Appendix A. Variables used in the empirical analysis

Table A 1. Variables used in main analyses

Analysis of effect of sanctions on Norwegian fish exports		
Variables	*Explanation*	*Source*
Fish exports	Exports to China of fish and other seafood products (corresponding to code 03 in the Harmonized System classification of commodities: "Fish, crustaceans, molluscs, aquatic invertebrates nes"), in million USD.	Comtrade
Fish production (tonnes)	Volume of fish and seafood produced, in tonnes. Includes all species, capture and aquaculture.	FAO, Fisheries and Aquaculture Department, Global Production Statistics 1950-2013
Length of coastline	Length of coastline in kilometers in 2000	UNEP Environmental Data Explorer/World Resources Institute
Tropical (% of total land area)	Percentage of land surface area that has a tropical climate	Nunn and Puga (2012), http://diegopuga.org/data/rugged/
Absolute latitude	Absolute value of latitude	Adapted from Nunn and Puga (2012), http://diegopuga.org/data/rugged/
Average temperature	Average of average daily minimum and maximum temperature 1961-1990, Celcius	Adapted from The World Bank Climate Change Data
Capital labour ratio	Capital stock (million 2005 USD) divided by number of persons employed (millions)	Adapted from Penn World Tables 8.1
Distance to China	Distance between a country's capital and Beijing in kilometers	CEPII
Real exchange rate volatility	Volatility of real effective exchange rate 2000-2010	Adapted from Darvas (2012)

Analysis of effect of sanctions on Norwegian total exports		
Variables	*Explanation*	*Source*
Total exports	Total exports to China, in million USD.	Comtrade
Distance to China	Distance between a country's capital and Beijing in kilometers	CEPII
GDP (output side)	Output-side GDP, PPP adjusted (million 2005 USD)	Penn World Tables 8.1
Population size	Population size, in millions	Penn World Tables 8.1
Human capital index	Human capital index	Penn World Tables 8.1
Capital	Capital stock (million 2005 USD)	Penn World Tables 8.1
Exports/GDP	Merchandise exports to GDP	Penn World Tables 8.1
Manufacturing exports (% of merchandise exports)	Manufacturing exports (% of merchandise exports)	World Development Indicators
Real exchange rate volatility	Volatility of real effective exchange rate 2000-2010	Adapted from Darvas (2012)
Rule of law index	Rule of law index ranging from -2.5 to +2.5	World Bank Governance Indicators, from the Quality of Government Standard Dataset

Analysis of effect of sanctions on Norwegian voting in the UN		
Variables	*Explanation*	*Source*
Voting agreement with China	Proportion of votes on human rights resolutions on which a country votes the same way as China, out of all votes both countries participated in, using a simple yes and no distinction, and not counting abstentions	Adapted from Harvard Dataverse V11, Voeten (2013)
GDP	GDP, PPP adjusted (million 2005 USD)	Penn World Tables 8.1
Population size	Population size, in millions	Penn World Tables 8.1
Military expenditures (% of GDP)	Military expenditures as proportion of GDP	World Development Indicators
NATO membership	Dummy variable for NATO membership	Coded by author
Exports/GDP	Merchandise exports to GDP	Penn World Tables 8.1
Manufacturing exports (% of merchandise exports)	Manufacturing exports (% of merchandise exports)	World Development Indicators
Exports to China	Total exports to China, in million USD.	Comtrade
Distance to China	Distance between a country's capital and Beijing in kilometers	CEPII
Latitude	Latitude	CEPII
Aid commitments	Sum of aid commitments (not including international organizations), constant 2009 USD	AidData 2.1, from the Quality of Government Standard Dataset
Democracy	Polity IV institutionalized democracy index	Polity IV, from the Quality of Government Standard Dataset

Table A 2. Variables used in Appendix B analyses

Analysis of effect of sanctions on competition in the Chinese market for fish		
Variables	*Explanation*	*Source*
Fish import quantity growth	Year on year growth in import quantity (tonnes) of "Fish, crustaceans, molluscs and other aquatic invertebrates"	FAO, Fisheries and Aquaculture Department, Global Production and Trade 1976-2013
Distance to fish exporters	Distance from fish exporters weighted by their share of total world exports	Adapted from CEPII and Comtrade
GDP	GDP, PPP adjusted (million 2005 USD)	Penn World Tables 8.1
Population size	Population size, in millions	Penn World Tables 8.1
Exports/GDP	Merchandise exports to GDP	Penn World Tables 8.1
Fish production (tonnes)	Volume of fish and seafood produced, in tonnes. Includes all species, capture and aquaculture.	FAO, Fisheries and Aquaculture Department, Global Production Statistics 1950-2013
Real exchange rate volatility	Volatility of real effective exchange rate 2000-2010	Adapted from Darvas (2012)

Additional references Appendix A

Darvas, Z. (2012), "Real effective exchange rates for 178 countries: a new database", Working Paper 2012/06, Brussels: Bruegel

Nunn, N. and Puga. D. (2012), "Ruggedness: The blessing of bad geography in Africa", *Review of Economics and Statistics*, 94, 1, 20-36

Voeten, E. (2013), "Data and Analyses of Voting in the UN General Assembly", in Reinalda, B. (ed.), *Routledge Handbook of International Organization*, New York: Routledge, 54-66

Appendix B. Effects of the sanctions on competition in the Chinese market for fish

In theory, if the sanctions against Norwegian fish exports reduced the level of competition in the Chinese market, this should increase prices, everything else equal. Given that fish is a non-Giffen good, an increase in prices should produce a reduction in demand, i.e. a lower quantity of fish imports to China, everything else equal. The everything else equal condition in these statements can be kept by performing a synthetic control analysis of Chinese imports, where the effect of the sanctions on Chinese imports is assessed against a counterfactual constructed from other import countries. While fish prize data is not readily available, the FAO has data on fish imports quantities, a data series that ends in 2013, which is sufficient for our purposes. Using the synthetic control method to assess the evolution of imported quantities of fish after 2010 is complicated by the fact that China in the pre-treatment period was by far the largest importer globally, so creating a counterfactual as a convex combination of the other countries is difficult. For this reason, we focus the subsequent analysis on the year-on-year growth of Chinese fish imports, using the synthetic control approach to approximate the rate of growth in the absence of sanctions against Norway.

The fully drawn line in Figure B1 shows the growth in the Chinese quantity of fish imports in the period 2000-2013. The dotted line is the synthetic country constructed to be similar to China on demand (GDP and population size), domestic supply (fish production), trade openness and costs (exports to GDP, volatility of exchange rates, and distance from exporters weighted by their share of total world exports). As can be seen in Table B1, the synthetic control region (with country weights given in Table B2) is similar to China on most predictors, but population size and fish production are of course hard to replicate. The errors in predicting pre-treatment growth also tend to be non-trivial. Nevertheless, there is little evidence that

growth in Chinese fish imports was negatively affected by the sanctions against Norway. Growth of import quantities was positive in 2011 and 2012 and larger than in 2010, and above growth in the synthetic control country. While growth in 2013 was negative and lower than that of the synthetic control country, results from a placebo analysis presented in Figure B2 show that the difference to the synthetic control region is not statistically significant. Out of 60 countries, China has the 15th most negative difference, which is far from being significant at any conventional level. The countries with pre-treatment root mean squared prediction errors greater than two times that of China have been excluded from the figure, but this does not affect these results. We therefore conclude that the sanctions imposed on Norwegian fish exports after 2010 did not reduce the level of competition in the Chinese market for fish.

Figure B 1. Effects of sanctions against Norway on growth in Chinese fish import quantities

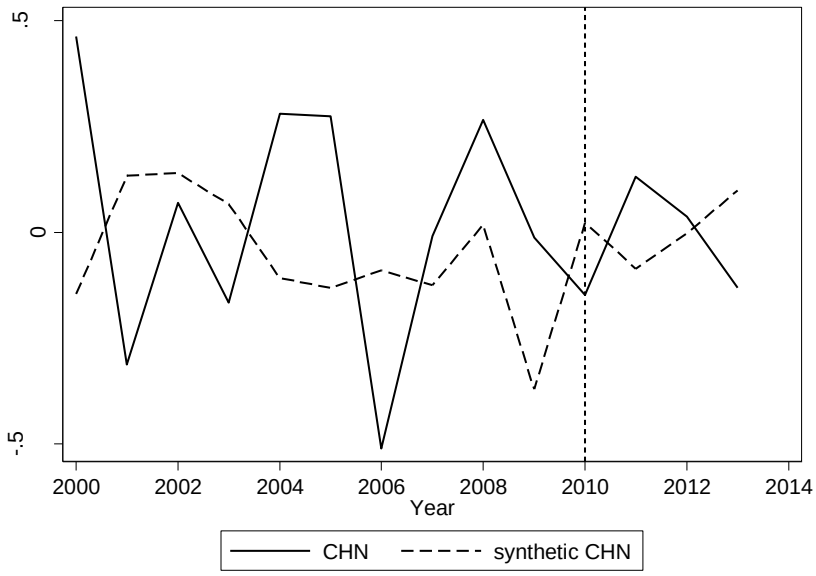


Figure B 2. Difference from synthetic control country for China and placebo differences in 59 countries

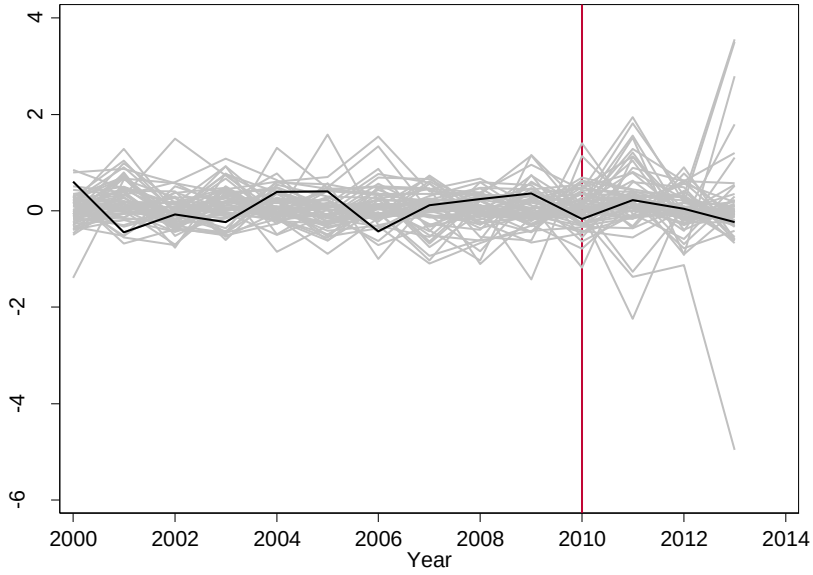


Table B 1. Total import predictor means, import quantity analysis

	Norway	
Variables	Real	Synthetic
Distance to fish exporters	7868.66	7869.18
GDP	7507879.00	7509282.00
Population size	1280.649	307.72
Exports/GDP	0.14	0.14
Fish production (tonnes)	51400000.00	4894702.00
Real exchange rate volatility	6.39	6.39

Table B 2.Country weights in the synthetic China for import quantity analysis

Country	Weight
United States	0.569
Morocco	0.153
India	0.117
Peru	0.086
Norway	0.075

Appendix C. Effects on Norwegian total exports: Details of analysis

The following presents the details of the approach used to estimate the impact of Chinese sanctions following the 2010 Nobel peace prize on total Norwegian exports to China across all sectors. A new synthetic control country is created using determinants of total exports to China. We maintain the assumption that the sanctions against Norway did not affect competition in the overall market in China, which seems even more reasonable in this case since the market share of Norway in total imports to China is tiny, at 0.2 per cent in 2010. A lower bound for the loss in total Norwegian exports can therefore be calculated in the same way as above. Table C1 shows the values of Norway and the synthetic country on the predictors of exports to China. The control region is created to be similar to Norway in trade costs and constraints (distance to China, exchange rate volatility), production capacity and economic structure (output side GDP, human and physical capital, openness to trade, sectoral composition), and institutions (rule of law). The specification is consistent with gravity models of bilateral trade (Anderson, 1979; Anderson and van Wincoop, 2003), factor based models of trade, and empirical studies relating trade flows and patterns to institutions and exchange rate volatility (Anderson and Marcouiller, 2002; Levchenko, 2007; Nunn, 2007; Chowdhury, 1993). There is balance on most variables, but given the high level of oil exports from Norway it is difficult to recreate the country fully from a combination of the others in terms of share of manufacturing exports. The countries that form the synthetic control region for Norway are presented in Table C2; Iceland comprises 67 per cent, the Netherlands 19, Sweden 14, and the United States a tiny fraction.

Table C 1. Total export predictor means

	Norway	
Variables	Real	Synthetic
Distance to China	7031.01	7739.66
GDP (output side)	262665.80	205488.10
Population size	4.63	5.73
Human capital index	3.36	3.02
Capital	579869.40	570992.50
Exports/GDP	0.62	0.56
Manufacturing exports (% of merchandise exports)	18.85	34.04
Real exchange rate volatility	3.96	10.19
Rule of law index	1.91	1.85

Table C 2. Country weights in the synthetic Norway in the total export analysis

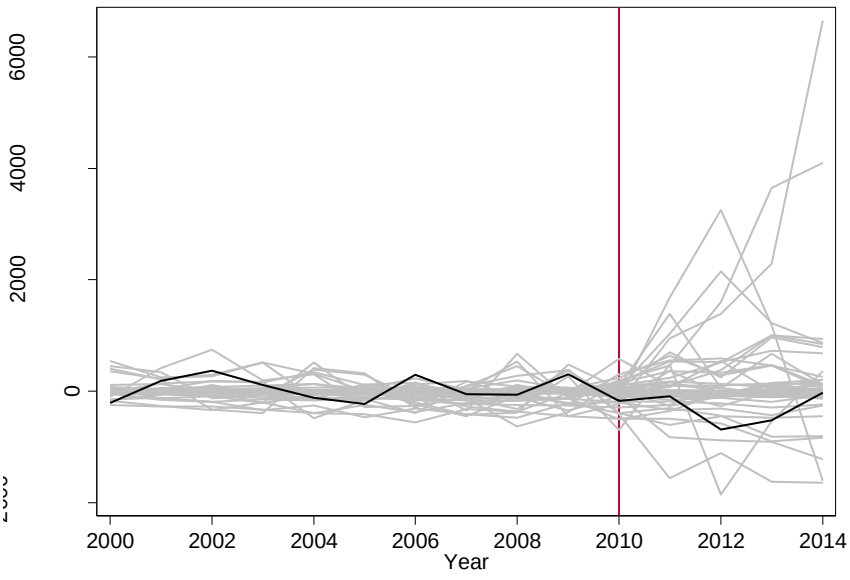
Country	Weight
Iceland	0.669
Netherlands	0.192
Sweden	0.136
United States	0.004

Note: The following countries received zero weight: Argentina, Armenia, Australia, Austria, Belgium, Benin, Bulgaria, Bahrain, Bolivia, Brazil, Barbados, Botswana, Canada, Switzerland, Chile, Cote d'Ivoire, Colombia, Cyprus, Czech Republic, Germany, Denmark, Ecuador, Egypt, Spain, Estonia, Finland, Fiji, France, United Kingdom, Gambia, Greece, Guatemala, Croatia, Hungary, Indonesia, India, Ireland, Israel, Italy, Jamaica, Jordan, Japan, Kazakhstan, South Korea, Sri Lanka, Lithuania, Luxembourg, Latvia, Moldova, Mexico, Malta, Mozambique, Mauritius, Malaysia, Niger, New Zealand, Pakistan, Panama, Peru, Philippines, Poland, Portugal, Paraguay, Romania, Senegal, Singapore, Slovenia, Slovakia, Thailand, Ukraine, Uruguay, South Africa, Zambia.

We present the placebo analysis for the effect of the sanctions on total Norwegian export to China in Figure C1. In line with Abadie et al. (2010), we have excluded countries with pre-treatment root mean squared prediction errors more than two times that of Norway in Figure C1. This leaves 55 countries including Norway, which as in the main text is represented by the black line against the grey of the placebo countries. For 2012, Norway has the fourth most negative difference from its synthetic control country, suggesting that the effect is significant at a 10 per cent level ($p<0.073$). In this case, however, at most three additional countries could have differences below that of Norway for all possible allocations of the Norwegian loss in exports to other countries, which means that under some extreme assumptions about which

countries took over the market share of Norway, the effect of the sanctions becomes insignificant. It appears unlikely that the three countries that follow Norway in negative differences relative to their respective synthetic controls should be the ones taking over Norway's market share, however, since we should then observe positive differences for them unless they also happen to be hit by negative shocks at the same time. Under the more reasonable assumptions that the market share Norway lost due to the sanctions was taken over by the countries with positive differences to their respective synthetic control countries, or was more widely spread among the other countries, the effect stays significant. For the other years, the Norwegian deviation from its synthetic control country does not stand out compared to the placebo countries.

Figure C 1. Difference from synthetic control country for Norway and placebo differences in 54 countries



Appendix D. Effects on Norwegian foreign policy: Details of analysis

While there is substantial debate over how to measure voting agreement (or more generally preference alignment) using UN data, Figure D1 presents two measures of the extent of agreement between Norwegian and Chinese votes in the UN General Assembly on human rights resolutions. The upper graph measures the proportion of votes on which Norway and China voted in the same way, out of all votes they both participated in, using a simple yes and no distinction, and not counting abstentions (as in Kegley and Cook (1991)). The lower graph measures the same proportion but with abstentions included. There is an apparent increase in voting agreement between Norway and China immediately following the Nobel prize decision of 2010. As noted by Bailey et al. (forthcoming), however, the measures of voting agreement used here do not necessarily reflect greater alignment of preferences or foreign policy positions, they could simply reflect different issues being voted over in different years, with for instance the issues voted on in 2011 being of a nature where the preferences of Norway and China coincide. In addition to its other advantages in creating a credible counterfactual, the synthetic control approach also addresses this challenge, however. If changes in voting agreement simply captures differences in issues being voted on across years, then Norway and its synthetic counterpart should have the same evolution of voting agreement. If, however, increased agreement is due to a change in foreign policy position, we should see a divergence between Norway and the synthetic control country in their voting agreement with China. The synthetic control approach hence makes the alternative ideal point approach to measuring state preferences suggested by Bailey et al. redundant for our purposes, and in fact represents an alternative method to estimate dynamic state preferences. In the analysis, we therefore use the proportion of votes in agreement with China

(not including abstentions) as our dependent variable; however, results are robust to also including abstentions.

Figure D 1. Agreement in voting between Norway and China on UN human rights resolutions, 1993-2014

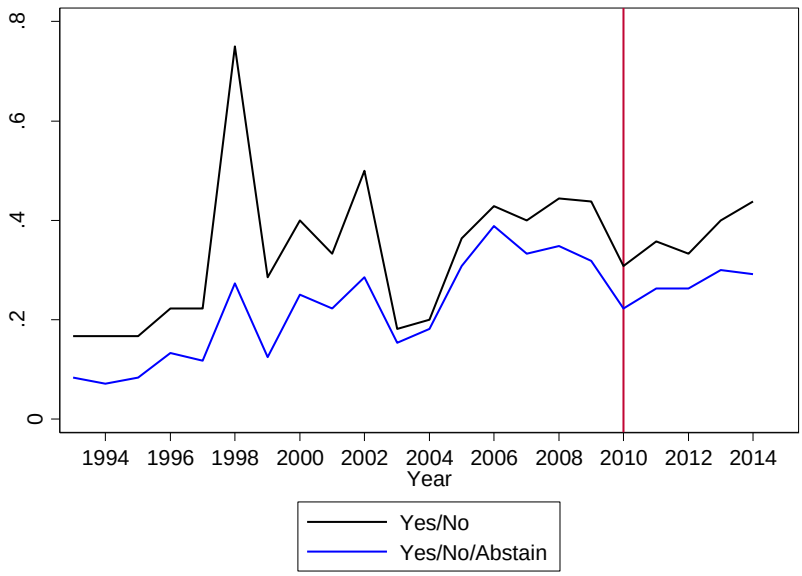


Table D1 presents mean values on predictor variables of UN voting for Norway and a synthetic control country created to resemble Norway on these variables. The predictor variables reflect power (GDP, population size, military expenditures), economic interests in general and in relation to China (openness to trade, industry structure, exports to and distance to China), strategic interests (military alliance membership and latitude), and idealistic orientation (aid commitments and democratic accountability). Adapted to our context, these variables capture the main country characteristics determining UN voting behaviour as summarized in Dreher and Sturm (2012). As before, the synthetic country resembles Norway closely on most dimensions, with the industrial composition of Norway being difficult to recreate through a weighted average of the other countries. Table D2 shows the weights of the different countries in the synthetic control group, these mainly include Denmark (82 per cent) and the

Netherlands (13 per cent), with the remaining 5 per cent divided among Greece, Lithuania and Saudi Arabia.

Table D 1. Voting agreement predictor means

	Norway	
Variables	Real	Synthetic
GDP	262665.80	234108.80
Population size	4.63	7.11
Military expenditures (% of GDP)	1.68	1.58
NATO membership	1.00	0.98
Exports/GDP	0.62	0.63
Manufacturing exports (% of merchandise exports)	18.85	62.77
Exports to China	1222.00	1343.79
Distance to China	7031.01	7273.71
Latitude	59.92	54.39
Aid commitments	1400.00	1300.00
Democracy	10.00	9.88

Table D 2. . Country weights in the synthetic Norway in the UN voting analysis

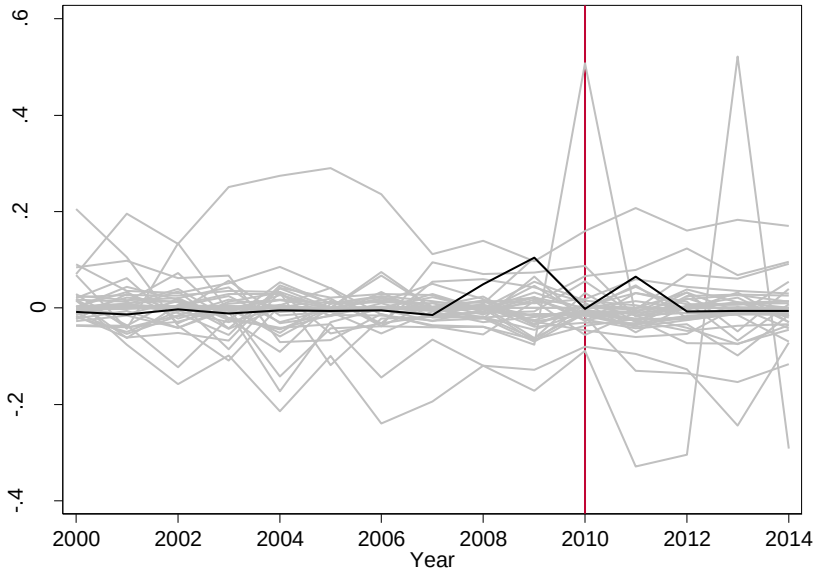
Country	Weight
Denmark	0.818
Greece	0.025
Lithuania	0.017
The Netherlands	0.128
Saudi Arabia	0.011

Note: The following countries received zero weight: Australia, Austria, Belgium, Brazil, Canada, Chile, Colombia, Cyprus, Czech Republic, Germany, Spain, Estonia, Finland, France, United Kingdom, Hungary, India, Ireland, Italy, Japan, South Korea, Kuwait, Luxembourg, Latvia, New Zealand, Portugal, Qatar, Romania, Slovakia, Sweden, Thailand, United States, South Africa.

To assess whether the estimated changes in Norwegian voting patterns in the US are due to chance, we run placebo analyses which assign treatment status to the other 38 countries in our donor pool. The results are shown in Figure D3. In 2011, the year where Norwegian voting patterns diverged from its synthetic counterpart, the difference was the third highest among the countries included in the analysis, with only South Africa and Chile having larger positive differences in voting agreement with China compared to their respective synthetic countries.

This suggests that the increased agreement of Norwegian voting with China in 2011 was not due to chance ($p<0.077$). We can thus conclude that Chinese government reactions to the 2010 peace prize are significantly related to changes in Norwegian foreign policy in the area of human rights.

Figure D 2. Difference from synthetic control country for Norway and placebo differences in 38 countries



Additional references Appendix D

Bailey, M. A., Strezhnev, A. and Voeten, E. (forthcoming), "Estimating dynamic state preferences from United Nations voting data", *Journal of Conflict Resolution*

Kegley, C. W. Jr. and Cook, S. W. (1991), "U.S. foreign aid and U.N. voting: Did Reagan's linkage strategy buy deference or defiance?", *International Studies Quarterly*, 35, 3, 295-312