Online Appendix of "Home Work: Exploring the Labor Market Effects of Subsidizing Domestic Services"

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Appendix A.1: Description of the Belgian Work Incapacity Insurance System

Social security in Belgium is composed of the following branches: unemployment, sickness absence (<1 year), disability insurance (>1 year), occupational illnesses, workplace injuries, and pensions. Social security is organized as a work-related insurance, which individuals can build rights to only by being active on the labor market (this includes being an unemployed jobseeker). It protects the insured against certain risks (such as becoming unemployed, ill, or too old to work) by providing a replacement income for the lost earnings. In Belgium, any individual eligible to social security is insured against health shocks that affect their ability to work through the payment of benefits whose amount are a given fraction of the last monthly earnings. This Appendix describes the insurances related to work incapacity, i.e., sickness absence, disability insurance, occupational illnesses, and workplace injuries.

Sickness absence. The reimbursement of medical expenses and sickness absence benefits are made via public health insurance funds called "mutualities," which are funded by the National Institute for Health and Disability Insurance (NIHDI) and act as intermediaries. In short, to benefit from Belgian medical coverage, individuals must register with a health insurance fund and pay quarterly contributions. Then, when they become sick, their mutuality pays them a monthly benefit as compensation for their loss of earnings; it is however the employer who is in charge of paying the worker's wage during the first month (14 days) of sickness for a white-collar (blue-collar) salaried worker. During a sickness absence, individuals are examined by a doctor designated by their mutuality. To be recognized as being unable to work, applicants must fulfill three criteria. First, they must have stopped all productive activity. Second, they must have stopped this productive activity as a direct consequence of a health deterioration that is not directly linked to their professional activity. Third, the applicant's ability to work must be reduced by at least 66% with respect to their previous occupation. After 6 months of sickness absence, the reduction in the ability to work is evaluated with respect to any occupation that the worker could perform given their age, education and experience (instead of their previous occupation). If the illness lasts more than a year, the individuals enter the long-term disability program.

Disability insurance. After one year of sickness absence, the disabled worker enters the long-term disability program, which is publicly provided by the NIHDI. In practice, in order to be accepted into the long-term disability program, the applicant's doctor (who oversaw them during the sickness absence period) submits the application to the NIHDI, which can either directly

approve the doctor's conclusions or run its own internal evaluation and invite the applicant for a medical examination. Each year, 1,000 long-term disabled individuals are randomly selected to be re-evaluated by a doctor of the NIHDI in order to check that the prognosis is still in line with the individual's current health. Most of the time, these random checks confirm the existing prognosis.

Occupational illness. The Federal Agency for Professional Risks (Fedris) is the body in charge of preventing and compensating illnesses that can arise *as a result of* the exercise of a certain occupation. The agency has a list of recognized occupational illnesses which link given occupations with given illnesses. It is also possible to have an illness recognized without it being on the list, but in this case, it is harder for the applicant to prove the link between their occupation and the illness. The benefits paid out to beneficiaries are computed as the percentage of lost earnings capacity arising because of the illness, multiplied by the last wage (with floors and ceilings).

Workplace injuries. Workers are also covered against potential accidents they could suffer when at work (or on their way to and from work). If the employer's insurance company has recognized the worker's accident as a "work accident", and the worker remains permanently unable to work as a result, then the worker is entitled to permanent incapacity benefits. The insurance company pays out medical costs and incapacity benefits, whose amount depends on the rate of incapacity computed by the doctor appointed by the insurance company.

Appendix A.2: Point Estimates Presented in Graphical Evidence

This Appendix contains tables with the point estimates which are illustrated in Figure 2 in the paper. Because of limited space, the Table below shows the estimated coefficients *at the end of each year* (and for all pre-treatment quarters), although Equation (1) is run on a quarterly panel of individuals.

Table A. 1: Effect of the SVS on Employment in Subsidized Industries

	Benchmark DD	Triple-Differences	DD with High-Income Women as Controls	Placebo DD High Income Individuals
Pre-treatment effects				
t=2003q1	-0.0009	-0.0017*	-0.0107***	0.0008*
	(0.0008)	(0.0009)	(0.0006)	(0.0004)
t=2003q2	0.00006	-0.0004	-0.0041***	0.0004
	(0.0008)	(0.0009)	(0.0005)	(0.0004)
t=2003q3	0.0010	0.0007	-0.0022***	0.0003
	(0.0007)	(0.0008)	(0.0005)	(0.0003)
Post-treatment effects				
t=2004q4	0.0027***	0.0019*	0.0102***	0.0008*
	(0.0010)	(0.0011)	(0.0007)	(0.0005)
t=2005q4	0.0068***	0.0060***	0.0169***	0.0009
	(0.0010)	(0.0012)	(0.0008)	(0.0006)
t=2006q4	0.0132***	0.0130***	0.0259***	0.0002
	(0.0011)	(0.0013)	(0.0009)	(0.0006)
t=2007q4	0.0213***	0.0196***	0.0312***	0.0019***
	(0.0012)	(0.0013)	(0.0009)	(0.0007)
t=2008q4	0.0279***	0.0269***	0.0361***	0.0012*
	(0.0012)	(0.0013)	(0.0010)	(0.0007)
t=2009q4	0.0328***	0.0323***	0.0390***	0.0008
	(0.0012)	(0.0014)	(0.0010)	(0.0007)
t=2010q4	0.0325***	0.0320***	0.0404***	0.0009
	(0.0012)	(0.0014)	(0.0010)	(0.0007)
t=2011q4	0.0331***	0.0330***	0.0404***	0.0005
	(0.0012)	(0.0014)	(0.0010)	(0.0008)
t=2012q4	0.0350***	0.0344***	0.0402***	0.000983
	(0.0012)	(0.0014)	(0.0010)	(0.0008)
t=2013q4	0.0355***	0.0366***	0.0418***	-0.0006
	(0.0012)	(0.0014)	(0.0010)	(0.0008)
t=2014q4	0.0360***	0.0372***	0.0417***	-0.0006
	(0.0012)	(0.0014)	(0.0011)	(0.0008)
t=2015q4	0.0357***	0.0374***	0.0422***	-0.0011
	(0.0012)	(0.0014)	(0.0011)	(0.0008)
Mean pre-treatment outcome	0.0446***	0.0179***	0.0213***	0.0179***
	(0.0052)	(0.0004)	(0.0048)	(0.0004)
Observations	9,620,196	17,465,732	8,947,492	7,845,588
R-squared	0.49	0.53	0.55	0.67

Appendix A.3: Placebo Tests for the Effects of the SVS on Employment in Targeted Industries

Figure A. 1 shows the results of three placebo tests for the effects of the SVS on employment in subsidized industries. Panel (a) shows our benchmark results for ease of comparison.

Figure A. 1: Placebo Tests
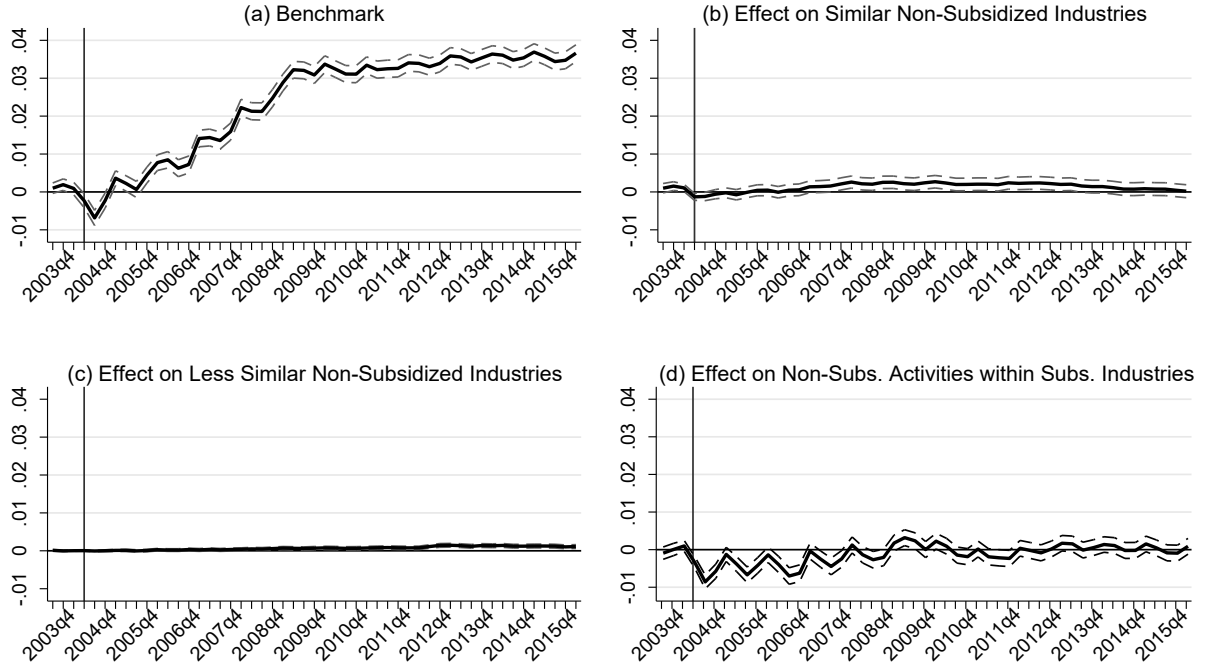
Panel (b) shows the results of a placebo tests that estimates Equation (1) for the probability of being employed in similar industries to the ones targeted by the SVS, but that were not subsidized by the SVS. We consider unsubsidized industries to be similar to our subsidized industries based on the following characteristics: (i) a service industry with larger shares of women than men, (ii) a majority of low-skilled (blue-collar) workers, and (iii) an inclination to take place (at least partly) informally. The industries that fulfill these criteria include food retail, clothing retail, restaurants, and hotels. More specifically, unsubsidized comparable industries include industries with the following NACE codes: 4711 "Retail sale in non-specialized stores with food, beverages or tobacco predominating"; 4771 "Retail sale of clothing in specialized stores"; 5510 "Restaurants and mobile food service activities"; and 5610 "Hotels and similar accommodation." Panel (b) shows that employment and work disability in similar non-subsidized industries evolved quite similarly across low-income men and women between 2003 and 2015, thus supporting the robustness of our findings.

One issue with the placebo test described above, however, is that placebo industries might compete for workers with industries that were subsidized and, therefore, the SVS might have indirectly affected the placebo industries. Panel (c) thus shows the results of a different placebo test, in which we use less similar industries which are less likely to compete for workers with treated industries. Here, the placebo industries we select are pre-primary and primary education and retail in various specialized stores (e.g., chemists, medical and orthopedic goods, cosmetic and toilet articles). These activities are also performed by women in majority, but are more highly skilled and thus are less likely to compete with the industry of domestic services for the same workers. The results of estimating Equation (1) for these less similar placebo industries shows that employment of low-skilled men and women evolved almost identically over our period of analysis in these industries and thus add support to the results we show in the paper.

Finally, Panel (d) shows the result of a third placebo test in which we consider the probability of being employed in non-subsidized activities within the industries that were subsidized by the SVS. Indeed, because the subsidy targeted specific activities (namely cleaning and ironing), many activities performed within the industries that were targeted by the scheme—cleaning of buildings, placement agencies, and social work activities—continued to take place without benefiting from the subsidy. Therefore, as a placebo test, we can estimate the effect of the subsidy implementation on non-subsidized employment, inside subsidized industries. To do so, we distinguish between employment within subsidized industries, that is subsidized by the SVS versus non-subsidized by the SVS. Specifically, if an individual is employed in a subsidized industry, under an SVS contract, they are registered as being in subsidized employment. If an individual is employed in a subsidized industry, but not under an SVS contract, they are registered as being in non-subsidized employment. Panel (d) shows that non-subsidized employment in subsidized industries remained very similar for men and women. Again, this leads us to conclude that the employment effects presented in our benchmark findings are indeed caused by the implementation of the SVS.

Appendix A.4: Additional Employment and Work Incapacity Outcomes

Table A. 2: Effect of the SVS on Additional Employment and Work Incapacity Outcomes

	Employment					Work Incapacity			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Overall	Salaried	Self-employment	SVS Employment	Non-SVS employment	Overall	Sickness Absence	Disability	Other
β: Effect of 100€ subsidy/inhabitant	0.0074***	0.0068***	0.0026***	0.0057***	0.0017***	0.0042***	0.0010***	0.0028***	0.0005***
	(0.0006)	(0.0006)	(0.0004)	(0.0001)	(0.0005)	(0.0003)	(0.0001)	(0.0002)	(0.0001)
Constant	0.4720***	0.4510***	0.0341***	0.0007***	0.4710***	0.0468***	0.0191***	0.0206***	0.0073
	(0.0021)	(0.0022)	(0.0010)	(0.0001)	(0.0021)	(0.0008)	(0.0002)	(0.0006)	(0.0001)
Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340
R-squared	0.95	0.90	0.92	0.98	0.95	0.85	0.80	0.78	0.81

Appendix A.5: Disaggregating the Increase in Disability Claims in Subsidized Industries by Medical Condition

Our findings show that the SVS increased the rate of participation in the disability insurance. In this section, we explore whether part of this increase was driven by increases in disability rates within the industries targeted by the SVS. To do so, we use our DD framework described in Section 4, but considering as an outcome being on long-term disability, while having an employment contract in a treated industry. In essence, this outcome is a dummy equal to one if an individual is receiving long-term disability insurance benefits at the end of a quarter and still has an employment contract in a targeted industry (which is necessary to associate the disability with the targeted industries). We then estimate the treatment effects separately for various kinds of disabilities in order to understand what type of disability insurance claims rise, if any. To this end, Figure A. 2 shows the estimated marginal effect of being a woman on the probability of being work disabled in one of the subsidized industries, for different illnesses separately.

Figure A. 2: Effect of Being a Woman on the Incidence of Various Medical Conditions
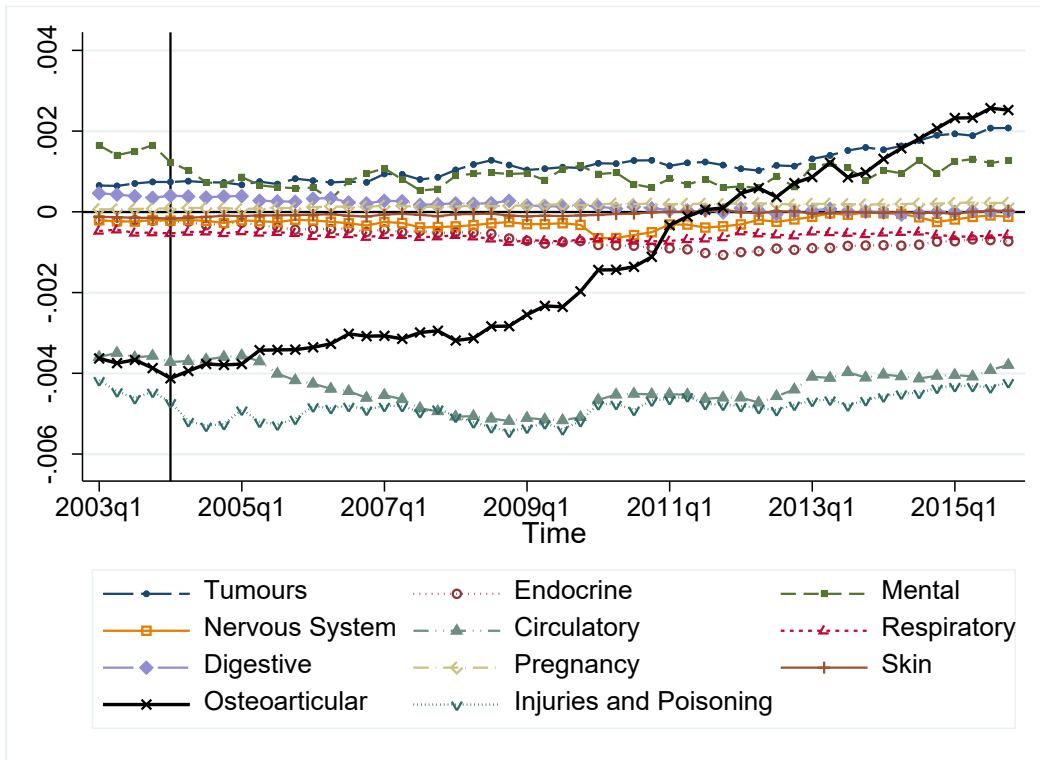

Figure A. 2 indicates quite clearly that the bulk of the increased incidence of work disability among women employed in the treated industries arises because of a strong increase in the

probability that they suffer from osteoarticular illnesses. These findings are consistent with previous research studying the health hazards associated with working in cleaning occupations. Cleaners have indeed repeatedly been shown to be particularly subject to osteoarticular illnesses because of job-related factors such as movement repetition, frequent awkward body posture, excessive force required to handle equipment, inadequate rest breaks and a rapid working pace (Woods and Buckle, 2006; Kumar and Kumar, 2008; Brun, 2009). In addition, existing research has also highlighted the strong exposure of cleaners to chemical and biological hazards which, through dermal contact and inhalation, can lead them to suffer from respiratory and skin-related illnesses (Brun, 2009). Previous research has also highlighted a number of factors that can cause psychological difficulties for cleaners such as job insecurity, lack of control over the organization of their work, difficult working schedules, poor social recognition, lack of social relations at work and limited learning and career development opportunities (Brun, 2009; Goffin et al., 2018). We do not, however, find any effect of the subsidy on these other disabilities.

Appendix A.6: Heterogeneous Effects of the SVS

In this Appendix, we explore the heterogeneous effects of the SVS across municipalities with different characteristics. First, in Table A. 3, we divide our sample between municipalities who presented an average income (i.e., income from all sources, including work and all sorts of social insurance benefits) that was above or below the median municipality in 2003. Second in Table A. 4, we divide our sample between municipalities with a relatively high or low share (i.e., above or below the median municipality) of non-Belgian residents in 2003. Our estimates indicate that employment gains are driven by higher-income municipalities and municipalities with a relatively low share of non-Belgian residents. Interestingly, these employment gains seem to be driven by decreases in inactivity rates, rather than unemployment, in these higher-income and low-migrant share municipalities. In contrast the decrease in unemployment rate is higher in lower-income municipalities and those with relatively higher shares of non-Belgian residents.

Table A. 3: Heterogeneous Effects of the SVS – High-/Low-Income Municipalities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Employment		Unemployment		Work Incapacity		Other Social Welfare Programs		Inactivity	
	High-income	Low-income	High-income	Low-income	High-income	Low-income	High-income	Low-income	High-income	Low-income
β: Effect of 100€ subsidy/inhabitant	0.0090***	0.0065***	-0.0022***	-0.0032***	0.0042***	0.0046***	-0.0052***	-0.0047***	-0.0080***	-0.0046***
	(0.0006)	(0.0008)	(0.0003)	(0.0004)	(0.0002)	(0.0005)	(0.0003)	(0.0004)	(0.0005)	(0.0011)
Constant	0.712***	0.528***	0.0377***	0.152***	0.0369***	0.0870***	0.0786***	0.125***	0.0430***	0.0414***
	(0.0017)	(0.0022)	(0.0007)	(0.0011)	(0.0005)	(0.0010)	(0.0008)	(0.0011)	(0.0018)	(0.0028)
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,696	7,646	7,696	7,646	7,696	7,646	7,696	7,646	7,696	7,646
R-squared	0.95	0.93	0.90	0.91	0.86	0.83	0.74	0.76	0.91	0.91

Table A. 4: Heterogeneous Effects of the SVS – Municipalities with a High/Low Share of Non-Belgian Residents

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Employment		Unemployment		Work Incapacity		Other Social Welfare Programs		Inactivity	
	High share non-BE	Low share non-BE	High share non-BE	Low share non-BE	High share non-BE	Low share non-BE	High share non-BE	Low share non-BE	High share non-BE	Low share non-BE
β: Effect of 100€ subsidy/inhabitant	0.0060***	0.0088***	-0.0040***	-0.0018***	0.0040***	0.0042***	-0.0048***	-0.0048***	-0.0029***	-0.0082***
	(0.0008)	(0.0006)	(0.0004)	(0.0003)	(0.0005)	(0.0003)	(0.0006)	(0.0003)	(0.0010)	(0.0005)
Constant	0.5280***	0.7110***	0.1520***	0.0381***	0.0845***	0.0382***	0.1270***	0.0774***	0.0414***	0.0436***
	(0.0019)	(0.0019)	(0.0007)	(0.0011)	(0.0008)	(0.0007)	(0.0010)	(0.0009)	(0.0026)	(0.0016)
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,722	7,622	7,722	7,622	7,722	7,622	7,722	7,622	7,722	7,622
R-squared	0.94	0.94	0.94	0.86	0.90	0.78	0.78	0.75	0.91	0.89

Appendix A.7. Effects of the SVS on Yearly Income

This Appendix shows the results of estimating Equation (3) for the years 2003–2015, using mean income (from different sources) gained during the entire year as the outcome variable. Work earnings includes all declared income from salaried or self-employed work. Unemployment benefits represent benefits for involuntary unemployment provided by the unemployment agency. Work incapacity benefits include all benefits related to work incapacity, i.e., sickness absence, long-term disability, work injuries, and occupational illness. Benefits from other social welfare programs includes benefits for (early) retirement, social integration benefits, benefits related to a handicap, and benefits to self-employed individuals (which encompass a mix of benefits related to unemployment, illnesses, etc.). Total income is the sum of income from work, unemployment benefits, work incapacity benefits, and benefits from other social welfare programs.

Table 1: Effect of the SVS on Yearly Earnings and Benefits Receipt

	(1)	(2)	(3)	(4)	(5)
	Work Earnings	Unemployment Benefits	Work Incapacity Benefits	Benefits from Other Social Welfare Programs	Total Income
β: Effect of 1€ subsidy/inhabitant	0.96***	-0.48***	0.33***	-0.13*	0.68*
	(0.33)	(0.03)	(0.03)	(0.08)	(0.37)
Constant	8,289***	1,091***	373***	749***	10,501***
	(126)	(8)	(9)	(22)	(138)
Fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	15,340	15,340	15,340	15,340	15,340
R-squared	0.95	0.89	0.84	0.69	0.94

Appendix A.8. Robustness Tests of the Overall Labor Market Effects of the SVS

Table A. 5 Estimated Labor Market Effects w/o Industries NACE78, NACE81 or NACE88

	Employment				Unemployment			
	Benchmark	W/o NACE78	W/o NACE81	W/o NACE88	Benchmark	W/o NACE78	W/o NACE81	W/o NACE88
β: Effect of 100€ subsidy/inhabitant	0.0074***	0.0088***	0.0062***	0.0068***	-0.0028***	-0.0034***	-0.0009***	-0.0033***
	(0.0006)	(0.0006)	(0.0007)	(0.0006)	(0.0003)	(0.0003)	(0.0003)	(0.0004)
Constant	0.4720***	0.4690***	0.4740***	0.4730***	0.1080***	0.1090***	0.1040***	0.1090***
	(0.0021)	(0.0021)	(0.0023)	(0.0022)	(0.0007)	(0.0006)	(0.0008)	(0.0008)
Observations	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340
R-squared	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.92

	Work Incapacity				Other SWP			
	Benchmark	W/o NACE78	W/o NACE81	W/o NACE88	Benchmark	W/o NACE78	W/o NACE81	W/o NACE88
β: Effect of 100€ subsidy/inhabitant	0.0042***	0.0042***	0.0041***	0.0045***	-0.0049***	-0.0049***	-0.0044***	-0.0052***
	(0.0003)	(0.0003)	(0.0003)	(0.0004)	(0.0003)	(0.0003)	(0.0003)	(0.0004)
Constant	0.0468***	0.0470***	0.0471***	0.0463***	0.1070***	0.1070***	0.1060***	0.1070***
	(0.0008)	(0.0008)	(0.0008)	(0.0010)	(0.0006)	(0.0006)	(0.0008)	(0.0008)
Observations	15,340	15,340	15,340	15,340	15,340	15,340	15,340	15,340
R-squared	0.85	0.85	0.85	0.85	0.76	0.76	0.77	0.76

	Inactivity			
	Benchmark	W/o NACE78	W/o NACE81	W/o NACE88
β: Effect of 100€ subsidy/inhabitant	-0.0057***	-0.0072***	-0.0054***	-0.0048***
	(0.0007)	(0.0009)	(0.0006)	(0.0009)
Constant	0.2140***	0.2170***	0.2130***	0.2120***
	(0.0025)	(0.0027)	(0.0024)	(0.0028)
Observations	15,340	15,340	15,340	15,340
R-squared	0.91	0.91	0.91	0.91