

One or Two Tiers of Local Government? – The Cost Effects of a Regional Experiment

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Abstract

This paper evaluates the cost effects of a Finnish regional self-government experiment. The experiment introduced a new intermediate tier of local administration that was given the responsibility to organize 60 per cent of public services. These services include e.g. basic health care, the majority of social services and secondary education, services that are typically provided by municipalities in Finland. Follow-up reports suggest that the experiment has resulted in massive cost-saving, especially in the social and health sectors. This paper puts previous findings under scrutiny by utilizing a synthetic control method for comparative case studies. Our findings cast serious doubts on the magnitude of the cost savings.

Key words: regional experiment, case study, synthetic control method, local government

JEL classes: R5, H7

Tiivistelmä

Tutkimuksessa arvioidaan Kainuun hallintokokeilun kustannusvaikutuksia vuosina 2005–2009 niin sanotun synteettisen kontrolliyksikön menetelmällä. Keskeinen tavoite on arvioida, mitä Kainuun sosiaali- ja terveystalouden kustannuksille olisi tapahtunut ilman hallintokokeilua. Tulosten mukaan hallintokokeilun avulla saadut vuosien 2005–2009 yhteenlasketut kustannussäästöt ovat 4–34 miljoonaa euroa, riippuen käytettävästä menojen koskevasta tilastotiedosta. Aiemmat valtiovarainministeriön teettämät arviot ovat päättyneet huomattavasti suurempiin säästövaikutuksiin.

Asiasanat: Kainuun hallintokokeilu, sosiaali- ja terveystaloudet, kuntatalous, vaikutusarviointi

JEL-luokat: R5, H7

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1. Introduction

There are many ways to organize local government. According to the Council of European Municipalities and Regions (2010), only nine EU 27 countries have a single-tier structure. Germany, France, Italy, Spain and the UK have a second and even a third tier of local government. Even though countries differ vastly in terms of their institutions, they all share common worries. Local government needs to be re-organized to deliver better public services, efficiency, equality and democracy. Given the importance of these issues, it is no wonder that local government reforms have been the subject of so much discussion in several OECD countries. A general trend in several countries, such as Germany and France, is towards decentralization in which responsibilities are transferred to local governments, see e.g. Wollman (2004). The UK has already introduced experiments between unitary authorities and “two-tier pathfinders” (Department for Communities and Local Government, 2010). Administrative reforms and how to share responsibilities between different tiers of local administration have also been on the agenda in all the Nordic countries. Denmark was the first to implement a reform in 2007 in which larger municipal and regional units were created and tasks were transferred from the regional level to the state and the municipalities (Aalbu et. al., 2008, Blom-Hansen, 2010).

Even though local government reforms have been justified on welfare and democracy grounds, there is surprisingly little econometric evidence on their impacts. The primary reason for this is that reforms are typically implemented simultaneously in all regions, in which case it is hard to find proper comparison regions. Regional experiments are equally problematic as typically statistical inference is based on asymptotic results that are not well suited for cases in which a treatment group is formed by a single observation. This paper contributes to the evaluation of local government reforms by adopting the synthetic control group approach proposed by Adabie et. al. (2010). This method is especially developed for case studies and it provides means for assessing the statistical significance of the observed differences.

This paper focuses on one particular aspect of local government reforms by analysing the cost effects of a regional experiment that started in 2005 in the Kainuu region in Finland. Finland differs from most of countries as it has only a single tier of local administration, but in this experiment around 60 per cent of public services were taken away from the participating municipalities. The responsibility to provide services such as basic health care, secondary education and social services (excluding nursery) was given to a new intermediate tier of local administration. This experiment is particularly interesting given the international tendency to transfer more and more tasks from central administration to local governments. It provides a unique possibility to assess the

potential benefits of having a two-tier local administration instead of a unitary structure.

Previous evaluations and follow-up reports relating to the experiment indicate that the re-organization resulted in considerable cost savings. The report by the Ministry of Finance follow-up group puts the magnitude of cost savings at around 70 million euros for the years 2005-2008 (Ministry of Finance, 2010). Even larger savings of a magnitude of 100 million euros were reported by some newspapers and the Kainuu Regional Council. In line with these figures, all previous reports suggest that the growth rate in social and health care costs in the Kainuu region has been some two percentage points below the growth rate of all social and health care costs in Finland. The OECD (2010) reports that the regional experiment has managed to create economies of scale and the scope and to promote new service delivery routes. The OECD is, however, less optimistic on the cost savings. Its country report states that it is still unclear whether or not Kainuu will meet its efficiency objectives (OECD 2010). This paper aims at shedding some light on this issue.

The rest of the paper is organized as follows. The following section introduces the self-government experiment at issue and briefly discusses the regional structure of Finland. The evaluation method is discussed in the third section and the data in the following section. Section 5 reports the results and the final section concludes.

2. Finnish local government and the self-government experiment in the Kainuu region

The regional structure of Finland consists of 326 municipalities that form 20 regions governed by regional councils ('maakuntaliitto'). These correspond to the NUTS 3 level established by Eurostat. The average size of municipalities is small, half of the municipalities having less than 5000 inhabitants. In a fairly large country by land area, this means that the distances are long and most regions are sparsely populated.

Unlike the other Nordic countries, Finnish local government has only a single tier. Regional councils do exist between the municipalities and central government, but their tasks are limited to land use planning as a guideline for individual municipalities and regional development. Regional councils have neither elected councils nor taxation powers, unlike councils in e.g. Sweden or Norway. Regional councils are organized as joint municipal authorities. In general, intermunicipal cooperation has replaced the intermediate level of local government that is common in other Nordic countries. Municipal cooperation is mostly voluntary, except in two cases: every municipality has to belong to a hospital district (there are currently 20 hospital districts) that organizes specialized health care and every municipality is also obliged to belong to a regional council (18 regional councils). As these two compulsory institutions for regional co-operation have no rights to levy taxes, their financing is entirely reliant on the participating municipalities and central government.

The missing intermediate level of local administration and high degree of decentralization means that Finnish municipalities have a large range of responsibilities in providing public services for their citizens. These include e.g. basic health care, comprehensive and upper secondary education, child day-care, elderly care, providing income support and land use planning at the municipal level. Even though under the constitution municipalities are self-governing entities, central government typically sets minimum standards for the quality and the quantity of public services that municipalities have to meet. To overcome excessive costs, municipalities have formed a total of 226 joint authorities that are responsible for the provision of e.g. basic health care and education to all co-operating municipalities. Municipalities finance the provision of public services through municipal income tax, property taxes, a share of corporate tax revenue, user fees and incomes from sales and the state subsidy system. On average, municipal income tax and the subsidy system are the main sources of revenue, with shares of 40 and 20 per cent, respectively. The independence of

municipalities is reinforced by the fact they are free to set income tax rates, decide spending levels and to borrow directly from the financial markets¹.

Over the years the lack of an intermediate level of local government has led to speculation about the potential benefits of having one. Such an experiment was finally proposed in the Act on the Regional Self Government Experiment in one NUTS3 region, Kainuu. The Act was introduced in 2003 and the experiment started in 2005. The experiment ended in 2012. There were initially nine municipalities participating in the experiment, but this came down to eight when the small municipality of Vuolijoki merged with Kajaani (the centre of the Kainuu region) in 2007. The aims of the administrative experiment were to ensure the provision and quality of basic services for all inhabitants in Kainuu, to increase efficiency in the service sector, to improve regional development activities, and to gain experience of the new regional level (OECD, 2010).

The Act introduced considerable changes in the provision of public services. Some 60 per cent of tasks previously carried out by participating municipalities were transferred to the intermediate level of local government, i.e. Kainuu Regional Council. The regional council was also given some responsibilities that are typically in the domain of central government, such as EU funding, regional planning and development and industrial policies. But the main point was that the intermediate tier of local administration was given the responsibility to organize all health care, social services (excluding nurseries) and secondary education. This represents a significant change in the distribution of responsibilities given that typically only specialized health care is organized at the intermediate level (hospital districts). Accordingly, the experiment has unique potential to uncover potential benefits by providing public services at a more centralized level than the municipal level. This information is also likely to be relevant for those countries that plan to decentralize the provision of services.

During the experiment all the participating municipalities act like any other municipality in Finland. They levy taxes, receive state subsidies and their municipal councils are elected as before. The two changes that the experiment introduced were that 59 councillors are also elected to the regional council and participating municipalities pay a pre-determined share of their revenue to the new regional council. The share of payments is not totally fixed as it has increased from 58.1 to 60.1 per cent during the experiment.

¹ For a thorough presentation of public services at the local level, see Moisio et.al. (2010).

3. Identification strategy and statistical inference

Our principal evaluation problem is that we observe what happened in the Kainuu region during the experiment but the hypothetical case of no experiment remains unobserved. For this one needs to find a comparison point to reflect what would have happened in Kainuu if the regional self-government experiment had not been introduced. Previous evaluations of the cost effects of the experiment have been based on the calculations performed by Kainuu Regional Council comparing the changes in social and health costs in Kainuu to cost changes at the national level, see e.g. Ministry of Finance (2010). The resulting comparison point underestimates the average pre-experiment growth in social and health service costs in the Kainuu region by almost two percentage points. The reason for this is that changes in costs at the national level are mainly driven by the large urban growth centres that have very little in common with declining regions, such as Kainuu. Under these circumstances, it is hard to separate the impact of the regional experiment from other regional differences.

Finland, like many other countries, has experienced uneven regional development over the last couple of decades, see Tervo (2005). As there are vast differences between regions, one is likely to get a better comparison point by assigning greater weight to regions closer to Kainuu. In particular, one might want to find a comparison unit that minimizes the differences prevailing between Kainuu and the comparison unit before the actual experiment was launched. This is the idea behind the Abadie and Gardeazabal (2003) study that explores the impacts of Basque terrorism on the evolution of the Basque country. They introduce the framework in which the unknown contrafactual outcome, in our case costs in social and health services, C_{1t}^N is written as

$$C_{1t}^N = \delta_t + \theta_t Z_i + \lambda_t \mu_i + \varepsilon_{it}. \quad (1)$$

Equation (1) relates costs to business cycle factors, δ_t , regional factors that are observable for a researcher, Z_i and unobserved factors. The unobserved factors are further divided into factors that change in time, $\lambda_t \mu_i$, and the random term ε_{it} .

Let us designate Kainuu as number 1 out of a total of $K+1$ regions. The purpose is to find the optimal weights w^* that add up to one and manage to equilibrate the growth rates in costs before the experiment $t < T_0$, $\Delta C_{11} = \sum_{k=2}^{K+1} w_k^* \Delta C_{k1}$, ... $\Delta C_{1T_0-1} = \sum_{k=2}^{K+1} w_k^* \Delta C_{kT_0-1}$, and the factors affecting cost changes $Z_1 = \sum_{k=2}^{K+1} w_k^* Z_k$. Abadie et al. (2010) show that the synthetic control region that is created by the use of optimal weights manages to equilibrate a large number of

pre-experiment cost changes and the observed factors affecting these changes only if the synthetic control region also manages to equilibrate the unobserved factors related to cost changes. Provided that this holds, the weighted cost changes of other regions provide a consistent estimator for the unknown contrafactual state that would prevail if the experiment had not been introduced in Kainuu. Accordingly, the impact of the self-government experiment on the growth in costs in the Kainuu region at time $t \geq T_0$, ∇_{it} , can be calculated by subtracting the weighted cost changes from the observed cost changes as

$$\nabla_{it} = \Delta C_{it} - \sum_{k=2}^{K+1} w_k^* \Delta C_{it}. \quad (2)$$

In typical evaluation settings the statistical inference is based on the asymptotic results, which rely on the number of observations being high enough. These results are of no use in a research setting such as ours in which a regional experiment is conducted in only one region. Abadie et al. (2010) proposed that approximate statistical inference could be based on placebo experiments conducted on all observations that are not exposed to an experiment. The idea has similarities with permutation analysis and in the current context requires the creation of an arbitrary administration experiment in all potential control regions, after which these placebo experiments have to be evaluated in a similar fashion to the real experiment. If the observed differences in the Kainuu region are large compared to the distribution of placebo effects in other regions, one has some ground to say that the observed differences are actually caused by the Kainuu regional experiment.

4. Data

The self-government experiment transferred two thirds of social and health-related tasks from municipalities to a new tier of local administration. The good news was that the size of the experiment makes it possible to observe its impacts but the bad news is that it also resulted in considerable data problems. Typically Statistics Finland collects cost information from individual municipalities and aggregates it into larger regions. After the experiment this has not been possible for the NUTS3 Kainuu region as there is no municipal-level cost information on public services provided by the Kainuu Regional Council. To make things even more difficult, it is impossible to separate payments from municipalities to the Kainuu Regional Council from general costs in the accounts of the individual municipalities. This means that there are no official separate cost figures for the participating municipalities for the services organized by the regional council.

There are two possible routes to overcome the data problem. The first is to ask the Kainuu Regional Council to provide figures for social and health care costs for the years 2005-2009 that correspond as closely as possible to those that can be obtained from official registers for the time period before the experiment. The second is to use information provided by Statistics Finland that it collects directly from the Kainuu Regional Council and reports at the NUTS3 level. As there is no official truth on costs, we employ both data sources in our analyses. Previous reports have employed only data produced by the Kainuu Regional Council, and we show that this might be the principal factor driving previously reported cost savings.

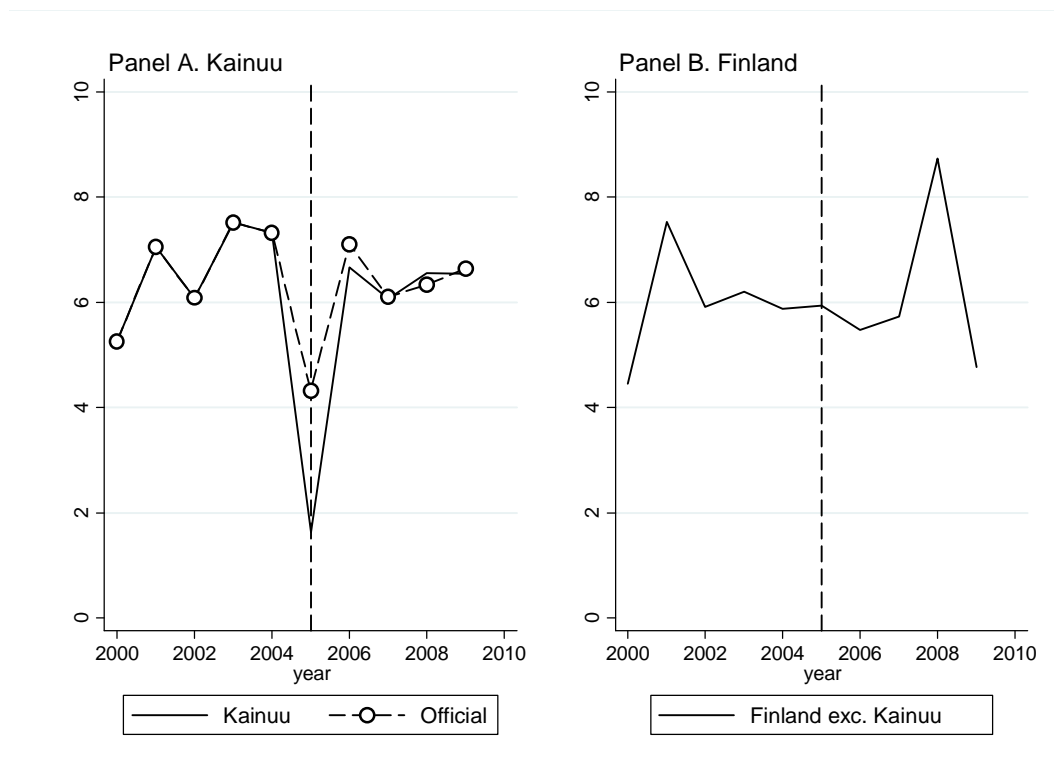
Otherwise data is readily available from the official registers maintained by Statistics Finland, the National Institute for Health and Welfare and the Social Insurance Institute of Finland. Whenever necessary, one municipality that is situated in the Kainuu region but did not participate in the experiment, Vaala, is subtracted from the figures concerning the Kainuu region. Owing to the small size of Vaala, this results in only minor changes and has virtually no impact on the results.

Our principal outcome variable is defined as being either net social and health care costs per head or yearly changes in these. By focusing on net changes we avoid huge changes in gross cost measures caused by a joint authority that was set up between two participating municipalities, viz. Suomussalmi and Puolanka, in 2003. The reasons for focusing on social and health care costs are twofold. First, reductions in social and health care costs are mentioned as the main source of the benefits of the self-government experiment in previous reports. Second, the centre of Kainuu, i.e. Kajaani, rolled its vocational education activities into an independent company in 2004. This nullified the corresponding costs that were previously shown in the balance sheets of Kajaani. This shows up in total costs

but not in costs for social and health services. Since it is possible that changes in definitions affect the evaluation results, we put the results under scrutiny by also analysing total costs. The results of these unreported sensitivity checks are qualitatively very similar to those reported in this study².

Figure 1 compares costs in social and health services between the Kainuu region and the average of other NUTS3 regions. The panel on the left-hand side reports two cost figures for the Kainuu region. The solid line presents the figures provided by the Kainuu region and the dashed line plots the figures calculated by Statistics Finland. The panel on the right-hand side reports the average of observed changes in social and health care costs in other regions.

Figure 1. Yearly changes in net costs in social and health services, Kainuu and the average of other mainland regions



Notes: (i) The solid line in the left-hand panel corresponds to the figures provided by the Kainuu Regional Council and the dotted line on the left-hand side corresponds to the figures calculated by Statistics Finland; (ii) The figure on the right-hand side reports the average of other mainland regions.

² These results are available from the authors on request. The results are reported in Finnish in Hämäläinen and Moision (2011).

The most striking feature in the cost growth figures for Kainuu is the sudden drop in the solid line in 2005. In previous reports this drop is attributed fully to the self-government experiment. There are, however, two reasons why this interpretation may be problematic. First, the drop occurs at the same time as two different data sets are joined together. The pre-experiment figures are provided by Statistics Finland and the post-experiment figures are provided by the Kainuu Regional Council. If there are any differences in cost levels of the datasets they show up when exploring the cost differences. This concern is raised by the dotted line that plots changes in social and health care costs as calculated by Statistics Finland. There is a clear drop for the year 2005, but the growth in costs exceeds that implied by the figures of the Kainuu Regional Council by some two percentage points. As the two series behave remarkably similarly in the latter years, the only potential problem seems to be related to the connection point of two time series.

Another difficulty in attributing all the observed changes in 2005 to the self-government experiment is that the social security experiment, as reported e.g. in Korkeamäki and Uusitalo (2009), was expanded to the Kainuu region in 2005. This meant that municipalities and their federations became eligible for the reduction in social security payments at exactly the same time as the self-government experiment was introduced. The subsidy was limited to €100,000 over a period of three years, so its impact is not likely to be particularly large. However, this example points out that one also has to consider other changes that occurred simultaneously with the experiment. It also gives a good advice to civil servants planning such experiments. If they want to have results that are as pure as possible, it is advisable not to conduct several reforms at the same time.

Turning next to the average growth in costs in other regions, the figure is dominated by two spikes that originate from wage agreements. The first spike is observed in 2001 when the public sector wage agreement entailed a three per cent wage increase in the municipal sector. This coincided with additional services that the state transferred to the municipal sector. Together these two factors resulted in an almost six per cent increase in wage costs in the municipal sector. There was an even higher spike in the growth in costs in 2008. This resulted from the parliamentary election that was held the previous year. Several parties signalled that nurses' wages should increase considerably. This resulted in industrial action in the next wage negotiation round in the public sector. The resulting wage increases were far higher than before, as is evident from Figure 1. It is surprising that the wage increases in 2008 do not show up in the figures for the Kainuu region. On the other hand, there is no downward spike in 2009, so the last two years more or less cancel each other out in Kainuu.

Even though there are differences in the cost series provided by the Kainuu Regional Council and Statistics Finland, and our cost measure differs from that employed in previous reports, the cost changes coincide well with those reported

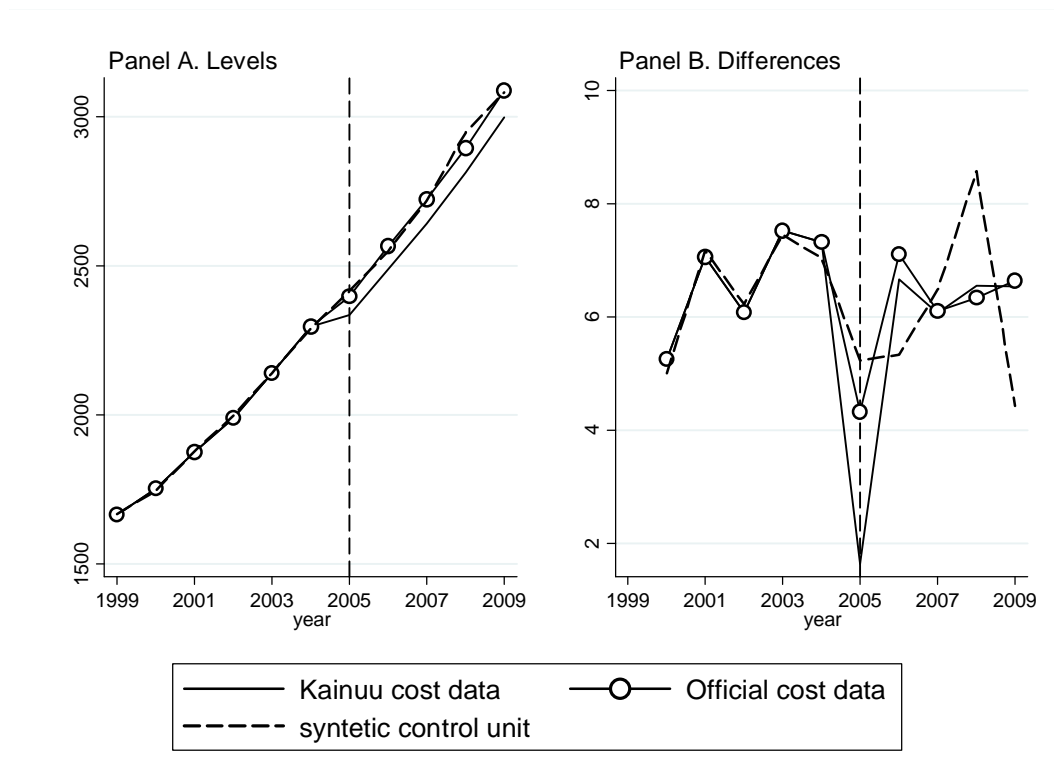
e.g. in the follow-up report (Ministry of Finance, 2010). It is particularly important that the growth rate of social and health care costs is smaller during the period of the experiment than during the pre-experiment years of 2002-2004 employed in previous reports. If an evaluation was based on the Kainuu region only, this would imply that the experiment had a dampening effect on cost growth. On these grounds our conclusions would be similar to those made previously.

Finally, Figure 1 confirms our worries concerning the use of national cost figures in evaluating the Kainuu self-government experiment. In the 2000-2004 period, costs in social and health services grew almost two percentage points faster in Kainuu than in the rest of the country. Based on this finding it is hard to imagine why the average growth in other regions should tell us anything about the experience of the Kainuu region in the period 2005-2009 assuming no experiment had ever taken place there. It is even harder to believe that changes in national costs in social and health services, as employed in previous reports, should provide a valid contrafactual for a contracting region such as Kainuu. After all, national aggregate costs in social and health services are mainly driven by the Helsinki metropolitan region (over 30% of all costs) and other larger growth regions (e.g. Tampere Region 10% and Southwest Finland 10%).

5. Results

The aim of this evaluation is to construct a control unit for the Kainuu region that follows the observed pre-experiment costs in social and health services as closely as possible. As discussed above, typical comparisons based on averages can be improved by giving greater weight to regions that are similar to the experiment region. Figure 2 compares the actual cost figures to the synthetic comparison region that is formed by employing optimal weights provided by the data-driven optimization procedure. We estimate the weights using data both on level and change forms. Costs in social and health services are measured in levels on the left-hand side and in differences on the right hand side. The dashed line shows costs in the synthetic control region that is used to represent costs in the Kainuu region had the experiment not taken place. There are also two series for actual costs for the Kainuu region, viz. that reported by the Kainuu Regional Council as a solid line and that calculated by Statistics Finland as a dotted line.

Figure 2: Evaluation results



Notes: (i) The panel on the left-hand side reports the results in level terms and the panel on the right shows the results in changes; (ii) The solid line corresponds to costs in social and health services as reported by the Kainuu Regional Council, the dotted line corresponds those reported by Statistics Finland, and the dashed line reports the cost figures for the synthetic comparison region.

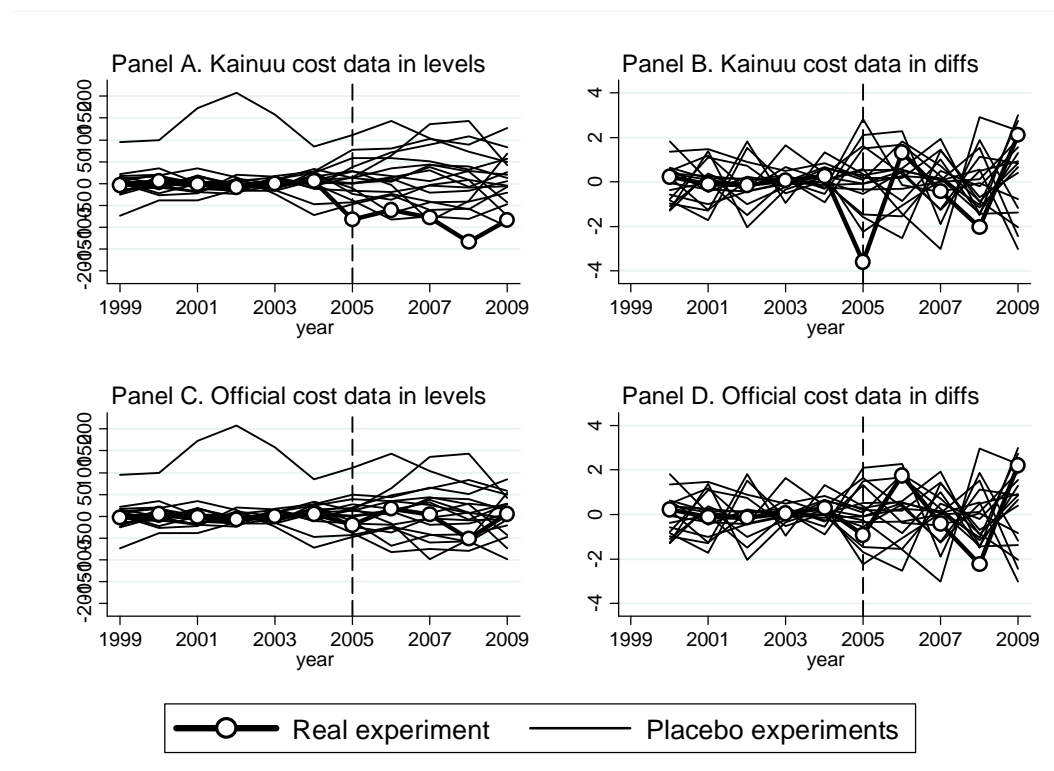
The synthetic control eliminates two percentage points in differences in growth rates that prevailed before the experiment if a comparison unit is formed by the average of growth rates in other NUTS3 regions. As the growth rates vary much more than the corresponding cost figures in levels, it is not surprising to find that practically no pre-experiment differences are observed in the figure on the left-hand side. All in all, the synthetic comparison regions look much like Kainuu, at least when it comes to the trend in costs in health and social services over the years 1999-2004.

The self-government experiment started at the beginning of 2005 after which the lines start to diverge. There are, however, huge differences between different data sources. The panel on the left-hand side shows that the cost figures of the Kainuu Regional Council are over 80 euros per capita below those of the synthetic control unit. This finding is in line with previous reports that have reported considerable cost savings for the self-government experiment. The situation would be completely different if the evaluation was based on cost figures calculated by Statistics Finland, which are almost indistinguishable from those of the synthetic comparison region.

The panel on the right-hand side of Figure 2 sheds some light on the observed differences. The point estimates show cost savings of almost 4 percentage points for 2005 if the evaluation is based on data from the Kainuu Regional Council. The corresponding cost figures from Statistics Finland imply cost savings of under one percentage point for the same period. Otherwise the two series coincide, so the potential impact of the self-government experiment on costs in social and health services seems to depend mostly on which data source is used when merging pre- and post-experiment costs.

It is a common problem in case studies such as this that the comparison of two regions tells us nothing about the significance of the observed differences. To overcome this, we follow Abadie et. al. (2010) and introduce placebo experiments in all regions. The inference is then based on the comparisons of actual costs with those implied by a synthetic control unit in all 19 regions. These comparisons are plotted in Figure 3, in which the actual evaluation result concerning the Kainuu self-government experiment is shown as a dotted bold line and the other lines correspond to placebo effects observed in other regions. The panels on the left-hand side correspond to evaluations of levels and the panels on the right-hand side show the corresponding evaluations of changes. The upper two panels of Figure 3 show the results when data from the Kainuu Regional Council is used in the estimations, whereas the lower panels report the results when the evaluations are based on data from Statistics Finland.

Figure 3. *Statistical inference of the significance of cost effects of data provided by the Kainuu Regional Council (upper panels) and Statistics Finland (lower panels)*



Notes: (i) The figures report the difference between the treated unit and the synthetic control unit for all regions; (ii) The dotted line represents Kainuu; (iii) The upper panels correspond to cost data provided by the Kainuu Regional Council and the lower panels are based on cost data from Statistics Finland; (iv) The figures on the left-hand side correspond to cost data in level terms and the figures on the right give the specifications in which the cost data is differenced.

The changes in the Kainuu region during the experiment can be considered exceptional if there are no placebo differences of the same magnitude in other regions. In comparing Kainuu with other regions it is advisable to ignore one region in which the pre-experiment differences exceed 200 euros per head. This outlier region is the Helsinki metropolitan region, where specialized health care units push up costs in health services and immigration raises costs in social services. As the Helsinki region is by far the largest of all the NUTS3 regions in Finland, there are no comparable regions that could accurately balance the cost differences for this particular region.

Figure 3 shows that the typical yearly variation in costs measured in level terms is around ± 50 euros per capita. Changes in yearly growth rates in social and health care costs are within the magnitude of two percentage points in one direction or another. The upper row panels imply that the observed cost savings when using the data of the Kainuu Regional Council are likely to be statistically

significant, at least when analysing costs in levels. When focusing in differences it is observed that the only observation that clearly differs from the range of two percentage points is a reduction of almost four percentage points in cost growth in the Kainuu region in the first year of the experiment. There are two other changes that almost reach the magnitude of two percentage points in 2008 and 2009. As discussed above, large increases in municipal wages caused an upsurge in social and health service costs in 2008. For some reason, Kainuu managed to avoid this increase, resulting in a two percentage point smaller growth in costs in 2008. However, this was totally offset in the following year when the cost growth in the Kainuu region exceeded that of the synthetic control by the same two percentage points.

The results reported in the lower part of Figure 2 are less favourable for the self-government experiment. If data obtained from the Kainuu Regional Council is replaced by data provided by Statistics Finland, none of yearly point estimates presented in the lower left corner can be considered as statistically significant. Some of the point estimates calculated for changes in costs in social and health services are close to the limit of two percentage points, but these more or less cancel each other out. These findings suggest that the self-government experiment did not affect the growth in social and health service costs in the 2005-2009 period. Accordingly, the existence of cost savings is totally dependent on the cost series employed in the evaluations.

So far all the evaluations have been carried out using the year 2005 as the starting point of the experiment. It is not self-evident that the evaluation should start from this point. To recall, the Act on the self-government experiment was adopted in early 2003. This means that municipalities had information on the experiment when they planned the 2004 financial year and this might have affected their actions already before the actual start of the experiment. It is easy to incorporate this into the analyses by defining the pre-experiment period as 1999-2003. Figure A1 in the Appendix shows that social and health care costs grew by some two percentage points more in the Kainuu region than in the synthetic control region in 2004. This could imply that the municipalities were less strict in their cost controls before joining the experiment. Nevertheless, the changes induced by this specification are far smaller than the changes caused by using different data sources. On the basis of this, it might be safe to say that our results are not driven by potential anticipation effects.

The results are based on a synthetic control region that resembles the Kainuu region in the pre-experiment period. Table 1 displays the weights that the method assigns to potential control regions in various evaluations. The first two columns show the weights corresponding to the results in which the evaluation starts in 2005, and the latter two columns report the weights for the results in which the evaluation starts in 2004. The weights are fairly robust to changes in the way costs are measured as specifications in levels and differences tend to pick up the

same regions. However, there is considerable variation depending on whether anticipation effects are included in the evaluations or not. If the experiment is specified as starting in 2004, half of the synthetic control unit is produced by North Karelia. In the specifications in which the evaluations start in 2005, this is offset by the combined weights of Päijät-Häme and North Savo. Having said that, it is reassuring that even large changes in weights seem to result in only minor changes in the actual evaluation results reported in Figures 1 and A1.

Table 1. Regional weights in the synthetic control region

Region	2005		2004	
	Weights: levels	Weights: changes	Weights: levels	Weights: changes
Uusimaa	0	0	0	0
Eastern Uusimaa	0	0	0	0
Southwest Finland	0	0	0	0
Satakunta	0	0	0	0
Häme	0	0	0	0
Tampere Region	0	0	0	0
Päijät-Häme	0.23	0.35	0	0
Kymenlaakso	0	0	0	0
South Karelia	0	0	0	0
South Savo	0.09	0	0	0.04
North Savo	0.21	0.20	0	0
North Karelia	0	0	0.51	0.53
Central Finland	0	0	0	0
South Ostrobothnia	0.06	0	0.08	0.09
Ostrobothnia	0	0	0	0
Central Ostrobothnia	0.29	0.25	0.24	0.11
Oulu Region	0	0	0	0
Lappi	0.12	0.20	0.17	0.22

Note: Different years correspond to different specifications as to how the starting year of the self-government experiment is modelled.

Table 2 shows that the average of 18 control units does not provide a very accurate comparison point for Kainuu. The pre-experiment values for social and health care costs per inhabitant show that the increase in Kainuu was over 50 euros per capita more rapid than elsewhere. On average, regions also had more educated and healthier inhabitants whose taxable annual income exceeded that of Kainuu by 500-700 euros per person. In addition, the unemployment rate is lower

in the other regions, albeit the incidence of long-term unemployment is more severe.

Table 2. Means of cost growth predictors

	Kainuu	Finland	Levels 2005	Changes 2005	Levels 2004	Changes 2004
<i>Lagged costs</i>						
Costs per capita in 2002 (€)	1990	2023	-	-	1990	-
Costs per capita in 2003 (€)	2140	2148	2140	-	2141	-
Costs per capita in 2004 (€)	2296	2273	2290	-	-	-
Cost growth in 2002 (%)	6.1	5.9	-	-	-	6.1
Cost growth in 2003 (%)	7.5	6.2	-	7.4	-	7.4
Cost growth in 2004 (%)	7.3	5.9	-	7.0	-	-
<i>Regional characteristics</i>						
Education indicator	247	270	253	258	250	254
Under 7 years of age (%)	6.8	7.6	7.7	7.6	7.6	7.4
Over 75 years of age (%)	7.5	7.5	7.3	7.2	7.1	7.3
Unemployment rate (%)	20.2	12.9	14.5	14.7	16.9	17.1
Long-term unemployed (%)	20.2	26.1	25.1	26.0	24.3	24.1
Sickness indicator	128	107	111	109	116	118
One-person households (%)	36.2	37.3	35.8	36.8	35.2	36.4
Swedish-speaking (%)	0.1	6.3	3.0	2.7	2.5	1.2
Population change (%)	-1.14	0.01	-0.35	-0.26	-0.56	-0.58
<i>Taxable income/person (€)</i>						
1999-2003	9319	10771	-	-	9371	-
2000-2003	9507	10996	-	-	-	9581
1999-2004	9467	10922	10053	-	-	-
2000-2004	9646	11132	-	10467	-	-

Notes: (i) Finland corresponds to the average of 18 control NUTS3 regions (ii) In top row of the table Levels (Changes) correspond to specifications in which the synthetic control unit is created for costs in level terms (changes) and the year (2004 or 2005) shows the year when the experiment is modelled to start; (iii) The figures for Kainuu correspond to the average over the period 2000-2004 if not otherwise stated; (iv) The figures for the synthetic control units correspond to the average for the period 1999-2004 (1999-2003) when costs are measured in levels and the average for the period 2000-2004 (2000-2003) when costs are measured in changes and the experiment is modelled to start in 2005 (2004), if not otherwise stated.

Synthetic control units provide a more accurate comparison point to Kainuu than an average of control regions³.

Among the background characteristics reported in Table 2 there are several factors that are employed in the state subsidy system. The state subsidy system is primarily employed to compensate the prevailing differences in cost levels that do not change much over time. One might therefore expect these differences to be better when looking at costs in levels. This does not seem to be the case as there are not many differences between the columns presenting levels and changes. Whether the experiment is specified as starting in 2005 or 2004 induces a little more variation. Both specifications manage to balance pre-experiment costs but the 2004 specification is more accurate regarding to education, unemployment, and population changes. In addition, the 2005 specification exceeds the average taxable income of Kainuu by some 400-600 euros. The difference is reduced to one tenth of this in the 2004 specification. The differing balancing properties result from the different weights assigned to the control regions. Regardless of these differences, the evaluation results are remarkably similar between different evaluations.

There are two explanations for the findings that differences in weights or the balancing powers have only a modest impact on the evaluation results. The first is that the observed differences in the balancing powers of the background characteristics are not particularly pronounced. Another explanation could be that since all the specifications manage to balance pre-experiment costs, previous costs are the most important factor in assessing the cost effects of the self-government experiment.

Finally, to gain more insight into the sensitivity of our results we experimented with different specifications, and these are reported in the Appendices. Appendix A1 gives results, discussed above, in which the anticipation effects are calculated as part of the experiment. In Figure A2 only pre-experiment changes in costs are employed when equalizing the pre-experiment differences between Kainuu and the synthetic control. Figure 3 shows the results when the cost growth predictors include the average growth in costs in 2000-2004 and household taxable income. Changes in the cost growth predictors only affect the ability of the resulting synthetic control region to mimic the pre-experiment cost growth rates. The conclusions regarding the effects of the self-government experiment remain practically unaltered.

³ Several predictors are being assigned small weights. This finding is not surprising given that there is not that much variation in most of these predictors from one year to the next and the variation tends to disappear when examining yearly changes. Four pre-experiment factors that are given the largest weights are previous cost growth, education and the share of the Swedish-speaking population. Even though other predictors are not found to be important in explaining changes in costs, almost all of them are still also much closer to the pre-experiment values in Kainuu than the average figures.

6. Conclusions

This study explores the cost effects of a self-government experiment that was introduced in Finland in 2005. This experiment introduced a new intermediate level of local government into the Finnish one-tier system of local administration. Almost two thirds of tasks that are typically provided by single municipalities or joint municipal authorities were transferred to this new second tier of local government, viz. basic health care, secondary education and the majority of social services. The evaluation was carried out by creating a synthetic control unit for the experiment region from 18 NUTS3 control units. In addition, placebo experiments were conducted on all control regions to help the statistical inference of the observed differences in this particular case study.

Previous assessments on the cost savings in social and health services of the self-government experiment vary from 60 to 100 million euros in the first four or five years of the experiment. The point estimates reported in this study imply considerably smaller cost effects. If the analyses are based on cost figures provided by the regional council of the experiment region, our results show cost savings varying from 34.4 million euros to 36.5 million euros, depending on the exact specification. These savings are found to be statistically significant and their magnitude is still sizeable given that total costs in social and health services in the experiment region were around 250 million euros in 2009.

If a more suitable comparison unit made up synthetic control units more than halves the previous cost savings, even bigger reductions are observed if the analyses are based on cost information provided by Statistics Finland. Exactly the same analyses result in point estimates that suggest that the cost impact of the experiment varies from a small increase to less than 4 million euros of savings, depending on the exact specification. All these point estimates are found to be statistically insignificant as similar changes are also observed in other regions that are not affected by the self-government experiment.

These findings cast doubts on the magnitude of the cost savings previously credited to the self-government experiment. The second tier of local government might bring about many good things but may miss its target if it is primarily introduced to reduce costs in social and health services. The study also points to an important lesson for those conducting regional experiments. When planning an experiment it is vital to make sure that the relevant information is collected in the same fashion as before. Otherwise there is a risk that different data sources may result in rather different evaluation results.

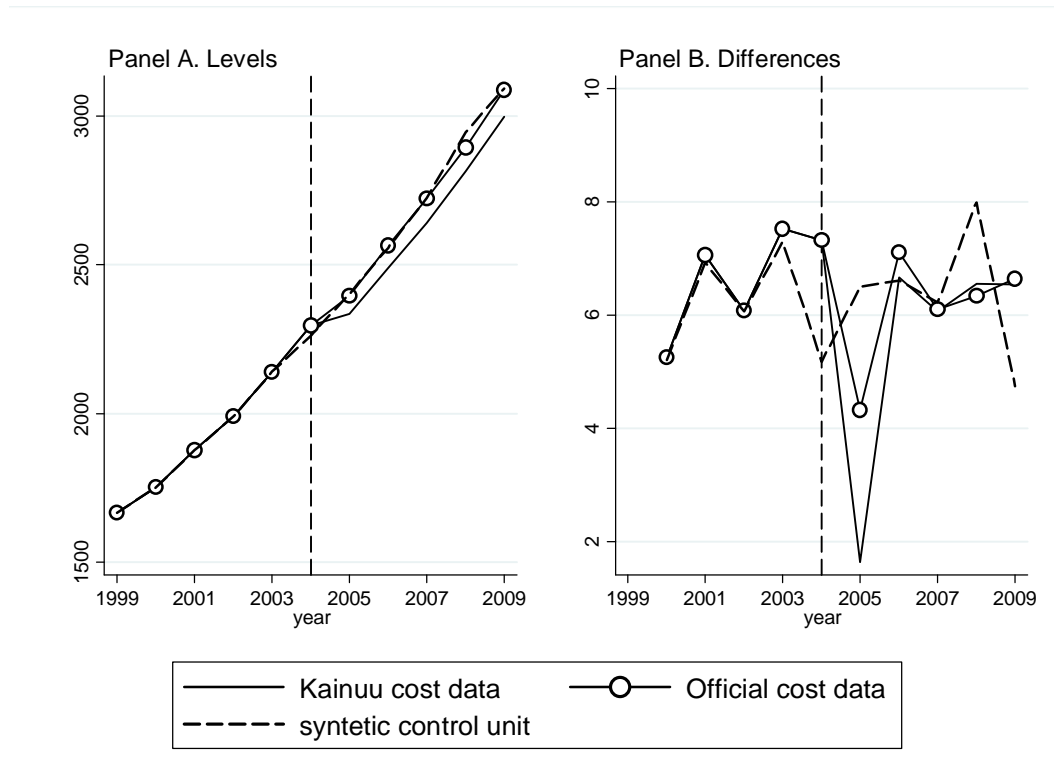
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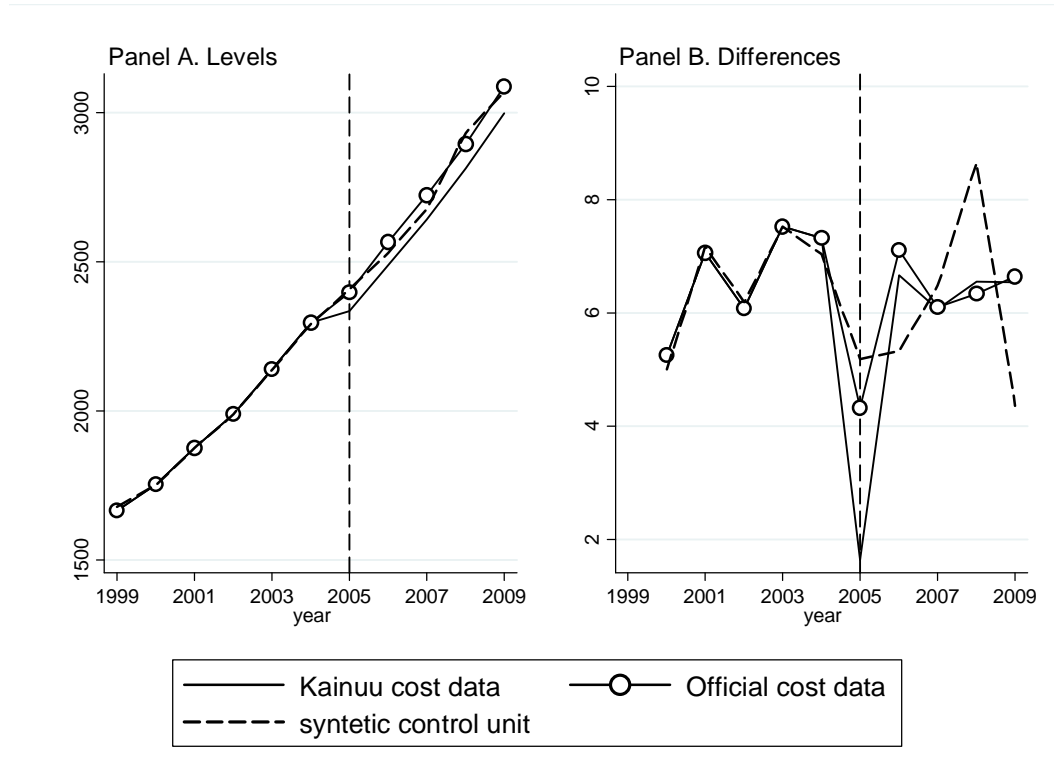
Appendix

Figure A1. Yearly changes in net costs in social and health services, Kainuu vs. the synthetic control region, the pre-experiment period defined as 2000-2003



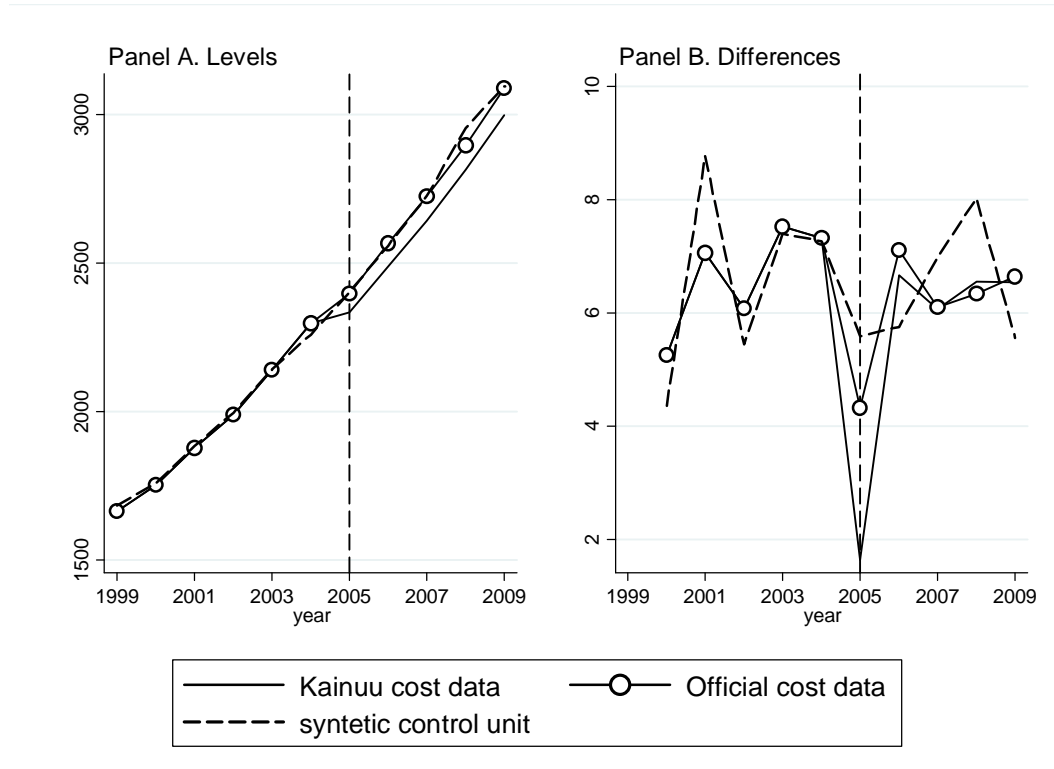
Notes: (i) as in Figure 2; (ii) The means of past cost figures are (Kainuu – synthetic control unit) in the specification using levels: 2002 (1990-1990) and 2003 (2140-2141), and in specification using changes: 2002 (6.1-6.1) and 2003 (7.5-7.4); (iii) the means of the other predictors are (Kainuu average over the years 2000-2003 – synthetic control for costs in levels – synthetic control for costs in changes) education (245–250-254), share of persons under 7 years of age (6.9–7.6–7.4), share of persons over 75 years of age (7.3–7.1–7.3), unemployment rate (20.6–16.9–17.1), share of long-term unemployed (20.6–24.3–24.1), sickness indicator (127–116–118), share of one-person households (35.6–35.2–36.4), share of Swedish-speaking population(0.1–2.5–1.2), population change (-1.22–0.56–0.58); (iv) The means of taxable income (Kainuu – synthetic control unit) are (9319-9371) when examining costs in levels and (9507-9581) when examining changes.

Figure A2. Yearly changes in net costs in social and health services, Kainuu vs. the synthetic control region. The growth predictors include only lagged cost values



Notes: (i) as in Figure 2; (ii) The means of past cost figures when measured in levels are (Kainuu – synthetic control unit): 1999 (1665–1666), 2000 (1753–1749), 2001 (1876–1875), 2002 (1990–1991), 2003 (2140–2139), 2004 (2297–2290); (iii) The means of past cost figures when measured in changes are (Kainuu – synthetic control unit): 2000 (5.26–5.00), 2001 (7.06–7.17), 2002 (6.08–6.19), 2003 (7.52–7.52), 2004 (7.32–7.04)

Figure A3. Yearly changes in net costs in social and health services, Kainuu vs. the synthetic control region The growth predictors defined as the average of previous costs changes and population growth



Notes: (i) as in Figure 2; (ii) The means of average costs are (Kainuu – synthetic control unit) (1954–1955) when measured in levels and (6.65–6.64) when measured in changes; (iii) the means of population change (Kainuu – synthetic control for costs in levels – synthetic control for costs in changes) are (-1.14–0.63–0.71)