HAL
open science

Job losses and the political acceptability of climate policies : an amplified collective action problem

Francesco Vona

To cite this version:

Francesco Vona. Job losses and the political acceptability of climate policies : an amplified collective action problem. OFCE Policy Brief, 2018, 35, pp.1 - 8. hal-03458275

HAL Id: hal-03458275

https://sciencespo.hal.science/hal-03458275v1

Submitted on 30 Nov 2021

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

ofce

policy brief

35 | 7 mai 2018

JOB LOSSES AND THE POLITICAL ACCEPTABILITY OF CLIMATE POLICIES: AN AMPLIFIED COLLECTIVE ACTION PROBLEM?

Francesco Vona
Sciences Po, OFCE

Political acceptability is an essential issue in choosing the appropriate climate policy. Sociologists and behavioral scientists recognize the importance of selecting environmental policies that have broad political support, while economists compare different instruments first based on their efficiency and then by assessing their distributional impacts and thus the political acceptability of such policies. I argue that the large economic losses potentially ascribed to climate policies, especially job losses, can have substantial impacts on the willingness to vote for these policies. In aggregate, the costs of these losses are significantly smaller than the benefits; both in terms of health and labor market outcomes, but the losses are concentrated in specific areas, sectors and social groups that are already exposed to other shocks, such as automation and trade shocks. This setting conjures a collective action problem that is amplified by declining political participation, de-unionization and localized contextual effects.

Key policy insight:

- Climate policies are perceived as extremely harmful for employment because of their high incidence on communities and sectors that already damaged by other shocks.
- Excessive levels of labour market inequalities are detrimental for the political acceptability of climate policies, thus fighting inequality can have beneficial effects for climate change.
- Policymakers should be more careful in distinguishing between small and large distributional effects of climate policies, and their consequences on their political acceptability.

Keywords: Climate Policies, Employment Impacts, Inequality and Distributional Impacts, Collective Action Problems, Amplification Mechanisms, Political Acceptability.

Acknowledgements:
I acknowledge the financial support of the Horizon 2020 project INNOPATHS (project ID 730403). I thank David Popp for useful comments.

SciencesPo

Job-killing regulation is a constant argument put forward by carbon intensive industries to undermine the political acceptability of unilateral climate policies. The exit of the US from the Paris Agreement is just the most recent symptom of a political choice justified by the need to defend the jobs of coal miners and blue-collar workers in energy-intensive sectors. Existing research shows that the aggregate benefits of environmental policies in terms of improved health largely exceed the costs of job losses for these exposed categories.[1] In the US, Vona *et al.* (2017) even underscore the substantial job creation effects of the green part of the Obama stimulus package. Focusing only on labor market costs and the benefits of climate policies, this work suggests that the jobs destroyed in energy-intensive industries are likely to be offset by new well-paid jobs in green industries, such as renewable energy, building retrofitting, waste management and pollution abatement. The relocation from brown to green jobs can, however, be difficult, particularly given the potentially large (or perceived large) differences in their skill profiles (Vona *et al.*, 2018). For instance, Walker (2013) shows that the permanent earnings losses for workers displaced by the Clean Air Act can be large, especially for those who change industries. Taken together, this evidence seems to suggest that new jobs in green sectors are unlikely to be taken by workers displaced by environmental policies, who instead will experience permanent earnings losses in subsequent jobs.

1. See Greenstone (2002), Walker (2011) and Smith (2015).

Overall, extreme distributional effects, either in terms of long-term unemployed or permanent earnings losses, may undermine the political acceptability and thus the support for environmental policies. This essay discusses this issue using the prism of the collective action theory (Olson, 1965) and by building a parallel with recent empirical research on trade liberalization (Autor *et al.*, 2013, 2016). Undoubtedly, the political acceptability of climate policies is a broad issue that cannot be merely reduced to the iconic lobbying efforts of green activists on the one hand and miners and oil companies on the other. However, I argue that in a world with growing inequality and declining political participation, behavioral and contextual factors reinforce the consequences of severe job losses on the political acceptability of climate policies.

Sociological, behavioral and economic drivers of green preferences

To frame my argument in a general way, it is useful to briefly examine the drivers of green preferences. Individuals play multiple roles associated with multiple types of impacts on the environment. They are basically consumers and workers as well as, under certain conditions, voters and green or brown political activists. Their environmentally related choices in each of these roles are driven by both economic and non-economic factors provided that individuals are bounded rational actors embedded in a social context and endowed with inherited beliefs.

For convenience, I summarize these drivers in Table 1 where I list the main sociological and economic drivers of green behavior. In the two columns, I distinguish between the drivers of green preferences and those of green political participation, which is useful to discuss how the size of the distributional effects of climate policies affect differently green preferences and political participation.

Among the main sociological and behavioral drivers, which are discussed extensively elsewhere,[2] intrinsic values (e.g., ethical considerations, intergenerational equity), inaccurate perceptions of health impacts and behavioral inertia explain, for

2. See, e.g., Allcott and Mullainathan (2010) and Sovacool *et al.* (2015).

Table 1. **Drivers of Green Preferences and Participation**

	Green preferences	Green political participation
Economic	*Any* income effects of climate policy, e.g., distributional effects of carbon taxation	*Large* income effects, essentially geographically concentrated job losses
Non-economic	Contextual factors & social norms, behavioral inertia, intrinsic values, intergenerational and ethical considerations, perceived health effects	Same drivers, but contextual factors likely to be more important

instance, the energy efficiency puzzle. Contextual factors, such as social norms and peer effects, are also very important for the political acceptability of climate policies in making individuals aware of environmental problems and of their economically viable solutions. Recent research has shown that imitation effects increased the political acceptability of both feed-in tariffs and solar rooftop PV panels in Germany and California.[3] Social comparisons are also shown to affect the adoption of energy-efficient behaviors or mitigation practices.[4]

With regard to economic drivers, the impacts can be conveniently divided depending on their size and concentration. As consumers, individuals are affected by climate policies that alter the relative prices of goods with different carbon intensity. Empirical evidence on the environmental Kuznets curve shows that green preferences emerge once basic needs are satisfied (Dinda, 2004). Unless the health effects of climate change are easily understandable, verifiable and thus perceived to be large, poorer households are unlikely to be willing to approve policies that, at least in the medium term, increase the cost of electricity or of gas. However, it is also very unlikely that *small* distributional impacts, such as those associated with changes in the relative prices of brown and green goods, will emerge into a clear opposition to climate policies. Indeed, environmental policies represent just a small component of a broader political package and are likely dominated by other policies, such as fiscal policy. To illustrate, a party that proposes a carbon tax and an increase in tax progressivity is likely to be voted for by less-advantaged households on the basis of *small* distributional effects of the climate policy.

The issue is likely to be different for *extreme events* or *large* distributional effects, notably job losses ascribed to climate policies or climate-related disasters. While it is difficult to verify whether the shutdown of a coal power plant is due to a carbon tax, to technological obsolescence or to savings on labor costs, the workers' perception in energy-intensive industries is to ascribe it to environmental regulations. Clearly, such a perception is induced by industrial lobbies that support the job-killing argument to advocate reductions in the stringency of climate policies. Although existing research shows that the risk of job losses is not enough to justify the grandfathering of emissions permits and generous policy exceptions for trade-exposed, energy-intensive sectors (Ekins and Speck 1999; Martin et al. 2014), there is substantial empirical evidence indicating that carbon pricing can induce a relocation of economic activities and thus of employment toward regions (within a country) and countries (globally) with laxer environmental policies (Mulatu *et al.*, 2010; Kahn and Mansur, 2013). Moreover, since energy-intensive industries tend to be geographically concentrated, job losses are magnified by negative local multiplier effects.

3. The relationship between economic growth and the unemployment rate is called the Okun's law.

4. See, e.g., Allcott (2011), Biel and Thøgersen (2007) and Babutsidze and Chai (2018).

Job losses and the net benefits of political participation

In order to aggregate the *large* distributional effects of climate policies, the key statistic is the share of workers employed in energy-intensive sectors. In developed countries, this share ranged between 2.9% and 5.5% in 2009 (Table 2). Out of this share, job losses with negligible hope of successful relocation to an equivalent position in terms of pay scale and social status are limited to those workers that are also exposed to other negative shocks, notably low-skilled blue-collar jobs (Acemoglu and Autor, 2011). After losing their jobs in a polluting industry, such workers are very unlikely to find an equivalent manufacturing job in terms of pay, career development and occupational prestige. The most likely outcome will be re-employed in a low-skilled service job at the bottom end of the wage distribution. As a result, the distributional effects of climate policy can be summarized as follows: we have a large majority of modest winners and a tiny fraction of big and already vulnerable losers, in a range between less than 1% and 3.5% of the workforce for most developed countries (Table 3). That is, we are in the presence of a classic collective action problem because agents that are modestly winning are unlikely to get organized to support climate policy, while the losers have everything at stake if the policy is approved. Notice that carbon leakage, i.e., the relocation of polluting activities to countries with lax environmental policies, cancels the health benefits of a unilateral climate policy and thus makes the winners even less likely to organize an active support to environmental policies.

Cragg *et al*. (2013) show that US congressional representatives from carbon-intensive and poorer areas have a lower probability of voting in favor of anti-carbon legislation. Taking stock of these findings, it seems that the perceived negative effect of regulation on jobs shapes the electors' preferences, especially in most vulnerable regions where job opportunities in other sectors are absent or unattractive. There is a strong analogy here to what occurred with trade policies in the US. Autor *et al.* (2016) show that US regions more exposed to Chinese competition are also those that after its entry into the WTO (in 2001) embraced extreme right-wing positions, e.g., the Tea Party. This result bears relevance for climate policies because manufacturing jobs disappeared not only in textile industries but also in the dirtier segments of equipment manufacturing, metals and chemicals. Going a step further, the tight election of Donald Trump in former industrial states of the Rust Belt can be explained as a miscalculation of the dramatic effect of trade liberalization for certain demographic groups, especially middle-aged white men. Although labor cost differentials are the main drivers of industry relocation and consequently of this political turnaround, the Clean Air Act contributed to creating losers in trade-exposed, energy-intensive industries.

A plausible counter-argument is that climate policies also create winners, namely, firms and workers in emerging green sectors that can organize and combat the brown political constituency. No doubt, the winners have created green constituencies in support of climate policies everywhere. However, there is a fundamental asymmetry between brown losers, who are low-skilled individuals with few outside opportunities, and green winners, who instead seem to be high-skilled workers with plenty of outside opportunities (Vona *et al*., 2018). The extent to which this asymmetry translates into a different degree of effective political participation and activism remains an open issue.

Either way, concerns about the political consequences of trade and climate policies in a world with substantial differences in labor and environmental costs have received too little attention in the political debate. The electoral arithmetic of the median voter is clearly right, especially for climate policies that have *first-order* effects on a very small fraction of the population, but the political result may be different from what median voter theory would say due to the presence of amplifying factors.

Table 2. **Workers in Highly Polluting Industries, as a share of the total employment**

	Germany	Denmark	France	UK	Italy	Japan	Korea	USA
1997	0,065	0,049	0,049	0,047	0,066	0,061	0,054	0,047
2000	0,061	0,047	0,045	0,042	0,065	0,057	0,050	0,045
2003	0,057	0,043	0,042	0,037	0,064	0,053	0,045	0,040
2006	0,055	0,041	0,040	0,032	0,063	0,052	0,045	0,040
2009	0,048	0,036	0,034	0,029	0,054	0,043	0,045	0,036

Note: source EU-KLEMS data. Selected high-income countries. Highly Polluting industries according to ISIC rev.4 codes are: C "Mining"; 27t28 "Basic and Fabricated Metals"; 24 "Chemicals"; 26 "Other Non-Metallic Minerals"; 23 "Coke, Refined Petroleum and Nuclear"; 20 "Wood and Products of Wood". Power generation is excluded as it is non-tradable. The share is computed as the sum of the hours worked in highly polluting industries over the total hours worked in the economy.

Table 3. **Vulnerable Workers in Highly Polluting Industries, as a share of the total employment**

Low Skilled Share

	Germany	Denmark	France	UK	Italy	Japan	Korea	USA
1997	0,013	0,014	0,018	0,016	0,040	0,013	0,016	0,006
2000	0,012	0,012	0,016	0,012	0,036	0,010	0,012	0,005
2003	0,010	0,010	0,013	0,010	0,035	0,007	0,009	0,004
2006	0,010	0,010	0,011	0,007	0,031	0,007	0,007	0,004
2009	0,007	0,010	0,009	0,007	0,025	0,006	0,007	0,003

Low and Medium Skilled Share

	Germany	Denmark	France	UK	Italy	Japan	Korea	USA
1997	0,054	0,038	0,041	0,037	0,062	0,050	0,044	0,037
2000	0,050	0,036	0,037	0,032	0,061	0,046	0,038	0,034
2003	0,045	0,032	0,035	0,027	0,060	0,042	0,033	0,030
2006	0,044	0,030	0,030	0,023	0,058	0,041	0,032	0,030
2009	0,037	0,026	0,026	0,021	0,049	0,034	0,032	0,026

Note: source EU-KLEMS data. Highly Polluting industries are: C "Mining"; 27t28 "Basic and Fabricated Metals"; 24 "Chemicals"; 26 "Other Non-Metallic Minerals"; 23 "Coke, Refined Petroleum and Nuclear"; 20 "Wood and Products of Wood". Power generation is excluded as it is non-tradable. The 'low skilled share' is computed as the hours worked by workers with no more than lower seconday education in highly polluting industries over total hours worked in the economy. The 'low and medium skilled share' is computed in a similar manner. Medium skilled workers are those with upper secondary education.

Amplifying the Collective Action Problem

Two well-known trends are amplifying the collective action problem. First, downward trends in political participation in developed countries are the first factor that can exacerbate collective action problems. The second is related to changing contextual factors and, more specifically, to the well-known concomitant rise of inequality within a country, especially developed countries that should lead international negotiations to drastically reduce GHG emissions.

Let me discuss first the role played by declining political participation. My conjecture is that the decline in political participation has increased the political influence of those who lose from climate policies. Arithmetically, the losers are simply counting more on electoral outcomes than the winners if, as predicted by the logic of collective action, the share of voters is higher for the former group. Even more important, the losers will become politically active on climate-related issues, thus contributing to the dissemination of the job-killing argument in the public debate. The concomitant decline in unionization rates is a related amplifying factor insofar as intermediate polit-

ical bodies, such as unions, can make workers aware of the long-term job opportunities offered by the development of green sectors. While the International Labor Organization plays a key role in promoting sustainable growth, it is unlikely that national unions will actively negotiate greener investment strategies with multinational and local firms. Indeed, the bargaining power of unions has decreased in response to deindustrialization and to the threat of further relocations; thus, jobs have the priority over environmental quality in negotiations with industrial associations. This dynamic explains the persistence of heavily polluting sites in rich European countries, such as the ILVA in Taranto (Italy) and the Alteo in Ciotat (France).

The second amplifying factor is related to both the economic and non-economic drivers mentioned in Table 1. Societies with high levels of income inequality are less willing to invest in reducing their carbon footprint. The median voters in such countries are poorer and thus not ready to exchange the short-term adjustment costs with the long-term economic and environmental benefits of green growth (e.g., Magnani, 2000). Job-killing political discourses will easily influence the green political beliefs of those living in areas heavily affected by deindustrialization. Furthermore, because inequality between rich and poor communities has increased substantially (OECD, 2016; Rosés and Wolf, 2018), the likelihood of interacting with a worker who has been negatively affected by globalization, either for labor or environmental reasons, is higher in disadvantaged communities. Because social interactions nourish political beliefs as well as consumers' preferences, segregated societies will exacerbate collective action problems through peer effects. Put differently, a few losers from climate policies can fuel a substantial opposition to these policies because the negative effects of deindustrialization are heavily concentrated in certain communities. To reinforce the hostility against climate policies in poor communities, Rosés and Wolf (2018) show that regions with a very high shares of energy-intensive industries and mining have been the main losers of the European deindustrialization in last four decades. Group identity also acts as an amplifier insofar as brown jobs not only are geographically concentrated but also are dominated by white prime-age males—a group heavily exposed to trade shocks (Autor *et al.*, 2017).

The extreme forms of discontent created by climate policies are a gift to the true vested interests defending the status quo of lax carbon regulations: the companies in heavily polluting sectors. The job-killing argument is just a weapon in the basket of brown lobbies, although it is certainly an important one. A pragmatic approach to climate policy should hence consider setting countervailing mechanisms to minimize the collective action problem associated with extreme economic events.

Conclusions

Several complementary policies can mitigate the losses for workers in highly exposed industries. Ideally, we need industrial policies that support the green economy combined with retraining policies as well as a clear identification of the differences in the skill profiles of brown and green jobs. However, this approach may not suffice if specialization in greener production is persistent and thus difficult to transfer to areas lagging behind. The evidence in Vona *et al.* (2017) suggests that this is the case, as the areas creating more green jobs are also high-tech and host of a national research lab. Such persistence is not surprising given the high degree of innovativeness of green products compared to polluting products.

A less ambitious plan that seems to have worked well in Canada is to recycle the revenues from a carbon tax to reduce labor taxation (Yamazaki, 2017). While this tax

reform may not prevent the relocation of polluting industries or parts of such industries elsewhere, it will increase the incentives to create jobs in other sectors. The key issue is then to compare the working conditions in new jobs with those in brown jobs. The risk is that new job opportunities will be concentrated in low-skilled segments of the service sector and thus that the political discontent caused by climate policies will not be mitigated.

Finally, carbon border adjustments may be a suitable option to prevent carbon leakage and the associated job losses (Helm *et al.*, 2012). Carbon border adjustments appear to be the ideal policy to invalidate the rhetoric of the job-killing argument and ensure the widespread acceptability of climate policies. In addition, the health benefits associated with emissions reductions will be more evident because countries with laxer environmental regulations will be induced to reduce their emissions-to-output ratios to export to rich countries. The problem here is that carbon border adjustments face fierce opposition from emerging countries, especially China. Increasing the awareness of the health benefits from reduced emissions may be a way to overcome the resistance of these countries. Another possibility is to propose a countervailing acceleration of trade liberalization in environmental goods to induce China and other emerging countries, which are or can easily become net exporters of these goods, to accept border carbon adjustments.

References

Acemoglu, D., Autor, D., 2011, "Skills, tasks and technologies: Implications for employment and earnings", *Handbook of labor economics*, 4: 1043–1171.

Allcott, H., Mullainathan, S., 2010, "Behavior and energy policy", *Science*, 327(5970): 1204–1205.

Allcott, H., 2011, "Social norms and energy conservation", *Journal of Public Economics,* 95(9): 1082–1095.

Autor, D., Dorn, D., Hanson, G.H., 2013, "The China syndrome: Local labor market effects of import competition in the US", *American Economic Review*, 103(6): 2121–68.

Autor, D., Dorn, D., Hanson, G. and Majlesi, K., 2016, "Importing Political Polarization?", *NBER Working Paper* 22637.

Autor, D., Dorn, D., Hanson, G., 2017, "When work disappears: manufacturing decline and the falling marriage-market value of men", *NBER Working Paper* 23173.

Babutsidze, Z., Chai, A., 2018, "Look at me Saving the Planet! The Imitation of Visible Green Behavior and its Impact on the Climate Value-Action Gap", *Ecological Economics*, 146: 290–303.

Biel, A., Thøgersen, J., 2007, "Activation of social norms in social dilemmas: a review of the evidence and reflections on the implications for environmental behavior", *Journal of Economic Psychology,* 28(1): 93–112.

Bollinger, B., Gillingham, K., 2012, "Peer effects in the diffusion of solar photovoltaic panels", *Marketing Science*, 31(6): 900-912.

Comin, D., Rode, J., 2013, "From green users to green voters", *NBER Working Paper* 19219.

Cragg, M., Zhou, Y., Gurney, K., Kahn, M., 2013, "Carbon geography: the political economy of congressional support for legislation intended to mitigate greenhouse gas production", *Economic Inquiry*, 51(2): 1640–1650.

Dinda, S., 2004, "Environmental Kuznets curve hypothesis: a survey", *Ecological Economics,* 49(4): 431–455.

Ekins, P., Speck, S. 1999, "Competitiveness and exemptions from environmental taxes in Europe", *Environmental and resource economics*, 13(4): 369–396.

Greenstone, M., 2002, "The impacts of environmental regulations on industrial activity: Evidence from the 1970 and 1977 clean air act amendments and the census of manufactures", *Journal of Political Economy*, 110(6): 1175–1219.

Helm, D., Hepburn, C., Ruta, G., 2012, "Trade, climate change, and the political game theory of border carbon adjustments", *Oxford Review of Economic Policy*, 28(2): 368–394.

Kahn, M., Mansur, E., 2013, "Do local energy prices and regulation affect the geographic concentration of employment?", *Journal of Public Economics,* 101: 105–114.

Magnani, E., 2000, "The environmental Kuznets curve, environmental protection policy and income distribution", *Ecological Economics,* 32: 431–443.

Martin, R., Muûls, M., De Preux, L., Wagner, U., 2014, "Industry compensation under relocation risk: A firm-level analysis of the EU emissions trading scheme", *The American Economic Review,* 104(8): 2482-2508.

Mulatu, A., Gerlagh, R., Rigby, D., Wossink, A., 2010, "Environmental regulation and industry location in Europe", *Environmental and Resource Economics*, 45(4): 459–479.

OECD, 2016, *OECD Regions at a Glance 2016*, OECD Publishing, Paris.

Olson M., 1965, *The Logic of Collective Action: Public Goods and the Theory of Groups*. Harvard University Press.

Sovacool, B., Linnér, B., Goodsite, M., 2015, "The Political Economy of Climate Adaptation", *Nature Climate Change,* 5(7): 616–618.

Rode, J., Weber, A., 2016, "Does localized imitation drive technology adoption? A case study on rooftop photovoltaic systems in Germany", *Journal of Environmental Economics and Management*, 78: 38–48.

Rosés, J., Wolf N., 2018, "Regional economic development in Europe, 1900-2010: a description of the patterns", *CEPR Discussion Paper* 12749.

Smith, V., 2015, "Should benefit-cost methods take account of high unemployment? Symposium introduction", *Review of Environmental Economics and Policy,* 9(2): 165–178.

Vona, F, Marin, G., Consoli, D., 2017, "Measures, Drivers and Effects of Green Employment: Evidence from US Local Labor Markets, 2006-2014", *SPRU Working Paper Series* 2017-13, SPRU – Science and Technology Policy Research, University of Sussex.

Vona, F., Marin, G., Consoli, D., Popp, D., 2018, "Environmental Regulation and Green Skills: an empirical exploration", forthcoming, *Journal of the Association of Environmental and Resource Economists*.

Walker, R., 2011, "Environmental regulation and labor reallocation: Evidence from the Clean Air Act", *American Economic Review,* 101(3): 442–447.

Walker, R., 2013, "The transitional costs of sectoral reallocation: Evidence from the Clean Air Act and the workforce", *The Quarterly Journal of Economics*, 128(4): 1787-1835.

Yamazaki, A., 2017, "Jobs and climate policy: Evidence from British Columbia's revenue-neutral carbon tax", *Journal of Environmental Economics and Management*, 83: 197–216.

Pour citer ce document :
Francesco Vona, 2018, « Job Losses and the Political Acceptability of Climate Policies: An Amplified Collective Action Problem? », *OFCE Policy brief* ***35***, 7 mai.

Directeur de la publication Xavier Ragot
Rédacteur en chef du blog et des *Policy briefs* Guillaume Allègre
Réalisation Najette Moummi (OFCE).

Copyright © 2018 – OFCE *policy brief* ISSN 2271-359X. All Rights Reserved.