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GAUTE TORSVIK AND KJELL VAAGE

GATEKEEPING VERSUS MONITORING:

EVIDENCE FROM A CASE WITH EXTENDED SELF-REPORTING OF SICKNESS ABSENCE

Department of Economics
UNIVERSITY OF BERGEN

Gatekeeping versus monitoring: Evidence from a case with extended self-reporting of sickness absence.[*]

Gaute Torsvik[†]and Kjell Vaage[‡]

Abstract

We examine the impact of a policy reform that gave employees in a municipality extended rights to self-declare sickness absence. To identify the effect of bypassing the physician as an absence certifier we contrast the development of absence in the reform municipality with absence in similar municipalities. We use a standard difference–in–difference comparison and the synthetic control method to quantify the effect of the reform. Using these methods we find that the reform reduced sickness absence by more than 20%. It is the incidence of absence spells that declines, not their length. To explain this result, we emphasize that the reform not only removed the physician from the picture, it also put the employer more firmly into it by prescribing a detailed follow up scheme (phone calls, meetings, flowers) for the employer (the first line–leader) and the employee calling in sick. The combination of extended self–certification and employer involvement can be taken as a sign of trust and concern for the employees' well-being or as enhanced monitoring. Both interpretations can explain the drop in absence we observe.

[†]University of Oslo; gaute.torsvik@econ.uio.no (corresponding author)
[‡]University of Bergen; kjell.vaage@econ.uib.no

1 Introduction

In modern economies most workers are insured against income losses because of temporary spells of illness. If a worker's health drops below a threshold, he or she is permitted to call in sick and obtain sick benefits to compensate for lost income. Sickness benefits can, as any type of insurance, be misused. Employees who are fit for work, who have a health condition above the threshold, may call in sick (Henrekson and Persson, 2004; Hesselius et al., 2005).

To restrain moral hazard in social insurance, it is common to require a medical certificate from a physician in order to obtain health–related welfare transfer (OECD (2010)). Medical doctors are given the role as gatekeepers based on the notion that they are the best to judge whether an employee fulfills the requirements for sickness benefits or not. Their suitability for the role of absence certifiers has, however, been debated. If GPs consider themselves primarily as their patients' advocate, requests for sick–leave certificates might be difficult to deny (Svärdsudd (2000); Carlsen and Nyborg (2009)). Their role as gatekeepers may also be weakened by their own economic interests as they may lose patients if they decline requests for a sickness absence certificate. The conflicting motives that GPs have as the gatekeepers of health related welfare benefits, and the fact that prescribing medical certificates for social benefits is costly, have spurred several recent Scandinavian policy reforms extending the period of self-reported sickness absence, see for example Hesselius et al. (2005) and Fleten et al. (2009).

This paper examines the impact of a radical self-certification reform, a reform that gave workers the opportunity to completely bypass the physician as a sickness absence certifier. From May 2008, all municipality employees in Mandal (a municipality in Norway) could self-declare sickness absence for the whole benefit period (up to a full year). The rule elsewhere in Norway is that workers must obtain a medical certificate if they are absent for more than three or eight days (depending on the regime chosen by the firm).

Prescribing sickness certificates takes a toll on the time and energy of the physicians and on resources that can — with extended self–certification — be used on other patients. Self–certification will also save time and resources for the patients who no longer have to visit their doctor's office to obtain a sick-leave

certificate and it will reduce public expenditure, because doctors are reimbursed for the time they use certifying sickness absence. These are the obvious desirable effects of the reform.

A potential disadvantage of extending self-certification of sickness absence is that it may increase the level of absenteeism. Although it has, as noted above, been widely discussed whether physicians really are able and motivated to guard welfare benefits against moral hazard behavior, the evidence is far from conclusive. In a recent paper Markussen et al. (2013) exploit exogenous variation in the physician that patients meet. They conclude that the doctor matters for the likelihood that a client obtains a medical certificate for a sick-leave. This indicates that doctors are to some extent gatekeepers for health related welfare benefits. In that case, we should expect absenteeism to increase in Mandal. A randomized trial in Sweden supports this prediction (Hesselius et al., 2005). A random sample of workers in two different municipalities were given one extra week - two instead of one - of self-declared absence. In comparison with workers who did not obtain an extra week, the treatment group increased their absence significantly; on average, absenteeism increased by 0.8 days per year (more for men). Based on the results from the Swedish experiment, we should expect a substantial increase in sickness absence in Mandal.

It is not clear that we can extrapolate from the Swedish results. The Mandal-reform differs from the Swedish reform along many dimensions. First and foremost, it differs in the level of generosity and trust it grants employees to take responsibility over their decisions to report sick. In fact, the reform was branded as the "Trust Project" and it appealed openly to workers' responsibility and reciprocity; "the reform grants you a lot of freedom and and we trust you will not misuse it". Elsewhere, especially in the lab, it has been shown that bestowing trust on someone can enhance their trustworthiness (Falk and Kosfeld (2006)). If this mechanism kicks in, we should expect lower absence rates after the reform.

Furthermore, the reform not only removed the physician from the picture, it also put the employer more firmly into it. The *Trust Project* prescribed a detailed follow up scheme (phone calls, meetings, counseling, sending cards, sending flowers) for the employer (the first line leader) and the employee calling in sick. Closer contact between the employer and the employee was communicated, in line with

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the "trust" branding of the reform, as a sign of the employer's concern for the workers well-being. However, it could also, by a more cynical person, be interpreted as enhanced monitoring, which in itself will (for many individuals) make it more costly to call in in sick.

Theory does not tell us how a reform with extended self-certification and employer involvement, will affect sickness absence. Note, however, that even a zero effect on absence is interesting from a policy point of view, as the reform will reduce visits to the doctor that motivated by obtaining a sickness absence certificate. Fewer consultations with the doctors save public money (health consultations are subsidized by the state), and they also save time and resources for the physicians. Hesselius et al. (2005) estimates that extending self declaration of absence by seven days reduced the number of visits to the physicians by (a maximal estimate of) nine percentage points.[1] The potential gain in terms of reduced public reimbursement of physician costs is much larger in Mandal because of the size of the reform (going from seven to a maximum of 365 days of self-declaration).

To assess the impact of the reform on sickness absence, we compare absences among municipality workers in Mandal before and after the reform with the change in absence among municipality employees in a number of other similar Norwegian municipalities; we use a difference-in-difference method with Mandal as the treated unit and the other municipalities as controls. The change in absence in similar municipalities is used to estimate how absence in Mandal would have developed in the counterfactual case with no *Trust Project*. The critical assumption for identification is that the comparison municipalities have the same underlying time-trend in absence as Mandal.

We use two methods to select comparison municipalities. First, we use a comprehensive list of municipalities that are classified in the same category as Mandal by Statistics Norway. This classification is based on the size and economic characteristics of the municipalities. Second, we use the synthetic control method developed by Abadie and Gardeazabal (2003) and Abadie et al. (2010) to construct a comparison group. The essence of this method is to use the pre-reform period

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[1]This estimate is an upper bound, some individuals will visit the doctor even if they self-declare absence; the estimate made by Hesselius et al. (2005) is based on the assumption that none of those who self-report visits the doctor.

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to construct a synthetic control unit (synthetic Mandal) —a convex combination of potential control municipalities — that resembles the treated unit along the dimensions that are important predictors for sickness absence in the post–reform period.

Irrespective of the method we use to construct the control units, the difference-in-difference estimates show a considerable decline (around 20 %) in absence in Mandal in the post–reform period. A more detailed analysis of the data shows that the decline in absence is especially high for employees below 50 years of age (60% of the employees are below 50).

Our data consist of one treated unit (municipality workers in Mandal). Hence, we cannot use traditional inferential techniques to assess the uncertainty of the change in absence. There is no sampling uncertainty in our case, because our data include the entire population that was treated with extended self-certification. There is, however, still uncertainty associated with our estimate of the reform impact on sickness absence. Individual health has a random component and it could be that the difference we observe in absence between periods because of random health shocks. One way to assess this uncertainty is to use permutation based inference, that is, to compare the pre– and post–reform absence in other municipalities with the change we observe in Mandal (Ernst et al., 2004; Abadie and Gardeazabal, 2003).

Using this method, we find that the post–reform development in Mandal stands out in the distribution of changes in the post–reform period. Hence we conclude that it is improbable that the drop in absence is due to a random event. Moral hazard is a potential problem in all kinds of health related social insurance, and to constrain this problem most Western states use medical doctors to certify eligibility. It is both interesting and policy relevant that replacing medical certificates (gatekeeping) with employer–driven counseling and monitoring can reduce sickness absenteeism.

In addition to the impact on absence, we find evidence that the reform induced older workers to stay longer in their jobs. Compared with its synthetic counterpart the fraction of employees above 50 years was considerable higher in Mandal after the reform. This effect may explain why the post–reform drop in sickness absence among employees above 50 years was lower than for those under

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50. If the reform induced older workers with health problems to stay longer in their jobs, the absence rate among these workers may naturally increase.

The next section provides a brief introduction to the sickness insurance system in Norway and it also gives a description of the reform in Mandal. Thereafter we describe our data and the estimation method. Section 4 presents the results.

2 Institutional setting and the policy reform

2.1 Sickness benefits and absence in Norway

Sickness insurance is mandatory in Norway and covers all workers employed for more than four weeks. The compensation ratio is 100 % from day one for a maximum period of one year[2]. The employer pays sickness benefits for the first 16 days, thereafter the benefits are financed by the National Insurance Administration (NIS) thereafter, for a maximum of 50 weeks. No medical certification is required for sickness spells lasting from one to three days, and self-reporting can be applied up to four times per year. As of 2001, firms are encouraged to join a publicly organized scheme, where one out of several components consists of allowing self-reported absence spells up to eight days, three times per year. Spells lasting more than three/eight days require a medical certificate, usually from a general practitioner. For spells lasting more than eight weeks an expanded certificate is required.

The level of sickness absence is high in Norway, around 7% of contracted work hours are lost because of sickness absence (certified by a medical doctor). Around 80% of the absenteeism is because of long-term sickness spells (spells that last more than 16 days). The public expenditures associated with sickness absence are in the order of 2,5 % of GDP. Another issue is that individuals who obtain long-term sickness certificates have a high risk of never returning to ordinary work, that is, it is likely that they will receive social security benefits on a permanent basis Markussen et al. (2012).

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[2]For some groups of employees there is an earning ceiling of approximately NOK 525,000/EUR 65,000 per year, but most workers (all in the public sector and the greater part in the private sector) obtain 100 % .

2.2 Extended self-certification of sickness absence in Mandal.

There are 428 municipalities in Norway; the smallest has fewer than 300 inhabitants and the largest more than 600000. Municipalities employ workers to provide goods and services. They are responsible for compulsory education (until the 10th grade), outpatient health services, senior citizen services and for building and maintaining the infrastructure within the municipality. The reform municipality, Mandal, exceeds the average size of municipalities in Norway, in 2012 it had 15 000 inhabitants and 1200 employees (around 900 full time positions). Because all municipalities provide the same kinds of goods and services the composition of their workforces, in terms of gender, age and education is quite similar.

Historically, the level of sickness absence for municipality employees in Mandal has been around the average for this sector in Norway. During the last decade, several municipalities — and firms more generally — have experimented with various local reforms to reduce sickness absenteeism. This is also the case for the municipality of Mandal; in 2003, it launched a "presence project" to reduce sickness absence among its employees. From this project came an initiative directed to the Ministry of Labour, requesting permission to "bypass" the physician as a sickness absence certifier. The suggestion was to let municipality employees, if they so wished, self–certify their sickness absence for at most the entire benefit period (one year). The conjecture communicated by the municipality administration was that employees would respond positively to extended trust and counseling in relation to sickness absence. In addition, the administrative leadership in Mandal proposed a detailed follow–up plan for the line leaders, the idea being that a strong involvement from the employees' line managers would substitute for the GP's involvement and advice. For shorter spells, leaders were instructed to call the absentees (after three days and after eight days). For longer spells, the leaders were instructed to initiate a number of different meetings for individual counseling and follow-up plans, and to also regularly contact the absentee, and send cards and flowers etc. All initiatives popped up as reminders on the email system of the leaders, and if they did not follow up on the plan, a message would be sent to the next person in the hierarchy who should then take actions. This hierarchical

system of email–based action reminders guaranteed that the follow–up plan was actually implemented.

The application of the system with extended self-certification of sickness absence was approved by the Ministry in June 2007. Mandal thereby became the first and only municipality — and firm — in Norway that was given permission to operate with a sickness insurance scheme that made the medical certificate from physician optional for the full length of the sickness spell. After some months of piloting a web-based system of self reported absence was in place in May 2008. In September 2008, almost 90 % of all sickness absence was self-reported. The project was extended to apply in 2011, and it is still running.

3   Data

Statistics Norway divides municipalities into different classes based on their size and economic flexibility. Mandal is a medium–sized municipality, a category that includes municipalities that have between 5000 and 20 000 inhabitants (Mandal had 15 035 inhabitants in 2012). Municipalities are further divided into subgroups based on a set of economic variables. We have comprehensive information (a balanced panel) on sickness absence and on other municipality characteristics for 64 municipalities; Mandal and 63 municipalities that belong to the same category of medium sized municipalities. Although all of the municipalities in our sample are "medium sized" they vary in size, from having fewer than 500 to having more than 1500 employees.

Our data run from 2003 to 2013. The first reform year is 2008, which means we have five observations before and six after the reform. For the reform year (2008) we only use the last two quarters, due to the fact that the reform was operative from first of May. Our data is at the municipality level, broken down by gender and by four age intervals, $[16 - 39]$, $[40 - 49]$, $[50 - 59]$, and $[60 - 69]$. Using individual–level data we could examine potential compositional effects of the reform, but in terms of the magnitude, precision and inference of the estimate, individual data would not help much as the reform was implemented at the municipality level.

Our analysis is based on absence spells that lasted longer than 16 days. We fo-

cus on long term absence because of data availability and reliability. Our outcome variable measures absence days as a percentage of contracted work days, averaged over calendar years (except for 2008 when we only use the post–reform period (3rd and 4th quarters). The data are obtained from the National Insurance Administration (NAV). Employers (municipalities in our case) are financially responsible for short absence spells, whereas the state takes over the responsibility after 16 days. In order to be reimbursed for absence benefits after 16 days employers must report long-term absence to NAV. For short term spells only absence certified by a medical doctor is reported to NAV. Hence, if we used short term spells, reported absence in Mandal would drop simply because only physician certified absence is recorded in the NAV data. It would of course be optimal to also have access to reliable data on short-term absence. But in terms of lost work days long–term spells dominate. For municipality employees around 80 % of the contracted workdays are lost because of sickness absence spells that extend beyond 16 days.

4   Results

4.1   Difference–in–difference calculations

As a first take on the impact of the reform Table 1 compares before and after mean values for some key variables.

Table 1. Mean values of sickness absence before and after the reform

	Mandal		Control ($N = 63$)		
	Before	After	Before	After	DiD
Employees	1032	1205	861	1006	
Fraction of women	0.83	0.83	0.81	0.82	
Fraction below 50 years	0.65	0.59	0.62	0.62	
Sickness absence all	6.52%	5.27%	6.69%	6.52%	1.08%
Sickness absence below 50 years	6.03%	4.65%	6.02%	6.05%	1.41%

Table 1 shows that there is a relatively large drop in sickness absence in Mandal compared with the change in control municipalities. The pre-period means are based on yearly data from 2003 until 2008. The post–reform period contains data

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from 2008 to 2013, but uses absence data only from the second half of 2008, as the reform was implemented on May 1, 2008.

Absence is 1.25 percentage points lower in Mandal in the post–reform period while there is a slight drop of 0.17 percentage points in long term absence in the control municipalities. The difference-in-difference (DiD) in means is 1.08 percentage points (17 % drop in long-term absence). The difference-in-difference is even larger for employees below 50 years, with a 1.41 percentage points drop (22 %). There is also a difference in the development of the age-composition of the workforce; a 6 percentage point increase in the fraction of employees above 50 years in Mandal, while there is no change in the fraction of workers above 50 years n the control municipalities.

Comparing levels before and after the reform is indicative of how the reform changed absenteeism, but in order to attribute the decline in absence to the reform with more confidence, we have to look closely to the development of sickness absence in Mandal, and in the control municipalities, over the pre–and post–reform periods. Figure 1 graphs the development in long-term sickness absence in Mandal and in the control municipalities. Each gray curve is a control municipality. The broken line is the mean of the controls. In the left panel all employees are included; the right panel shows the development in absence for employees below 50years.
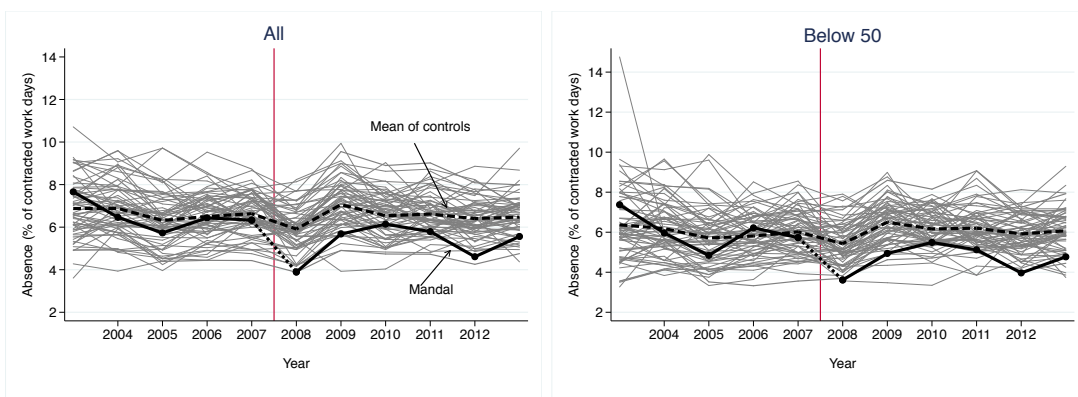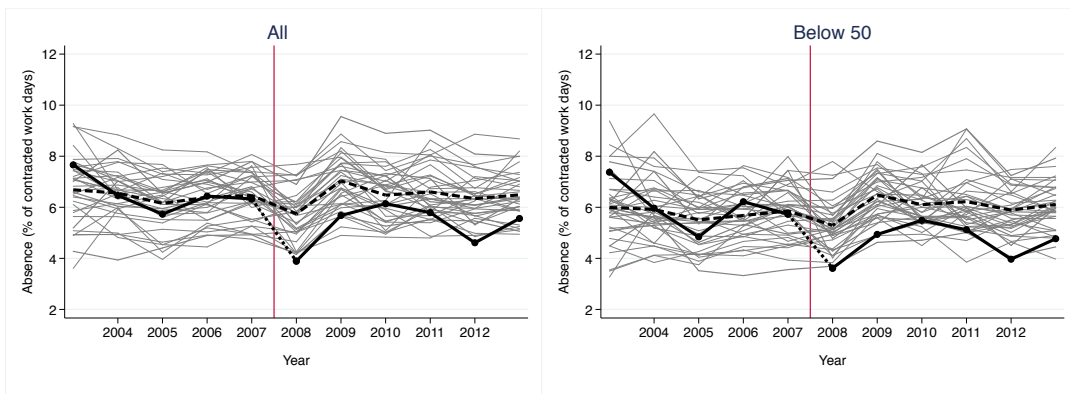

Figure 1. Evolution of long-term absence before and after the reform

Before the reform, yearly average absence in Mandal is equal to or above

the mean absence levels in the municipalities we compare it with. After the reform, absence in Mandal drops well below the average absence for the controls in that period. The immediate relative drop (2008) is particularly large.[3] Looking at all the periods, it is quite evident that Mandal shifts in the distribution of municipality absence, from a position in the middle of the distribution to a position in the lower tail of the distribution.

Individual municipality curves show a substantial variation in absence over the years. The volatility is particularly high for small municipalities (in small municipalities there are few data behind each observation). In Figure 2 all municipalities with fewer than 800 employees are excluded (averaging over the data period Mandal has 1089 employees). With this restriction, we are left with 36 control units.

Figure 2. Evolution of long term absence before and after the reform with a restricted sample of controls.

The exclusion of municipalities with fewer than 800 employees does not change the mean of the control substantially. The difference-in-difference between post- and pre-reform means are now -1.19 percentage points for all employees and -1.63 percentage points for employees younger than 50 years (compared with -1.08 and -1.41 if all municipalities are included). There is, however, considerably less volatility in the data.

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[3]One reason why there is a drop in 2008 is because the data for this year only contain the 3rd and 4th quarters, and absence levels tend to be higher during the winter. But this does not affect our comparison between Mandal and the other municipalities as we have collected data for the same period for all municipalities

We cannot use the standard methods of large sample inference to assess the statistical uncertainty of our difference-in-difference estimate. With aggregate municipality data there are five pre- and six post–reform observations for each municipality. We do not obtain reliable estimates of the standard errors of the mean absence in Mandal before and after the reform with so few observations. However, if we assume that the random elements in sickness absence in Mandal and the other municipalities are independently drawn from the same normal distribution, we can use a fixed effect OLS difference–in–difference estimator to obtain standard errors for the reform effect.[4] When all employees are included (those above and below 50 years) the reform estimate is -1.19 with a robust standard error (clustered on municipalities) of 0.11. For employees below 50 years the reform point estimate is -1.41, with a robust standard error of 0.19. Hence, if we assume that the random part of sickness absence in Mandal and the rest of the municipalities is drawn from the same normal distribution, it is highly improbable ($p < 0,001$) that it is luck alone that gave Mandal such a (comparatively) low level of absence in the post–reform period.

A more robust — distribution free — test of the uncertainty associated with the difference-in-difference estimate is to use a permutation test to check whether the drop in absence observed in Mandal from 2008 onwards stands out compared with the changes (percentage sickness absence after the reform minus percentage absence before) in other municipalities ((exact inference), Bertrand et al. (2004); Ernst et al. (2004). While this inference still assumes that the random part in the sickness absence equation is drawn from the same distribution for all municipalities, we do not assume that the distribution is normal.

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[4]We estimate the equation $sick_{it} = \alpha_i + \beta ref_t + \delta ref\_\_treat_{it} + \varepsilon_{it}$, where α_i is a fixed municipality effect,ref_t is equal to one in the years (t) after 2007 (zero otherwise) and $ref\_\_treat_{it}$ is equal to one if the municipality is Mandal in the reform period (zero otherwise).
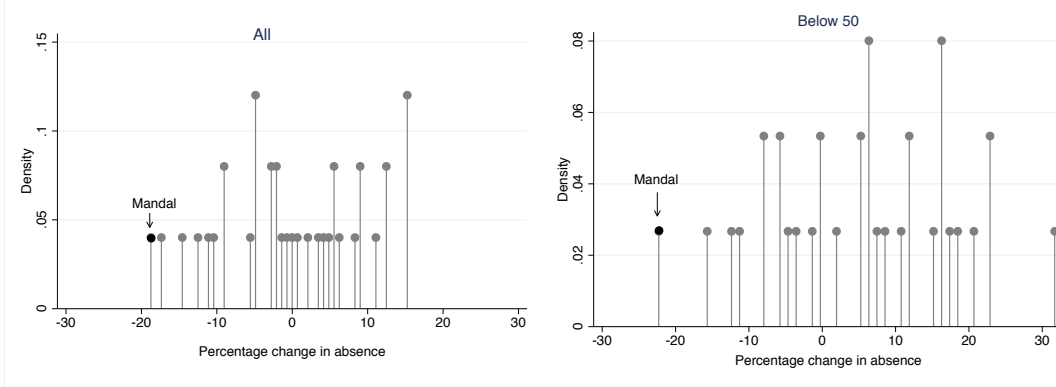
Figure 3. The distribution of relative changes in mean absence rates between pre– and the post–reform period

The left panel in Figure 3 shows the distribution of percentage change in absence ((absence after minus absence before)/absence before) for all employees, while the right panel shows the distribution for employees below 50 years. For all employees, Mandal ties with another municipality in having the most extreme percentage drop in absence. If we consider only workers that are below 50 years, Mandal is, by a large margin, the municipality with the largest drop in absence.

4.2   Synthetic control method

Next we use the synthetic control method developed by Abadie and Gardeazabal (2003); Abadie et al. (2010) to estimate the causal impact of the reform. This method uses information from the pre-reform periods to construct a synthetic Mandal; a convex combination of the control municipalities that best resembles the treated unit - Mandal - prior to the reform. The idea is to match on all observable characteristics that may have an impact on the outcome of interest (sickness absence in our case). To account for unobservable variables that influence sickness absence it is recommended to match on pre–reform values of the outcome variable (Abadie et al. (2010)).

Formally there are J municipalities indexed by j and where $j = 1$ is Mandal, which in period τ is treated with extended self-certification of sickness absence. Municipalities $2,..J$ are in the donor pool. $\mathbf{z_j} = (x_{j,1}, ..x_{j,k}, y_{j,k+1}, ..y_{j,k+(\tau-1)})$ is

a column vector that contains k entries of pre-reform municipality characteristics that may predict sickness absence (in our analysis we use only two variables, average unemployment rates in the municipality and the fraction of part time workers) and $(\tau - 1)$ entries with pre-reform values of the outcome variable of interest, percentage of sickness absence, in our case.

The synthetic control method selects the weights $\mathbf{w} = (w_2, w_3, ..w_k)$ and $\mathbf{v} = \left(v_1, v_2, ..v_k, v_{k+1}, ..v_{k+(\tau-1)}\right)$ that minimize a nested minimization problem given by

$$\mathbf{w}^*(\mathbf{v}) = \underset{\mathbf{w}}{argmin} = \left(\sum_{i=1}^{k} v_i \left(x_{1,i} - \hat{x}_{synth,i}\right)^2 + \sum_{t=1}^{\tau-1} v_{k+t} \left(y_{1,t} - \hat{y}_{synth,t}\right)^2\right) \qquad (1)$$

$$\mathbf{v}^* = \underset{\mathbf{v}}{argmin} = \left(\sum_{t=1}^{\tau-1} \left(y_{1,t} - \hat{y}_{synth,t}\right)^2\right) \qquad (2)$$

where

$$\hat{x}_{synth,i} = \left(\sum_{j=2}^{J} w_j x_{j,i}\right); \hat{y}_{synth,t} = \left(\sum_{j=2}^{J} w_j y_{j,t}\right)$$

Each entry within $\mathbf{w}^*$ is a number between 0 and 1 and it is the weight that is assigned to each municipality in the donor pool, with these weights summing to 1. Each entry in $\mathbf{v}^*$ is a number between 0 and 1; it is the weights given to municipality characteristics and to the lagged values of the outcome variable in order to minimize the squared predicted error of the lagged outcome variable (sickness absence before the reform). In short, the nested algorithm, given by equations 1 and 2, identifies the donor weights that minimize the distance between the treated unit (Mandal) and the donors. The weights $\mathbf{w}^*$ are used to construct a synthetic control unit that depict the counterfactual development of sickness absence in Mandal.

Abadie et al (2010) suggest that one way to examine the uncertainty of the synthetic control estimates is to compare them with placebo reforms in the control units (compare the synthetic x and x, where x is a municipality that did not extend self certification of sickness absence). If the post–reform development in the treated unit is unusual compared with the placebo reforms this indicates that it is unlikely that the treatment effect is due to chance alone.

Figure 4 includes both the treated unit and the placeboes, in the left panel all employees are included, the right panel compares employees below 50 years of age. The black thicker line is Mandal. We can see that the gap between Synthetic Mandal and Mandal is consistently negative, and it is in the lower range of the placebos (although there are "placebo gaps" that occasionally dip below the gap between the synthetic control and the treated unit).
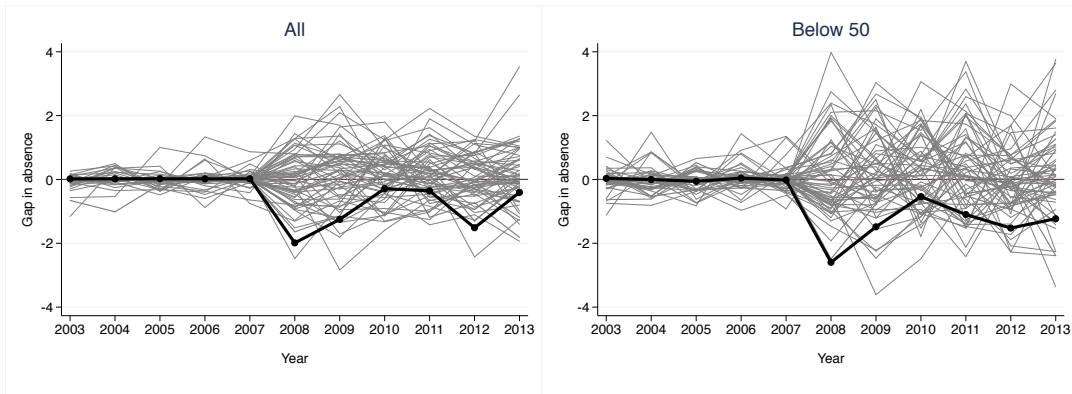
Figure 4. Gaps between synthetic X and X

Using the synthetic control we find that the average drop in absence over the six post–reform years is 0.96 percentage points for Mandal. Again it is useful to calculate the average post–reform gap for all municipalities and check where in the distribution of gaps Mandal is located. There are two (out of 63) that have a larger average drop in absence in the (pseudo) post–reform period if we compare with the synthetic counterpart. The municipalities with a larger average post (pseudo) reform gap have, however, a much poorer fit with their synthetic control in the pre-reform period. If we consider only the 50 percent with best pre-reform fit (50 % with lowest pre reform mean squared prediction error; Mandal is among the decile with the best pre-reform fit, we find that Mandal is the municipality with the largest decline in sickness absence gap.

For employees below 50 years the average post–reform gap in Mandal is -1.27 percentage point. This number is very close to the drop of 1.42 percentage points that we found by using all the controls in the analysis above. The average sickness drop in Mandal in the post–reform (or pseudo reform period) is by far the largest

if we compare across all municipalities in the donor pool.

The general picture that emerges from the synthetic control analysis, is that allowing workers to self-certify sickness absence reduced long term absence. The decline in absence endures over the post–reform period (six years), although the reform year stands out with a very large drop in absence.

4.3 Additional results

To better understand why extended self-certification and enhanced employer involvement lead to a drop in absence, we have analyzed the length of absence spells and the percentage of spells that are graded. Markussen et al. (2012) study a nationwide Norwegian reform in 2004 that, among other things, encouraged the substitution of graded for nongraded sick leave certificates. They argue that the reform led to shorter spells of sickness absence which in turn reduced absence levels; with graded sickness insurance workers utilize their remaining work capacity and this leads to a faster recovery and to a reduction in sick benefits claims. Normally it is the physician, together with the employer and the worker, who decide the grading of absence spells. After the reform in Mandal, the employer (the line-leader) and worker decided the grading of the absence. Could it be that the Mandal reform increased the use of grading, which then reduced the length of the sickness spells, as found in Markussen et al. (2012)?

We do not have data for 2003 on the fraction of graded absences, but the changes from 2004 and onwards are illustrated in Figure 5. Comparing with control municipalities there is no evidence that graded sickness absence is more frequently used in Mandal. There is a general trend toward more grading of absence, but Mandal basically follows the trend.
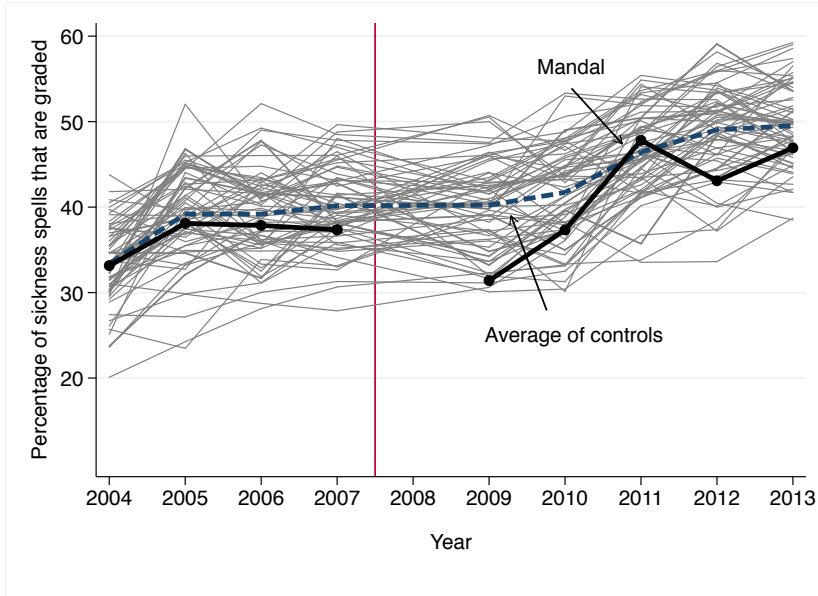
Figure 5. Grading of absence

Figure 6 depicts that there is no reform effect on the length of absence spells either. The length of absence spells did not change before and after the reform in Mandal and there is also no change in the average of the control municipalities.
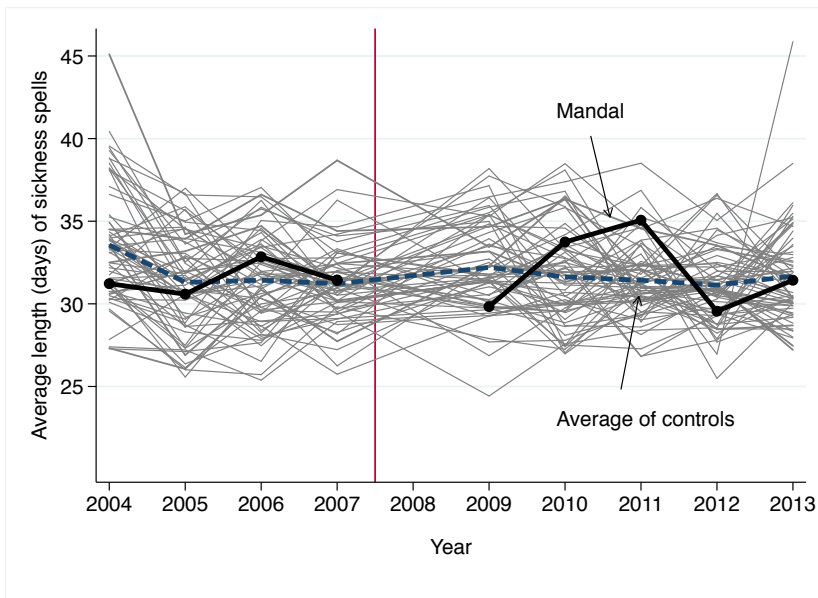
Figure 6. Length of sickness spells

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The fact that the length of the spells follows the trend in other municipalities means that the drop in absence observed in Mandal in the post–reform period is due to *fewer* long–term spells of sickness absence. It is not the activation measures initiated by the employer that improve the health and work capacity of the workers and bring them more quickly back to work. It must be the prospect of being counseled, activated and monitored by the line–leader that enhances the barrier of entering a long–term spell of absence. But even if we can deduce this, it is difficult, based on the data we have, to distinguish whether it is enhanced trust or monitoring that leads to lower absence. The trust aspect of the reform, the fact that it extends the discretion and responsibility individual workers are given to assess their own health related work capacity, will induce reciprocity inclined workers to be less absent from work. The monitoring and activation aspect of the reform will increase the psychological costs of reporting in sick and also reduce the incidence of absenteeism. It is difficult to separate these mechanisms.

Another interesting pattern in the data that can be discerned in Table 1 is that the fraction of workers above 50 years increases in Mandal compared with the other municipalities. Figure 7 provides a more detailed account of the trend in this fraction. In the left panel the fraction of workers above 50 years is plotted against all other municipalities and their average, while in the right panel we have used a synthetic control method to let the data find municipalities with the same pre-reform (or pseudo reform for municipalities other than Mandal) trend.
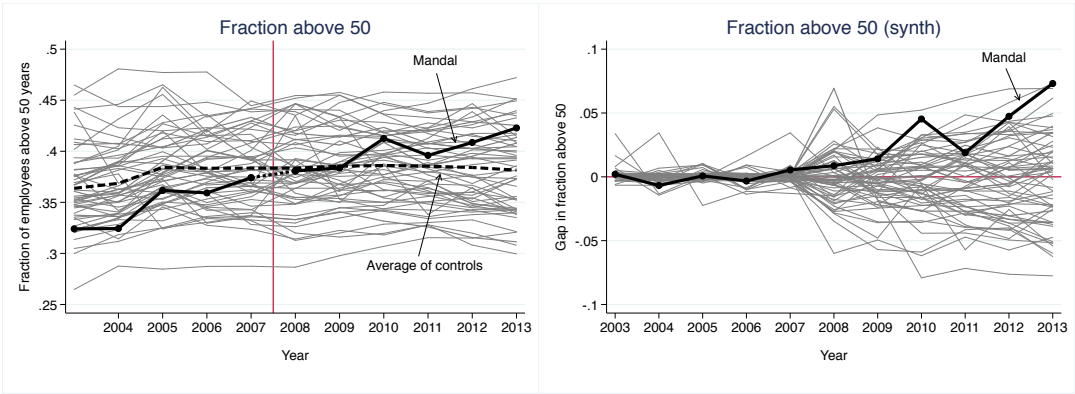
Figure 7. Fraction of workers above 50 years

Compared with the control municipalities there appears to be an increase in the fraction of the municipality workers who are above 50 years in Mandal in the period after the reform. The most commonly travelled routes out of the labor force begin with a long-term sickness absence spell which then leads to disability insurance or some other form of permanent welfare support. The Mandal reform lowers the frequency of long-term absence spells, which then later on induces a higher fraction of the workers to stay in their jobs.

5   Conclusion

In this paper, we have examined the effect of a policy reform that was implemented in a Norwegian municipality to reduce sickness absence. The key component of the reform was a transfer of the responsibility to certify health problems that qualify for sickness benefits from the medical doctor to the workers. The reform extended self-certification for the maximum length of the benefit period (one year). Individuals with serious health problems will of course still visit the doctor, but it is not the physician's responsibility to certify that a person should not attend work because of health issues. Another important reform element was that line-leaders were given a strict follow-up and counseling plan to help those calling in sick to return to their work. This aspect of the reform could be interpreted either as increased concern for the workers' well-being or as increased monitoring. Our data cannot discriminate between these two interpretations of the employers' role.

We find a significant drop in sickness absence in Mandal after the extended self-certification reform. We use two methods to construct a counterfactual for the reform municipality, the standard difference-in-difference method where we use municipalities that are classified by Statistics Norway to be of medium size with some or little economic flexibility, and the synthetic control method. Irrespective of method, the results are the same; compared with the counterfactual there is a large drop in absence in the reform municipality. Another interesting pattern in the data is that workers above the age of 50 appear to stay longer in their jobs in the reform municipality.

Almost all countries with a modern welfare state use physicians as gatekeepers of health benefits. In order to obtain economic support a medical doctor must

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certify that the person has health issues that make him or her eligible for the benefits. This practice is costly for the doctors, the patients and for the state (which reimburses the medical doctors). A natural concern is that extending individuals' rights (responsibilities) to self–certify health–related problems that make them eligible for benefits, will increase moral hazard problems related to social insurance. Our analysis indicates that sickness certification can be taken off the hands of the physicians without a subsequent rise in sickness absence. In fact, our results indicate a large drop in absence. Hence, extended self-certification of sickness absence in Mandal appears to be a win–win reform: less absence and fewer resources used on certification. Note however, that extended self–certification of absence implied extended employer involvement, which probably uses administrative resources in the municipality.

In terms of external validity and scale–up potential, there are several caveats. We are confident that we measured the causal impact of the reform on absence in Mandal, but we are not able to identify the exact mechanisms that lead to reduced absence, whether was it was enhanced trust or enhanced monitoring. Furthermore, we cannot know if there are specific characteristics within Mandal that made extended self-certification of absence work so well there. It is, however, reassuring that Mandal appears to be very much an "average" municipality if we look at the pre-reform data (on sickness absence or other variables such as, age, gender composition, unemployment, etc.). It is also good that the leaders in the municipality administration who initiated the "Trust Project" were present both before and after the reform.

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Department of Economics

University of Bergen
Fosswinckels gate 14
N-5007 Bergen, Norway
Phone: +47 55 58 92 00
Telefax: +47 55 58 92 10
www.uib.no/econ/en
post@econ.uib.no