

Supplementary file

Post-conflict area-based regeneration policy in deprived urban neighbourhoods

Summary of the statutory commissioned economic evaluation

The economic indicators used to evaluate the success of the economic renewal theme in the government-sponsored evaluation of NR (RSM McClure Watters, 2014) are displayed in Table A1. Between the 2001 and 2011 censuses there was a reduction in the gap between NRAs and non-NRAs in the percentage of the working age population who were economically active, unemployed and long term unemployed. However, the reduction in the gap for unemployed and long term unemployed was due to a greater increase in unemployment for non-NRAs than NRAs. Several labour market statistics for 2004-2011 indicate that the economic gap widened between NRAs and non-NRAs, with greater increases in Job Seekers Allowance claimants in NRAs.

Table A1: Economic Renewal Indicators (RSM McClure Watters, 2014)

Census							
% working age population	2001			2011			Change in Gap
	NRA	Non-NRA	Gap	NRA	Non-NRA	Gap	
Economically Active	49.7	64.7	15.0	57.1	67.9	10.8	-4.2
Unemployed	8.1	3.4	4.7	8.3	4.3	4.0	-0.7
Unemployed that are long term unemployed	46.7	37.6	9.1	47.3	44.1	3.2	-5.9
Labour Market and Welfare							
% eligible population	2004/05			2012			Change in Gap
	NRA	Non-NRA	Gap	NRA	Non-NRA	Gap	
Job Seekers Allowance	6.5	2.5	-4.0	10.5	4.5	-6.0	+2.0
Employment Support Allowance	3.6	1.9	-1.7	5.7	2.8	-2.9	+1.2
Disability Living Allowance	17.1	7.7	-9.4	18.3	9.1	-9.2	-0.2
Pension Credit	54.2	28.2	-26.0	54.6	27.4	-27.2	+1.2

Further details on the selections of areas for NR intervention

The Department for Social Development intended for Neighbourhood Renewal to target resources to the most deprived areas of Northern Ireland. The Department defined this as the most deprived 10% of wards and electoral districts in Northern Ireland. The Department launched a consultation document on Neighbourhood Renewal in 2001 (there was no exact date on this document – it is now held in an online archive – we have a copy) and submissions regarding the document were due by 1st October 2001. The Report on the Consultation process (also archived - we have a copy) reports that this approach to the selection of neighbourhoods for Neighbourhood Renewal assistance received ‘widespread endorsement’. At that time the Noble multiple deprivation measures were the most up-to-date indicators of where deprivation in Northern Ireland was worst. The report states the Noble measure was the only criteria used to identify the list of deprived wards and electoral districts

around which Neighbourhood Renewal Areas were to be established. Neighbourhood Renewal Areas had to be in the worst 10% of wards and electoral districts. No other factors were taken into account in targeting. This clarifies that only the deprivation measures were used to select intervention areas - there was not a longlist or shortlist of neighbourhoods. Local politics or events did not feature in the identification of neighbourhoods for targeting. The civil servants in the Department for Social Development appear to have had the final say, agreed on by the consultation process, and this was signed off by government ministers.

There were further consultations in 2004 on the Implementation of Neighbourhood Renewal, coordinated by the Department for Social Development. The consultation exercise included seven regional consultation conferences attended by 327 people. The sectoral breakdown showed that 41% were from the community/voluntary sector, 11% from the private sector and 48% from the public sector. In addition, there were 48 written responses to the Department's consultation document. There was also a consultation with the Social Development Committee of the Northern Ireland Assembly and a group of academics and practitioners. Relevant documents are available on request from the authors since these are archived:

- Department for Social Development (2001) Urban Regeneration in Northern Ireland neighbourhood renewal - a consultation document.
- Department for Social Development (No date) People and Place A Strategy for Neighbourhood Renewal Working Paper 1 Report of the Consultation Process.
- Department for Social Development (2003) Equality Impact Assessment (EQIA) Urban Regeneration – Neighbourhood Renewal.
- Department for Social Development (2005) People and Place Draft Implementation Plan for Neighbourhood Renewal in regional towns and cities consultation report.

Further details on the merging of the Northern Ireland Household Panel Survey (NIHPS) and Understanding Society

The NIHPS started in 2001 and consisted of eight waves of data – covering 2001 to 2008. Four waves of the Understanding Society dataset were used for the analysis covering 2009-2012. The two surveys could easily be harmonised, merging on the cross-wave person identifier variable ‘pid’ that was consistent across both the surveys. The British Household Panel Survey (BHPS) sample is part of Understanding Society from Wave 2 onwards and BHPS sample members have an identifier within the Understanding Society datasets, allowing users to match BHPS Wave 1-18 data to Understanding Society Wave 2 data and onwards. A household identifier was not maintained between the two surveys.

There are a number of sources of information on merging the two datasets available online including a Understanding Society harmonised BHPS User Guide (Fumagalli, Knies and Buck, 2017) and a STATA tutorial on merging which includes STATA commands.

Most of the variables used for the purpose of this study were consistent across the two surveys e.g. job status and subjective financial wellbeing as well as explanatory variables such as gender, age and the GHQ instrument which measured mental health. However, there were a number of changes between the two surveys in variable labels, which required harmonisation e.g. gross monthly household income. The categories of response for educational attainment, marital status and self-rated health slightly changed between the two surveys, but these could be harmonised to consistent groupings across the two surveys.

Sample size of the NIHPS

The data used in this study comes from the largest household panel surveys available in the UK. The Institute for Social and Economic Research (ISER) at the University of Essex designed the original BHPS and the extended NIHPS. We note the sample size for the NIHPS

was bigger than that for the Scottish and Welsh components of the BHPS, even though these regions have much larger populations than NI. In 1999, the first Scotland BHPS sample was targeted to 1,500 households and in Wales the sample target was also 1,500 households. In Northern Ireland for 2001 the target was 2,000 households. According to the 2001 census the total population of Northern Ireland, was 1,685,267 and 1,287,211 were aged 16+, so a sample of 3,458 divided by 1,287,211 represents 0.27% of the population.

There are 890 SOAs in Northern Ireland, with an average population of 2,000 persons. From the wave one we observe that the NIHPS surveyed individuals from 831 SOAs. Including the 59 SOAs that did not have observations, the average number of individuals from each SOA sampled was 3.89 persons. In terms of deprivation, we know from the data that NRAs, which comprised of the most deprived urban SOAs, had a 2001 Census population of 204,839 aged 16+, and in the NIHPS 775 were sampled in 2001, representing 0.38% of the NRA population. Thus, it would appear the coverage of the NIHPS was higher in these deprived areas.

In the first wave of the NIHPS there were 775 respondents in 471 households from NRAs (22.4% and 23.8% of the total respectively), 2,683 respondents from 1,507 households in Non-NRAs, 243 respondents from 141 households in Analogous Control Narrow (ACN) Control 1, and 384 respondents from 227 households in Analogous Control Wide (ACW) Control 2.

Further information on the religious composition of Northern Ireland

The first NI census in 1926 recorded 1.26 million residents, of which 67% were Protestant and 33% Catholic. The change in the religious composition of NI and segregation over time has also been studied in the academic literature (Shuttleworth and Lloyd, 2009). The latest 2011 census revealed that 48% of the population had a Protestant background (down 5%

from the 2001 census), 45% were raised as Catholics, while 7% belonged to another religion or none (Northern Ireland Statistics and Research Agency, 2011).

The religious differences in Northern Ireland (Protestant and Catholic) fundamentally shape the society, politics and culture. Thus in Northern Ireland, policies must have an Equality Impact Assessment (EQIA). The EQIA for NR carried out by the Department for Social Development's Belfast Regeneration Office in 2003 (p.18) states that the Department 'believes generally that this policy will promote equality between persons of different religious belief/ political opinion'.

However, there have been a number of controversies concerning the allocation of monies to community groups that are inevitably divided between the two religious/political communities in Northern Ireland. For example, an £80 million Social Investment Fund (SIF) was mired in controversy over concerns about the alleged role of paramilitaries in some community groups. In 2016, it emerged that £1.7m of SIF funding had been allocated to Charter NI, an east Belfast organisation headed by a unionist paramilitary commander. The money was awarded to enable Charter NI to manage an employment project in east Belfast, despite concerns that the paramilitary group remained involved in criminality and intimidation. There is little formal academic literature, other than journalistic reports and commentaries concerning such matters but they are an important consideration in studies of Northern Ireland.

Articles such as: 'Government gave Ulster Defence Association -linked groups £5 million of taxpayers' money' <https://www.belfasttelegraph.co.uk/sunday-life/government-gave-udalinked-groups-5-million-of-taxpayers-money-35121805.html> [Accessed 28th February

2019] and commentary ‘Stormont Executive bankrolls loyalism’

<http://www.socialistdemocracy.org/RecentArticles/RecentStormontExecutiveBankrollsLoyalism.html> [Accessed 28th February 2019] provide insights to these matters.

An example of economic renewal project under Neighbourhood Renewal

Girdwood Park is an example of an economic renewal project facilitated by NR in a religiously segregated part of North Belfast, specifically the Crumlin Ardoyne area. The former Girdwood Army Barracks was converted into a Community Hub to provide a shared space for training and education facilities, leisure and employment opportunities. The challenges in reconciling differing objectives of opposing religious communities concerning housing development in the Girdwood Masterplan are documented as a case study in Muir (2014).

T-test/ chi-square test of differences in pre-intervention characteristics, 2001

Table A2: T-test/ chi-square test of differences in pre-intervention characteristics, 2001

Characteristics (%)		NRA	Non-NRA (v NRA)		Analogous Control Narrow (v NRA)			Analogous Control Wide (v NRA)			
			%	Chi- sq/t- test	p- value	%	Chi- sq/t- test	p- value	%	Chi-sq/ t-test	p- value
Employment		34.9	48.0	35.5	0.000	34.9	0.0002	0.989	34.4	0.02	0.882
Unemployment		8.7	3.9	24.6	0.000	8.5	0.007	0.933	6.6	1.3	0.253
Household income monthly (£ mean)		1,797	2,397	8.0	0.000	1,961	1.49	0.135	1,858	0.6	0.518
Benefits		66.7	54.9	29.1	0.000	60.4	2.8	0.095	64.1	0.6	0.421
Financial difficulties		10.2	6.9	7.7	0.006	12.3	0.7	0.397	11.3	0.3	0.615
Female		61.3	57.2	3.7	0.055	57.1	1.2	0.270	58.1	0.9	0.335
Age		43.8	45.4	2.1	0.036	43.2	-0.4	0.655	45.8	1.6	0.111
Education	Third level	16.1	27.9	37.4	0.000	18.9	0.857	0.355	17.5	0.3	0.590
	Upper secondary (A Level)	10.2	11.6	1.0	0.309	9.9	0.02	0.902	10.0	0.009	0.923
	Lower secondary (GCSE)	21.5	20.5	0.3	0.603	21.2	0.005	0.942	19.4	0.6	0.451
	Other qualification	9.3	10.9	1.4	0.229	9.0	0.02	0.888	9.1	0.01	0.910
	No qualifications	42.9	29.0	45.1	0.000	41.0	0.2	0.629	44.1	0.1	0.736
Marital status	Single	32.0	25.3	11.5	0.001	37.7	2.4	0.121	34.1	0.4	0.511
	Married/Civil Partnership	48.6	60.1	28.0	0.000	42.9	2.0	0.153	46.3	0.5	0.499
	Separated/Divorced	11.7	7.2	14.2	0.000	11.3	0.02	0.875	10.6	0.3	0.613
	Widowed	7.8	7.4	0.09	0.764	8.0	0.01	0.904	9.1	0.5	0.487
Number of children (mean)		0.8	0.6	-2.9	0.003	0.6	-1.1	0.255	0.6	-2.0	0.045
Good self-rated health		59.5	69.8	24.5	0.000	59.9	0.01	0.919	60.3	0.06	0.811
High mental distress score		7.3	4.0	12.8	0.000	6.1	0.3	0.561	5.3	1.4	0.241
Religion	Catholic	55.6	34.3	96.8	0.000	56.1	0.02	0.883	49.1	3.6	0.056
	Protestant	36.4	57.7	92.9	0.000	41.0	1.5	0.223	45.9	8.2	0.004
	Neither	4.9	3.7	1.7	0.187	0.5	8.3	0.004	2.3	3.7	0.053
	Catholic/Protestant										
N		657	2,280			212			320		

We explore the time variance of potential covariates for adjustment in the fixed effects model in Table A3. A ‘within percent’ of 100% represents time-invariance - gender is time invariant in our dataset. There is low time-variance on education, marital status etc. but we maintain

these covariates in our model. We do not include religion as an explanatory variable in the model due to the very low time variance.

Table A3: Time variance in covariates included in adjusted fixed effects model

Within percent - The fraction of the time an individual has the specified value of the covariate.		
Covariate	Within percent	N
Third Level education	83.8	6300
Upper secondary education	73.3	3360
Lower secondary education	78.9	4886
Other qualification	83.9	2125
No qualification	95.5	6016
Single	92.9	6541
Married/Civil Partnership	91.1	12546
Separated/Divorced	75.0	1897
Widowed	82.5	1703
Number of children – 0	90.0	15686
1 child	45.5	2749
2 children	49.9	2597
3 children	51.1	1192
4 children	41.6	354
5 children	35.3	80
6 children	33.1	12
7 children	72.9	15
9 children	100.0	2
Good or better health	83.7	16208
High mental distress score	34.0	1033
Catholic	94.0	7741
Protestant	91.8	11019
Neither Catholic nor Protestant	96.9	664

Parallel trends

Difference-in-difference estimation relies on the assumption that economic outcomes in the NR and control group(s) would follow the same time trend in the absence of NR. Regression on the economic dependent variable that includes the interaction of the pre-NR period and NR status, acts as an exploratory test of the validity of the assumption of parallel trends. Since the dataset contained data for only two waves prior to NR and wave one must be the reference year, investigating parallel trends was attempted by examining significance of the

interaction between wave two and NR status - this should not be significant for the parallel trends assumption to hold.

We see in Table A4 that the assumption of parallel trends held for all models, with one exception - household income in the comparison with all non-NRAs. Thus, interpretations of the difference-in-difference coefficient on household income may be viewed with caution. We also note that the result on the pre-intervention period (wave 2) does not represent a definitive failure of parallel trends for the household income since we have only one pre-intervention period to 'test' on. Moreover, when the modelling of parallel trends did not use fixed effects in the panel set-up, the 'significant pre-intervention effect' on household income was not observed. It was only observed for models which included fixed effects on the individual as in Table A4.

Table A4: Parallel trends ‘test’: coefficient on interaction of NRA and pre-intervention 2002

Parallel trends ‘test’ – coefficient on interaction of NRA and pre-intervention wave two		
	(1)	(2)
NRA v Non-NRA (N=22,687)		
Employment	0.022 (0.015) [p=0.157]	0.014 (0.015) [p=0.355]
Unemployment	0.003 (0.013) [p=0.830]	0.002 (0.013) [p=0.881]
Household income (logarithm)	0.113*** (0.024) [p=0.000]	0.113*** (0.024) [0.000]
Benefits	-0.002 (0.015) [p=0.872]	-0.001 (0.015) [0.938]
Financially difficult	-0.020 (0.016) [p=0.196]	-0.020 (0.016) [p=0.210]
NRA v Analogously Deprived Narrow (N= 6,363)		
Employment	0.003 (0.027) [p=0.889]	-0.005 (0.027) [p=0.865]
Unemployment	0.013 (0.019) [p=0.496]	0.013 (0.019) [p=0.499]
Household income (logarithm)	0.010 (0.042) [p=0.818]	0.009 (0.042) [p=0.836]
Benefits	0.001 (0.025) [p=0.957]	0.003 (0.025) [p=0.889]
Financially difficult	0.005 (0.028) [p=0.864]	0.007 (0.028) [p=0.804]
NRA v Analogously Deprived Wide (N= 7,145)		
Employment	0.019 (0.023) [p=0.413]	0.011 (0.024) [p=0.632]
Unemployment	0.010 (0.018) [p=0.559]	0.010 (0.018) [p=0.587]
Household income (logarithm)	0.050 (0.037) [p=0.176]	0.050 (0.037) [p=0.178]
Benefits	0.008 (0.022) [p=0.706]	0.010 (0.022) [p=0.658]
Financially difficult	0.000 (0.024) [p=0.990]	0.003 (0.024) [p=0.915]

Model (1) is the basic DID specification with fixed effects, time effects, interaction of time and treatment status and no adjusted covariates.

Model (2) is model (1) adjusted for education, marital status, number of children, health status, mental distress

*Significant at p<0.1; * at p<0.05; ** at p<0.01 *** at p<0.001. Standard errors clustered on panel unit of individual (in parentheses).

Full results for comparison of NRAs and non NRA:

Table A5: Difference-in-difference results – 2003 post-treatment period

(n=4,055, N=22,687)	Employment		Unemployment		Household income (logarithm)		Benefit receipt		Finding it financially difficult	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Neighbourhood Renewal Area (β_1)	-0.049 (0.038)	-0.036 (0.036)	-0.016 (0.018)	-0.015 (0.018)	-0.189** (0.061)	-0.168** (0.060)	0.032 (0.029)	0.027 (0.027)	-0.029 (0.021)	-0.030 (0.021)
Strategy period (2003-2012) (β_2)	0.003 (0.009)	-0.004 (0.009)	-0.013** (0.005)	-0.014** (0.005)	0.112*** (0.014)	0.115*** (0.014)	0.006 (0.008)	0.006 (0.008)	-0.012* (0.007)	-0.012* (0.007)
Difference-in-difference (β_3)	0.011 (0.017)	0.007 (0.016)	0.008 (0.009)	0.007 (0.009)	0.037 (0.025)	0.026 (0.025)	-0.000 (0.016)	0.007 (0.016)	-0.002 (0.012)	-0.003 (0.012)
<i>Education – base no qualifications</i>										
Third level		0.133** (0.050)		-0.009 (0.023)		0.088 (0.058)		-0.037 (0.044)		-0.001 (0.023)
Upper secondary (A Level)		-0.028 (0.050)		-0.027 (0.023)		0.012 (0.059)		-0.031 (0.045)		0.000 (0.024)
Lower secondary (GCSE)		-0.094* (0.050)		-0.036 (0.024)		-0.023 (0.063)		-0.027 (0.046)		0.003 (0.022)
Other qualification		0.033 (0.053)		-0.040 (0.025)		0.033 (0.058)		-0.041 (0.047)		-0.005 (0.025)
<i>Marital status – base single</i>										
Married/Civil Partner		0.068* (0.030)		-0.012 (0.011)		0.147*** (0.039)		0.078** (0.025)		-0.028* (0.015)
Separated/Divorced		0.073* (0.039)		0.000 (0.016)		-0.184** (0.059)		0.116** (0.037)		0.007 (0.023)
Widow		0.034 (0.038)		-0.000 (0.014)		-0.310*** (0.068)		0.133** (0.039)		-0.015 (0.021)
Number of children		-0.024** (0.007)		-0.007* (0.003)		-0.032** (0.009)		0.111*** (0.009)		-0.017** (0.005)
Good or better self-rated health		0.037*** (0.008)		0.005 (0.004)		0.008 (0.011)		-0.023** (0.007)		-0.013* (0.006)
High mental distress score		-0.030* (0.012)		0.009 (0.008)		-0.001 (0.019)		0.045*** (0.013)		0.101*** (0.015)
Constant (average fixed effect)	0.480*** (0.010)	0.414*** (0.042)	0.051*** (0.005)	0.077*** (0.019)	8.549*** (0.017)	8.490*** (0.051)	0.511*** (0.009)	0.416*** (0.038)	0.081*** (0.006)	0.113*** (0.020)
R ²	0.005	0.044	0.0004	0.001	0.050	0.187	0.0006	0.115	0.0009	0.020

Model (1) is the basic DID specification with fixed effects, time effects and no adjusted covariates.

Model (2) is model (1) adjusted for education, marital status, number of children, health status, mental distress.
'n': number of individuals, 'N' number of observations (individual-time observations)
*Significant at p<0.1; * at p<0.05; ** at p<0.01 *** at p<0.001. Standard errors clustered on panel unit of individual (in parentheses).

Results with 2006 cut-off

Table A6: Difference-in-difference regression results for economic outcomes with 2006 cut off – NRAs compared with three control groups

	Employment		Unemployment		Household income (logarithm)		Benefit receipt		Finding it financially difficult	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
NRA v Non NRA (n=3,893 N=16,226)										
Neighbourhood Renewal Area (β_1)	-0.041 (0.042)	-0.022 (0.040)	-0.005 (0.023)	-0.005 (0.023)	-0.169** (0.062)	-0.136* (0.062)	0.046 (0.036)	0.040 (0.033)	-0.021 (0.025)	-0.023 (0.025)
Strategy period (2006-2012) (β_2)	-0.047*** (0.011)	-0.063*** (0.011)	-0.027*** (0.006)	-0.028*** (0.006)	0.207*** (0.017)	0.208*** (0.071)	0.067*** (0.012)	0.070*** (0.012)	0.002 (0.008)	0.002 (0.008)
Difference-in-difference (β_3)	0.024 (0.023)	0.018 (0.023)	0.007 (0.011)	0.007 (0.011)	0.031 (0.034)	0.015 (0.034)	-0.004 (0.022)	0.005 (0.022)	-0.005 (0.015)	-0.007 (0.015)
NRA v Analogous Control Narrow (ACN) (n=1,222 N=4,541)										
Neighbourhood Renewal Area (β_1)	0.006 (0.118)	0.011 (0.112)	-0.073 (0.118)	-0.072 (0.117)	0.251 (0.191)	0.287 (0.192)	0.087 (0.086)	0.097 (0.087)	-0.066 (0.098)	-0.074 (0.098)
Strategy period (2006-2012) (β_2)	-0.001 (0.038)	-0.014 (0.038)	-0.049* (0.021)	-0.052* (0.021)	0.316*** (0.057)	0.319*** (0.056)	0.068 (0.038)	0.084 (0.037)	0.022 (0.025)	0.016 (0.023)
Difference-in-difference (β_3)	-0.016 (0.042)	-0.026 (0.041)	0.025 (0.022)	0.021 (0.021)	-0.039 (0.066)	-0.056 (0.064)	-0.004 (0.042)	-0.003 (0.040)	-0.021 (0.028)	-0.017 (0.027)
NRA v Analogous Control Wide (ACW) (n=1,379 N=5,092)										
Neighbourhood Renewal Area (β_1)	-0.063 (0.084)	-0.048 (0.078)	-0.026 (0.075)	-0.021 (0.075)	0.128 (0.134)	0.142 (0.132)	0.081 (0.061)	0.066 (0.063)	-0.008 (0.074)	-0.002 (0.075)
Strategy period (2006-2012) (β_2)	-0.005 (0.030)	-0.016 (0.031)	-0.048** (0.017)	-0.051** (0.017)	0.305*** (0.049)	0.306*** (0.049)	0.079* (0.032)	0.088** (0.031)	0.006 (0.021)	0.005 (0.021)
Difference-in-difference (β_3)	-0.013 (0.036)	-0.024 (0.035)	0.022 (0.018)	0.020 (0.018)	-0.034 (0.057)	-0.050 (0.056)	-0.019 (0.037)	-0.013 (0.035)	-0.011 (0.025)	-0.011 (0.024)

*Significant at p<0.1; * at p<0.05; ** at p<0.01 *** at p<0.001. Standard errors clustered on panel unit of individual (in parentheses).

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