67-79**	**80+**
2012	0.0510	0.0515	0.0312	0.1092	0.2735	0.2473	0.1496	0.0867
2013	0.0483	0.0510	0.0310	0.1104	0.2728	0.2456	0.1544	0.0865
2014	0.0484	0.0524	0.0315	0.1119	0.2723	0.2424	0.1564	0.0847
2015	0.0461	0.0521	0.0318	0.1124	0.2714	0.2431	0.1594	0.0836
2016	0.0457	0.0528	0.0353	0.1119	0.2690	0.2430	0.1604	0.0820
2017	0.0443	0.0530	0.0390	0.1119	0.2675	0.2425	0.1613	0.0806
2018	0.0426	0.0524	0.0391	0.1122	0.2682	0.2433	0.1622	0.0802

Table A.4.1 Shares of medical consultations by age group, data from SSB (n.d.-e)

Ratio of consultation share to age share by age group								
Year	**0-5**	**6-15**	**16-19**	**20-29**	**30-49**	**50-66**	**67-79**	**80+**
2005	0.6667	0.417	0.5988	0.8329	0.9726	1.198	1.7243	1.9612
2006	0.6667	0.417	0.5988	0.8329	0.9726	1.198	1.7243	1.9612
2007	0.6667	0.417	0.5988	0.8329	0.9726	1.198	1.7243	1.9612
2008	0.6667	0.417	0.5988	0.8329	0.9726	1.198	1.7243	1.9612
2009	0.6667	0.417	0.5988	0.8329	0.9726	1.198	1.7243	1.9612
2010	0.6667	0.417	0.5988	0.8329	0.9726	1.198	1.7243	1.9612
2011	0.6667	0.417	0.5988	0.8329	0.9726	1.198	1.7243	1.9612
2012	0.6823	0.4162	0.5997	0.8343	0.9724	1.1999	1.722	1.9517
2013	0.6511	0.4178	0.598	0.8315	0.9727	1.1961	1.7267	1.9708
2014	0.6587	0.4331	0.6123	0.8345	0.9744	1.1891	1.672	1.961
2015	0.6373	0.4321	0.6263	0.8324	0.9767	1.1947	1.6395	1.9599
2016	0.6435	0.4385	0.7002	0.8271	0.9741	1.1914	1.5945	1.9422
2017	0.6346	0.4399	0.7797	0.8272	0.9756	1.1844	1.5562	1.919
2018	0.6215	0.435	0.7936	0.8319	0.9839	1.181	1.524	1.906

Table A.4.2 Ratio of consultation share to age share by age group. Values prior to 2012 are based on the average ratio value in 2012 and 2013. These values are calculated based on the age groups in Table A.4.1, but applied to slightly different age groups (see table A.5).

	0-66	**67-79**	**80+**
Home care ratio	0.758517	1.233438	4.730307
Institutional care ratio	0.127864	1.907011	14.40868

Table A.4.3 Ratio of long-term care allocated share of expenses to age share by age group. These ratios are calculated for the age groups specified in the table, but applied to slightly different age groups (see table A.5). Allocated share of expenses is based on expenditure shares from Kjelvik & Mundal (2013).

Estimated share of in-kind transfers from home care			
Year	**0-66**	**67-79**	**80+**
2005	0.6707	0.1065	0.2228
2006	0.6707	0.1055	0.2238
2007	0.6709	0.1049	0.2242
2008	0.6728	0.1048	0.2224
2009	0.6749	0.1042	0.2210
2010	0.6758	0.1052	0.2190
2011	0.6757	0.1067	0.2176
2012	0.6749	0.1097	0.2153
2013	0.6741	0.1131	0.2128
2014	0.6719	0.1184	0.2097
2015	0.6697	0.1231	0.2072
2016	0.6676	0.1274	0.2050
2017	0.6649	0.1312	0.2040
2018	0.6617	0.1345	0.2038

Table A.4.4 Estimated share of in-kind transfers from home care by age group

Estimated share of in-kind transfers from long term care in institutions			
Year	**0-66**	**67-79**	**80+**
2005	0.1182	0.1722	0.7096
2006	0.1180	0.1703	0.7117
2007	0.1180	0.1693	0.7127
2008	0.1190	0.1701	0.7109
2009	0.1200	0.1699	0.7101
2010	0.1207	0.1723	0.7070
2011	0.1210	0.1752	0.7038
2012	0.1211	0.1806	0.6983
2013	0.1213	0.1867	0.6920
2014	0.1211	0.1958	0.6831
2015	0.1208	0.2037	0.6755
2016	0.1205	0.2110	0.6685
2017	0.1197	0.2166	0.6636
2018	0.1186	0.2211	0.6603

Table A.4.5 Estimated share of in-kind transfers from long-term care in institutions by age group

Share of in-kind transfers from child welfare services by age group			
Year	**0-6**	**7-15**	**16-20**
2005	0.24	0.52	0.23
2006	0.24	0.52	0.24
2007	0.24	0.52	0.24
2008	0.24	0.52	0.24
2009	0.24	0.52	0.24
2010	0.25	0.51	0.24
2011	0.25	0.50	0.25
2012	0.25	0.50	0.25
2013	0.25	0.50	0.25
2014	0.25	0.50	0.24
2015	0.25	0.51	0.24
2016	0.24	0.51	0.24
2017	0.23	0.52	0.24
2018	0.22	0.53	0.25

Table A.4.6 Estimated share of in-kind transfers from child welfare services by age group. Data from SSB (n.d.-b)

Appendix 5 – Estimated in-kind transfers from service sectors

Sector	Target group	In-kind transfers
General health care	0-6	1.79
	7-15	1.25
	16-20	2.28
	21-30	2.39
	31-50	2.83
	51-65	3.40
	66-80	4.39
	81+	5.49
Health center	0-5	3.73
	6-20	2.26
Child welfare services	0-6	7.35
	7-15	12.84
	16-20	10.44
Long-term care in institutions	0-65	2.04
	66-80	30.36
	81+	229.36
Home care	0-65	11.34
	66-80	18.44
	81+	70.73
Childcare	1-5	166.88
Education	6-15	158.80
Social	18-67 with needs	41.64

Table A.5 In-kind transfers in thousand NOK for Halden in 2018. Values are not CPI adjusted. Needs for social services is as described in chapter 4.3.2 and is defined as persons with income and gross financial wealth beneath 2G and not in education.

Appendix 6 – Estimated minimum expenditure requirements

Table A.6 Estimated minimum expenditure requirements in thousand NOK (not CPI deflated) by target groups. Figure on the next page. Needs for social services (groups under social recipient) is as described in chapter 4.3.2 and is defined as persons with income and gross financial wealth beneath 2G and not in education.

	Age	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
	0	5.79	6.39	6.73	7.58	8.29	8.84	9.72	10.96	11.13	12.06	12.15	13.12	14.03	14.84
	1-5	51.27	63.51	76.61	90.76	99.36	109.3	114.8	125.3	128.2	138.4	141.2	148.7	156.8	168.7
	6	77.90	81.13	86.13	91.17	98.04	103.9	107.1	113.3	117.6	122.5	125.4	132.0	139.1	144.7
	7-15	77.75	81.01	85.99	91.13	98.04	103.9	107.2	113.4	117.7	122.8	125.8	132.5	139.8	145.4
	16-20	5.68	6.29	6.53	7.37	8.07	8.66	9.56	10.79	11.00	11.91	11.97	13.22	14.41	15.25
	21-30	4.05	4.42	4.65	5.14	5.52	5.89	6.24	7.11	7.20	7.67	7.68	8.28	8.64	8.92
	31-50	4.18	4.55	4.80	5.29	5.68	6.06	6.43	7.30	7.41	7.91	7.93	8.56	8.94	9.25
	51-65	4.39	4.77	5.03	5.54	5.95	6.34	6.73	7.62	7.76	8.26	8.31	8.98	9.36	9.67
	66-80	14.79	15.72	16.39	17.81	18.97	20.68	21.20	22.91	23.45	24.39	24.73	26.48	27.36	28.31
	81+	85.22	89.95	93.32	100.9	107.0	118.0	119.2	126.6	129.3	133.7	136.3	145.9	150.5	156.2
Social recipient	18-20	11.69	12.75	14.29	16.56	20.69	22.87	25.98	26.18	26.38	28.24	32.70	43.40	52.17	53.64
	21-30	10.07	10.88	12.41	14.33	18.14	20.10	22.67	22.50	22.57	24.00	28.41	38.46	46.40	47.30
	31-50	10.20	11.02	12.55	14.48	18.31	20.27	22.85	22.69	22.79	24.23	28.66	38.74	46.70	47.63
	51-65	10.41	11.23	12.78	14.74	18.58	20.55	23.15	23.00	23.13	24.59	29.04	39.16	47.12	48.05
	66-67	20.81	22.18	24.14	27.01	31.59	34.88	37.62	38.30	38.82	40.72	45.46	56.66	65.13	66.70

Appendix 7 – Equivalence scales

Equivalence scale values	Minimum in-kind	EU scale	OECD scale	NC scale	Theta	NA scale
Family	309.31	2.1	2.7	33.44	0.96	3.24
Single reference adult	9.25	1	1	1	0.96	1
Single elderly 81+	156.24	1	1	16.89	0.96	1.58

Table A.7.1 Value of different equivalence scales for three different households using 2018 parameters for NC scale and theta. A family is defined here as two adults aged 31-50 and two children aged 7-15. The single reference adult is aged 31-50. Minimum in-kind values are in thousand NOK (not CPI adjusted).

Year means **Year**	NC scale	Theta	NA scale	EU scale
2005	5.23	0.98	1.69	1.45
2006	5.16	0.97	1.70	1.45
2007	5.26	0.97	1.70	1.45
2008	5.17	0.97	1.70	1.44
2009	5.17	0.97	1.71	1.44
2010	5.23	0.97	1.72	1.44
2011	5.10	0.97	1.72	1.44
2012	4.79	0.97	1.72	1.44
2013	4.85	0.97	1.73	1.45
2014	4.77	0.97	1.74	1.45
2015	4.84	0.97	1.75	1.45
2016	4.77	0.96	1.76	1.45
2017	4.82	0.96	1.76	1.45
2018	4.85	0.96	1.76	1.44

Table A.7.2 Means of equivalence scales and parameters over time. The NC scale is decreasing, and theta is decreasing over time, which means that in-kind transfers grow faster for the reference group than minimum consumption and that it grows faster than average in-kind transfers for other target groups. Overall, the NA scale gets higher over time due to theta decreasing. It should be noted that this is not the case for the robustness check where we assume no in-kind transfers from the home care sector to individuals aged 0-65.

NA scale value Year	1 %	25 %	50 %	75 %	99 %
2005	0.9992	1.0359	1.5145	2.0414	3.7720
2006	0.9992	1.0374	1.5152	2.0634	3.7893
2007	0.9993	1.0405	1.5150	2.0366	3.7799
2008	0.9992	1.0453	1.5158	2.0550	3.8052
2009	0.9992	1.0013	1.5163	2.0670	3.8820
2010	0.9992	1.0662	1.5265	2.1001	3.9525
2011	0.9991	1.0683	1.5215	2.1047	3.9868
2012	0.9991	1.0014	1.5192	2.1019	4.0411
2013	0.9991	1.0652	1.5248	2.1097	4.0426
2014	0.9990	1.0015	1.5350	2.1191	4.1503
2015	0.9989	1.0016	1.5337	2.1275	4.1692
2016	0.9988	1.0017	1.5370	2.1607	4.2248
2017	0.9988	1.0017	1.5215	2.1330	4.2917
2018	0.9987	1.0017	1.5216	2.1134	4.3511

Table A.7.3 The value of the NA scale for households at different percentiles over time of the distribution of the NA scale.

EU scale value	1 %	25 %	50 %	75 %	99 %
2018	1	1	1.5	1.8	2.8

Table A.7.4 The value of the EU scale for households at different percentiles of the distribution of the EU scale. These percentile values are unchanged from 2005 to 2018.

Appendix 8 – Summary statistics for imputed consumption

Imputed Consumption				
Year	**Mean**	**Standard deviation**	**Median**	**Sample size**
2005	386,782	279,757	312,312	271,671
2006	408,921	322,930	319,046	275,426
2007	430,538	328,553	337,698	272,358
2008	436,090	318,469	347,796	274,479
2009	455,050	319,482	369,627	278,987
2010	479,403	352,483	384,283	291,618
2011	487,174	350,185	392,397	293,971
2012	505,463	367,765	405,642	298,743
2013	536,447	398,437	428,575	304,542
2014	531,589	388,104	426,514	306,697
2015	547,689	394,719	442,580	307,024
2016	560,753	408,111	451,420	311,836
2017	577,967	429,253	462,047	316,535
2018	586,941	428,804	470,942	321,986

Table A.8 Summary statistics for imputed consumption from 2005 to 2018. Comma is used as thousand separator. Mean, standard deviation, and median in current NOK.

Appendix 9 – Inequality measures

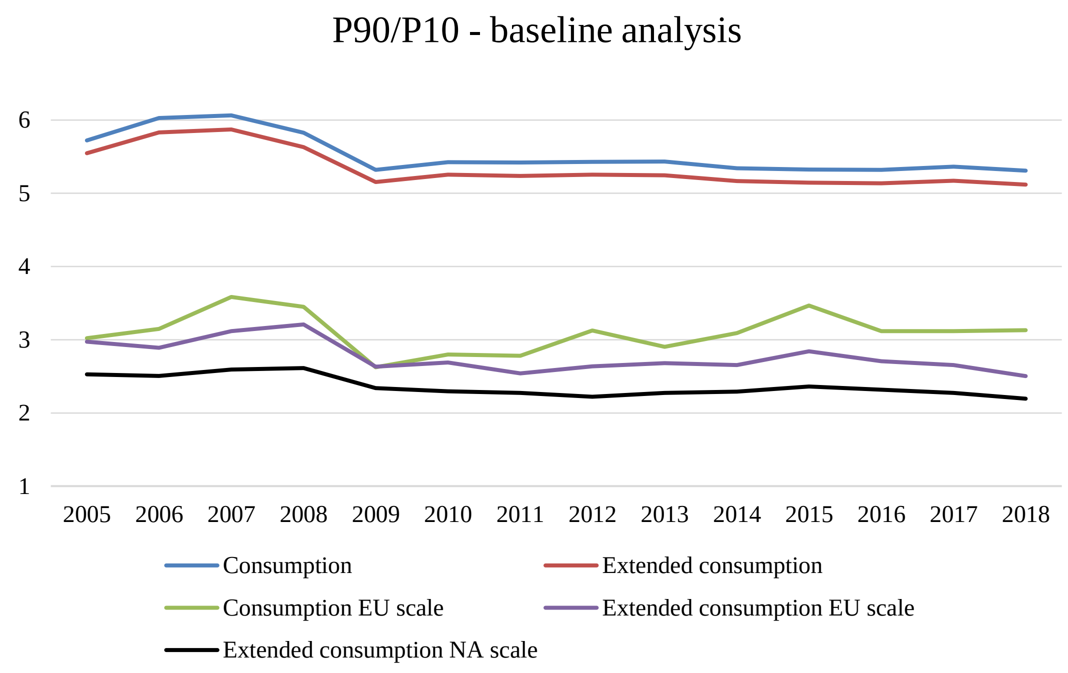

Figure A.9.1 P90/P10 for all consumption measures – baseline analysis. The blue and red line show unequivalized consumption and extended consumption respectively. The green and purple lines are equivalized using the EU scale while the black line is equivalized using the NA scale.

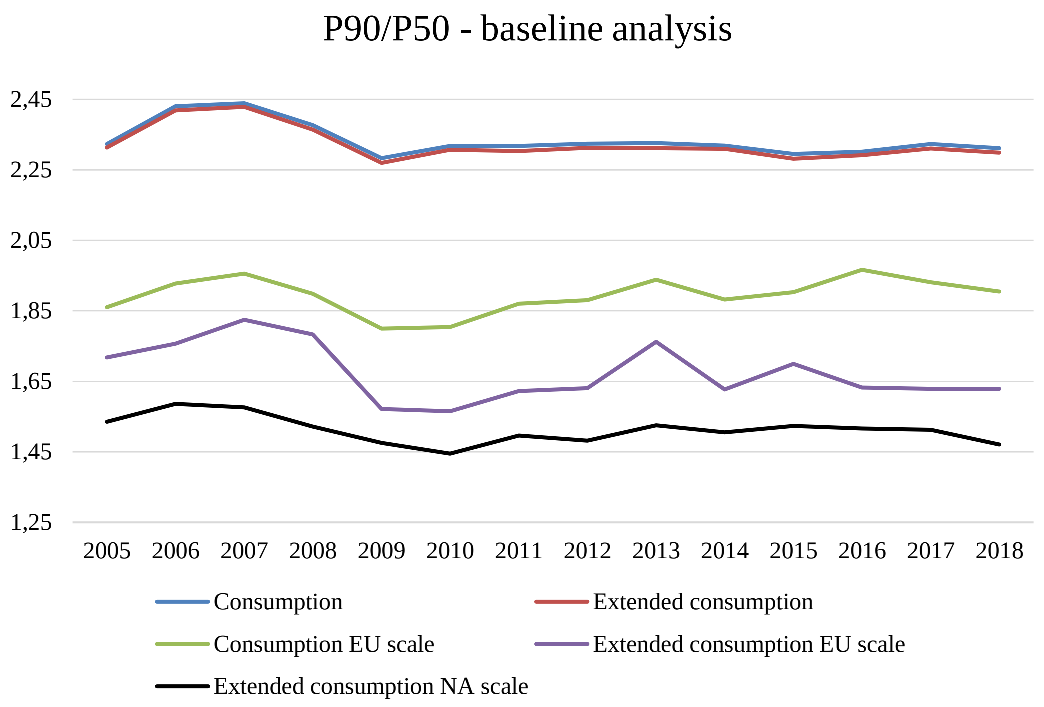

Figure A.9.2 P90/P50 for all consumption measures – baseline analysis. The blue and red line show unequivalized consumption and extended consumption respectively. The green and purple lines are equivalized using the EU scale while the black line is equivalized using the NA scale.

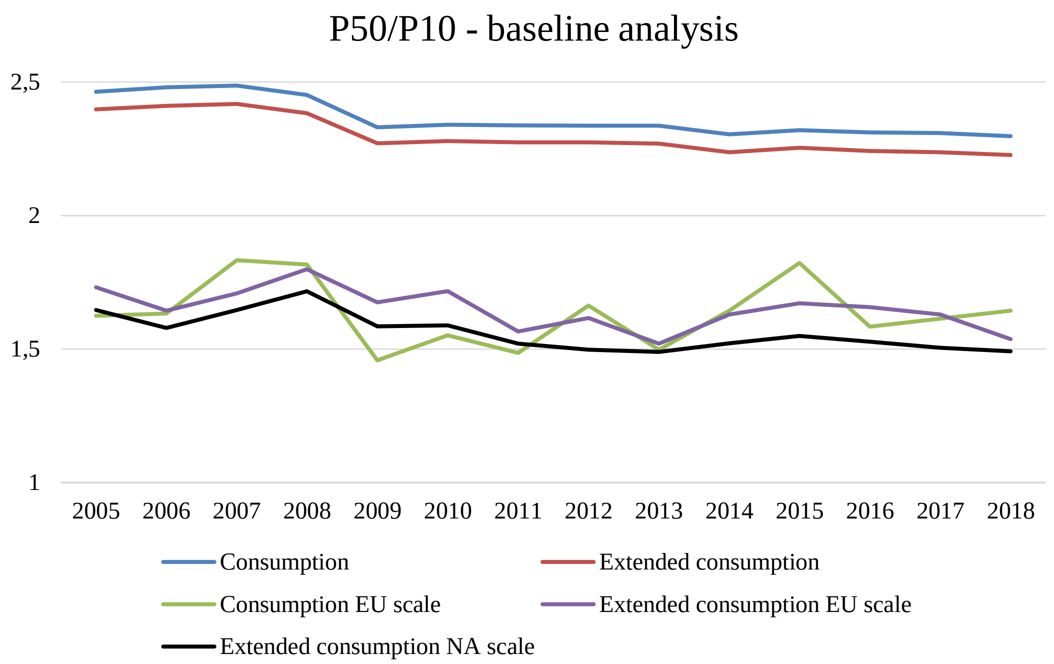

Figure A.9.3 P50/P10 for all consumption measures – baseline analysis. The blue and red line show unequivalized consumption and extended consumption respectively. The green and purple lines are equivalized using the EU scale while the black line is equivalized using the NA scale.

Gini-coefficient of extended consumption; baseline and robustness checks

Year	Baseline	Removed elderly home for 0-65	OECD scale	National average spending
2005	0.2589	0.2626 (1.43%)	0.2521 (−2.63%)	0.2585 (-0.15%)
2006	0.2756	0.2798 (1.52%)	0.2681 (−2.72%)	0.275 (-0.22%)
2007	0.2671	0.2712 (1.54%)	0.2592 (−2.96%)	0.2664 (-0.26%)
2008	0.2529	0.2571 (1.66%)	0.2449 (−3.16%)	0.252 (-0.36%)
2009	0.2414	0.2456 (1.74%)	0.234 (−3.07%)	0.2409 (-0.21%)
2010	0.251	0.2554 (1.75%)	0.2436 (−2.95%)	0.2503 (-0.28%)
2011	0.2457	0.2502 (1.83%)	0.2379 (−3.17%)	0.2451 (-0.24%)
2012	0.2497	0.2546 (1.96%)	0.2425 (−2.88%)	0.2492 (-0.20%)
2013	0.2546	0.2595 (1.92%)	0.2481 (−2.55%)	0.254 (-0.24%)
2014	0.249	0.2543 (2.13%)	0.2428 (−2.49%)	0.2485 (-0.20%)
2015	0.2477	0.2528 (2.06%)	0.2414 (−2.54%)	0.2472 (-0.20%)
2016	0.2499	0.2551 (2.08%)	0.2435 (−2.56%)	0.2492 (-0.28%)
2017	0.2544	0.2599 (2.16%)	0.2481 (−2.48%)	0.254 (-0.16%)
2018	0.2494	0.255 (2.25%)	0.2429 (−2.61%)	0.249 (-0.16%)

Table A.9.1 Gini-coefficient for the baseline analysis and robustness checks. Percentage change from the baseline level is shown in parenthesis after levels for each robustness check. Gini-coefficient of extended consumption equivalized with the NA scale. The three robustness checks are: removing in-kind transfers in the elderly home service sector for those aged 0 to 65 years, using the OECD scale instead of the EU scale, and using National average expenditure instead of municipality specific spending.

P90/P10 of extended consumption; baseline and robustness checks				
Year	**Baseline**	**Removed elderly home for 0-65**	**OECD scale**	**National average spending**
2005	2.5273	2.6362 (4.31%)	2.3126 (−8.49%)	2,6207 (3.70%)
2006	2.5052	2.5588 (2.14%)	2.2758 (−9.15%)	2,6337 (5.13%)
2007	2.5942	2.7298 (5.23%)	2.4358 (−6.10%)	2,7201 (4.86%)
2008	2.6124	2.7499 (5.26%)	2.4135 (−7.61%)	2,6611 (1.87%)
2009	2.3380	2.4173 (3.39%)	2.1591 (−7.65%)	2,3694 (1.34%)
2010	2.2957	2.4305 (5.87%)	2.1114 (−8.03%)	2,3769 (3.54%)
2011	2.2744	2.3064 (1.41%)	2.0745 (−8.79%)	2,3255 (2.25%)
2012	2.2191	2.2841 (2.93%)	2.0299 (−8.52%)	2,2932 (3.34%)
2013	2.2725	2.3089 (1.60%)	2.0997 (−7.60%)	2,3210 (2.14%)
2014	2.2918	2.4228 (5.72%)	2.1048 (−8.16%)	2,3442 (2.29%)
2015	2.3610	2.4610 (4.24%)	2.1893 (−7.27%)	2,4122 (2.17%)
2016	2.3158	2.4425 (5.47%)	2.1398 (−7.60%)	2,3703 (2.36%)
2017	2.2756	2.3834 (4.74%)	2.1119 (−7.19%)	2,3184 (1.89%)
2018	2.1942	2.3137 (5.44%)	2.0694 (−5.69%)	2,2909 (4.41%)

Table A.9.2 P90/P10 for the baseline analysis and robustness checks. Percentage change from the baseline level is shown in parenthesis after levels for each robustness check. P90/P10 of extended consumption equivalized with the NA scale. The three robustness checks are: removing in-kind transfers in the elderly home service sector for those aged 0 to 65 years, using the OECD scale instead of the EU scale, and using National average expenditure instead of municipality specific spending.

Year	*Gini-coefficient - baseline analysis* Consumption EU scale	Extended consumption EU scale	Extended consumption NA scale
2005	0.2981	0.2584 (-13.32%)	0.2589 (-13.15%)
2006	0.3173	0.2755 (-13.17%)	0.2756 (-13.14%)
2007	0.3096	0.2691 (-13.08%)	0.2671 (-13,73%
2008	0.2955	0.2573 (-12.93%)	0.2529 (-14.42%)
2009	0.281	0.2457 (-12.56%)	0.2414 (-14.09%)
2010	0.2913	0.2552 (-12.39%)	0.251 (-13.83%)
2011	0.2862	0.251 (-12.30%)	0.2457 (-14.15%)
2012	0.2907	0.2553 (-12.18%)	0.2497 (-14.10%)
2013	0.2957	0.2594 (-12.28%)	0.2546 (-13.90%)
2014	0.291	0.2559 (-12.06%)	0.249 (-14.43%)
2015	0.2881	0.2539 (-11.87%)	0.2477 (-14.02%)
2016	0.2906	0.2554 (-12.11%)	0.2499 (-14.01%)
2017	0.2956	0.2601 (-12.01%)	0.2544 (-13.94%)
2018	0.2911	0.2564 (-11.92%)	0.2494 (-14.32%)

Table A.9.3 Gini-coefficient of different consumption measures in our baseline analysis. EU scale and NA scale in the labels means that the consumption measure is equivalized by the EU scale and the NA scale respectively. The percentages in parenthesis show the change from EU scale equivalized imputed consumption.

Year	*P90/P10 - baseline analysis* Consumption EU scale	Extended consumption EU scale	Extended consumption NA scale
2005	3.0218	2.9749 (-1.55%)	2.5273 (-16.36%)
2006	3.1493	2.8888 (-8.27%)	2.5052 (-20.45%)
2007	3.5841	3.1177 (-13.01%)	2.5942 (-27,62%)
2008	3.4499	3.2083 (-7.00%)	2.6124 (-24.28%)
2009	2.624	2.633 (0,34%)	2.338 (-10.90%)
2010	2.7982	2.6876 (-3.95%)	2.2957 (-17.96%)
2011	2.7791	2.5393 (-8.63%)	2.2744 (-18.16%)
2012	3.1262	2.6356 (-15.69%)	2.2191 (-29.01%)
2013	2.9036	2.6797 (-7.71%)	2.2725 (-21.74%)
2014	3.0922	2.6523 (-14.23%)	2.2918 (-25.89%)
2015	3.4677	2.8396 (-18.11%)	2.361 (-31.92%)
2016	3.1158	2.7051 (-13.18%)	2.3158 (-25.67%)
2017	3.1155	2.654 (-14.81%)	2.2756 (-26.96%)
2018	3.1301	2.5027 (-20.04%)	2.1942 (-29.90%)

Table A.9.4 P90/P10 of different consumption measures in our baseline analysis. EU scale and NA scale in the labels means that the consumption measure is *equivalized by the EU scale and the NA scale respectively. The percentages in parenthesis show the change from EU scale equivalized imputed consumption.*

Gini-coefficient – elderly home service sector robustness check			
Year	**Consumption EU scale**	**Extended consumption EU scale**	**Extended consumption NA scale**
2005	0.2981	0.2605 (-12.61%)	0.2626 (-11.91%)
2006	0.3173	0.2779 (-12.42%)	0.2798 (-11.82%)
2007	0.3096	0.2713 (-12.37%)	0.2712 (-12.40%)
2008	0.2955	0.2595 (-12.18%)	0.2571 (-12.99%)
2009	0.281	0.2481 (-11.71%)	0.2456 (-12.60%)
2010	0.2913	0.2578 (-11.50%)	0.2554 (-12.32%)
2011	0.2862	0.2537 (-11.36%)	0.2502 (-12.58%)
2012	0.2907	0.2583 (-11.15%)	0.2546 (-12.42%)
2013	0.2957	0.2626 (-11.19%)	0.2595 (-12.24%)
2014	0.291	0.2593 (-10.89%)	0.2543 (-12.61%)
2015	0.2881	0.2571 (-10.76%)	0.2528 (-12.25%)
2016	0.2906	0.2588 (-10.94%)	0.2551 (-12.22%)
2017	0.2956	0.2637 (-10.79%)	0.2599 (-12.08%)
2018	0.2911	0.2601 (-10.65%)	0.255 (-12.40%)

Table A.9.5 Gini-coefficient of different consumption measures in the elderly home service robustness check. EU scale and NA scale in the labels means that the consumption measure is equivalized by the EU scale and the NA scale respectively. The percentages in parenthesis show the change from EU scale equivalized imputed consumption.

Year	Consumption EU scale	Extended consumption EU scale	Extended consumption NA scale
	P90/P10 - elderly home service sector robustness check		
2005	3.0218	3.1044 (2.73%)	2.6362 (-12.76%)
2006	3.1493	2.8929 (-8.14%)	2.5588 (-18.75%)
2007	3.5841	3.33 (-7.09%)	2.7298 (-23.84%)
2008	3.4499	3.3623 (-2.54%)	2.7499 (-20.29%)
2009	2.624	2.6151 (-0.34%)	2.4173 (-7.88%)
2010	2.7982	2.8251 (0.96%)	2.4305 (-13.14%)
2011	2.7791	2.5345 (-8.80%)	2.3064 (-17.01%)
2012	3.1262	2.6442 (-15.42%)	2.2841 (-26.94%)
2013	2.9036	2.7244 (-6.17%)	2.3089 (-20,48%)
2014	3.0922	2.8088 (-9.17%)	2.4228 (-21.65%)
2015	3.4677	2.9871 (-13.86%)	2.461 (-29.03%)
2016	3.1158	2.8197 (-9.50%)	2.4425 (-21.61%)
2017	3.1155	2.7845 (-10.62%)	2.3834 (-23.50%)
2018	3.1301	2.547 (-18.63%)	2.3137 (-26.08%)

Table A.9.6 P90/P10 of different consumption measures in the elderly home service robustness check. EU scale and NA scale in the labels means that the consumption measure is equivalized by the EU scale and the NA scale respectively. The percentages in parenthesis show the change from EU scale equivalized imputed consumption.

Year	*Gini-coefficient – OECD scale robustness check* Consumption OECD scale	Extended consumption OECD scale	Extended consumption NA scale
2005	0.2918	0.246 (-15.70%)	0.2521 (-13.61%)
2006	0.3099	0.2616 (-15.59%)	0.2681 (-13.49%)
2007	0.3015	0.254 (-15.75%)	0.2592 (-14.03%)
2008	0.2872	0.2413 (-15.98%)	0.2449 (-14.73%)
2009	0.2738	0.2305 (-15.81%)	0.234 (-14.54%)
2010	0.2839	0.24 (-15.46%)	0.2436 (-14.20%)
2011	0.2781	0.2351 (-15.46%)	0.2379 (-14.46%)
2012	0.2831	0.24 (-15.22%)	0.2425 (-14.34%)
2013	0.2889	0.2451 (-15.16%)	0.2481 (-14.12%)
2014	0.2843	0.2412 (-15.16%)	0.2428 (-14.60%)
2015	0.2816	0.2391 (-15.09%)	0.2414 (-14.28%)
2016	0.284	0.2407 (-15.25%)	0.2435 (-14.26%)
2017	0.2892	0.2452 (-15.21%)	0.2481 (-14.21%)
2018	0.2846	0.2409 (-15.35%)	0.2429 (-14.65%)

Table A.9.7 Gini-coefficient of different consumption measures in the OECD scale robustness check. OECD scale and NA scale in the labels means that the consumption measure is equivalized by the OECD scale and the NA scale respectively. The percentages in parenthesis show the change from OECD scale equivalized imputed consumption.

Year	P90/P10 – OECD scale robustness check Consumption OECD scale	Extended consumption OECD scale	Extended consumption NA scale
2005	2.8488	2.5764 (-9.56%)	2.3127 (-18.82%)
2006	2.9708	2.4887 (-16.23%)	2.2759 (-23.39%)
2007	3.3023	2.7898 (-15.52%)	2.4359 (-26.24%)
2008	3.1685	2.7935 (-11.84%)	2.4135 (-23.83%)
2009	2.2485	2.316 (3.00%)	2.1592 (-3.97%)
2010	2.638	2.3765 (-9.91%)	2.1114 (-19.96%)
2011	2.6124	2.2174 (-15.12%)	2.0745 (-20.59%)
2012	2.8827	2.2936 (-20.44%)	2.03 (-29.58%)
2013	2.7805	2.3959 (-13.83%)	2.0997 (-24.48%)
2014	2.8459	2.337 (-17.88%)	2.1049 (-26.04%)
2015	3.1522	2.4944 (-20.87%)	2.1894 (-30.54%)
2016	2.924	2.4013 (-17.88%)	2.1398 (-26.82%)
2017	2.8761	2.3428 (-18.54%)	2.1119 (-26.57%)
2018	2.9505	2.21 (-25.10%)	2.0694 (-29.86%)

Table A.9.8 P90/P10 of different consumption measures in the OECD scale robustness check. OECD scale and NA scale in the labels means that the consumption measure is equivalized by the OECD scale and the NA scale respectively. The percentages in parenthesis show the change from OECD scale equivalized imputed consumption.

Gini-coefficient – national average spending robustness check			
Year	**Consumption EU scale**	**Extended consumption EU scale**	**Extended consumption NA scale**
2005	0.2981	0.2581 (-13.42%)	0.2585 (-13.28%)
2006	0.3173	0.275 (-13.33%)	0.275 (-13.33%)
2007	0.3096	0.2687 (-13.21%)	0.2664 (-13.95%)
2008	0.2955	0.257 (-13.03%)	0.252 (-14.72%)
2009	0.281	0.2458 (-12.53%)	0.2409 (-14.27%)
2010	0.2913	0.2552 (-12.39%)	0.2503 (-14.07%)
2011	0.2862	0.2512 (-12.23%)	0.2451 (-14.36%)
2012	0.2907	0.2557 (-12.04%)	0.2492 (-14.28%)
2013	0.2957	0.2598 (-12.14%)	0.254 (-14.10%)
2014	0.291	0.2565 (-11.86%)	0.2485 (-14.60%)
2015	0.2881	0.2543 (-11.73%)	0.2472 (-14.20%)
2016	0.2906	0.2558 (-11.98%)	0.2492 (-14.25%)
2017	0.2956	0.2606 (-11.84%)	0.254 (-14.07%)
2018	0.2911	0.257 (-11.71%)	0.249 (-14.46%)

Table A.9.9 Gini-coefficient of different consumption measures in the national average expenditure robustness check. EU scale and NA scale in the labels means that the consumption measure is equivalized by the EU scale and the NA scale respectively. The percentages in parenthesis show the change from EU scale equivalized imputed consumption.

Year	Consumption EU scale	Extended consumption EU scale	Extended consumption NA scale
	P90/P10 - national average spending robustness check		
2005	3.0218	2.9267 (-3.15%)	2.6207 (-13.27%)
2006	3.1493	3.0901 (-1.88%)	2.6337 (-16.37%)
2007	3.5841	3.2534 (-9.23%)	2.7202 (-24.11%)
2008	3.4499	3.2133 (-6.86%)	2.6611 (-22.86%)
2009	2.624	2.7274 (3.94%)	2.3694 (-9.70%)
2010	2.7982	2.744 (-1.94%)	2.3769 (-15.05%)
2011	2.7791	2.6075 (-6.17%)	2.3255 (-16.32%)
2012	3.1262	2.6548 (-15.08%)	2.2932 (-26.64%)
2013	2.9036	2.7457 (-5.44%)	2.321 (-20.06%)
2014	3.0922	2.7125 (-12.28%)	2.3442 (-24.19%)
2015	3.4677	2.8448 (-17.96%)	2.4122 (-30.44%)
2016	3.1158	2.7346 (-12.23%)	2.3704 (-23.92%)
2017	3.1155	2.75 (-11.73%)	2.3185 (-25,58%)
2018	3.1301	2.6036 (-16.82%)	2.291 (-26.81%)

Table A.9.10 P90/P10 of different consumption measures in the national average expenditure robustness check. EU scale and NA scale in the labels means that the consumption measure is equivalized by the EU scale and the NA scale respectively. The percentages in parenthesis show the change from EU scale equivalized imputed consumption.

Appendix 10 – Microdata.no script example

Figure A.10 below shows the microdata.no script used for the baseline analysis in 2018.

```
///// START OF SCRIPT /////

require no.ssb.fdb:13 as db
// Create our datasets for defining the sample, as well as preparing datasets for
consumption and in-kind transfers

create-dataset population
import db/BEFOLKNING_FOEDSELS_AAR_MND as birthyear
generate age = 2018 - int(birthyear/100)
import db/BEFOLKNING_STATUSKODE 2019-01-01 as regstat
keep if regstat == '1'
import db/INNTEKT_HUSHNR 2018-12-31 as househnr

clone-dataset population consumption18
clone-dataset population allocation_inkind

use population
collapse (max) age , by(househnr)
//Generate the sample
sample 0.2 172022
generate sampled = 1

merge sampled into consumption18 on househnr
merge sampled into allocation_inkind on househnr

use consumption18
keep if sampled == 1
use allocation_inkind
keep if sampled == 1
delete-dataset population

// Start imputing consumption
use consumption18

// Import data
import db/INNTEKT_BANKINNSK 2017-12-31 as bankstart
import db/INNTEKT_FOND 2017-12-31 as fundstart
import db/INNTEKT_VERDIPAPIR 2017-12-31 as securitiesstart
import db/INNTEKT_ASK_MARK 2017-12-31 as askstart
import db/INNTEKT_BANKINNSK 2018-12-31 as bankend
import db/INNTEKT_FOND 2018-12-31 as fundend
import db/INNTEKT_VERDIPAPIR 2018-12-31 as securitiesend
import db/INNTEKT_ASK_MARK 2018-12-31 as askend
import db/INNTEKT_GJELD 2017-12-31 as debtstart
import db/INNTEKT_GJELD 2018-12-31 as debtend
import db/INNTEKT_WIES 2018-12-31 as netincome
import db/SKATT_ARV_GAVER 2018-12-31 as heritance
import db/INNTEKT_AKSJEUTBYTTE 2018-12-31 as dividends
import db/INNTEKT_NARINNT 2018-12-31 as businessincome
```

```
import db/INNTEKT_PRIM_MARK 2017-12-31 as primaryhousingstart
import db/INNTEKT_PRIM_MARK 2018-12-31 as primaryhousingend
import db/INNTEKT_SEK_MARK 2017-12-31 as secundaryhousingstart
import db/INNTEKT_SEK_MARK 2018-12-31 as secundaryhousingend
import db/BEFOLKNING_KOMMNR_FORMELL 2018-01-01 as regkommcurrent
import db/BEFOLKNING_KOMMNR_FORMELL 2019-01-01 as regkommnext


// Replace missing variables
replace bankstart = 0 if sysmiss(bankstart)
replace fundstart = 0 if sysmiss(fundstart)
replace securitiesstart = 0 if sysmiss(securitiesstart)
replace askstart = 0 if sysmiss(askstart)
replace bankend = 0 if sysmiss(bankend)
replace fundend = 0 if sysmiss(fundend)
replace securitiesend = 0 if sysmiss(securitiesend)
replace askend = 0 if sysmiss(askend)
replace debtstart = 0 if sysmiss(debtstart)
replace debtend = 0 if sysmiss(debtend)
replace netincome = 0 if sysmiss(netincome)
replace heritance = 0 if sysmiss(heritance)
replace dividends = 0 if sysmiss(dividends)
replace businessincome = 0 if sysmiss(businessincome)
replace primaryhousingstart = 0 if sysmiss(primaryhousingstart)
replace primaryhousingend = 0 if sysmiss(primaryhousingend)
replace secundaryhousingstart = 0 if sysmiss(secundaryhousingstart)
replace secundaryhousingend = 0 if sysmiss(secundaryhousingend)
replace regkommcurrent = '5061' if regkommcurrent == '1567'


// Generate new variables needed for imputation of consumption
generate agenext = 2019 - int(birthyear/100)
generate activesaving = bankend - bankstart + fundend - fundstart*0.965362 +
securitiesend - securitiesstart*0.98553 + askend - askstart*0.98553 - debtend +
debtstart
generate fortunestart = bankstart + fundstart + securitiesstart + askstart -
debtstart
generate fortuneend = bankend + fundend + securitiesend + askend - debtend
generate returns = bankend + fundend + securitiesend + askend - bankstart -
fundstart - securitiesstart - askstart
generate nettoincome = netincome + heritance
generate adults = 0
replace adults = 1 if age >=18
generate adultsnext = 0
replace adultsnext = 1 if agenext >=18
generate agemax = age
generate agemin = age
generate housingsumstart = primaryhousingstart + secundaryhousingstart
generate housingsumend = primaryhousingend + secundaryhousingend
generate move = 0
replace move = 1 if regkommcurrent != regkommnext
generate equivalenceEU = 0.5
replace equivalenceEU = 0.3 if age <18

// Collapse to household level
```

```
collapse (sum) activesaving fortuneend nettoincome dividends returns adults
adultsnext businessincome housingsumstart housingsumend equivalenceEU
(max) agemax (min) agemin (mean) move, by(househnr)

// Equivalence scale
generate EUscale = 0.5 + equivalenceEU
drop equivalenceEU

// Generate variables for identifying real estate transactions
//https://www.ssb.no/statbank/table/07230/tableViewLayout1/
generate priceincrease = housingsumstart*1.1142
generate pricedecrease = housingsumstart*0.9142


// Imputing consumption
generate consumption = nettoincome - activesaving
summarize consumption, gini
histogram consumption

//// Here we impose sample restrictions explained in methodology chapter ////

// We only want households where the household head is between 25 and 90
drop if agemax<25
drop if agemin>90
summarize consumption, gini

// Exclude if number of adults in the household changes between years
drop if adults != adultsnext

summarize consumption, gini

// Exclude if the household moves housing (measured by change in build-year)
drop if move != 0

summarize consumption, gini


summarize fortuneend
summarize returns

// Exclude if dividends received exceed 1G
drop if dividends > 96883
summarize consumption, gini


// Exclude if income from own business exceed 1G
drop if businessincome > 96883
summarize consumption, gini
histogram consumption

summarize nettoincome
summarize activesaving
```

```
////// Year before - Here we need to impute consumption for year before so that
we can calculate change in consumption needed for an exclusions ///

create-dataset consumption2

import db/BEFOLKNING_FOEDSELS_AAR_MND as birthyear

generate age = 2017 - int(birthyear/100)
import db/BEFOLKNING_STATUSKODE 2018-01-01 as regstat
keep if regstat == '1'

// Import household identifier
import db/INNTEKT_HUSHNR 2017-12-31 as househnr

// Get the correct sample
use consumption18
merge consumption into consumption2 on househnr
use consumption2
summarize consumption
drop if sysmiss(consumption)
use consumption2

// Import data
import db/INNTEKT_BANKINNSK 2016-12-31 as bankstart
import db/INNTEKT_FOND 2016-12-31 as fundstart
import db/INNTEKT_VERDIPAPIR 2016-12-31 as securitiesstart
import db/INNTEKT_BANKINNSK 2017-12-31 as bankend
import db/INNTEKT_FOND 2017-12-31 as fundend
import db/INNTEKT_VERDIPAPIR 2017-12-31 as securitiesend
import db/INNTEKT_ASK_MARK 2017-12-31 as askend
import db/INNTEKT_GJELD 2016-12-31 as debtstart
import db/INNTEKT_GJELD 2017-12-31 as debtend
import db/INNTEKT_WIES 2017-12-31 as netincome
import db/SKATT_ARV_GAVER 2017-12-31 as heritance
import db/INNTEKT_AKSJEUTBYTTE 2017-12-31 as dividends
import db/INNTEKT_NARINNT 2017-12-31 as businessincome
import db/INNTEKT_PRIM_MARK 2016-12-31 as primaryhousingstart
import db/INNTEKT_PRIM_MARK 2017-12-31 as primaryhousingend
import db/INNTEKT_SEK_MARK 2016-12-31 as secundaryhousingstart
import db/INNTEKT_SEK_MARK 2017-12-31 as secundaryhousingend



// Replace missing variables
replace bankstart = 0 if sysmiss(bankstart)
replace fundstart = 0 if sysmiss(fundstart)
replace securitiesstart = 0 if sysmiss(securitiesstart)
replace bankend = 0 if sysmiss(bankend)
replace fundend = 0 if sysmiss(fundend)
replace securitiesend = 0 if sysmiss(securitiesend)
replace askend = 0 if sysmiss(askend)
replace debtstart = 0 if sysmiss(debtstart)
replace debtend = 0 if sysmiss(debtend)
replace netincome = 0 if sysmiss(netincome)
replace heritance = 0 if sysmiss(heritance)
```

```
replace dividends = 0 if sysmiss(dividends)
replace businessincome = 0 if sysmiss(businessincome)
replace primaryhousingstart = 0 if sysmiss(primaryhousingstart)
replace primaryhousingend = 0 if sysmiss(primaryhousingend)
replace secundaryhousingstart = 0 if sysmiss(secundaryhousingstart)
replace secundaryhousingend = 0 if sysmiss(secundaryhousingend)


// Generate new variables
generate activesaving = bankend - bankstart + fundend - fundstart*1.153129 +
securitiesend - securitiesstart*1.178898 + askend - debtend + debtstart
generate returns = bankend - bankstart + fundend - fundstart + securitiesend -
securitiesstart + askend
generate nettoincome = netincome + heritance


// Collapse to household level
collapse (sum) nettoincome activesaving, by(househnr)


// Imputing consumption
generate consumptionprev = nettoincome - activesaving
summarize consumptionprev, gini
histogram consumptionprev


//merge konsum
merge consumptionprev into consumption18 on househnr

// Back to original dataset -- Here we go back to 2018
use consumption18

// Beneath we drop household with extreme changes in consumption from our
data set

// drop if household has extreme changes in consumption
drop if consumption > consumptionprev*3
drop if consumption < consumptionprev*0.25
delete-dataset consumption2

summarize consumption, gini

// Beneath we drop variables that we dont need anymore so we allow the script to
run faster

drop fortuneend dividends adults adultsnext businessincome housingsumstart
housingsumend agemax agemin move consumptionprev activesaving

///////// Dataset for identifying those we think may qualify for social assistance
create-dataset kursdata
import-event db/NUDB_KURS_NUS 2018-01-01 to 2018-12-31 as coursetype
destring coursetype
keep if coursetype >= 200000 & coursetype < 900000

create-dataset lenke_kurs_person
```

```
import db/NUDB_KURS_FNR as fnr
merge fnr into kursdata


///////// Allocation of in-kind transfers
use kursdata
collapse (count) coursetype, by(fnr)
rename coursetype numberofcourses
merge numberofcourses into allocation_inkind
delete-dataset kursdata
delete-dataset lenke_kurs_person

use allocation_inkind
generate not_study = 1
replace not_study = 0  if numberofcourses >= 1

import db/SKATT_BRUTTOINNTEKT 2018-12-31 as grossincome
import db/INNTEKT_BRUTTO_FINANSKAPITAL 2017-12-31 as grossfinance
replace grossincome= 0 if sysmiss(grossincome)
replace grossfinance= 0 if sysmiss(grossfinance)
generate qualified = 0
replace qualified = 1 if grossincome <= 193766 & grossfinance <= 193766
generate ageforsocial = 0
replace ageforsocial = 1 if age >= 18 & age <= 67
generate socialservicerecipients = qualified*not_study*ageforsocial
drop grossincome grossfinance qualified not_study numberofcourses
ageforsocial


// Import household identifier
import db/BEFOLKNING_KOMMNR_FORMELL 2019-01-01 as knrreg


// Beneath we generate age categories in order to allocate the transfers to them


generate age06 = 0
replace age06 = 1 if age <= 6
generate age715 = 0
replace age715= 1 if age > 6 & age <=15
generate age1620 = 0
replace age1620 = 1 if age > 15 & age <=20
generate age2130 = 0
replace age2130 = 1 if age > 20 & age <=30
generate age3150 = 0
replace age3150 = 1 if age > 30 & age <=50
generate age5165 = 0
replace age5165 = 1 if age > 50 & age <=65
generate age6680 = 0
replace age6680 = 1 if age > 65 & age <=80
generate age81= 0
replace age81 = 1 if age > 80
generate age15 = 0
replace age15 = 1 if age>=1 & age<=5
generate age615 = 0
replace age615 = 1 if age>=6 & age<=15
```

```
generate age05 = 0
replace age05 = 1 if age <=5
generate age619 = 0
replace age619 = 1 if age > 5 & age <=19
generate age065 = 0
replace age065 = 1 if age <= 65

generate alderkategori = age
recode alderkategori
(0/6=1)(7/15=2)(16/20=3)(21/30=4)(31/50=5)(51/65=6)(66/80=7)(81/120=8)

generate forholdstall_helse = alderkategori
recode forholdstall_helse
(1=0.6214593831265887)(2=0.43501212662179234)(3=0.7935558464282659)(4
=0.8318824192377523)(5=0.9839372031653096)(6=1.1809868682808469)(7=1.
5239536219290104)(8=1.9059510873188017)
generate forholdstall_helsestasjon  = age
recode forholdstall_helsestasjon
(0/5=5.841814004925524)(6/19=3.5371253445427544)(20/120=0)
generate forholdstall_barnevern = alderkategori
recode forholdstall_barnevern
(1=2.7953091135373036)(2=4.884177628245491)(3=3.969241541262963)(4/8=
0)

generate forholdstall_elderly_inst = alderkategori
recode forholdstall_elderly_inst
(1/6=0.12786385416984558)(7=1.9070113897323608)(8=14.408682823181152)

generate forholdstall_elderly_home = alderkategori
recode forholdstall_elderly_home
(1/6=0.7585170269012451)(7=1.23343825340271)(8=4.730306625366211)
```

```
create-dataset agegroups
import db/BEFOLKNING_FOEDSELS_AAR_MND as birthyear
generate age = 2018 - int(birthyear/100)
import db/BEFOLKNING_STATUSKODE 2019-01-01 as regstat
keep if regstat == '1'
import db/INNTEKT_HUSHNR 2018-12-31 as househnr
import db/BEFOLKNING_KOMMNR_FORMELL 2019-01-01 as knrreg


generate age06 = 0
replace age06 = 1 if age <= 6
generate age715 = 0
replace age715= 1 if age > 6 & age <=15
generate age1620 = 0
replace age1620 = 1 if age > 15 & age <=20
generate age2130 = 0
replace age2130 = 1 if age > 20 & age <=30
```

```
generate age3150 = 0
replace age3150 = 1 if age > 30 & age <=50
generate age5165 = 0
replace age5165 = 1 if age > 50 & age <=65
generate age6680 = 0
replace age6680 = 1 if age > 65 & age <=80
generate age81= 0
replace age81 = 1 if age > 80
generate age065 = 0
replace age065 = 1 if age <= 65
generate age05 = 0
replace age05 = 1 if age <=5
generate age619 = 0
replace age619 = 1 if age > 5 & age <=19


clone-variables age06 age715 age1620 age2130 age3150 age5165 age6680
age81 age065 age05 age619, suffix('_s')

collapse (mean) age06 age715 age1620 age2130 age3150 age5165 age6680
age81 age065 age05 age619 (sum) age06_s age715_s age1620_s age2130_s
age3150_s age5165_s age6680_s age81_s age065_s age05_s age619_s,
by(knrreg)
clone-variables age06 age715 age1620 age2130 age3150 age5165 age6680
age81 age065 age05 age619, suffix('_share')

merge age06_share age715_share age1620_share age2130_share
age3150_share age5165_share age6680_share age81_share age065_share
age05_share age619_share age06_s age715_s age1620_s age2130_s
age3150_s age5165_s age6680_s age81_s age065_s age05_s age619_s into
allocation_inkind on knrreg

delete-dataset agegroups
use allocation_inkind


//Teste Œ lage kolonne D, altsŒ andel gruppen utgj¿r i kommunen
generate agegroupshareoftotal = age06_share*age06 + age715_share*age715 +
age1620_share*age1620 + age2130_share*age2130 + age3150_share*age3150
+ age5165_share*age5165 + age6680_share*age6680 + age81_share*age81

generate agegroupshareoftotal_elderly = age065_share*age065 +
age6680_share*age6680 + age81_share*age81

generate agegroupshareoftotal_helsestasjon = age05_share*age05 +
age619_share*age619 + 0


generate agegrouptotalpeople = age06_s*age06 + age715_s*age715 +
age1620_s*age1620 + age2130_s*age2130 + age3150_s*age3150 +
age5165_s*age5165 + age6680_s*age6680 + age81_s*age81

generate agegrouptotalpeople_elderly = age065_s*age065 +
age6680_s*age6680 + age81_s*age81
//Check if this works
```

```
generate agegrouptotalpeople_helsestasjon = age05_s*age05 +
age619_s*age619 + 1

//histogram agegroupshareoftotal
//histogram agegrouptotalpeople, freq

drop age06_share age715_share age1620_share age2130_share
age3150_share age5165_share age6680_share age81_share age06_s
age715_s age1620_s age2130_s age3150_s age5165_s age6680_s age81_s

// Start of expenditures by Python
generate helseutgifter = knrreg
destring helseutgifter
generate helsestasjon_exp = knrreg
destring helsestasjon_exp
generate elderly_home_exp = knrreg
destring elderly_home_exp
generate elderly_inst_exp = knrreg
destring elderly_inst_exp
generate education_exp = knrreg
destring education_exp
generate childcare_exp = knrreg
destring childcare_exp
generate barnevern_exp = knrreg
destring barnevern_exp
generate social_exp = knrreg
destring social_exp

//// BENEATH WE ALLOCATE IN-KIND TRANSFERS, recode written in python

recode
helseutgifter(101=89325656.25)(104=68552320.3125)(105=128783945.3125)(10
6=211807500.0)(111=12527908.203125)(118=4396486.328125)(119=14055791.
9921875)(121=4267936.5234375)(122=21630244.140625)(123=11389230.4687
5)(124=39214136.71875)(125=32953417.96875)(127=9929654.296875)(128=24
530558.59375)(135=31794853.515625)(136=33964828.125)(137=16005615.234
375)(138=17062955.078125)(211=25106970.703125)(213=105566851.5625)(21
4=41388886.71875)(215=42627773.4375)(216=37410992.1875)(217=69788984.
375)(219=324013125.0)(220=157298765.625)(221=70470835.9375)(226=32440
068.359375)(227=28054964.84375)(228=38465773.4375)(229=27847439.45312
5)(230=91629421.875)(231=152437671.875)(233=52424867.1875)(234=164328
51.5625)(235=120063484.375)(236=49817253.90625)(237=57538476.5625)(23
8=40823417.96875)(239=8780723.6328125)(301=1797417750.0)(402=6208825
3.90625)(403=95622718.75)(412=72259289.0625)(415=18526140.625)(417=65
686507.8125)(418=14535729.4921875)(419=19934222.65625)(420=17387720.7
03125)(423=10628146.484375)(425=28368798.828125)(426=16074382.8125)(4
27=65746421.875)(428=29866564.453125)(429=18876457.03125)(430=142309
77.5390625)(432=9412344.7265625)(434=11101308.59375)(436=10894158.203
125)(437=26315843.75)(438=11162969.7265625)(439=7424902.83203125)(441
=9235745.1171875)(501=85958632.8125)(502=107941179.6875)(511=1446956
3.4765625)(512=9202136.71875)(513=11931498.046875)(514=10824884.76562
5)(515=15748105.46875)(516=22074421.875)(517=15762813.4765625)(519=11
114830.078125)(520=24409060.546875)(521=23092298.828125)(522=3255844
3.359375)(528=41486550.78125)(529=32187439.453125)(532=16366590.82031
25)(533=21117107.421875)(534=39483066.40625)(536=16376515.625)(538=20
```

134128.90625)(540=14513762.6953125)(541=12381987.3046875)(542=214004
66.796875)(543=10402935.546875)(544=11141229.4921875)(545=12732566.40
625)(602=224785296.875)(604=74663906.25)(605=66094039.0625)(612=15152
758.7890625)(615=7118679.19921875)(616=14703862.3046875)(617=2560129
6.875)(618=12570941.40625)(619=31883039.0625)(620=29653593.75)(621=14
835736.328125)(622=5758400.87890625)(623=34371890.625)(624=44482230.4
6875)(625=64141972.65625)(626=55564289.0625)(627=60535972.65625)(628=
20748505.859375)(631=11297320.3125)(632=6743591.796875)(633=15774195.
3125)(701=67604828.125)(704=138752703.125)(710=131589031.25)(711=2422
0923.828125)(712=122714007.8125)(713=29379177.734375)(715=34124750.0)
(716=36194261.71875)(729=47982250.0)(805=85672695.3125)(806=129822968
.75)(807=41238679.6875)(811=9679557.6171875)(814=42133835.9375)(815=3
2114931.640625)(817=17687570.3125)(819=22837302.734375)(821=25909669.
921875)(822=19611435.546875)(826=31210990.234375)(827=10549178.71093
75)(828=19352839.84375)(829=16611863.28125)(830=7739825.68359375)(831
=9964378.90625)(833=14894936.5234375)(834=34427171.875)(901=16697140.
625)(904=55555187.5)(906=128695304.6875)(911=5793919.43359375)(912=96
21987.3046875)(914=17099275.390625)(919=14890612.3046875)(926=249770
21.484375)(928=14606134.765625)(929=9444993.1640625)(935=4734534.1796
875)(937=13224952.1484375)(938=7800421.38671875)(940=7993382.8125)(94
1=13072778.3203125)(1001=215493546.875)(1002=41908277.34375)(1003=21
972785.15625)(1004=29609361.328125)(1014=32657896.484375)(1017=19726
462.890625)(1018=23486087.890625)(1021=8273521.484375)(1026=8365994.1
40625)(1027=9894321.2890625)(1029=14404857.421875)(1032=21232029.296
875)(1034=11914172.8515625)(1037=15993155.2734375)(1046=11769934.570
3125)(1101=37172265.625)(1102=169001890.625)(1103=351816687.5)(1106=1
03155367.1875)(1111=9396804.6875)(1112=10809810.546875)(1114=7033271.
484375)(1119=68799007.8125)(1120=44772242.1875)(1121=37761863.28125)(
1122=19551830.078125)(1124=54258417.96875)(1127=33000855.46875)(1129
=10054577.1484375)(1130=50223617.1875)(1133=13180633.7890625)(1134=2
6855667.96875)(1135=26730916.015625)(1141=13015083.0078125)(1142=186
28285.15625)(1144=2743007.8125)(1145=4566910.15625)(1146=35243824.218
75)(1149=101655148.4375)(1151=1399088.623046875)(1160=64375679.6875)(
1201=703048312.5)(1211=17944207.03125)(1216=16072965.8203125)(1219=4
4254191.40625)(1221=47571652.34375)(1222=8382950.1953125)(1223=15309
797.8515625)(1224=42951886.71875)(1227=7568153.80859375)(1228=392963
98.4375)(1231=20980812.5)(1232=8602043.9453125)(1233=6663906.73828125
)(1234=6202807.6171875)(1235=54774718.75)(1238=31051978.515625)(1241=
13586688.4765625)(1242=10833154.296875)(1243=56996289.0625)(1244=226
61349.609375)(1245=37939957.03125)(1246=87163000.0)(1247=95072875.0)(
1251=17857957.03125)(1252=4371213.37890625)(1253=26768755.859375)(12
56=33149886.71875)(1259=27743406.25)(1260=18644724.609375)(1263=5267
8191.40625)(1264=18039466.796875)(1265=4825758.7890625)(1266=1331397
9.4921875)(1401=39551945.3125)(1411=9779184.5703125)(1412=6531765.136
71875)(1413=14930766.6015625)(1416=27788976.5625)(1417=19553326.1718
75)(1418=13290920.8984375)(1419=10657114.2578125)(1420=66397070.3125)
(1421=14506459.9609375)(1422=28423923.828125)(1424=23308535.15625)(14
26=22977982.421875)(1428=16795525.390625)(1429=19981130.859375)(1430
=30332074.21875)(1431=21492746.09375)(1432=46064496.09375)(1433=2186
0902.34375)(1438=18802593.75)(1439=21777308.59375)(1441=9720407.22656
25)(1443=26975503.90625)(1444=5162133.7890625)(1445=19049234.375)(144
9=23764287.109375)(1502=76238375.0)(1504=99320859.375)(1505=49143910.
15625)(1511=9623736.328125)(1514=10836642.578125)(1515=29071662.1093
75)(1516=17562970.703125)(1517=19605451.171875)(1519=33513476.5625)(1
520=23945027.34375)(1523=13226422.8515625)(1524=10705291.015625)(152
5=19898242.1875)(1526=6876033.69140625)(1528=15161536.1328125)(1529=

14097181.640625)(1531=22975634.765625)(1532=22059019.53125)(1534=383
41273.4375)(1535=22198677.734375)(1539=25152404.296875)(1543=1313955
8.59375)(1545=14053859.375)(1546=7137966.30859375)(1547=17767464.8437
5)(1548=23200347.65625)(1551=10049011.71875)(1554=13215599.609375)(15
57=9843913.0859375)(1560=9511908.203125)(1563=20561396.484375)(1566=
16627943.359375)(1567=8689035.15625)(1571=8080806.640625)(1573=11507
230.46875)(1576=19730253.90625)(1804=182422328.125)(1805=55409207.031
25)(1811=13419832.03125)(1812=11367337.890625)(1813=51483746.09375)(1
815=10108998.046875)(1816=4851953.61328125)(1818=10406499.0234375)(1
820=31571681.640625)(1822=14937536.1328125)(1824=40331214.84375)(182
5=8937210.9375)(1826=8818624.0234375)(1827=8169149.90234375)(1828=90
51104.4921875)(1832=14158624.0234375)(1833=93763406.25)(1834=1180814
4.53125)(1835=4908984.375)(1836=14029461.9140625)(1837=36327175.78125
)(1838=9696072.265625)(1839=7711060.05859375)(1840=23784822.265625)(1
841=46956476.5625)(1845=12406180.6640625)(1848=17400937.5)(1849=1317
4041.9921875)(1850=19147470.703125)(1851=9563416.9921875)(1852=47909
64.35546875)(1853=3970495.361328125)(1854=12227428.7109375)(1856=537
2066.89453125)(1857=5468094.23828125)(1859=6838479.98046875)(1860=54
758808.59375)(1865=45029644.53125)(1866=26574919.921875)(1867=159217
75.390625)(1868=18308455.078125)(1870=37969257.8125)(1871=18280205.07
8125)(1874=9213867.1875)(1902=181358812.5)(1903=90857023.4375)(1911=2
4694521.484375)(1913=18393957.03125)(1917=7402991.69921875)(1919=650
4256.34765625)(1920=8008259.765625)(1922=28417591.796875)(1923=15450
483.3984375)(1924=32234925.78125)(1925=24103167.96875)(1926=8172998.0
46875)(1927=8516148.4375)(1928=5542981.4453125)(1929=5983725.0976562
5)(1931=88799078.125)(1933=20185359.375)(1936=10417517.578125)(1938=3
0987419.921875)(1939=7946325.68359375)(1940=8219205.078125)(1941=161
31844.7265625)(1942=24147320.3125)(1943=8989826.171875)(2002=1204523
8.28125)(2003=36759761.71875)(2004=59760714.84375)(2011=21662423.8281
25)(2012=94916507.8125)(2014=9048062.5)(2015=8773629.8828125)(2017=77
75564.453125)(2018=11500152.34375)(2019=18443597.65625)(2020=2718103
5.15625)(2021=13701453.125)(2022=16066733.3984375)(2023=6099142.57812
5)(2024=8626877.9296875)(2025=23275667.96875)(2027=5376289.0625)(2028
=18897095.703125)(2030=47572000.0)(5001=557175312.5)(5004=78721632.81
25)(5005=27088875.0)(5011=12148610.3515625)(5012=3967408.935546875)(5
013=22867708.984375)(5014=30543966.796875)(5015=22149046.875)(5016=6
435273.4375)(5017=17040552.734375)(5018=17787152.34375)(5019=4660239.
74609375)(5020=4684208.49609375)(5021=25564199.21875)(5022=10240272.
4609375)(5023=15580554.6875)(5024=29799685.546875)(5025=34453476.562
5)(5026=9600019.53125)(5027=19732103.515625)(5028=34658910.15625)(502
9=17966273.4375)(5030=18401552.734375)(5031=32387812.5)(5032=2110316
0.15625)(5033=6308004.39453125)(5034=10631728.515625)(5035=53474691.4
0625)(5036=9872346.6796875)(5037=66637453.125)(5038=48926636.71875)(5
039=13127940.4296875)(5040=9219448.2421875)(5041=12851208.984375)(50
42=9829061.5234375)(5043=3713497.314453125)(5044=6984091.30859375)(5
045=25828460.9375)(5046=14334593.75)(5047=12191793.9453125)(5048=371
6413.0859375)(5049=5172035.64453125)(5050=19828027.34375)(5051=18796
669.921875)(5052=5290926.7578125)(5053=24999478.515625)(5054=4301883
5.9375)

recode
helsestasjon_exp(101=19836470.703125)(104=28213503.90625)(105=3203248
2.421875)(106=54436964.84375)(111=3387291.748046875)(118=994728.21044
92188)(119=2721302.24609375)(121=273096.3134765625)(122=5823683.1054
6875)(123=3230793.212890625)(124=13213349.609375)(125=10140813.47656
25)(127=3057038.0859375)(128=6813623.046875)(135=7492759.765625)(136=

20148425.78125)(137=4034234.130859375)(138=2945937.98828125)(211=110
52136.71875)(213=18557634.765625)(214=22950621.09375)(215=11184255.85
9375)(216=17896144.53125)(217=19196992.1875)(219=97450843.75)(220=442
97320.3125)(221=12349417.96875)(226=13010259.765625)(227=8913979.4921
875)(228=14335787.109375)(229=9367954.1015625)(230=27058248.046875)(2
31=36551156.25)(233=15522620.1171875)(234=5424891.6015625)(235=20713
390.625)(236=14059328.125)(237=15339806.640625)(238=9879707.03125)(23
9=1997573.8525390625)(301=619248500.0)(402=14645525.390625)(403=2361
0345.703125)(412=28831367.1875)(415=7320960.9375)(417=24440636.71875)
(418=4885642.578125)(419=6213387.20703125)(420=3471556.15234375)(423=
3501236.81640625)(425=8254687.5)(426=4690869.140625)(427=14435019.531
25)(428=5913278.80859375)(429=3419181.884765625)(430=1950171.0205078
125)(432=1008176.5747070312)(434=1143214.4775390625)(436=1018667.236
328125)(437=4427933.59375)(438=2216993.896484375)(439=1645009.277343
75)(441=1996812.3779296875)(501=23257941.40625)(502=21110345.703125)(
511=3018338.37890625)(512=1995451.416015625)(513=4042109.86328125)(5
14=2965321.2890625)(515=5685990.72265625)(516=4402034.1796875)(517=7
017974.12109375)(519=3316112.548828125)(520=3504800.29296875)(521=83
23402.34375)(522=7691962.40234375)(528=11452239.2578125)(529=1213745
1.171875)(532=6222803.7109375)(533=6956271.484375)(534=11766410.15625
)(536=3477488.525390625)(538=7078910.15625)(540=2279508.544921875)(54
1=2688003.90625)(542=3790046.875)(543=1334749.3896484375)(544=184460
9.375)(545=3124786.376953125)(602=45328226.5625)(604=21822250.0)(605=
27182474.609375)(612=5597955.078125)(615=1671647.8271484375)(616=482
9293.45703125)(617=4411715.33203125)(618=3307584.716796875)(619=6119
427.24609375)(620=8804294.921875)(621=3481742.431640625)(622=1875383.
30078125)(623=19216617.1875)(624=13212697.265625)(625=13690000.97656
25)(626=22254423.828125)(627=11545988.28125)(628=8253065.4296875)(631
=3074545.166015625)(632=2567879.8828125)(633=3410191.162109375)(701=
23427462.890625)(704=55435632.8125)(710=46912964.84375)(711=4344261.2
3046875)(712=33375527.34375)(713=7020076.66015625)(715=14781833.0078
125)(716=6553509.765625)(729=24454593.75)(805=25520753.90625)(806=390
18046.875)(807=12442576.171875)(811=2103543.212890625)(814=11043497.0
703125)(815=10305239.2578125)(817=2241678.22265625)(819=4636842.2851
5625)(821=5455304.19921875)(822=4168788.0859375)(826=5979890.625)(827
=971584.9609375)(828=2705321.044921875)(829=1961157.470703125)(830=1
025780.1513671875)(831=999162.5366210938)(833=3150472.16796875)(834=
6382020.01953125)(901=5980516.6015625)(904=14368535.15625)(906=31869
654.296875)(911=3511336.42578125)(912=1590707.3974609375)(914=740642
6.7578125)(919=3443732.666015625)(926=13161230.46875)(928=4350944.335
9375)(929=1606381.8359375)(935=1909254.39453125)(937=3424933.8378906
25)(938=1892881.9580078125)(940=3241442.138671875)(941=2242336.91406
25)(1001=75343671.875)(1002=34384570.3125)(1003=7245694.82421875)(100
4=6190969.23828125)(1014=12389614.2578125)(1017=4079028.564453125)(1
018=11057317.3828125)(1021=2294512.451171875)(1026=1856421.38671875)
(1027=1765195.9228515625)(1029=3663695.80078125)(1032=8525752.929687
5)(1034=1833245.2392578125)(1037=5999738.76953125)(1046=5014089.8437
5)(1101=10390903.3203125)(1102=59816097.65625)(1103=94492250.0)(1106=
26248880.859375)(1111=1337941.40625)(1112=2324460.205078125)(1114=22
29984.86328125)(1119=9342852.5390625)(1120=13744976.5625)(1121=15674
822.265625)(1122=6881969.7265625)(1124=23817904.296875)(1127=7555908.
203125)(1129=1687951.904296875)(1130=10164042.96875)(1133=1493574.58
49609375)(1134=3348862.3046875)(1135=3611496.337890625)(1141=3018002
.9296875)(1142=2865567.3828125)(1144=387093.93310546875)(1145=817736.
2670898438)(1146=8707385.7421875)(1149=26231054.6875)(1151=260497.19
23828125)(1160=7858534.1796875)(1201=175369906.25)(1211=3729402.8320

3125)(1216=3482618.65234375)(1219=12857330.078125)(1221=20025236.328
125)(1222=2742487.79296875)(1223=2499669.43359375)(1224=10714264.648
4375)(1227=637676.9409179688)(1228=5155839.35546875)(1231=3407163.08
59375)(1232=549011.3525390625)(1233=987644.6533203125)(1234=938867.7
978515625)(1235=10337287.109375)(1238=9769078.125)(1241=3207451.4160
15625)(1242=1304557.861328125)(1243=14143390.625)(1244=5683046.38671
875)(1245=7340098.6328125)(1246=18572441.40625)(1247=19400570.3125)(1
251=1683966.6748046875)(1252=369161.5295410156)(1253=4647625.0)(1256
=4097734.86328125)(1259=3000499.0234375)(1260=2804565.4296875)(1263=
10892937.5)(1264=1813874.267578125)(1265=448959.2895507812 5)(1266=13
57732.5439453125)(1401=11292532.2265625)(1411=1873068.9697265625)(14
12=895368.2250976562)(1413=582421.2036132812)(1416=2883943.84765625)
(1417=2131119.873046875)(1418=819166.0766601562)(1419=2707619.384765
625)(1420=21556951.171875)(1421=1573245.1171875)(1422=1789972.534179
6875)(1424=4207647.4609375)(1426=5126427.734375)(1428=2626227.050781
25)(1429=2743551.26953125)(1430=2732421.142578125)(1431=1863189.2089
84375)(1432=13405589.84375)(1433=3106898.681640625)(1438=3109163.330
078125)(1439=5459562.98828125)(1441=1549808.59375)(1443=3634867.1875)
(1444=836912.2314453125)(1445=5133744.62890625)(1449=4906310.0585937
5)(1502=28624421.875)(1504=35722644.53125)(1505=26499093.75)(1511=261
2096.923828125)(1514=1383398.4375)(1515=7958541.9921875)(1516=887496
6.796875)(1517=3364984.375)(1519=8790437.5)(1520=8616823.2421875)(152
3=1354807.6171875)(1524=1572827.2705078125)(1525=3501423.828125)(152
6=619468.3227539062)(1528=6954965.33203125)(1529=2659323.486328125)(
1531=10099653.3203125)(1532=5831574.21875)(1534=6092352.05078125)(15
35=6352176.26953125)(1539=6610625.9765625)(1543=2503884.27734375)(15
45=1107561.767578125)(1546=1148517.333984375)(1547=4113092.28515625)
(1548=9764578.125)(1551=3059072.265625)(1554=3176013.427734375)(1557=
2172564.453125)(1560=2529901.123046875)(1563=5365111.81640625)(1566=
5673829.58984375)(1567=1803208.49609375)(1571=1357158.935546875)(157
3=1427778.3203125)(1576=2190994.62890625)(1804=45932574.21875)(1805=
15497866.2109375)(1811=2721898.681640625)(1812=1778592.529296875)(18
13=5740267.578125)(1815=907741.7602539062)(1816=489231.2316894531)(1
818=1651791.9921875)(1820=5654062.98828125)(1822=1870081.0546875)(18
24=11864313.4765625)(1825=945182.8002929688)(1826=1886616.2109375)(1
827=968978.4545898438)(1828=1637328.369140625)(1832=7286682.6171875)
(1833=16123100.5859375)(1834=1505950.1953125)(1835=665380.1879882812
)(1836=876530.8227539062)(1837=8764886.71875)(1838=1619506.713867187
5)(1839=1014748.1689453125)(1840=3549328.369140625)(1841=13539881.83
59375)(1845=1177043.212890625)(1848=4037943.84765625)(1849=1953562.2
55859375)(1850=1587427.1240234375)(1851=1450474.365234375)(1852=1212
419.677734375)(1853=932078.6743164062)(1854=2068728.515625)(1856=646
652.5268554688)(1857=611450.1953125)(1859=873471.435546875)(1860=728
8993.65234375)(1865=7100250.9765625)(1866=7441239.2578125)(1867=1505
142.578125)(1868=2790857.421875)(1870=6956571.2890625)(1871=5035537.5
9765625)(1874=1053216.552734375)(1902=56215449.21875)(1903=15673622.
0703125)(1911=4750547.36328125)(1913=3509010.009765625)(1917=872275.
3295898438)(1919=1162672.119140625)(1920=678476.6845703125)(1922=376
6925.78125)(1923=2527941.89453125)(1924=5395647.94921875)(1925=23191
95.3125)(1926=1348301.6357421875)(1927=1080122.6806640625)(1928=6254
06.494140625)(1929=1372333.49609375)(1931=9900189.453125)(1933=31833
94.04296875)(1936=2391913.0859375)(1938=4058584.9609375)(1939=106498
8.525390625)(1940=2280303.22265625)(1941=2793149.4140625)(1942=48525
82.03125)(1943=1216954.4677734375)(2002=1410287.109375)(2003=3452654.
541015625)(2004=9108664.0625)(2011=2001467.7734375)(2012=11663460.93
75)(2014=1094940.4296875)(2015=983345.3979492188)(2017=28353.1036376

95312)(2018=924998.9624023438)(2019=1184732.91015625)(2020=4145379.8828125)(2021=2350021.240234375)(2022=964433.2885742188)(2023=1276737.6708984375)(2024=995382.568359375)(2025=2460206.0546875)(2027=1564014.2822265625)(2028=2162717.529296875)(2030=6024419.43359375)(5001=148075187.5)(5004=11620362.3046875)(5005=11827831.0546875)(5011=3666329.58984375)(5012=1360769.53125)(5013=3537980.224609375)(5014=6316767.08984375)(5015=6093063.4765625)(5016=1507825.1953125)(5017=4858628.41796875)(5018=3846577.392578125)(5019=987702.5756835938)(5020=892367.2485351562)(5021=6581959.47265625)(5022=2085953.61328125)(5023=3649506.591796875)(5024=9340890.625)(5025=5787205.078125)(5026=1573043.9453125)(5027=4802241.2109375)(5028=14539323.2421875)(5029=5521354.98046875)(5030=2849328.369140625)(5031=12301104.4921875)(5032=3606839.111328125)(5033=1041513.671875)(5034=2283624.267578125)(5035=15893750.9765625)(5036=2535188.96484375)(5037=15464057.6171875)(5038=10409634.765625)(5039=1400227.4169921875)(5040=1172436.6455078125)(5041=2211265.869140625)(5042=1451100.9521484375)(5043=279720.703125)(5044=2081507.8125)(5045=2312941.40625)(5046=1575155.6396484375)(5047=3767980.46875)(5048=952097.1069335938)(5049=834661.7431640625)(5050=3373782.470703125)(5051=3866020.01953125)(5052=897383.6059570312)(5053=4661444.82421875)(5054=7273127.9296875)

recode
elderly_home_exp(101=464073218.75)(104=527553000.0)(105=804393375.0)(106=1157061625.0)(111=68828648.4375)(118=15923699.21875)(119=40077687.5)(121=11065415.0390625)(122=90330523.4375)(123=121145328.125)(124=190899031.25)(125=162954687.5)(127=36639011.71875)(128=132385328.125)(135=99332289.0625)(136=255427218.75)(137=80871421.875)(138=96518742.1875)(211=165541953.125)(213=379585156.25)(214=181911265.625)(215=200658437.5)(216=182500312.5)(217=294996718.75)(219=1694614750.0)(220=899327625.0)(221=135601781.25)(226=190121812.5)(227=142443328.125)(228=217682156.25)(229=109250210.9375)(230=407248250.0)(231=611136812.5)(233=279609656.25)(234=78547171.875)(235=394259468.75)(236=314036156.25)(237=308172187.5)(238=101007062.5)(239=35649804.6875)(301=7926768500.0)(402=237306296.875)(403=522915500.0)(412=416158187.5)(415=110670070.3125)(417=395039250.0)(418=87959250.0)(419=113237921.875)(420=117126914.0625)(423=90583250.0)(425=127058789.0625)(426=65257667.96875)(427=293302406.25)(428=129891695.3125)(429=68369937.5)(430=35141625.0)(432=24448054.6875)(434=14536512.6953125)(436=14342895.5078125)(437=101004937.5)(438=48323246.09375)(439=37991335.9375)(441=23503224.609375)(501=454409062.5)(502=490677812.5)(511=36901320.3125)(512=26421917.96875)(513=32257662.109375)(514=32355966.796875)(515=56062917.96875)(516=70408625.0)(517=91758164.0625)(519=46958378.90625)(520=94467726.5625)(521=74152296.875)(522=101564070.3125)(528=285061687.5)(529=211548593.75)(532=57592152.34375)(533=120576976.5625)(534=196193296.875)(536=138508703.125)(538=102445796.875)(540=61129132.8125)(541=20696658.203125)(542=139482218.75)(543=30274500.0)(544=41869250.0)(545=33903097.65625)(602=671768875.0)(604=375604812.5)(605=414081500.0)(612=93858164.0625)(615=16682552.734375)(616=95468257.8125)(617=82336914.0625)(618=29199271.484375)(619=70539585.9375)(620=82005234.375)(621=50128511.71875)(622=28506232.421875)(623=194408968.75)(624=244074562.5)(625=362272031.25)(626=383484906.25)(627=213540343.75)(628=154350875.0)(631=43851164.0625)(632=23688552.734375)(633=39455707.03125)(701=351536625.0)(704=657228250.0)(710=898054312.5)(711=76332398.4375)(712=576416687.5)(713=140995765.625)(715=243349281.25)(716=139754890.625)(729=389755156.25)(805=513176531.25)(806=743239312.5)(807=249063140.625)(811=14621006.8359375)(814=248091734.375)(815=201460812.5)(817=62980972.6562

5)(819=137989750.0)(821=109992523.4375)(822=49912695.3125)(826=906358
12.5)(827=20230314.453125)(828=46535371.09375)(829=38652035.15625)(83
0=28362679.6875)(831=22057916.015625)(833=35751761.71875)(834=768355
46.875)(901=132980187.5)(904=324660531.25)(906=547300062.5)(911=51205
460.9375)(912=33073546.875)(914=110597804.6875)(919=74472078.125)(926
=156426687.5)(928=56098871.09375)(929=30357039.0625)(935=21709429.687
5)(937=45869660.15625)(938=21078896.484375)(940=15463547.8515625)(941
=7278018.06640625)(1001=980483562.5)(1002=193827250.0)(1003=16732835
9.375)(1004=186042765.625)(1014=216135156.25)(1017=91383812.5)(1018=1
36846828.125)(1021=46951281.25)(1026=14606836.9140625)(1027=23083382.
8125)(1029=89208023.4375)(1032=176696140.625)(1034=19125402.34375)(10
37=137303968.75)(1046=23036908.203125)(1101=261773140.625)(1102=7968
25000.0)(1103=1500221125.0)(1106=448251656.25)(1111=48228785.15625)(1
112=40828410.15625)(1114=17115773.4375)(1119=207049531.25)(1120=2355
75531.25)(1121=228683109.375)(1122=160515078.125)(1124=247346890.625)
(1127=148943171.875)(1129=25438380.859375)(1130=169175718.75)(1133=18
749380.859375)(1134=74595437.5)(1135=111145718.75)(1141=45060914.0625
)(1142=41238105.46875)(1144=1461604.736328125)(1145=6295941.89453125)
(1146=171625031.25)(1149=566814437.5)(1151=257291.29028320312)(1160=1
15407312.5)(1201=3244342500.0)(1211=58766277.34375)(1216=84631796.875
)(1219=180530312.5)(1221=354692812.5)(1222=77519960.9375)(1223=433055
89.84375)(1224=215174203.125)(1227=16409105.46875)(1228=126066992.187
5)(1231=31380316.40625)(1232=4844051.7578125)(1233=7986941.40625)(123
4=8193250.9765625)(1235=151988515.625)(1238=145990875.0)(1241=650603
86.71875)(1242=28570568.359375)(1243=361747468.75)(1244=70216500.0)(1
245=46102531.25)(1246=263005406.25)(1247=333291187.5)(1251=76443367.1
875)(1252=5793031.25)(1253=111935671.875)(1256=95654445.3125)(1259=61
044687.5)(1260=76628984.375)(1263=283245312.5)(1264=34047523.4375)(12
65=4895542.96875)(1266=25313093.75)(1401=217600968.75)(1411=64635421.
875)(1412=4705791.50390625)(1413=23270328.125)(1416=65247296.875)(141
7=40660355.46875)(1418=52281265.625)(1419=29756593.75)(1420=16193132
8.125)(1421=42653847.65625)(1422=33687093.75)(1424=112657179.6875)(14
26=106373007.8125)(1428=62004628.90625)(1429=55083464.84375)(1430=29
879851.5625)(1431=82989890.625)(1432=180946859.375)(1433=44304917.968
75)(1438=68502585.9375)(1439=119525414.0625)(1441=46123019.53125)(144
3=110356992.1875)(1444=14583755.859375)(1445=145668546.875)(1449=103
178515.625)(1502=401850125.0)(1504=646758250.0)(1505=426904187.5)(151
1=56537359.375)(1514=55422406.25)(1515=99056554.6875)(1516=113144835.
9375)(1517=65391156.25)(1519=156839750.0)(1520=152556453.125)(1523=36
651066.40625)(1524=27075169.921875)(1525=76263453.125)(1526=16815646.
484375)(1528=132741421.875)(1529=80459921.875)(1531=188183046.875)(15
32=159502328.125)(1534=130923773.4375)(1535=192364968.75)(1539=11935
0835.9375)(1543=51672824.21875)(1545=34114800.78125)(1546=16736443.35
9375)(1547=62208039.0625)(1548=179462734.375)(1551=61398214.84375)(15
54=80887835.9375)(1557=37668429.6875)(1560=33878558.59375)(1563=1201
72031.25)(1566=90212445.3125)(1567=28300513.671875)(1571=17223427.734
375)(1573=28247613.28125)(1576=53033031.25)(1804=635277437.5)(1805=33
8295187.5)(1811=26844699.21875)(1812=25263808.59375)(1813=123085156.2
5)(1815=8223589.84375)(1816=1584167.96875)(1818=30462982.421875)(1820
=128315835.9375)(1822=23596308.59375)(1824=185792062.5)(1825=1790319
9.21875)(1826=26125638.671875)(1827=20094917.96875)(1828=40532777.343
75)(1832=76293062.5)(1833=366086875.0)(1834=40213214.84375)(1835=2894
939.208984375)(1836=19277785.15625)(1837=104610437.5)(1838=32493898.4
375)(1839=21230494.140625)(1840=126781718.75)(1841=119278742.1875)(18
45=24938058.59375)(1848=29352455.078125)(1849=26457359.375)(1850=446
06750.0)(1851=52077617.1875)(1852=13816315.4296875)(1853=30592160.156

25)(1854=39746761.71875)(1856=4658687.5)(1857=2857537.109375)(1859=23439017.578125)(1860=177729671.875)(1865=143739562.5)(1866=164523125.0)(1867=42270304.6875)(1868=70974234.375)(1870=162867453.125)(1871=77960351.5625)(1874=38553398.4375)(1902=1128251750.0)(1903=348405468.75)(1911=144970171.875)(1913=47763855.46875)(1917=19471488.28125)(1919=20259640.625)(1920=12397508.7890625)(1922=52561796.875)(1923=53896035.15625)(1924=107140945.3125)(1925=47913050.78125)(1926=17853460.9375)(1927=38429484.375)(1928=7259528.80859375)(1929=11126589.84375)(1931=184490796.875)(1933=80063226.5625)(1936=69499648.4375)(1938=51099457.03125)(1939=36395789.0625)(1940=40649890.625)(1941=58739671.875)(1942=70948906.25)(1943=24372835.9375)(2002=16312850.5859375)(2003=136535890.625)(2004=181026015.625)(2011=64301203.125)(2012=341707343.75)(2014=16049517.578125)(2015=15581658.203125)(2017=21947164.0625)(2018=14970273.4375)(2019=22089605.46875)(2020=51907734.375)(2021=52645050.78125)(2022=26914791.015625)(2023=23819531.25)(2024=13761708.0078125)(2025=78226203.125)(2027=10456086.9140625)(2028=44671148.4375)(2030=159172156.25)(5001=2024187000.0)(5004=306596781.25)(5005=233924437.5)(5011=54984667.96875)(5012=14794847.65625)(5013=67792906.25)(5014=75463000.0)(5015=50698371.09375)(5016=29841185.546875)(5017=87625859.375)(5018=51633480.46875)(5019=10230830.078125)(5020=8955665.0390625)(5021=107100046.875)(5022=41338734.375)(5023=68436718.75)(5024=142794125.0)(5025=66681171.875)(5026=24125083.984375)(5027=98272804.6875)(5028=226955265.625)(5029=69729015.625)(5030=59360019.53125)(5031=209235578.125)(5032=63298613.28125)(5033=6620856.4453125)(5034=31159949.21875)(5035=359761625.0)(5036=40222703.125)(5037=352314937.5)(5038=220781312.5)(5039=49944691.40625)(5040=28146324.21875)(5041=31705035.15625)(5042=23438634.765625)(5043=3823849.853515625)(5044=12347571.2890625)(5045=19650900.390625)(5046=16554539.0625)(5047=44117613.28125)(5048=4630176.26953125)(5049=16810431.640625)(5050=83428296.875)(5051=84429906.25)(5052=8615814.453125)(5053=78961765.625)(5054=132647468.75)

recode
elderly_inst_exp(101=494061125.0)(104=259701031.25)(105=652695437.5)(106=926613625.0)(111=50653253.90625)(118=20461011.71875)(119=42407164.0625)(121=12479610.3515625)(122=71476968.75)(123=62265199.21875)(124=164848390.625)(125=101246750.0)(127=59398488.28125)(128=79229109.375)(135=76200742.1875)(136=136588921.875)(137=63422144.53125)(138=60169441.40625)(211=215204125.0)(213=418480906.25)(214=321808781.25)(215=169434984.375)(216=225277468.75)(217=311836875.0)(219=1639981500.0)(220=677569187.5)(221=191380515.625)(226=237975671.875)(227=130836484.375)(228=208866203.125)(229=132778359.375)(230=405492687.5)(231=533179750.0)(233=262245937.5)(234=68585914.0625)(235=459090375.0)(236=220104171.875)(237=280175218.75)(238=155388375.0)(239=33488132.8125)(301=8819211000.0)(402=191413875.0)(403=380500843.75)(412=489906093.75)(415=85645148.4375)(417=191735718.75)(418=54016949.21875)(419=80217125.0)(420=62136304.6875)(423=41432402.34375)(425=88324367.1875)(426=38974722.65625)(427=238622406.25)(428=86758640.625)(429=53170945.3125)(430=35556820.3125)(432=18849894.53125)(434=32211253.90625)(436=15489969.7265625)(437=62345175.78125)(438=27035386.71875)(439=19824654.296875)(441=29463335.9375)(501=309385468.75)(502=276560625.0)(511=33539273.4375)(512=30070863.28125)(513=40545031.25)(514=34932277.34375)(515=47364257.8125)(516=86358843.75)(517=66402968.75)(519=40009289.0625)(520=33473804.6875)(521=63676414.0625)(522=73163968.75)(528=334148593.75)(529=118763968.75)(532=92933265.625)(533=184261218.75)(534=170104078.125)(536=83108460.9375)(538=94685656.25)(540=36755441.40625)(541=20064812.5)(542=67410476.5625)(543=33731289.0625)(544=42621593.75)(545=3325041

7.96875)(602=802280687.5)(604=327002250.0)(605=323550343.75)(612=6272
9593.75)(615=13253941.40625)(616=20459339.84375)(617=47938027.34375)(
618=33648726.5625)(619=68172570.3125)(620=62522363.28125)(621=494390
97.65625)(622=63187800.78125)(623=196572578.125)(624=174100703.125)(6
25=221393609.375)(626=272001812.5)(627=339603156.25)(628=68115023.437
5)(631=31688689.453125)(632=21705228.515625)(633=38613515.625)(701=26
7644468.75)(704=465370375.0)(710=642069562.5)(711=72951148.4375)(712=
555893687.5)(713=99923882.8125)(715=139506015.625)(716=112066601.5625
)(729=293549562.5)(805=463469062.5)(806=564384687.5)(807=91159968.75)(
811=29970429.6875)(814=120492843.75)(815=60120453.125)(817=39923800.7
8125)(819=69608062.5)(821=87110898.4375)(822=64625656.25)(826=9604568
7.5)(827=21378570.3125)(828=33648140.625)(829=27359669.921875)(830=24
610101.5625)(831=27468230.46875)(833=34611625.0)(834=59155808.59375)(
901=74819976.5625)(904=239364437.5)(906=528698437.5)(911=32663998.046
875)(912=37056527.34375)(914=56594265.625)(919=89444406.25)(926=13772
9765.625)(928=76542218.75)(929=32784394.53125)(935=17805410.15625)(93
7=43018792.96875)(938=20307417.96875)(940=31426289.0625)(941=1157107
65.625)(1001=902263812.5)(1002=175760265.625)(1003=180234781.25)(1004
=100427960.9375)(1014=149494406.25)(1017=49780261.71875)(1018=120020
960.9375)(1021=31313255.859375)(1026=22903757.8125)(1027=43046972.656
25)(1029=40699007.8125)(1032=274814687.5)(1034=27983330.078125)(1037=
54762210.9375)(1046=50775765.625)(1101=103879312.5)(1102=1050528125.0
)(1103=1943667625.0)(1106=532490437.5)(1111=44990789.0625)(1112=51223
460.9375)(1114=52487527.34375)(1119=380824000.0)(1120=195439562.5)(11
21=229042406.25)(1122=110919601.5625)(1124=400511781.25)(1127=158402
765.625)(1129=45172832.03125)(1130=90797601.5625)(1133=45442730.46875
)(1134=50145222.65625)(1135=37010285.15625)(1141=34315441.40625)(1142
=50293984.375)(1144=9644966.796875)(1145=16328199.21875)(1146=139730
031.25)(1149=572162687.5)(1151=13533512.6953125)(1160=112496203.125)(
1201=3811451250.0)(1211=94263250.0)(1216=62328535.15625)(1219=139117
953.125)(1221=256345781.25)(1222=46458359.375)(1223=32709705.078125)(
1224=165837109.375)(1227=20526548.828125)(1228=70148757.8125)(1231=5
4157546.875)(1232=101367335.9375)(1233=35498246.09375)(1234=22481962.
890625)(1235=176353390.625)(1238=85715281.25)(1241=67515203.125)(1242
=31541126.953125)(1243=130816585.9375)(1244=56933324.21875)(1245=148
073421.875)(1246=477634906.25)(1247=321386312.5)(1251=56530203.125)(1
252=14110085.9375)(1253=93587507.8125)(1256=96193609.375)(1259=87313
257.8125)(1260=58400261.71875)(1263=161448203.125)(1264=39494488.2812
5)(1265=10975976.5625)(1266=25171806.640625)(1401=138399609.375)(1411
=24090736.328125)(1412=18501195.3125)(1413=22031357.421875)(1416=623
82996.09375)(1417=36553214.84375)(1418=27302878.90625)(1419=51109929.
6875)(1420=74623906.25)(1421=26534507.8125)(1422=40333789.0625)(1424=
70036375.0)(1426=44808855.46875)(1428=28980894.53125)(1429=50436765.6
25)(1430=38669296.875)(1431=8122818.359375)(1432=136483296.875)(1433=
25798404.296875)(1438=59113875.0)(1439=46041750.0)(1441=30470136.7187
5)(1443=58695734.375)(1444=19759455.078125)(1445=34672804.6875)(1449=
78722492.1875)(1502=334889437.5)(1504=567219312.5)(1505=292031406.25)
(1511=32542488.28125)(1514=29762857.421875)(1515=108730789.0625)(1516
=68013093.75)(1517=60794488.28125)(1519=96555804.6875)(1520=11247480
4.6875)(1523=25368046.875)(1524=26083693.359375)(1525=36477570.3125)(
1526=14720078.125)(1528=37690484.375)(1529=47589824.21875)(1531=3628
4523.4375)(1532=10694072.265625)(1534=97634585.9375)(1535=115532968.7
5)(1539=160691984.375)(1543=68691414.0625)(1545=24268769.53125)(1546=
57580332.03125)(1547=100704843.75)(1548=104925257.8125)(1551=6879369
5.3125)(1554=64140945.3125)(1557=33681761.71875)(1560=36570757.8125)(
1563=97244937.5)(1566=82798398.4375)(1567=32974800.78125)(1571=23555

470.703125)(1573=36460878.90625)(1576=35859734.375)(1804=720014687.5)(1805=245130234.375)(1811=22864283.203125)(1812=32502128.90625)(1813=93361937.5)(1815=23450236.328125)(1816=18896800.78125)(1818=23263806.640625)(1820=80387187.5)(1822=32392460.9375)(1824=201691906.25)(1825=19711263.671875)(1826=26705777.34375)(1827=25749109.375)(1828=39978769.53125)(1832=62846085.9375)(1833=278600093.75)(1834=17257207.03125)(1835=14512194.3359375)(1836=24008789.0625)(1837=116166296.875)(1838=33752691.40625)(1839=18244119.140625)(1840=61491730.46875)(1841=172367312.5)(1845=43518906.25)(1848=36700246.09375)(1849=33555933.59375)(1850=29810861.328125)(1851=33501464.84375)(1852=15993378.90625)(1853=18243476.5625)(1854=32639572.265625)(1856=10061927.734375)(1857=22483406.25)(1859=14535763.671875)(1860=148398578.125)(1865=154348640.625)(1866=89672367.1875)(1867=38717992.1875)(1868=54333246.09375)(1870=110528929.6875)(1871=46518503.90625)(1874=16337496.09375)(1902=1121734625.0)(1903=267642687.5)(1911=47736335.9375)(1913=52875324.21875)(1917=19768351.5625)(1919=17457156.25)(1920=16651126.953125)(1922=61618718.75)(1923=29012115.234375)(1924=182983281.25)(1925=35127472.65625)(1926=21156740.234375)(1927=23913441.40625)(1928=21010773.4375)(1929=17107498.046875)(1931=179012500.0)(1933=82759406.25)(1936=36745472.65625)(1938=23151960.9375)(1939=51465808.59375)(1940=157591046.875)(1941=36635882.8125)(1942=62077429.6875)(1943=26166048.828125)(2002=37692011.71875)(2003=46212839.84375)(2004=347547250.0)(2011=36352660.15625)(2012=415535156.25)(2014=17914660.15625)(2015=25176458.984375)(2017=20893017.578125)(2018=22179980.46875)(2019=49569546.875)(2020=56733867.1875)(2021=41111328.125)(2022=24452912.109375)(2023=22600242.1875)(2024=19228318.359375)(2025=39471429.6875)(2027=23845376.953125)(2028=42638964.84375)(2030=167586078.125)(5001=2626904500.0)(5004=163054656.25)(5005=122840453.125)(5011=43129789.0625)(5012=20590570.3125)(5013=63058796.875)(5014=65381726.5625)(5015=45837644.53125)(5016=43814429.6875)(5017=27177466.796875)(5018=35441679.6875)(5019=16574193.359375)(5020=13938444.3359375)(5021=61013152.34375)(5022=29445683.59375)(5023=40377402.34375)(5024=128891289.0625)(5025=67208210.9375)(5026=25472974.609375)(5027=68104296.875)(5028=170316687.5)(5029=77905398.4375)(5030=76859265.625)(5031=104147351.5625)(5032=48200265.625)(5033=17813917.96875)(5034=34622382.8125)(5035=146222156.25)(5036=28996285.15625)(5037=155673234.375)(5038=124781210.9375)(5039=19562015.625)(5040=23591912.109375)(5041=26439068.359375)(5042=21397031.25)(5043=15160201.171875)(5044=18980990.234375)(5045=33295421.875)(5046=19332314.453125)(5047=44426656.25)(5048=10716159.1796875)(5049=77867359.375)(5050=126735781.25)(5051=63304332.03125)(5052=10640181.640625)(5053=61610070.3125)(5054=141147468.75)

recode
education_exp(101=158795.31860351562)(104=171964.08081054688)(105=127417.07611083984)(106=135893.8751220703)(111=290737.79296875)(118=184689.6514892578)(119=145065.61279296875)(121=189369.85778808594)(122=148904.76989746094)(123=144375.35095214844)(124=130411.57531738281)(125=137635.28442382812)(127=143875.0)(128=168731.78100585938)(135=159627.70080566406)(136=137860.45837402344)(137=155005.52368164062)(138=169869.35424804688)(211=204300.4608154297)(213=145154.78515625)(214=217746.81091308594)(215=135965.95764160156)(216=121903.73229980469)(217=118974.02954101562)(219=143180.8319091797)(220=144845.6268310547)(221=174093.3074951172)(226=125725.17395019531)(227=180165.8172607422)(228=198407.08923339844)(229=181071.91467285156)(230=127228.89709472656)(231=127799.4384765625)(233=147441.34521484375)(234=116386.8637084961)(235=138631.103515625)(236=126133.04901123047)(237=15891

9.69299316406)(238=135448.39477539062)(239=126710.84594726562)(301=1
68556.18286132812)(402=234953.67431640625)(403=147546.9970703125)(41
2=187101.3946533203)(415=142353.36303710938)(417=145328.18603515625)
(418=167218.68896484375)(419=425346.0998535156)(420=149885.330200195
3)(423=156752.83813476562)(425=154553.35998535156)(426=190742.935180
66406)(427=203747.78747558594)(428=151841.7205810547)(429=152199.996
9482422)(430=187066.3604736328)(432=168673.69079589844)(434=298685.6
994628906)(436=176946.54846191406)(437=146470.7489013672)(438=481854
.79736328125)(439=178341.76635742188)(441=171830.84106445312)(501=21
4757.99560546875)(502=138542.37365722656)(511=200984.31396484375)(51
2=163907.68432617188)(513=317060.0891113281)(514=161828.6895751953)(
515=154787.73498535156)(516=160662.353515625)(517=148995.3002929687
5)(519=166214.3096923828)(520=156235.6719970703)(521=165561.95068359
375)(522=217100.8758544922)(528=159475.341796875)(529=257128.8452148
4375)(532=256447.90649414062)(533=142646.05712890625)(534=148782.379
15039062)(536=166993.07250976562)(538=145738.3575439453)(540=282384.
82666015625)(541=187840.75927734375)(542=241284.04235839844)(543=149
823.76098632812)(544=180108.1085205078)(545=228286.48376464844)(602=
155279.47998046875)(604=178321.3348388672)(605=194280.2734375)(612=1
36512.84790039062)(615=328116.6687011719)(616=191056.01501464844)(61
7=159894.83642578125)(618=167205.70373535156)(619=172768.8446044922)
(620=175644.2108154297)(621=158256.53076171875)(622=172468.521118164
06)(623=141277.77099609375)(624=123826.97296142578)(625=123805.24444
580078)(626=134007.4920654297)(627=140817.16918945312)(628=141875.42
724609375)(631=667942.2607421875)(632=223897.64404296875)(633=197857
.69653320312)(701=137019.5770263672)(704=135492.2637939453)(710=1296
50.08544921875)(711=148249.00817871094)(712=129896.22497558594)(713=
136526.6876220703)(715=130984.92431640625)(716=174629.86755371094)(7
29=135103.45458984375)(805=158989.6240234375)(806=134557.3425292968
8)(807=213661.0565185547)(811=168240.26489257812)(814=146684.6771240
2344)(815=191661.97204589844)(817=170069.10705566406)(819=161438.613
89160156)(821=148962.92114257812)(822=180548.583984375)(826=179480.8
0444335938)(827=404045.9289550781)(828=161799.46899414062)(829=17933
0.42907714844)(830=227653.38134765625)(831=210878.6163330078)(833=17
7602.31018066406)(834=206973.23608398438)(901=172630.11169433594)(90
4=139469.23828125)(906=152301.36108398438)(911=392848.5107421875)(91
2=245596.0235595703)(914=167618.8507080078)(919=135030.89904785156)(
926=146643.8751220703)(928=147260.4217529297)(929=174917.0684814453)
(935=189023.52905273438)(937=164427.978515625)(938=245360.0158691406
2)(940=231945.20568847656)(941=396648.1628417969)(1001=146959.533691
40625)(1002=138380.2947998047)(1003=134248.3673095703)(1004=152076.2
6342773438)(1014=169632.78198242188)(1017=161210.02197265625)(1018=1
35767.7459716797)(1021=171188.2781982422)(1026=246293.6553955078)(10
27=159558.2275390625)(1029=146496.9482421875)(1032=129044.845581054
69)(1034=187451.15661621094)(1037=169421.8292236328)(1046=230364.807
12890625)(1101=146444.5037841797)(1102=146243.9727783203)(1103=13418
4.55505371094)(1106=132005.18798828125)(1111=138909.08813476562)(111
2=167945.44982910156)(1114=138518.09692382812)(1119=128068.52722167
969)(1120=152794.6014404297)(1121=130966.04919433594)(1122=121289.16
931152344)(1124=122375.20599365234)(1127=150197.15881347656)(1129=31
3673.095703125)(1130=213171.142578125)(1133=183438.14086914062)(1134
=189922.18017578125)(1135=144966.552734375)(1141=181391.83044433594)
(1142=150646.97265625)(1144=175824.32556152344)(1145=200565.23132324
22)(1146=146899.658203125)(1149=131101.22680664062)(1151=329166.6564
941406)(1160=154741.27197265625)(1201=143065.27709960938)(1211=14362
3.15368652344)(1216=170856.46057128906)(1219=157090.6982421875)(1221

=139474.51782226562)(1222=147412.3992919922)(1223=169474.9145507812
5)(1224=148524.39880371094)(1227=219242.1875)(1228=168357.7270507812
5)(1231=200114.34936523438)(1232=263191.89453125)(1233=228567.794799
8047)(1234=240000.0)(1235=148715.71350097656)(1238=150694.3969726562
5)(1241=191075.927734375)(1242=159592.34619140625)(1243=132940.06347
65625)(1244=180955.7342529297)(1245=182852.31018066406)(1246=153154.
052734375)(1247=175756.2255859375)(1251=308866.7907714844)(1252=2448
88.8702392578)(1253=136548.76708984375)(1256=160683.60900878906)(125
9=223292.3583984375)(1260=156330.1239013672)(1263=236081.6040039062
5)(1264=177842.39196777344)(1265=264126.6174316406)(1266=226153.4881
591797)(1401=165640.35034179688)(1411=192409.2559814453)(1412=197265
.96069335938)(1413=205207.41271972656)(1416=197326.66015625)(1417=19
3790.3289794922)(1418=214571.42639160156)(1419=151646.30126953125)(1
420=146953.58276367188)(1421=208346.37451171875)(1422=196610.458374
02344)(1424=174496.2615966797)(1426=173904.052734375)(1428=190438.72
0703125)(1429=180657.37915039062)(1430=163084.70153808594)(1431=2139
45.08361816406)(1432=149094.34509277344)(1433=175737.39624023438)(14
38=263955.2307128906)(1439=180536.80419921875)(1441=160996.81091308
594)(1443=135109.0850830078)(1444=223067.56591796875)(1445=161130.03
540039062)(1449=139298.64501953125)(1502=144394.1650390625)(1504=131
621.56677246094)(1505=145446.74682617188)(1511=202251.60217285156)(1
514=172527.06909179688)(1515=122523.3154296875)(1516=143640.3961181
6406)(1517=141861.4959716797)(1519=159982.60498046875)(1520=129106.1
2487792969)(1523=324046.6003417969)(1524=194245.1934814453)(1525=165
854.58374023438)(1526=144036.75842285156)(1528=133658.8592529297)(15
29=126242.61474609375)(1531=143199.37133789062)(1532=139288.7268066
4062)(1534=146458.06884765625)(1535=144335.99853515625)(1539=129243.
17932128906)(1543=183792.6483154297)(1545=151010.68115234375)(1546=1
74390.24353027344)(1547=260741.3330078125)(1548=185797.4853515625)(1
551=176928.4210205078)(1554=149372.1923828125)(1557=144024.67346191
406)(1560=170430.89294433594)(1563=185895.751953125)(1566=177645.614
62402344)(1567=145848.2208251953)(1571=171782.85217285156)(1573=1873
36.21215820312)(1576=214705.1239013672)(1804=182032.01293945312)(180
5=155356.41479492188)(1811=553398.8037109375)(1812=198976.379394531
25)(1813=169710.9375)(1815=236114.28833007812)(1816=261660.003662109
38)(1818=147120.60546875)(1820=165383.3770751953)(1822=201300.003051
7578)(1824=157320.5108642578)(1825=202934.1278076172)(1826=225939.75
830078125)(1827=229873.56567382812)(1828=194567.3065185547)(1832=216
429.96215820312)(1833=141164.77966308594)(1834=230939.697265625)(183
5=212648.1475830078)(1836=241055.17578125)(1837=286321.4111328125)(1
838=247119.2626953125)(1839=285976.7150878906)(1840=136346.58813476
562)(1841=294966.36962890625)(1845=232702.9266357422)(1848=224703.12
5)(1849=199657.1502685547)(1850=189231.10961914062)(1851=465500.0)(18
52=327681.82373046875)(1853=205390.41137695312)(1854=164324.2340087
8906)(1856=216880.0048828125)(1857=246576.47705078125)(1859=195250.0)
(1860=137556.41174316406)(1865=192608.2763671875)(1866=202567.169189
45312)(1867=208470.80993652344)(1868=174859.16137695312)(1870=162989
.6697998047)(1871=206930.69458007812)(1874=226019.22607421875)(1902=
152575.86669921875)(1903=163506.92749023438)(1911=188442.7795410156
2)(1913=274593.26171875)(1917=254260.16235351562)(1919=185836.364746
09375)(1920=188258.28552246094)(1922=208298.1414794922)(1923=209470.
5810546875)(1924=162499.32861328125)(1925=143590.0421142578)(1926=18
1743.80493164062)(1927=233910.61401367188)(1928=237778.94592285156)(
1929=200068.17626953125)(1931=164148.22387695312)(1933=171272.87292
48047)(1936=200836.15112304688)(1938=416979.3395996094)(1939=201400.
0244140625)(1940=205128.08227539062)(1941=169554.87060546875)(1942=1

29577.34680175781)(1943=786491.2109375)(2002=187441.98608398438)(200
3=177837.95166015625)(2004=174785.99548339844)(2011=159843.58215332
03)(2012=166145.1873779297)(2014=282692.32177734375)(2015=229419.357
2998047)(2017=272836.9445800781)(2018=225063.0645751953)(2019=170864
.85290527344)(2020=194612.82348632812)(2021=185588.9892578125)(2022=
233359.72595214844)(2023=203447.05200195312)(2024=300247.1923828125)
(2025=242314.5751953125)(2027=252959.5947265625)(2028=202468.3227539
0625)(2030=308419.677734375)(5001=145149.0020751953)(5004=235134.323
1201172)(5005=141449.9053955078)(5011=215335.43395996094)(5012=27914
7.3693847656)(5013=214173.64501953125)(5014=187807.861328125)(5015=2
80219.0246582031)(5016=179468.93310546875)(5017=133631.85119628906)(
5018=198820.9686279297)(5019=247172.4090576172)(5020=263264.1601562
5)(5021=135035.9649658203)(5022=174137.92419433594)(5023=154415.3137
2070312)(5024=137964.21813964844)(5025=149581.63452148438)(5026=1666
38.76342773438)(5027=166146.27075195312)(5028=140546.78344726562)(50
29=321271.1486816406)(5030=141103.37829589844)(5031=147130.14221191
406)(5032=161623.7030029297)(5033=241108.1085205078)(5034=175236.648
5595703)(5035=136878.3416748047)(5036=182913.46740722656)(5037=13816
9.81506347656)(5038=155341.41540527344)(5039=169761.19995117188)(504
0=157570.66345214844)(5041=152180.08422851562)(5042=242883.11767578
125)(5043=217016.95251464844)(5044=223766.37268066406)(5045=216035.0
341796875)(5046=164791.44287109375)(5047=134551.72729492188)(5048=28
0041.6564941406)(5049=203409.53063964844)(5050=175811.85913085938)(5
051=192250.42724609375)(5052=270555.5419921875)(5053=149609.5123291
0156)(5054=201682.2967529297)

recode
childcare_exp(101=166877.45666503906)(104=169572.69287109375)(105=152
660.91918945312)(106=156838.31787109375)(111=196161.84997558594)(118
=176280.70068359375)(119=183511.9171142578)(121=217037.04833984375)(
122=222025.36010742188)(123=155767.5018310547)(124=171115.997314453
12)(125=157677.0782470703)(127=185404.55627441406)(128=146767.547607
42188)(135=155095.1385498047)(136=151902.4658203125)(137=205475.1892
0898438)(138=158882.8125)(211=161037.56713867188)(213=208611.2518310
547)(214=174494.0643310547)(215=173091.9189453125)(216=170921.035766
60156)(217=229710.72387695312)(219=187141.17431640625)(220=169902.08
435058594)(221=156014.09912109375)(226=167993.43872070312)(227=18944
2.15393066406)(228=156684.2498779297)(229=143830.33752441406)(230=19
8651.09252929688)(231=181212.58544921875)(233=169988.99841308594)(23
4=174821.7010498047)(235=166796.52404785156)(236=153926.94091796875)
(237=179835.92224121094)(238=204635.46752929688)(239=145167.63305664
062)(301=194901.1993408203)(402=171784.28649902344)(403=187833.11462
402344)(412=171139.3280029297)(415=168643.76831054688)(417=190948.98
986816406)(418=207464.111328125)(419=184728.57666015625)(420=180414.
2303466797)(423=185710.34240722656)(425=152407.01293945312)(426=1869
53.4912109375)(427=207829.0252685547)(428=205174.2401123047)(429=184
309.17358398438)(430=168438.78173828125)(432=179793.6553955078)(434=
250028.564453125)(436=235962.9364013672)(437=196854.47692871094)(438
=152647.43041992188)(439=189779.4189453125)(441=223000.0)(501=175089.
84375)(502=161045.9747314453)(511=172918.18237304688)(512=217666.671
7529297)(513=224369.04907226562)(514=177023.62060546875)(515=169993.
3319091797)(516=179820.61767578125)(517=177206.2225341797)(519=18815
8.2489013672)(520=173111.70959472656)(521=192955.45959472656)(522=18
5248.30627441406)(528=167917.00744628906)(529=158282.8369140625)(532
=188806.36596679688)(533=183284.02709960938)(534=156018.6309814453)(
536=198583.3282470703)(538=175773.681640625)(540=154136.0626220703)(

541=188883.33129882812)(542=175416.9464111328)(543=167942.535400390
62)(544=173403.83911132812)(545=199295.7763671875)(602=170785.537719
72656)(604=184909.97314453125)(605=169736.4044189453)(612=166864.562
98828125)(615=696116.2719726562)(616=196883.19396972656)(617=203289.
58129882812)(618=211420.63903808594)(619=209578.6590576172)(620=2075
80.30700683594)(621=157328.35388183594)(622=210058.3953857422)(623=2
74745.60546875)(624=155547.8973388672)(625=169967.42248535156)(626=1
47287.2772216797)(627=148309.18884277344)(628=167712.3260498047)(631
=206155.41076660156)(632=209333.3282470703)(633=235352.38647460938)(
701=170812.53051757812)(704=171327.62145996094)(710=158513.82446289
062)(711=174550.15563964844)(712=173876.6632080078)(713=162968.38378
90625)(715=177867.6300048828)(716=184434.46350097656)(729=193319.686
88964844)(805=179534.63745117188)(806=159699.2645263672)(807=157996.
96350097656)(811=193179.4891357422)(814=172856.30798339844)(815=1962
56.68334960938)(817=203733.33740234375)(819=182291.53442382812)(821=
160735.70251464844)(822=155343.2159423828)(826=209507.99560546875)(8
27=245958.3282470703)(828=201234.89379882812)(829=177097.0916748047)
(830=266551.7272949219)(831=180000.01525878906)(833=241970.001220703
12)(834=270039.794921875)(901=173742.56896972656)(904=168014.4805908
203)(906=175188.6749267578)(911=157150.4364013672)(912=166713.134765
625)(914=188170.83740234375)(919=165801.6357421875)(926=177218.33801
26953)(928=154078.21655273438)(929=175867.76733398438)(935=217932.20
52001953)(937=141298.24829101562)(938=176964.2791748047)(940=206035.
09521484375)(941=288299.98779296875)(1001=160781.67724609375)(1002=1
57631.16455078125)(1003=161627.99072265625)(1004=203711.76147460938)
(1014=162997.89428710938)(1017=166217.7734375)(1018=190784.271240234
38)(1021=204992.64526367188)(1026=174185.19592285156)(1027=170393.15
795898438)(1029=154890.5792236328)(1032=210698.18115234375)(1034=162
015.7470703125)(1037=165772.84240722656)(1046=228891.66259765625)(11
01=180074.92065429688)(1102=156003.41796875)(1103=189141.8762207031
2)(1106=172863.41857910156)(1111=150660.29357910156)(1112=197660.293
57910156)(1114=167005.15747070312)(1119=171949.37133789062)(1120=171
038.87939453125)(1121=175267.95959472656)(1122=168731.58264160156)(1
124=192097.93090820312)(1127=184528.35083007812)(1129=180028.167724
60938)(1130=164813.61389160156)(1133=215005.615234375)(1134=223367.9
656982422)(1135=165769.53125)(1141=180137.42065429688)(1142=205930.8
1665039062)(1144=214919.9981689453)(1145=205526.3214111328)(1146=192
843.03283691406)(1149=143413.43688964844)(1151=208066.66564941406)(1
160=174769.3634033203)(1201=175992.5537109375)(1211=175350.00610351
562)(1216=169135.34545898438)(1219=149243.31665039062)(1221=157349.1
973876953)(1222=130010.42175292969)(1223=181229.8126220703)(1224=176
108.99353027344)(1227=184267.85278320312)(1228=231161.48376464844)(1
231=249512.19177246094)(1232=272093.017578125)(1233=201701.49230957
03)(1234=190755.09643554688)(1235=167680.45043945312)(1238=180284.51
538085938)(1241=200025.634765625)(1242=166901.94702148438)(1243=1445
13.94653320312)(1244=155979.96520996094)(1245=164852.99682617188)(12
46=169959.16748046875)(1247=162989.04418945312)(1251=158732.7880859
375)(1252=524133.36181640625)(1253=158178.69567871094)(1256=152037.7
960205078)(1259=198730.0567626953)(1260=266412.841796875)(1263=15323
1.59790039062)(1264=221321.64001464844)(1265=217956.52770996094)(126
6=205066.0400390625)(1401=202608.67309570312)(1411=229591.30859375)(
1412=268241.4245605469)(1413=223547.1649169922)(1416=192324.8748779
297)(1417=179277.37426757812)(1418=283636.3525390625)(1419=200384.00
268554688)(1420=184598.77014160156)(1421=216657.89794921875)(1422=20
1701.15661621094)(1424=180401.58081054688)(1426=187536.4227294922)(1
428=191754.37927246094)(1429=193713.3331298828)(1430=189631.5765380

8594)(1431=190081.87866210938)(1432=238278.80859375)(1433=184912.567
13867188)(1438=195054.55017089844)(1439=165361.96899414062)(1441=169
718.505859375)(1443=186030.4718017578)(1444=194527.2674560547)(1445=
194231.2774658203)(1449=173014.41955566406)(1502=179408.2489013672)(
1504=166815.3839111328)(1505=287189.9108886719)(1511=187850.0213623
047)(1514=340000.0)(1515=160225.2655029297)(1516=198317.4285888672)(1
517=175555.5877685547)(1519=196646.42333984375)(1520=195857.6049804
6875)(1523=193235.29052734375)(1524=163397.06420898438)(1525=170716.
33911132812)(1526=403599.9755859375)(1528=173392.7001953125)(1529=17
1949.69177246094)(1531=178778.91540527344)(1532=165210.43395996094)(
1534=155452.0721435547)(1535=171816.02478027344)(1539=164925.918579
10156)(1543=202391.6015625)(1545=160473.28186035156)(1546=211796.295
16601562)(1547=204024.6124267578)(1548=170957.1075439453)(1551=21114
5.8282470703)(1554=168842.46826171875)(1557=210889.6484375)(1560=221
338.24157714844)(1563=252892.6544189453)(1566=201861.95373535156)(15
67=180607.48291015625)(1571=234758.63647460938)(1573=193699.9969482
422)(1576=186590.63720703125)(1804=158713.4246826172)(1805=171402.67
944335938)(1811=187959.47265625)(1812=193137.92419433594)(1813=16474
1.5771484375)(1815=202095.24536132812)(1816=183344.83337402344)(1818
=164127.45666503906)(1820=180487.56408691406)(1822=267259.460449218
75)(1824=219890.64025878906)(1825=214949.9969482422)(1826=176803.283
69140625)(1827=422380.0354003906)(1828=179010.31494140625)(1832=2014
95.6512451172)(1833=155644.86694335938)(1834=280771.9421386719)(1835
=219933.33435058594)(1836=171363.63220214844)(1837=176144.882202148
44)(1838=164752.685546875)(1839=184314.2852783203)(1840=241457.15332
03125)(1841=207246.58203125)(1845=213459.7625732422)(1848=226209.091
18652344)(1849=215986.84692382812)(1850=202342.10205078125)(1851=180
450.71411132812)(1852=233088.88244628906)(1853=171983.04748535156)(1
854=199922.4090576172)(1856=199823.5321044922)(1857=367937.46948242
19)(1859=125000.0)(1860=177516.08276367188)(1865=174097.56469726562)(
1866=174971.77124023438)(1867=252070.70922851562)(1868=169154.19006
347656)(1870=180134.8419189453)(1871=185972.59521484375)(1874=159499
.98474121094)(1902=179636.85607910156)(1903=175436.4776611328)(1911=
168919.70825195312)(1913=219992.00439453125)(1917=261977.7526855468
8)(1919=179433.97521972656)(1920=208596.49658203125)(1922=215852.020
26367188)(1923=210757.8887939453)(1924=187602.783203125)(1925=323708
.80126953125)(1926=174469.39086914062)(1927=210828.125)(1928=195181.8
2373046875)(1929=219936.14196777344)(1931=194363.78479003906)(1933=2
05708.02307128906)(1936=228643.6767578125)(1938=187184.2041015625)(1
939=182863.00659179688)(1940=171630.0048828125)(1941=327201.2023925
781)(1942=162218.24645996094)(1943=199446.42639160156)(2002=149085.3
729248047)(2003=185962.6922607422)(2004=195583.06884765625)(2011=201
081.08520507812)(2012=155962.43286132812)(2014=179606.06384277344)(2
015=173615.38696289062)(2017=191229.1717529297)(2018=165937.4847412
1094)(2019=205916.6717529297)(2020=157289.77966308594)(2021=233241.0
888671875)(2022=168114.73083496094)(2023=167659.08813476562)(2024=20
1621.6278076172)(2025=165290.8935546875)(2027=219097.56469726562)(20
28=156596.6339111328)(2030=171977.4169921875)(5001=190198.944091796
88)(5004=190608.99353027344)(5005=171364.8681640625)(5011=197532.470
703125)(5012=240039.9932861328)(5013=192923.72131347656)(5014=165727
.26440429688)(5015=186812.3016357422)(5016=206279.99877929688)(5017=
161887.80212402344)(5018=213888.88549804688)(5019=267302.3071289062
5)(5020=270878.7841796875)(5021=186577.0263671875)(5022=198372.54333
496094)(5023=189507.17163085938)(5024=179063.14086914062)(5025=22771
4.2791748047)(5026=215987.5030517578)(5027=192021.33178710938)(5028=
186325.71411132812)(5029=186058.5479736328)(5030=158109.77172851562)

(5031=164741.1346435547)(5032=204470.00122070312)(5033=190447.37243652344)(5034=179016.5252685547)(5035=175837.24975585938)(5036=258840.91186523438)(5037=174420.68481445312)(5038=205257.43103027344)(5039=145325.57678222656)(5040=170405.41076660156)(5041=223544.44885253906)(5042=196523.8037109375)(5043=176041.6717529297)(5044=290733.33740234375)(5045=193348.48022460938)(5046=206111.1297607422)(5047=205500.0)(5048=172037.0330810547)(5049=223250.0)(5050=170444.44274902344)(5051=150725.23498535156)(5052=446666.6564941406)(5053=184337.7685546875)(5054=180969.71130371094)

recode
barnevern_exp(101=81615476.5625)(104=92166960.9375)(105=141107562.5)(106=243664375.0)(111=35169371.09375)(118=3809432.861328125)(119=16235897.4609375)(121=902689.0869140625)(122=23031005.859375)(123=21486283.203125)(124=56350593.75)(125=58031375.0)(127=18139980.46875)(128=32195759.765625)(135=28329865.234375)(136=40105996.09375)(137=11959802.734375)(138=18151525.390625)(211=19023265.625)(213=83259804.6875)(214=39897488.28125)(215=39499972.65625)(216=53838445.3125)(217=73547476.5625)(219=243253031.25)(220=151204500.0)(221=52316773.4375)(226=39306289.0625)(227=22937847.65625)(228=31828164.0625)(229=24728486.328125)(230=79643460.9375)(231=146201468.75)(233=48554843.75)(234=13007534.1796875)(235=86804195.3125)(236=70783539.0625)(237=61690140.625)(238=40670429.6875)(239=13522453.125)(301=1756461750.0)(402=57765156.25)(403=81252757.8125)(412=97141351.5625)(415=26683435.546875)(417=44420250.0)(418=11843210.9375)(419=34369402.34375)(420=18084746.09375)(423=25872503.90625)(425=78755914.0625)(426=16426253.90625)(427=54726953.125)(428=15439002.9296875)(429=20786976.5625)(430=13114240.234375)(432=3859936.767578125)(434=6647385.7421875)(436=2706330.078125)(437=9210006.8359375)(438=2570305.17578125)(439=1591299.8046875)(441=12057358.3984375)(501=112657898.4375)(502=207931843.75)(511=7801916.50390625)(512=6354601.5625)(513=4176219.23828125)(514=2431568.84765625)(515=5078130.37109375)(516=7265931.640625)(517=14763047.8515625)(519=6506455.56640625)(520=9230737.3046875)(521=16495228.515625)(522=16143433.59375)(528=52595582.03125)(529=63197554.6875)(532=14945792.96875)(533=22675550.78125)(534=27618148.4375)(536=24509625.0)(538=49630738.28125)(540=7139321.77734375)(541=3366293.9453125)(542=19632455.078125)(543=5963224.609375)(544=7906077.63671875)(545=8934942.3828125)(602=197079500.0)(604=50246445.3125)(605=95890695.3125)(612=13901205.078125)(615=3542873.046875)(616=11715075.1953125)(617=11693828.125)(618=7934322.75390625)(619=62506054.6875)(620=17712787.109375)(621=6906865.72265625)(622=2959455.322265625)(623=43482187.5)(624=50401878.90625)(625=77264179.6875)(626=63270445.3125)(627=39794972.65625)(628=27934675.78125)(631=4936521.484375)(632=4134232.421875)(633=16538335.9375)(701=90580968.75)(704=135380421.875)(710=136602812.5)(711=18582601.5625)(712=154930875.0)(713=19440414.0625)(715=40437679.6875)(716=21536929.6875)(729=76623742.1875)(805=119414492.1875)(806=151522390.625)(807=55041089.84375)(811=4742893.06640625)(814=52818062.5)(815=52683859.375)(817=15820232.421875)(819=22483417.96875)(821=16241475.5859375)(822=28763789.0625)(826=21232138.671875)(827=1344420.2880859375)(828=11435274.4140625)(829=5624784.1796875)(830=2892118.408203125)(831=4382706.0546875)(833=3770406.494140625)(834=7847201.66015625)(901=33686343.75)(904=53610117.1875)(906=126148898.4375)(911=6781572.75390625)(912=4571189.94140625)(914=13633698.2421875)(919=11134546.875)(926=30719316.40625)(928=9886883.7890625)(929=7622361.328125)(935=1038051.3916015625)(937=8064391.11328125)(938=2806087.646484375)(940=9657721.6796875)(941=2394672.119140625)(1001=209716109.375)(1002=65358644.53125)(1003

=12552058.59375)(1004=15175041.9921875)(1014=40002164.0625)(1017=108
76272.4609375)(1018=22297634.765625)(1021=7834198.73046875)(1026=164
1184.08203125)(1027=2255875.244140625)(1029=25230027.34375)(1032=170
93095.703125)(1034=2568594.970703125)(1037=10808705.078125)(1046=461
4199.70703125)(1101=46994820.3125)(1102=121280179.6875)(1103=3514046
25.0)(1106=79636289.0625)(1111=6785997.0703125)(1112=11401388.671875)
(1114=3634099.365234375)(1119=30817021.484375)(1120=29708556.640625)(
1121=36103132.8125)(1122=24284468.75)(1124=40895117.1875)(1127=46716
769.53125)(1129=5230033.69140625)(1130=34663093.75)(1133=8626752.9296
875)(1134=9409580.078125)(1135=27516324.21875)(1141=8720835.9375)(114
2=5965537.109375)(1144=1928518.4326171875)(1145=1458420.166015625)(1
146=26255076.171875)(1149=97979445.3125)(1151=0.0)(1160=30599394.5312
5)(1201=753963937.5)(1211=6325661.62109375)(1216=9582859.375)(1219=32
497935.546875)(1221=43956261.71875)(1222=3176678.7109375)(1223=76787
46.58203125)(1224=29389302.734375)(1227=2296584.47265625)(1228=28254
333.984375)(1231=4061376.46484375)(1232=919893.4326171875)(1233=1247
023.193359375)(1234=2317100.830078125)(1235=57028187.5)(1238=1961179
6.875)(1241=9045850.5859375)(1242=6252530.2734375)(1243=34853496.0937
5)(1244=6918073.73046875)(1245=14695918.9453125)(1246=69166453.125)(1
247=74124335.9375)(1251=9489466.796875)(1252=209339.9200439453)(1253
=17305904.296875)(1256=13980862.3046875)(1259=11040949.21875)(1260=1
1689064.453125)(1263=55844558.59375)(1264=13262067.3828125)(1265=238
225.61645507812)(1266=2073996.58203125)(1401=31257486.328125)(1411=4
989267.08984375)(1412=862146.4233398438)(1413=1964486.572265625)(141
6=5142696.2890625)(1417=14850976.5625)(1418=3058909.912109375)(1419=
3977869.140625)(1420=21912056.640625)(1421=5336478.02734375)(1422=61
24790.52734375)(1424=11935327.1484375)(1426=11272802.734375)(1428=66
31691.40625)(1429=9931280.2734375)(1430=7307009.765625)(1431=5172430.
6640625)(1432=28643376.953125)(1433=8511881.8359375)(1438=13915975.5
859375)(1439=17026556.640625)(1441=4298893.5546875)(1443=16676486.32
8125)(1444=594246.1547851562)(1445=11915562.5)(1449=9225658.203125)(1
502=43475390.625)(1504=121765117.1875)(1505=82699875.0)(1511=8671263.
671875)(1514=3512224.609375)(1515=14681587.890625)(1516=15719044.921
875)(1517=14595382.8125)(1519=24036755.859375)(1520=30024988.28125)(1
523=3664466.064453125)(1524=2827237.79296875)(1525=6056426.7578125)(
1526=1093024.2919921875)(1528=10829626.953125)(1529=17211207.03125)(
1531=23356857.421875)(1532=13831049.8046875)(1534=12375130.859375)(1
535=22634335.9375)(1539=11667579.1015625)(1543=3918625.244140625)(15
45=3858426.26953125)(1546=1442718.994140625)(1547=6896302.734375)(15
48=22486451.171875)(1551=8602087.890625)(1554=14031601.5625)(1557=59
64817.3828125)(1560=7989579.58984375)(1563=26352667.96875)(1566=2284
7183.59375)(1567=5227370.1171875)(1571=3779566.650390625)(1573=43878
55.95703125)(1576=10756928.7109375)(1804=131865781.25)(1805=45976484.
375)(1811=2313211.9140625)(1812=5411718.75)(1813=36425113.28125)(1815
=5586773.4375)(1816=828302.4291992188)(1818=2981162.109375)(1820=341
38742.1875)(1822=48219957.03125)(1824=38410855.46875)(1825=3280468.01
7578125)(1826=1526968.994140625)(1827=5172368.1640625)(1828=8889532.
2265625)(1832=19280072.265625)(1833=63596878.90625)(1834=4212786.132
8125)(1835=487319.1223144531)(1836=1169634.8876953125)(1837=18200818
.359375)(1838=5951609.86328125)(1839=1577854.736328125)(1840=1184589
1.6015625)(1841=26467492.1875)(1845=3906080.322265625)(1848=18129136.
71875)(1849=24896310.546875)(1850=18814470.703125)(1851=2649605.2246
09375)(1852=5273991.69921875)(1853=14825216.796875)(1854=5907501.464
84375)(1856=1311323.2421875)(1857=1443891.2353515625)(1859=8040523.9
2578125)(1860=40500031.25)(1865=31585367.1875)(1866=15618929.6875)(18
67=8307215.8203125)(1868=9000169.921875)(1870=17988701.171875)(1871=

10718520.5078125)(1874=1414817.7490234375)(1902=170122500.0)(1903=65744671.875)(1911=11738016.6015625)(1913=10023635.7421875)(1917=30460646.484375)(1919=18199941.40625)(1920=7157772.4609375)(1922=9218609.375)(1923=27793494.140625)(1924=20816351.5625)(1925=7782567.3828125)(1926=1999264.7705078125)(1927=3035364.74609375)(1928=2707887.939453125)(1929=4879378.90625)(1931=31304617.1875)(1933=16194875.9765625)(1936=10461154.296875)(1938=7953568.84765625)(1939=5299019.04296875)(1940=4291546.875)(1941=12774067.3828125)(1942=17283123.046875)(1943=3138357.666015625)(2002=8240792.96875)(2003=24541435.546875)(2004=35394078.125)(2011=10749764.6484375)(2012=70379445.3125)(2014=3105140.625)(2015=6354572.75390625)(2017=4342134.765625)(2018=3212685.05859375)(2019=9691876.953125)(2020=14814458.0078125)(2021=6753291.50390625)(2022=4121338.8671875)(2023=10489235.3515625)(2024=8786302.734375)(2025=6484681.640625)(2027=12025134.765625)(2028=8209935.546875)(2030=27788244.140625)(5001=629141875.0)(5004=67416968.75)(5005=34854578.125)(5011=9870146.484375)(5012=2222643.5546875)(5013=10363835.9375)(5014=12773394.53125)(5015=17527554.6875)(5016=1279376.3427734375)(5017=12810946.2890625)(5018=6246399.4140625)(5019=2429918.9453125)(5020=1768994.7509765625)(5021=16708664.0625)(5022=3981630.859375)(5023=11796108.3984375)(5024=28908113.28125)(5025=17214416.015625)(5026=3400329.833984375)(5027=21680851.5625)(5028=35567226.5625)(5029=7187333.49609375)(5030=7433878.90625)(5031=23784691.40625)(5032=4447636.23046875)(5033=2792552.490234375)(5034=4188536.62109375)(5035=56619773.4375)(5036=6617675.29296875)(5037=64797468.75)(5038=36402324.21875)(5039=5739656.73828125)(5040=2355417.96875)(5041=5263931.15234375)(5042=2208033.203125)(5043=2947466.552734375)(5044=3025458.740234375)(5045=9917297.8515625)(5046=1843032.470703125)(5047=10897979.4921875)(5048=2939176.26953125)(5049=747754.5166015625)(5050=11047038.0859375)(5051=10220129.8828125)(5052=810895.1416015625)(5053=21165390.625)(5054=19697740.234375)

recode
social_exp(101=41637.24136352539)(104=48868.39294433594)(105=48418.87664794922)(106=59988.6360168457)(111=141814.2852783203)(118=39492.53845214844)(119=60071.998596191406)(121=174300.0030517578)(122=66702.01873779297)(123=63976.097106933594)(124=47632.06481933594)(125=54100.17776489258)(127=57617.835998535156)(128=71563.21716308594)(135=42617.93899536133)(136=74437.20245361328)(137=50280.78842163086)(138=22304.832458496094)(211=42294.47937011719)(213=64034.11102294922)(214=42444.44274902344)(215=47954.620361328125)(216=55570.86944580078)(217=68540.57312011719)(219=65553.32946777344)(220=62648.0598449707)(221=44560.81008911133)(226=49711.27700805664)(227=37646.34323120117)(228=62690.66619873047)(229=42597.24807739258)(230=66848.64044189453)(231=49897.89581298828)(233=73176.33056640625)(234=57204.87976074219)(235=44227.935791015625)(236=31329.723358154297)(237=42190.91033935547)(238=48334.999084472656)(239=42181.819915771484)(301=71362.82348632812)(402=73529.34265136719)(403=75884.89532470703)(412=49196.746826171875)(415=64101.69219970703)(417=70621.9482421875)(418=66137.93182373047)(419=51605.09490966797)(420=56222.572326660156)(423=43254.310607910156)(425=56224.68185424805)(426=81862.59460449219)(427=53087.242126464844)(428=53279.998779296875)(429=44391.05987548828)(430=80456.13861083984)(432=65898.30780029297)(434=80580.64270019531)(436=108029.85382080078)(437=117387.66479492188)(438=115328.57513427734)(439=97639.99938964844)(441=81592.10205078125)(501=85647.05657958984)(502=70277.96173095703)(511=131806.12182617188)(512=99677.96325683594)(513=136290.3289794922)(514=113064.93377685547)(515=103989.6926879

8828)(516=92676.19323730469)(517=75342.20886230469)(519=101965.51513
671875)(520=66653.59497070312)(521=78755.7601928711)(522=82029.24346
923828)(528=63911.88430786133)(529=82730.94940185547)(532=52158.4510
80322266)(533=68156.62384033203)(534=60586.20834350586)(536=88110.58
044433594)(538=88223.10638427734)(540=45868.85070800781)(541=118785.
71319580078)(542=58021.278381347656)(543=91785.71319580078)(544=5352
3.36502075195)(545=81421.68426513672)(602=48933.46405029297)(604=509
08.92791748047)(605=50660.20202636719)(612=35449.440002441406)(615=2
21218.75)(616=48669.5671081543)(617=70063.95721435547)(618=45754.3869
0185547)(619=97785.18676757812)(620=46956.790924072266)(621=85561.90
490722656)(622=43708.736419677734)(623=52302.738189697266)(624=52778
.053283691406)(625=48603.61099243164)(626=58977.210998535156)(627=47
627.85339355469)(628=74812.66021728516)(631=94350.87585449219)(632=7
8101.69219970703)(633=59168.67446899414)(701=51511.932373046875)(704
=88438.78936767578)(710=45856.25076293945)(711=61431.89239501953)(71
2=59200.84762573242)(713=43952.735900878906)(715=47922.813415527344)
(716=69136.74926757812)(729=55325.7942199707)(805=72416.93115234375)(
806=46537.91046142578)(807=63678.504943847656)(811=85650.0015258789)
(814=76181.81610107422)(815=68672.51586914062)(817=77213.90533447266
)(819=74238.53302001953)(821=120258.1787109375)(822=128136.154174804
69)(826=120642.24243164062)(827=156098.03771972656)(828=120085.71624
75586)(829=82637.49694824219)(830=160020.00427246094)(831=117474.578
85742188)(833=155418.18237304688)(834=171453.70483398438)(901=77685.
79864501953)(904=91030.48706054688)(906=69752.12097167969)(911=13289
9.15466308594)(912=143952.37731933594)(914=58692.30651855469)(919=96
257.02667236328)(926=70602.9052734375)(928=109086.02142333984)(929=7
9242.10357666016)(935=116305.08422851562)(937=95358.48999023438)(938
=139694.44274902344)(940=123583.33587646484)(941=162421.05102539062)
(1001=86056.01501464844)(1002=104188.78173828125)(1003=61456.9206237
793)(1004=118683.86840820312)(1014=111619.37713623047)(1017=79736.19
842529297)(1018=69824.03564453125)(1021=147787.87231445312)(1026=937
56.75964355469)(1027=177000.0)(1029=82931.21337890625)(1032=71059.318
54248047)(1034=96583.33587646484)(1037=125513.76342773438)(1046=1476
89.6514892578)(1101=62551.33056640625)(1102=67778.85437011719)(1103=
65958.50372314453)(1106=60918.365478515625)(1111=29409.448623657227)
(1112=46801.88751220703)(1114=41886.5966796875)(1119=59833.568572998
05)(1120=67597.08404541016)(1121=57462.59689331055)(1122=81321.73919
677734)(1124=40395.851135253906)(1127=77038.36822509766)(1129=142428
.57360839844)(1130=95181.81610107422)(1133=102354.16412353516)(1134=
142810.80627441406)(1135=135140.7470703125)(1141=76851.24206542969)(
1142=155490.57006835938)(1144=59250.0)(1145=8916.666984558105)(1146=
79824.51629638672)(1149=50438.81607055664)(1151=140600.00610351562)(
1160=53804.09240722656)(1201=74223.06060791016)(1211=73079.71191406
25)(1216=72940.29998779297)(1219=70787.7426147461)(1221=73979.408264
16016)(1222=59258.33511352539)(1223=86570.0912475586)(1224=114070.79
315185547)(1227=116565.21606445312)(1228=150224.30419921875)(1231=17
4704.7576904297)(1232=33620.689392089844)(1233=53352.93960571289)(12
34=43105.262756347656)(1235=78654.01458740234)(1238=107966.94183349
61)(1241=103232.75756835938)(1242=57939.39208984375)(1243=38381.4811
706543)(1244=55582.279205322266)(1245=43061.920166015625)(1246=91687
.93487548828)(1247=67021.91162109375)(1251=74887.70294189453)(1252=9
2521.73614501953)(1253=33354.35485839844)(1256=73604.89654541016)(12
59=50404.95681762695)(1260=64535.71319580078)(1263=58862.8158569335
94)(1264=63390.24353027344)(1265=42541.66793823242)(1266=117282.0510
8642578)(1401=130151.77917480469)(1411=57521.12579345703)(1412=11773
6.8392944336)(1413=129300.00305175781)(1416=105402.98461914062)(1417

=115474.35760498047)(1418=123795.9213256836)(1419=143351.8524169922)
(1420=111903.51104736328)(1421=114000.0)(1422=246981.1248779297)(1424
=92766.91436767578)(1426=145685.94360351562)(1428=89000.0)(1429=9421
9.77996826172)(1430=135342.46826171875)(1431=117942.03186035156)(143
2=75233.93249511719)(1433=122881.57653808594)(1438=57149.2538452148
44)(1439=62643.24188232422)(1441=104055.55725097656)(1443=72132.5988
7695312)(1444=97153.84674072266)(1445=83531.64672851562)(1449=56633.
18634033203)(1502=147530.99060058594)(1504=60061.88201904297)(1505=5
7379.981994628906)(1511=158383.56018066406)(1514=34627.11715698242)(
1515=42417.52624511719)(1516=45687.66403198242)(1517=55875.59890747
07)(1519=97121.62017822266)(1520=68343.33038330078)(1523=84919.54040
527344)(1524=35045.45593261719)(1525=13797.297477722168)(1526=32727.
272033691406)(1528=58436.824798583984)(1529=96042.68646240234)(1531=
62699.29885864258)(1532=41715.301513671875)(1534=47557.212829589844)
(1535=87645.73669433594)(1539=112900.47454833984)(1543=81478.2638549
8047)(1545=56365.07797241211)(1546=68250.0)(1547=292362.2131347656)(1
548=89845.3369140625)(1551=49591.66717529297)(1554=54913.6352539062
5)(1557=61615.38314819336)(1560=93393.93615722656)(1563=134971.63391
11328)(1566=112387.28332519531)(1567=93169.81506347656)(1571=115677.
96325683594)(1573=129228.57666015625)(1576=119826.44653320312)(1804=
91483.77227783203)(1805=60703.704833984375)(1811=149729.736328125)(1
812=107966.10260009766)(1813=76975.69274902344)(1815=85760.00213623
047)(1816=122896.55303955078)(1818=120440.00244140625)(1820=132138.1
8359375)(1822=128849.45678710938)(1824=138700.79040527344)(1825=1990
62.5)(1826=104672.41668701172)(1827=130863.63220214844)(1828=220197.7
996826172)(1832=110823.94409179688)(1833=91414.07012939453)(1834=808
71.79565429688)(1835=12312.5)(1836=55375.0)(1837=83324.32556152344)(1
838=132418.91479492188)(1839=160205.8868408203)(1840=117762.9623413
086)(1841=84777.77862548828)(1845=111960.78491210938)(1848=112840.33
966064453)(1849=168128.57055664062)(1850=38956.520080566406)(1851=20
5854.1717529297)(1852=24810.810089111328)(1853=190241.92810058594)(1
854=116902.43530273438)(1856=70785.71319580078)(1857=19065.21797180
1758)(1859=116384.61303710938)(1860=64727.272033691406)(1865=90428.9
3981933594)(1866=100825.6607055664)(1867=141096.77124023438)(1868=55
017.77648925781)(1870=148100.57067871094)(1871=102277.22930908203)(1
874=80890.90728759766)(1902=73236.13739013672)(1903=67870.254516601
56)(1911=93403.51104736328)(1913=54590.90805053711)(1917=56177.77633
666992)(1919=77224.9984741211)(1920=212565.21606445312)(1922=98743.5
9130859375)(1923=71132.65228271484)(1924=65647.39990234375)(1925=662
69.84405517578)(1926=171717.9412841797)(1927=130123.07739257812)(192
8=100982.75756835938)(1929=234083.3282470703)(1931=118838.409423828
12)(1933=92194.03076171875)(1936=36577.32009887695)(1938=102349.3957
5195312)(1939=390516.1437988281)(1940=163822.5860595703)(1941=100801
.9790649414)(1942=135609.375)(1943=92400.0015258789)(2002=26854.74777
2216797)(2003=83165.24505615234)(2004=102860.75592041016)(2011=21368
.42155456543)(2012=55735.107421875)(2014=70327.58331298828)(2015=527
96.61178588867)(2017=37117.645263671875)(2018=32343.284606933594)(20
19=55223.46496582031)(2020=63801.170349121094)(2021=40386.665344238
28)(2022=76125.0)(2023=34658.53500366211)(2024=61459.014892578125)(20
25=84721.85516357422)(2027=155788.46740722656)(2028=59424.419403076
17)(2030=69169.66247558594)(5001=78538.00201416016)(5004=82932.92236
328125)(5005=64071.58660888672)(5011=99880.7373046875)(5012=140347.8
240966797)(5013=82305.25970458984)(5014=42977.37503051758)(5015=7320
9.30480957031)(5016=47739.131927490234)(5017=52079.471588134766)(501
8=93106.38427734375)(5019=92615.38696289062)(5020=141645.1568603515
6)(5021=116199.02801513672)(5022=99181.81610107422)(5023=79597.12219

238281)(5024=79187.01171875)(5025=101597.40447998047)(5026=152018.1884765625)(5027=66135.1318359375)(5028=81285.71319580078)(5029=74343.34564208984)(5030=60364.864349365234)(5031=72522.67456054688)(5032=97379.63104248047)(5033=136458.3282470703)(5034=69847.45788574219)(5035=64016.83807373047)(5036=89792.79327392578)(5037=55197.200775146484)(5038=72702.31628417969)(5039=87395.1644897461)(5040=71854.54559326172)(5041=130539.68811035156)(5042=209937.5)(5043=538142.8833007812)(5044=191161.28540039062)(5045=86519.9966430664)(5046=161315.7958984375)(5047=83292.03796386719)(5048=123611.11450195312)(5049=136656.25)(5050=74474.9984741211)(5051=238243.0877685547)(5052=304714.29443359375)(5053=139435.1806640625)(5054=67591.71295166016)

```
summarize helseutgifter
summarize helsestasjon_exp
summarize elderly_home_exp
summarize elderly_inst_exp
summarize education_exp
summarize childcare_exp
summarize barnevern_exp
summarize social_exp



generate helsetjeneste = 0
generate helsestasjon = 0
generate elderly_home = 0
generate elderly_inst = 0
generate education = 0
generate childcare = 0
generate barnevern = 0
generate socialservices = 0

replace helsetjeneste = (forholdstall_helse*agegroupshareoftotal*helseutgifter)/agegrouptotalpeople
replace helsestasjon = (forholdstall_helsestasjon*agegroupshareoftotal_helsestasjon*helsestasjon_exp)/agegrouptotalpeople_helsestasjon
replace elderly_home = (forholdstall_elderly_home*agegroupshareoftotal_elderly*elderly_home_exp)/agegrouptotalpeople_elderly
replace elderly_inst = (forholdstall_elderly_inst*agegroupshareoftotal_elderly*elderly_inst_exp)/agegrouptotalpeople_elderly
replace barnevern = (forholdstall_barnevern*agegroupshareoftotal*barnevern_exp)/agegrouptotalpeople
replace education = education_exp*age615
replace childcare = childcare_exp*age15
replace socialservices = social_exp*socialservicerecipients

// Here we summarize the in-kind transfers in each service sector

summarize helsetjeneste
summarize helsestasjon
```

```
summarize elderly_home
summarize elderly_inst
summarize education
summarize childcare
summarize barnevern
summarize socialservices

// generate variable consisting of all in-kind transfers on person level

generate inkindtransfers_person = helsetjeneste + helsestasjon + elderly_home +
elderly_inst + education + childcare + barnevern + socialservices
summarize inkindtransfers_person, gini

clone-dataset allocation_inkind inkind_person
use inkind_person
drop regstat sampled age06 age715 age1620 age2130 age3150 age5165
age6680 age81 age15 age615 age05 age619 age065 alderkategori
forholdstall_helse forholdstall_helsestasjon forholdstall_elderly_inst
forholdstall_elderly_home age065_share age05_share age619_share age065_s
age05_s age619_s agegroupshareoftotal forholdstall_barnevern
agegroupshareoftotal_elderly agegroupshareoftotal_helsestasjon
agegrouptotalpeople agegrouptotalpeople_elderly
agegrouptotalpeople_helsestasjon helseutgifter helsestasjon_exp
elderly_home_exp elderly_inst_exp education_exp childcare_exp barnevern_exp
social_exp


// Here we collapse the in-kind transfers to household level

use allocation_inkind
collapse (sum) helsetjeneste helsestasjon elderly_home elderly_inst education
childcare barnevern socialservices, by(househnr)

summarize helsetjeneste helsestasjon elderly_home elderly_inst education
childcare barnevern socialservices

merge helsetjeneste helsestasjon elderly_home elderly_inst education childcare
barnevern socialservices into consumption18 on househnr

use consumption18

summarize helsetjeneste helsestasjon elderly_home elderly_inst education
childcare barnevern socialservices

generate inkindtransfers = helsetjeneste + helsestasjon + elderly_home +
elderly_inst + education + childcare + barnevern + socialservices
histogram inkindtransfers

// Here we generate extended consumption

generate extendedconsumption = consumption + inkindtransfers

summarize consumption, gini
summarize extendedconsumption, gini
summarize inkindtransfers, gini
```

```
histogram inkindtransfers, freq
histogram extendedconsumption, freq
histogram consumption, freq

summarize EUscale



// Here we impose the EU equivalence scale to both consumption and extended
consumption

generate consumption_EU = consumption/EUscale
generate extendedcons_EU = extendedconsumption/EUscale


summarize consumption_EU, gini
summarize extendedcons_EU, gini

// Beneath we create target groups needed to construct the NA-scale

//// TARGETS (based on 5th percentile spending for services)
//Not socialrecipients

use inkind_person

generate reference_inkind = 9.248021
generate target_inkind = age
generate target_inkindsocial = age
recode target_inkind
(0=14.83592)(1/5=168.7629)(6=144.7321)(7/15=145.4077)(16/20=15.25422)(21/
30=8.920792)(31/50=9.248021)(51/65=9.672082)(66/80=28.31492)(81/120=156.
2381)
summarize target_inkind
recode target_inkindsocial
(18/20=53.6357)(21/30=47.30227)(31/50=47.6295)(51/65=48.05356)(66/67=66.6
964)

replace target_inkind = target_inkindsocial if socialservicerecipients == 1
drop target_inkindsocial
generate noncashscale = target_inkind/reference_inkind
summarize target_inkind noncashscale

collapse (sum) noncashscale target_inkind, by(househnr)
merge noncashscale target_inkind into consumption18 on househnr

use consumption18
clone-dataset consumption18 cons_reference

use cons_reference
drop if target_inkind != 9.248021
summarize consumption
delete-dataset cons_reference
```

```
/// Use 25th percentile for the reference group as a measure of minimum required
consumption (see table)
use consumption18
generate theta = 224965.61/(224965.61+(7.414736270904541*1000))
generate NAscale = theta*EUscale + (1-theta)*noncashscale
summarize theta NAscale EUscale
generate consumption_NA = consumption/NAscale
generate extconsumption_NA = extendedconsumption/NAscale

summarize consumption extendedconsumption consumption_EU
extendedcons_EU consumption_NA extconsumption_NA, gini
rename extendedcons_EU extconsumption_EU

// generate percentiles

generate percentiles_cons = quantile(consumption, 100)
generate percentiles_extcons = quantile(extendedconsumption, 100)
generate percentiles_EUcons = quantile(consumption_EU, 100)
generate percentiles_EUextcons = quantile(extconsumption_EU, 100)
generate percentiles_NAextcons = quantile(extconsumption_NA, 100)

clone-dataset consumption18 percentilesdataset_cons
clone-dataset consumption18 percentilesdataset_extcons
clone-dataset consumption18 percentilesdataset_EUcons
clone-dataset consumption18 percentilesdataset_EUextcons
clone-dataset consumption18 percentilesdataset_NAextcons

use percentilesdataset_cons
collapse (min) consumption , by(percentiles_cons)
rename consumption perc_cons
merge perc_cons into consumption18 on percentiles_cons
delete-dataset percentilesdataset_cons

use percentilesdataset_extcons
collapse (min) extendedconsumption , by(percentiles_cons)
rename extendedconsumption perc_extcons
merge perc_extcons into consumption18 on percentiles_extcons
delete-dataset percentilesdataset_extcons

use percentilesdataset_EUcons
collapse (min) consumption_EU, by(percentiles_cons)
rename consumption_EU perc_EUcons
merge perc_EUcons into consumption18 on percentiles_EUcons
delete-dataset percentilesdataset_EUcons

use percentilesdataset_EUextcons
collapse (min) extconsumption_EU, by(percentiles_cons)
rename extconsumption_EU perc_EUextcons
merge perc_EUextcons into consumption18 on percentiles_EUextcons
delete-dataset percentilesdataset_EUextcons

use percentilesdataset_NAextcons
collapse (min) extconsumption_NA, by(percentiles_cons)
rename extconsumption_NA perc_NAextcons
merge perc_NAextcons into consumption18 on percentiles_NAextcons
```

```
delete-dataset percentilesdataset_NAextcons


// Beneath we generate percentile variables for the different consumption
measures

use consumption18
tabulate perc_cons if percentiles_cons == 90
generate p90cons = perc_cons if percentiles_cons == 90
generate p50cons = perc_cons if percentiles_cons == 50
generate p10cons = perc_cons if percentiles_cons == 10

generate p90extcons = perc_extcons if percentiles_extcons == 90
generate p50extcons = perc_extcons if percentiles_extcons == 50
generate p10extcons = perc_extcons if percentiles_extcons == 10

generate p90EUcons = perc_EUcons if percentiles_EUcons == 90
generate p50EUcons = perc_EUcons if percentiles_EUcons == 50
generate p10EUcons = perc_EUcons if percentiles_EUcons == 10

generate p90EUextcons = perc_EUextcons if percentiles_EUextcons == 90
generate p50EUextcons = perc_EUextcons if percentiles_EUextcons == 50
generate p10EUextcons = perc_EUextcons if percentiles_EUextcons == 10

generate p90NAextcons = perc_NAextcons if percentiles_NAextcons == 90
generate p50NAextcons = perc_NAextcons if percentiles_NAextcons == 50
generate p10NAextcons = perc_NAextcons if percentiles_NAextcons == 10


summarize p90cons p50cons p10cons p90extcons p50extcons p10extcons
p90EUcons p50EUcons p10EUcons p90EUextcons p50EUextcons
p10EUextcons p90NAextcons p50NAextcons p10NAextcons

// Investigate consumption for two groups, one above median inkind and one
below

summarize inkindtransfers
//Check median
clone-dataset consumption18 lowinkind
drop if inkindtransfers < 52431.6155
summarize consumption extendedconsumption consumption_EU
extconsumption_EU consumption_NA extconsumption_NA EUscale
use lowinkind
drop if inkindtransfers > 52431.6155
summarize consumption extendedconsumption consumption_EU
extconsumption_EU consumption_NA extconsumption_NA EUscale


///// END OF SCRIPT /////
```