# Local Government Dataset[*]

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## Abstract

This panel data set covers Norwegian local governments from 1972 to 2016 and was originally constructed for an analysis of the strategic use of public capital (Fiva and Natvik, 2013). A first version of the data set was released in April 2012. The second version, released in December 2015, updates the time series and includes new variables. This third version corrects errors in the election statistics and updates the time series. The fiscal policy variables are constructed from account data provided by the Norwegian Social Science Data Service (NSD). The data set includes detailed information on eight different public spending programs/sectors, local tax policy, elections, and demographics. In this note we give a detailed description of each variable included in the data set.

**When using the data, please cite as follows:**

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# 1 Introduction

This panel data set was originally constructed for an analysis of the strategic use of public capital (Fiva and Natvik, 2013). It has later been applied in studies of, for example, voter turnout (Finseraas and Vernby, 2014), the resource curse (Borge et al., 2015), electoral reform (Fiva and Folke, 2016), government outsourcing (Geys and Sørensen, 2016), public infrastructure maintenance (Hopland, 2016), the power of parties (Fiva et al., 2017), and politician remuneration (Geys et al., 2017).

Many of the variables included in the data set stem from *Kommunedatabasen (NSD)* and *Statistikkbanken (SSB)*. Researchers working with Norwegian local governments are likely to find the following web pages useful:

*Kommunedatabasen (NSD)*: `https://trygg.nsd.uib.no/kdbbin/kdb_start.exe`

*Statistikkbanken (SSB)*: `https://www.ssb.no/statistikkbanken`

# 2 Local Government Structure

The municipalities are the core units in our data set. During the period 1972-2015, the number of Norwegian municipalities varied between 428 and 454. Some municipalities have merged with others or split up, and the new units have then received new official municipality identifying numbers.[1] In addition, municipalities have sometimes given away some of their area to other municipalities (Eri, 2004). They then continue to exist with the same identifying number, but in practice their structure might have changed significantly.

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[1] There are three exceptions: Narvik continued to have the same identifer (1805) after it merged with Ankenes in 1974 and Bodø kept the number 1804 after having merged with Skjerstad in 2005. When muncipalities Våle and Ramnes merged into Re municipality in 2002, the number 716 was transferred from Våle to the new municipality.

# Details

- year: Year identifier.

- knr: Municipality identifier. Analogous to European Statistical Office NUTS 5 level. These follow the municipality structure given for each year.

- kname: Municipality name: The name of the municipality in the given year.

- cnr: County identifier. Analogous to European Statistical Office NUTS 3 level.

- CountyAdm: A dummy equal to 1 if the county administration is located in the municipality.

- Region: A labor market region identifier. The labor market regions were established in 2000 by Statistics Norway[2] on the basis of information on commuting flows. Analogous to European Statistical Office NUTS4 level.[3]

- Latitude: The latitude of the municipality administration centre in 2014 (from Lind (2014)). This variable is missing for municipalities involved in mergers in the 1972-2015 period.

- Longitude: The longitude of the municipality administration centre in 2014 (from Lind (2014)). This variable is missing for municipalities involved in mergers in the 1972-2015 period.

- yelection: Years since last election. This variable takes the value 1 the first year after the local election (e.g. 1972), 2 the next year, 3 the third and 4 the fourth year.

- electionperiod: Election period identifier. This variable takes the value 1 for the years 1972-1975, 2 for the years 1976-1979 and so forth.

- borderchange: A dummy variable which takes the value one if the municipality's borders change this year or the next year[4] *and* the transferred area amounts to at least one percent of the area in the municipality which loses area. Otherwise, it is zero.

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[2]See `http://www.ssb.no/emner/00/00/nos_c616/nos_c616.pdf` for more information on the classification. The region identifiers can be downloaded by selecting "Correspondance tables" at `http://www3.ssb.no/stabas/ItemsFrames.asp?ID=1367327&Language=en&VersionLevel=classversion&MenuChoice=Language`.

[3]We employ the same regional structure for the whole period. All municipality mergers and border changes are within these regional borders, with the exeption of Ølen kommune, which in 2002 changed county affiliation and therefore also region affiliation (from 46 to 43). In 2006, Ølen merged with Vindafjord, another municipality in region 43.

[4]We set the dummy=1 for two and not just one year to avoid inconsistencies in the population variables, since these are calculated differently in the periods 1972-1987 and 1988-2008. (See 'Demographical Variables'.) Before 1988, the effect of a border change will show one year later than it will from 1988 and after.

- Balanced1: A dummy variable which takes the value one if the municipality exists for the whole period 1972-1999 with the same municipality code, zero otherwise.

- Balanced2: A dummy variable which takes the value one if the municipality exists and has the same municipality code in the whole period 1972-1999 AND its borders also do not change (with more than one percent area given away) during this period. Otherwise, it is zero.

- Balanced3: A dummy variable which takes the value one if the municipality exists for the whole period 1990-2015 with the same municipality code, and zero otherwise.

- Balanced4: A dummy variable which takes the value one if the municipality exists and has the same municipality code in the whole period 1990-2015 AND its borders also do not change (with more than one percent area given away) during this period. Otherwise, it is zero.

- Balanced5: A dummy variable which takes the value one if the municipality exists for the whole period 1972-2015 with the same municipality code, and zero otherwise.

- Balanced6: A dummy variable which takes the value one if the municipality exists and has the same municipality code in the whole period 1972-2015 AND its borders also do not change (with more than one percent area given away) during this period. Otherwise, it is zero.

- newknr: The new municipality identifier of municipalities which have merged during the sample period.

- split: A dummy variable which takes the value one if the municipality splits into two or more new municipalities during the sample period (i.e. 1976 or 1977).

# 3    Demographic and Socio-Economic Variables

Demographic variables for each year are those measured at January 1 for the years following and including 1988. For the years up until and including 1987, they are measured on December 31 the year before.[5]

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[5]Data for one municipality (1201 Bergen) is missing for 1972.

## Details

- pop: The total number of inhabitants in the municipality.[6]

- age06: Share of population aged 0 to 6 years.

- age715: Share of population aged 7 to 15 years.

- age1620: Share of population aged 16 to 20 years.

- age2125: Share of population aged 21 to 25 years.

- age2630: Share of population aged 26 to 30 years.

- age3135: Share of population aged 31 to 35 years.

- age3640: Share of population aged 36 to 40 years.

- age4145: Share of population aged 41 to 45 years.

- age4650: Share of population aged 46 to 50 years.

- age5155: Share of population aged 51 to 55 years.

- age5660: Share of population aged 56 to 60 years.

- age6165: Share of population aged 61 to 65 years.

- age6670: Share of population aged 66 to 70 years.

- age7175: Share of population aged 71 to 75 years.

- age7680: Share of population aged 76 to 80 years.

- age81: Share of population aged 81 years and higher.

- children: Share of population at pre-school age: Share of population aged 0 to 6 years for the period 1972-1996. Share of population aged 0 to 5 years for the period 1997-2011.

- young: Share of population at school age: i.e. Share of population aged 7 to 15 years for the period 1972-1996. Share of population aged 6 to 15 years for the period 1972-1996.

- elderly: Share of population aged 66 years and higher.

- women: The female share of the municipality's population.

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[6]This variable is taken directly from official statistics. In a few cases total population differs slightly from the sum of all age groups in the official statistics.

- unemployment: The number of registered unemployed persons (yearly average) as share of the total number of inhabitants aged 16-66 years at the end of the year.[7]

# 4 Elections

The local councils are elected every fourth year in September (1971, 1975, ... , 2011) in an open list proportional representation election system where each municipality is one electoral district. The D'Hondt seat allocation formula was used for translating votes into seats up until the 1999 election. From the 2003 election and onwards the Modified Sainte-Laguë (MSL) seat allocation formula has been used. Fiva and Folke (2016) analyze the consequences of this reform for various political outcomes.[8]

The local council elects the mayor and takes spending decisions for the four years following the election year. Our data is organized such that the political variables for years $t$, $t+1$, $t+2$ and $t+3$ take the values from the last local election at $t-1$ with the municipality structure at $t$.[9]

National elections are held in September every fourth year and two years after the last local elections ($t+1$) (1973, 1977, ..., 2013). We use the election results from $t+1$ and the municipality structure from $t+2$ for the variables at $t$, $t+1$, $t+2$ and $t+3$.[10] Most of the available party lists that participate in municipal elections are also represented in the national political arena. There are also smaller political parties that obtain little nationwide support and party independent local lists. Finally, parties may form joint lists where the seats are allocated to the parties jointly.

All data is from Statistics Norway's (SSB) election statistics. Most of it is provided by the Norwegian Social Science Data Services (NSD). In addition, we have used information

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[7]For the period 2000-2011 this variable is defined as the number of registered unemployed persons (yearly average) as share of the total number of inhabitants aged 16-66 years at the *beginning* of the year.

[8]A couple of small municipalities have used alternative electoral systems (see *flertallsvalg*, below). Also, direct election of the mayor has been used for some municipalities in 1999, 2003 and 2007.

[9]Hence, there will be missing values (59 observations overall) for local electoral variables at some years $t+1$, $t+2$ and/or $t+3$ if the municipality did not exist (with the same identifier code) at $t$.

[10]This causes missing values (33 observations overall) for national electoral variables at some years $t$, $t+1$ and/or $t+3$ if the municipality did not exist (with the same identifier code) at $t+2$.

from SSB's publications to get more detailed information on joint, local and other election lists.[11] The main reason for doing this is that in NSD's statistics, joint party lists are reported for the two categories 'socialist' and 'non-socialist' for some local elections, while for others they are lumped together in one category 'joint lists between political parties'. We have re-coded these lists and mayors or deputy mayors associated with them. In addition, we have recoded some local and 'other' lists which we believe fall clearly into one of the categories left- and right-wing.

Voters can affect the election outcome both by voting for a party list, and by casting preferential votes for particular candidates (Andersen et al. (2014)). *Personal votes* (personstemmer) can be cast to candidates from *any* party lists. When ballots includes "side votes" to other parties, then a share of the vote is transferred accordingly. When a ballot is cast without any preferential votes being given to other parties, a party will get as many *list votes* (listestemmer) as there are seats up for election. If ballots includes "side votes" to other parties, then list votes are transferred accordingly.[12] For elections held in the 1983 to 2011 period we calculate parties' voteshares based on their share of list votes.[13] For elections held in the period 1971-1979 we have not collected list votes, but construct voteshares based on *party votes* (which do not take into account preferential voting across party lines). Fiva et al. (2017) compare fiscal policy outcomes when a party barely received or did not receive an extra seat. This regression discontinuity design requires information on the exact distribution of votes, which is captured by *list votes*.

Fiva et al. (2017) find a limited number of observations displaying inconsistencies between the distribution of votes and the distribution of seats. For example, *Sveio munic-*

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[11]For the elections 1975-1995 we have consulted the printed publication 'Kommunestyrevalget' (SSB, 1995). For the last four elections, the information is available online under `http://www.ssb.no/english/subjects/00/01/valg_en/`. For the 1971 election, this information is not available.

[12]For example, if a voter choose party A's ballot, but add a name from party B, then party A gets 24 list votes and party B 1 list vote, if the size of the local council is 25.

[13]Note that up till the 1995 election official election statistics lumps together votes for parties belonging to the categories independent party list, "other" party list, and joint list. We therefore only have exact VoteShares for all parties for municipalities that had no more than a maximum of one independent party list, one "other" party list, or one joint list (about 90 percent fulfill this criteria). This is captured by the variable '*entydig*'.

*ipality* is listed in *Kommunedatabasen* with one seat for Høyre and two seats for Venstre in the 2007 election, but according to their share of votes (9.6% and 4.9%) it should be the other way around.[14] Fiva and Røhr (2017) recently collected data on all candidates participating in the local elections from 2003 to 2015.[15] These data allow us to identify errors in *Kommunedatabasen* and to correct these. For example, Høyre did indeed win two seats and Venstre one seat in the 2007 election in *Sveio municipality*. In total, we correct about 60 municipality-year errors from our previous version of the dataset.[16]

# Details

- ElectionDate: Election date of the most recently held local election.

- ElectionDateNat: Election date of the most recently held national election.

- VoteShareRV: Share of votes for the Red Electoral Alliance (RV) in the last local election.[17]

- VoteShareSV: Share of votes for The Socialist Left Party (SV)[18] in the last local election.

- VoteShareDNA: Share of votes for the Party (DNA) in the last local election.

- VoteShareV: Share of votes for the Liberal Party (V) in the last local election.

- VoteShareSP: Share of votes for the Centre Party (SP) in the last local election.

- VoteShareKRF: Share of votes for the Christian Democratic Party (KrF) in the last local election.

- VoteShareH: Share of votes for the Conservative Party (H) in the last local election.

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[14]Fiva et al. (2017) exclude such observations from their analysis.

[15]Data from the 2003 and 2007 elections are primarily from Christensen et al. (2008), but Fiva and Røhr correct some errors and supplement missing observations through direct contact with municipalities. The 2011 data is collected directly from the municipalities, while the 2015 data come from Statistics Norway.

[16]There still is a handful of observations where we have been unable to identify the reason for the inconsistency in the data. Specifically, this applies to Aukra and Sør-Varanger for the 2003 election and Hobøl, Skedsmo, and Karlsøy for the 2007 election.

[17]From the 2007 election and onwards, this variable measures support for the party with the name "The Red Party". This was formally a newly founded party, but its members were to a very large extent former members of the Red Electoral Alliance.

[18]In the 1971 election the party did not exist, but many of its later supporters were organized in the Socialist People's Party (SF). We use the same variables for this party.

- VoteShareFRP: Share of votes for the Progress Party (Frp)[19] in the last local election.

- VoteShareOther1 to VoteShareOther8: Shares of votes in the last local election for various minor political parties with little nationwide support.

- VoteShareIndep1 to VoteShareIndep6: Shares of votes in the last local election for various 'local or non-political lists'.

- VoteShareJointL: Share of votes for joint lists between left-wing parties (NKP[20], RV, SF/SV or DNA) in the last local election. This variable follows the classification made by Statistics Norway (SSB) for the elections in 1971, 1987 and 2003.

- VoteShareJointR: Share of votes for joint lists between right-wing parties (V, DNF/DLF[21], SP, KrF, H, Frp) in the last local election. This variable follows the classification made by Statistics Norway (SSB) for the elections in 1971, 1975, 1987 and 2003[22]

- VoteShareLEFT: Joint share of votes received by RV, SV/SF, DNA, and joint lists of left-wing parties.

- VoteShareRIGHT Joint share of votes received by V, SP, Krf, H, Frp and joint lists of right-wing parties

- VoteShareOTHER Joint share of votes received by election lists not classified as left-wing or right-wing.

- entydig: A dummy which takes the value 1 if we have exact data on all VoteShares for all parties running in the municipal election, zero otherwise.

- SeatShare[Party name or election list category]: Share of seats won by the party or type of election list in the last local election.

- SeatShareLEFT: Joint share of seats won in the last local election by RV, SV/SF, DNA, and joint lists of left-wing parties.

- SeatShareRIGHT: Joint share of seats won in the last local election by V, SP, Krf, H, Frp and joint lists of right-wing parties.

- SeatShareOTHER: Joint share of seats won in the last local election by election lists not classified as left-wing or right-wing.

- SizeOfCouncil: The total number of seats in the municipality council.

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[19]The same variable is used for the 1971 and 1975 elections, when the party's name was Anders Lange's Party.

[20]The Communist Party

[21]New People's Party/the Liberal People's Party

[22]The only exception is the 2003 election in Herøy municipality, where we have recoded 'the People's list' as belonging to the 'other' category because this list is not clearly right-wing.

- Mayor (and dMayor): Party identity of mayor (deputy mayor) based on NSD's classification with some alterations: 1 if the (deputy) mayor represents The Socialist Left Party (SV)

  2 if the (deputy) mayor represents the Red Electoral Alliance (RV)

  11 if the (deputy) mayor represents The Norwegian Labour Party (DNA)

  21 if the (deputy) mayor represents the Liberal Party (V)

  25 if the (deputy) mayor represents the New People's Party/the Liberal People's Party (DNF/DLF)

  31 if the (deputy) mayor represents the Centre Party (Sp)

  41 if the (deputy) mayor represents the Christian Democratic Party (KrF)

  51 if the (deputy) mayor represents the Conservative Party (H)

  55 if the mayor represents the Progress Pary (Frp)

  61 if the (deputy) mayor represents a joint list, local or 'other' election list which we have classified as right-wing

  71 if the (deputy) mayor represents a joint list, local or 'other' election list which we have classified as left-wing

  81 if the (deputy) mayor represents a joint list or some other list which has which we have been unable to classify as left-wing or right-wing.

- MayorLEFT (dMayorLEFT): A dummy variable taking the value one if the (deputy) mayor represents RV, SV, DNA or a local/other list classified as left-wing, zero otherwise.

- MayorRIGHT (dMayorRIGHT): A dummy variable taking the value one if the (deputy) mayor represents V, DNF/DLF, Sp, KrF, H, Frp, a joint list between right-wing parties or a local/other list classified as right wing, and zero otherwise.

- MayorOTHER (dMayorOTHER): A dummy variable taking the value one if the (deputy) mayor represents a joint, local or other list not classified as left-wing or right-wing, zero otherwise.

- MayorWoman: A dummy variable taking the value one if the mayor is a woman, zero otherwise.

- DirectMayor: A dummy variable taking the value one if the municipality holds direct elections for the mayor, zero otherwise.[23]

- FemaleCouncilMembers: Share of seats in the council held by female representatives.

- Gallagher: The Gallagher index is based on the vote-seat share deviation of all running parties ($r$). More formally, the index is defined as

$$Gallagher = \sqrt{1/2 \sum_{i=1}^{r} (VoteShare_i - SeatShare_i)^2}$$

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[23]Five municipalities that held direct elections for mayor in 2003 (Bø, Gjemnes, Molde, Os, and Selje) secured the mayor's seat in the local council on a separate quota. In these cases only $SizeOfCouncil - 1$ seats were allocated using the Modified Modified Sainte-Laguë method (Buck et al., 2005, p. 60).

where $SeatShare_i$ ($VoteShare_i$) is the proportion of seats (votes) of the $i$-th party (Gallagher (1991)). The index can take values from 0 (complete proportionality) to 1 (complete disproportionality).

- NoP: Number of parties winning representation.

- ENoP: The effective number of parties (ENoP) is an index developed by Laakso and Taagepera (1979). The index accounts for both the number of parties represented ($n$) and their relative strengths and is given by

$$ENoP = \frac{1}{\sum_{i=1}^{n} SeatShare_i^2},$$

where $SeatShare_i$ is the proportion of seats of the $i$-th party.[24]

- Flertallsvalg: This dummy variable takes the value 1 if the municipality hold plurality elections where voters vote for candidates instead of party lists.[25]

- ListVotes: Total number of list votes cast in the last local election.

- OrdinaryVotes: Number of ordinary party votes cast in the last local election (from Lind (2014)).

- EarlyVotes: Number of early party votes cast in the last local elections (from Lind (2014)).

- Turnout: Ratio of cast party votes to eligible voters in the last local election.

- Coalition: A dummy taking the value one if the mayor is from the left-wing bloc while the deputy mayor is not, or if the deputy mayor is from the left-wing bloc while the mayor is not.

- IncumbentSupport: Share of votes received by the bloc of the incumbent (the mayor's bloc) at the last local election. The right-wing parties/lists and the other parties and election lists not categorized as left-wing are here considered as one bloc.

- VoteNatRV: Share of votes for the Red Electoral Alliance (RV) in the national election.[26]

- VoteNatSV: Share of votes for The Socialist Left Party (SV) in the national election.[27]

- VoteNatDNA: Share of votes for the Norwegian Labour Party (DNA) in the national election.

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[24]Before 1999 there may be some cases where more than one list are lumped together in the election statistics (cf. variable *entydig*). This will have some influence on *NoP*, *ENoP* and *Gallagher*.

[25]This only concerns 1252 Modalen (1972-1999), 1151 Utsira (1972-1975) and 1835 Træna (1972-1979).

[26]In the 2009 and 2013 elections, this variable measures support for the "The Red Party".

[27]This variable name is also used for the 1973 election, when the Socialist People's Party (SF) ran together with NKP and other socialists in the Socialist Electoral League (also SV in short).

- VoteNatV: Share of votes for the Liberal Party (V) in the national election.[28]

- VoteNatSP: Share of votes for the Centre Party (SP) in the national election.

- VoteNatKrF: Share of votes for the Christian Democratic Party (KrF) in the national election.

- VoteNatH: Share of votes for the Conservative Party (H) in the national election.

- VoteNatFrp: Share of votes for the Progress Party (Frp) in the national election.[29]

- VoteNatLEFT: Share of votes in the national election for RV, SV or DNA

- VoteNatRIGHT: Share of votes in the national election for V, SP, Krf, H, and FrP.

- VoteNatOTHER: Shares of votes in the national election for a number of different small parties or election lists not classified as left- or right-wing.

- TurnoutNational: Ratio of votes cast to eligible voters in the national election.

- ChSupport: The difference (in percentage points) in the share of votes received by the bloc of the mayor between the local and the following national elecion for the bloc of the mayor. The right-wing and other parties/lists are considered one bloc.

# 5    Fiscal Policy

The fiscal policy data stem from local governments' accounts and include data on both tax policy and spending for different programs (child care, education, elderly care, health and social, culture, transport, central administration, other).

The account data for the 1972 to 2000-period allow us to distinguish between current expenditures, maintenance and investment. From 2001 and onwards, the organization of the account data was reformed which makes it hard to establish a consistent time series separating current expenditures, maintenance and investment for the entire period.[30] For the entire period, 1972-2013, we therefore only report total spending on the various programs.[31]

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[28]For the Liberal Party and other non-socialist parties, this also includes joint list votes which are 'split up' by Statistics Norway for the elections up until and including the 1981 election.

[29]'Anders Lange's party' in 1973 and 1977.

[30]There is also a change in the definitions from 1990/1991 which has made it necessary to reorganize the data somewhat compared to how it looks in NSD's database.

[31]For Oslo there is a break in the time series between 2000 and 2001, likely due to re-organization of budgetary items due to Oslo's special status as municipality and county.

All variables are measured in constant NOK 1000 per capita (the variable KPI2011 is used as a deflator).

## 5.1   Spending Policy 1972-2000

The account data is organized along two dimensions. The first dimension is the *type* of spending or revenue while the other is the *sector* in which the money is spent or earned.

In the account data from NSD, the types are identified by *items* (Norwegian: *poster*), while the sectors are identified by *'chapters'* (Norwegian: *kapitler*). We have added and subtracted items and chapters to achieve the categories which we are interested in.

*Current expenditures* is 'overall operating expenditures' (item 000-399) minus 'maintenance of buildings and structures' (item 150) and internal transfers (item 390)[32]. This is equivalent to the sum of expenditures on wages, equipment, other operating expenditures and external transfers to the social security system, central government, county administration, other municipalities and others. Spending on *maintenance* is item 150. Spending on *investment* is 'overall expenditures for new buildings and new structures' (item 400) in the period 1972-1990, and 'investment in fixed property overall' (item 40-48) in the period 1991-2000. *Sales* is 'income related to new buildings and structures' (item 800) in the first period. In the second period they equal the sum of items 80 and 88, which we have received from NSD on e-mail. These are not available online.

For the variables below, the first part of the variable name identifies the type of spending (or revenues) while the second identifies the sector of spending (or revenues).

Total spending is the sum of current expenditures, maintenance and (gross)investment.

## 5.2   Spending Policy 2001-2013

Total spending is the sum of (gross) current expenditures and (gross) investment for the various spending programs.

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[32]For the period 1991-2000, the codes are different. Operating expenditures are denoted 'item 01-39', maintenance is denoted 'item 15-19' and internal transfers are denoted 'item 38-39'.

# Details

- KPI2011: consumer price index deflator (2011 = 1.00).[33]

- CurrExp_childcare: Current expenditures on childcare. This variable is constructed using current expenditures for the subchapter 'institutions for the protection of children and youth' (chapter 1.431) for the period 1972-1982, 'childcare' (chapter 1.435-1.439) for the period 1982-1990 and the sum of the subchapters 'municipal childcare' (chapter 1.270-278) and 'non-municipal childcare' (chapter 1.279) for the period 1991-2000.

- CurrExp_education: Current expenditures on education. This variable is constructed using the main chapter 'education overall' (1.2) for the period 1972-1990 and the same chapter but with childcare (as defined above) subtracted for the period 1991-2000.

- CurrExp_elderlycare: Current expenditures on care for the elderly and disabled. This variable is constructed by summing current expenditures for the subchapters 'elderly homes' (1.451), 'other help for the elderly' (1.459) and 'help arrangements for the homes' (1.46) for the period 1972-1982. For the period 1983-1987, we use 'home nursery' (1.316), 'elderly homes' (1.450-1.453), 'combined elderly and nursery homes' (1.454-1.457), 'elderly dwellings' (1.458-1.459) and 'home nursery' (1.461). For the period 1988-1990, we use 'home nursery' (1.340), 'combined elderly and nursery homes (1.343-1.344), 'other treatment and care' (1.345-1.349), 'elderly homes' (1.450-1.453), 'combined elderly and nursery homes' (1.454-1.457), 'elderly dwellings' (1.458-1.459) and 'home nursery' (1.461). For the period 1991-2000 we use the subchapter 'treatment of and care for the elderly and disabled' (1.370-389).

- CurrExp_healthsocial: Current expenditures on other health and social services. For the period 1972-1990 this variable is constructed by summing current expenditures for the main chapters 'overall health protection' (1.3) and 'overall social care and social transfers' (1.4) and subtracting childcare and care for the elderly and disabled (as defined above). For the period 1991-2000, it is equivalent to current expenditures for the main chapter 'overall health protection, social services, treatment and care' (1.3) minus care for the elderly and disabled as defined above.

- CurrExp_culture: Current expenditures on cultural services. For the period 1972-1990, this equals the sum of current expenditures for the main chapter 'overall church and cultural purposes' (1.5) and the subchapters 'parks, swimming pools and outdoor life' (1.66) and 'cinemas' (1.74). For the period 1991-2000, we use the main chapter 'overall cultural and church purposes' (1.5).

- CurrExp_transport: Current expenditures on transport and infrastructure. This variable is constructed using the sum of the subchapters 'roads and streets' (1.61.), 'car routes' (1.75), 'trams and suburban railroad' (1.76) and 'infrastructure' (1.85)

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[33]Collected from Statistics Norway: http://www.ssb.no/kpi/tab-01.html

for the period 1972-1990 and the main chapter 'infrastructure purposes overall ' (1.7) for the period 1991-2000.

- CurrExp_centraladm: Current expenditures on central administration. This variable is constructed using the main chapter 'central administration overall' (1.1) for the period 1972-1990 and 'central administrative bodies and overall common expenditures' (1.1) for the period 1991-2000.

- CurrExp_other: Current expenditures on other purposes. For the period 1972-1990, this includes the main chapters 'overall joint expenditures' (1.0) 'construction and residential purposes' (1.6) 'municipality enterprises' (1.7), 'various purposes' (1.8) and 'taxes, loans and allocations overall' (1.9) with the subchapters 1.61, 1.66, 1.74, 1.75, 1.76 and 1.85 subtracted. For the period 1991-2000, it includes 'expenditures to be distributed' (1.0), 'overall technical purposes' (1.4), 'overall residential purposes, project and commercial purposes' (1.6), 'overall taxes, earmarked contributions etc.' (1.8) and 'overall interests, repayment and use of net operating surplus etc.' (1.9).

- Maint_childcare: Spending on maintenance in the child care sector, as defined above.

- Maint_education: Spending on maintenance in the education sector, as defined above.

- Maint_elderlycare: Spending on maintenance related to care for the elderly and disabled, as defined above.

- Maint_healthsocial: Spending on maintenance related to other health and social services, as defined above.

- Maint_culture: Spending on maintenance in the cultural sector, as defined above.

- Maint_transport: Spending on maintenance related to transport and infrastructure, as defined above.

- Maint_centraladm: Spending on central maintenance related to central administration, as defined above.

- Maint_other: Spending on maintenance for other purposes. This is constructed in the same way as for current expenditures, except that the chapters 'taxes, loans and allocations overall' (1.9, 1972-1990) and 'interests, repayment and use of net operating surplus' (1.9, 1991-2000) do not exist for maintenance. Moreover, the chapter 'overall taxes, earmarked contributions etc.' (1.8) does not exist prior to 1994.

- Invest_childcare: Expenditures for investment in new structures in the child care sector, as defined above.

- Invest_education: Expenditures for investment in new structures in the education sector, as defined above.

- Invest_elderlycare: Expenditures for investment in new structures used in care for the elderly and disabled, as defined above.

- Invest_healthsocial: Expenditures for investment in new structures used in for health and social services, as defined above.

- Invest_culture: Expenditures for investment in new structures related to cultural services, as defined above.

- Invest_transport: Expenditures for investment in new structures related to transport and infrastructure, as defined above.

- Invest_centraladm: Expenditures for investment in new structures used in central administration, as defined above.

- Invest_other: Expenditures for investment in new structures for other purposes. For the period 1972-1990, this includes the main chapters 'overall joint expenditures' (1.0) 'construction and residential purposes' (1.6) 'municipality enterprises' (1.7) and 'various purposes' (1.8) with the chapters 1.61, 1.66, 1.74, 1.75, 1.76 and 1.85 subtracted. For the period 1991-2000, it includes 'overall technical purposes' (1.4) and 'overall residential purposes, project and commercial purposes' (1.6).

- Sales_childcare: Income from sale of fixed property in the child care sector, as defined above.

- Sales_education: Income from sale of fixed property in the education sector, as defined above.

- Sales_elderlycare: Income from sale of fixed property related to care for the elderly and disabled, as defined above.

- Sales_healthsocial: Income from sale of fixed property related to other health and social services, as defined above.

- Sales_culture: Income from sale of fixed property in the cultural sector, as defined above.

- Sales_transport: Income from sale of fixed property related to transport and infrastructure, as defined above.

- Sales_centraladm: Income from sale of fixed property related to central administration, as defined above.

- Sales_other: Income from sale of fixed property related to 'other purposes', defined in the same way as for investment.

- Total_childcare: Before 2001, the sum of CurrExp_childcare, Invest_childcare, Maint_childcare. After 2001, the sum of gross current expenditures (*Driftsregnskapet*) and gross investment (*Investeringsregnskapet*) for child care (*barnehager*).

- Total_education: Before 2001, the sum of CurrExp_education, Invest_education, Maint_education. After 2001, the sum of gross current expenditures (*Driftsregnskapet*) and gross investment (*Investeringsregnskapet*) for education (*grunnskole*).

- Total_elderlycare: Before 2001, the sum of CurrExp_elderlycare, Invest_elderlycare, Maint_elderlycare. After 2001, the sum of gross current expenditures (*Driftsregnskapet*) and gross investment (*Investeringsregnskapet*) for elderly care (*pleie og omsorg*).

- Total_healthsocial: Before 2001, the sum of CurrExp_healthsocial, Invest_Healthsocial, Maint_healthsocial. After 2001, the sum of gross current expenditures (*Driftsregnskapet*) and gross investment (*Investeringsregnskapet*) for health, child protection, social assistance and housing (*kommunehelse, barnevern, sosialtjeneste, bolig*).

- Total_culture: Before 2001, the sum of CurrExp_culture, Invest_culture, Maint_culture. After 2001, the sum of gross current expenditures (*Driftsregnskapet*) and gross investment (*Investeringsregnskapet*) for culture and church (*kultur og kirke*).

- Total_transport: Before 2001, the sum of CurrExp_transport, Invest_transport, Maint_transport. After 2001, the sum of gross current expenditures (*Driftsregnskapet*) and gross investment (*Investeringsregnskapet*) for roads (*samferdsel*).

- Total_centraladm: Before 2001, the sum of CurrExp_centraladm, Invest_centraladm, Maint_centraladm. After 2001, the sum of gross current expenditures (*Driftsregnskapet*) and gross investment (*Investeringsregnskapet*) for central administration (*administrasjon, styring og fellesutgifter*).

- Total_other: Before 2001, the sum of CurrExp_other, Invest_other, Maint_other. After 2001, the sum of gross current expenditures (*Driftsregnskapet*) and gross investment (*Investeringsregnskapet*) for industry support, fire protection, planning and infrastructure (*næringsstøtte, brann og ulykke, planlegging, kulturminne, vann, avløp og renovasjon*).

- Total: The sum of Total_childcare, Total_elderlycare, Total_healthsocial, Total_culture, Total_transport, Total_centraladm, and Total_other.

- Share_'sector': Percent of Total spent on 'sector'.

## 5.3   Tax Policy 1984-2014

Municipalities are largely financed by regulated local tax sharing and grants from the central government. The major local tax choice concerns residential property taxation and user charges (Fiva et al. (2017)). We include information on fees for infrastructure services (sewage, water supply, and collection and management of garbage) which can be seen as implicit taxation.

We also include data on total revenues from property taxation, which is the sum of residential and commercial property taxation. Before 2007, the databases at Statistics Norway do not allow us to distinguish between these two type of property taxation. Commercial property taxation is predominantly taxes on hydro power production facilities (see Andersen et al. (2014)).

## Details

- PerCapPTAX: Revenues from commercial and residential property taxation, NOK 1000 per capita (deflated by KPI2011). Only available 1991-2014.

- dPTAX: Dummy variable equal to one if local government has any revenue from commercial and/or residential property taxation, zero otherwise. Only available 1991-2014.

- PTAXrate: The property tax rate. This is restricted to the interval between 0.2 and 0.7 percent of the assessed housing value. Only available 2007-2014.

- PerCapPTAXcommercial: Revenues from commercial property taxation, NOK 1000 per capita (deflated by KPI2011). Only available 2007-2014.

- PerCapPTAXresidential: Revenues from residential property taxation, NOK 1000 per capita (deflated by KPI2011). Only available 2007-2014.

- PTAX120sqm: Residential property tax in NOK for 120 square meter house (deflated by KPI2011). Only available 2007-2014.

- PerCapUserCharges: User charges for infrastructure services (sewage, water supply, and collection and management of garbage), NOK 1000 per capita (deflated by KPI2011). This variable is the gross income for infrastructure services (*vann, kloakker (avløp og rensing), renovasjon*) in *Kommuneregnskapet* (1984-1989) and *Driftsregnskapet* (1990-2013).

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