Should we clash or should I go?

Olivier Godechot, Zinaida Salibekyan

maxpo Max Planck Sciences Po Center on Coping with Instability in Market Societies

No. 13/3

maxpo discussion paper

Should We Clash or Should I Go?

The Impact of Low Wage and Bad Working Conditions on the Exit–Voice Trade-off

Olivier Godechot and Zinaida Salibekyan

Olivier Godechot and Zinaida Salibekyan
Should We Clash or Should I Go? The Impact of Low Wage and Bad Working Conditions on the Exit–Voice Trade-off

MaxPo Discussion Paper 13/3
Max Planck Sciences Po Center on Coping with Instability in Market Societies
November 2013

MaxPo Discussion Paper
ISSN 2196-6508 (Print)
ISSN 2197-3075 (Internet)

Submission Inquiries
Contact the editors at
dpseries@maxpo.eu

Downloads
www.maxpo.eu
Go to *Publications*

Max Planck Sciences Po Center on Coping with Instability in Market Societies
Sciences Po | 27 rue Saint-Guillaume | 75337 Paris Cedex 07 | France

Tel. +33 1 45 49 59 32
Fax +33 1 58 71 72 17

www.maxpo.eu
info@maxpo.eu

Abstract

Although Hirschman's exit–voice theoretical model has been applied to labor markets, research up to now has not tested one of its most important features: the impact of job quality on exit–voice strategies. Hirschman's model of consumer behavior explains that those individuals unsatisfied with a product's quality are more likely to "voice," whereas those more concerned with its price are more likely to "exit." A rationale for this trade-off is based on information: first, information on the price of alternative options is much more accessible than information on quality; second, voice produces more information than exit and favors opportunities for specific improvements. We transpose Hirschman's assumptions to labor markets and use the French SalSa survey and DADS, declaration by employers on social data, to examine the conditions under which French employees are more likely to exit, and the conditions under which they are more likely to voice. Our results support the Hirschmanian hypothesis. A deterioration by one unit in our working-conditions index increases the probability of participation in collective action by 5 percentage points. An increase in log hourly wage by one unit decreases the probability of quitting by 5 percentage points.

Authors

Olivier Godechot is Co-Director at the Max Planck Sciences Po Center on Coping with Instability in Market Societies, Paris. He is CNRS research fellow, affiliated with the Observatoire sociologique du changement, and holder of the AXA–Sciences Po Chair of Economic Sociology.

olivier.godechot@sciencespo.fr

Zinaida Salibekyan is a PhD candidate at the Institute of Labour Economics and Industrial Sociology (LEST–CNRS), Aix en Provence, and currently a lecturer at the University of Aix-Marseille.

Contents

Should We Clash or Should I Go? The Impact of Low Wage and Bad Working Conditions on the Exit–Voice Trade-off

Introduction

Hirschman's seminal book *Exit, Voice and Loyalty* (1970) is typically invoked in order to understand workers' strategies on coping with their wage and work conditions. Nevertheless, the mechanisms at the core of Hirschman's book are rarely analyzed precisely and tested empirically. Hirschman does not deal with labor markets and concentrates mainly on consumers dissatisfied by the price and the quality of a product. In such situations, consumers must choose between two options, exit or voice. Economics traditionally stresses the importance of exit as the basic market mechanism: firms adapt to consumers' exit through price adjustment. On the contrary, Hirschman stresses the fact that the voice strategy may be more efficient than exit. This is the case when consumers are primarily dissatisfied with the quality of a product. The reason for this is that voice conveys more information than exit and therefore helps firms to react to dissatisfaction.

The aim of this paper is to adapt Hirschman's model to labor markets. In the labor market, quitting, collective action, wages, and quality of work can be considered as direct equivalents of exit, voice, price, and quality of products on the market for goods and services respectively. When do workers choose to take part in collective action? When do they quit? Transposing Hirschman's model into the labor market predicts that dissatisfaction with pay should favor quitting while dissatisfaction with working conditions should favor collective action. The central mechanism relies on the information exchange at stake within those two strategies. Quality of work is a complex, multidimensional, and partly subjective phenomenon that is much more complex than information about pay. A worker will know much more about the pay in a new job than about the working conditions. Changing jobs mainly to improve working conditions is much more uncertain than changing to improve pay. Inversely, collective protest about working conditions gives some objectivity to the grievance and pressures employers to take the problem into account and to respond with some improvements.

The study of this trade-off draws on a French survey (Salsa 2009) that contains questions on quits and participations in collective action over the preceding five years. Labor market studies addressing the exit–voice trade-off generally privilege union membership as the main indicator for voice strategy. This choice may not be well-adapted to France, where, as opposed to the American "closed-shop" strategy, unions adopt a universalistic strategy, demanding advantages for all workers at the cost of remaining isolated and being discriminated against (Coutrot 1998; Bréda 2013). Although union membership is quite low, non-unionized workers remain in contact with union delegates and quite often join in collective action organized by unions. This study statistically estimates the

impact of pay and quality of work on participation in collective action, on the one hand, and on quits on the other. Furthermore, we investigate the consequences of those two strategies on either pay increase or on work quality improvement.

The paper is organized as follows: the first section deals with previous research concerning the exit–voice trade-off and shows that the issue of work quality has never been fully addressed; the second section provides a more in-depth analysis of this trade-off and sets up a testable hypothesis; the third section presents the data and the method; the fourth section analyses the results and the paper ends with a discussion on the scope and the limits of these results.

Previous research

An important amount of literature has been published in labor economics journals using Hirschman's exit–voice theory over the past 30 years. A large and growing body of literature has investigated the impact of voice on the likelihood of exit (Freeman 1978, 1980; Freeman/Medoff 1984; Miller/Mulvey 1991; Willman et al. 2006). Many studies have shown that by giving employees the opportunity of voice rather than that of exit, employers would benefit from a reduced turnover. But while quality is at the core of Hirschman's book (Barry 1974; Dowding et al. 2000), this important aspect remains untested when the concepts of voice and exit are applied to the labor market.

In 1984, Freeman and Medoff published the book *What Do Unions Do?*, where they adapted Hirschman's exit–voice model to the job market. They argued that the role of unions, as a form of collective voice strategy within firms, goes beyond negotiating wage increase above the competitive level. While they acknowledged that non-wage effects were significant, their study failed to consider the impact of voice on quality improvement as a non-wage effect. They showed only that voice had a positive impact on wage increase and reduced the exit rate of employees.

Miller and Mulvey (1991) used Freeman's (1980) study to conduct a new survey in which they studied the impact of unions on quits, total separations, job tenure, and layoffs in the US and in Australia. The main point of Freeman's (1980) study is that workers are likely to take the exit option less often when they have a voice institution for expressing their discontent, thus reducing the rate of quits and increasing job tenure. Miller and Mulvey (1991) used Hirschman's exit–voice model in order to analyze the behavior of individuals under unionism. They show that unions as a form of voice reduce quits in Australia and argue that they also increase job satisfaction. These findings have been explained by the fact that though unions have a strong impact on the wage premium of their workers compared to non-union workers, many non-wage aspects such as working hours, vacation entitlements, notice entitlements, and special payments and allow-

ances are provided as awards and apply both to union and non-union workers alike. Similarly, Peterson and Lewin (2000) argued that employees who feel unfairly treated by managers weigh the costs and benefits of expressing dissatisfaction versus quitting.

Willman et al. (2006) used a transaction cost approach to examine the employee's choice to either voice or not. They extended the scope of research to the employee level and argued that employers might avoid investments in voice where the costs exceed the returns. Even though they discussed the effect of the voice mechanism on the performance of employees, they did not take into account the impact of voice strategy on the quality of work.

Hammer (2000) described the benefits of voice from the perspective of improved motivation, commitment, and team working. The author highlighted the importance of studying direct worker participation as a voice mechanism in organizational decision-making processes, which should consequently influence the quality of work and contribute to organizational effectiveness. He did not, however, test the impact of quality of work on voice.

The aforementioned papers made valuable progress in investigating various effects of voice strategy on variables such as quit rates and workers' performance, but no research has surveyed nor empirically explored the direct influence of quality of work on the exit–voice strategy. Quality of work is at best approached indirectly through work satisfaction or feelings of justice.

Theoretical background

The current paper seeks first to examine and to measure the role of quality of work in shaping the exit–voice strategy, and second to assess the consequences of those strategies on either pay increase or work quality improvement. The theoretical arguments are based on a more systematic specification of cost and benefit factors and of available information on wages and work quality in alternative jobs, as well as on the comparative evaluation of the outcomes associated with the two alternatives: exit or voice.

Workers coping with bad working conditions

What happens when workers are dissatisfied with the quality of work? On the one hand, voice could seem more costly than exit as it is costly to spend time and energy in order to influence a firm and obtain improvements. On the other hand, information on the quality of alternative options is poor and change is risky. A way of modeling

Hirschman's view on exit would be to consider the combination of risk aversion and of random walk expectations on quality: when signing a new contract, expectancies on undisclosed quality are based on the quality experienced in the current contract $(E(Q_{t+1}) = Q_t)$. Chances of improvement equate chances of degradation. On the contrary, voice strategy conveys collective – and therefore more objective – information to employers and offers them a much more precise way to react to dissatisfaction than does exit. Chances of improvement are therefore positive.

For consumer markets, Hirschman (1970) argues that buyers will favor voice for more complex goods (such as schooling) and complex quality problems (such as car security issues). In such cases, information disclosed on quality makes up only a small proportion of the information on quality. Informational problems potentially exist to some degree in all markets (Akerlof 1970, 2002) and for any goods. As such, the consumer has a choice between either searching for another good or experimenting with the good to obtain information about its qualities (Nelson 1970). In the labor market, the cost of experimenting with a new job to obtain information about its quality is generally more substantial than for most consumer goods, both because quality of work is generally more complex than the quality of a good and because it cannot be assumed to be stable.

Hirschman (1970) argues, moreover, that the voice option is chosen more often when exit is difficult, costly, and unavailable. Therefore, if employees do not have other exit options – because of the local rate of unemployment, for instance – they will be more likely to use voice to communicate the decline of the quality of work.

We can thus formulate our first hypothesis as:

H1: Low quality of work favors collective voice.

Hirschman's argument does not suggest that dissatisfaction with job quality will never lead to employees choosing exit. In some situations, the cost of voice is too substantial and disclosed information about the quality of alternative options is sufficient to make exit a valuable strategy. Hirschman's argument implies rather that the internalization of the costs and the benefits of exit and voice make the voice strategy on the whole a more likely one than the exit strategy.

H1b: Low quality of work favors collective voice more than exit.

Hirschman argues that voice plays an important role in relation to those goods that have a strong public interest component. In order to improve the quality of work, it is therefore more likely for collective voice to have a higher impact than individual voice.

Moreover, the perception of working conditions is highly subjective. When a worker complains individually about his working conditions, he might be revealing his subjective preferences and bias more than an objective feature of his working conditions.

When protest becomes collective, it tends to give some objectivity to the problem. Freeman and Medoff (1984) also provide other arguments explaining why collective voice is more efficient than individual voice. Firstly, workers' claims have a "public good" aspect that can have a positive influence on other employees. Turning the claim from individual to collective increases the probability of success and sets incentives to join the protest. Secondly, employees who individually express their true preferences to their employers may risk being fired, whereas at the macro level, collective voice is a sign of power that has a protective character for employees, allowing them to express the public interest of the whole group and without the risk of being fired.

H1c: Low quality of work favors collective voice more than individual negotiation.

In discussing institutional alternatives for quality improvement, Hirschman (1974) discusses the paper by Nelson and Krashinsky (1972) in which they argue that knowledge between buyers and sellers is disproportional. They claim that buyers lack information about the quality of a product and sellers have a dominant role in ignoring the component of quality. In the labor market, there is the similar problem of knowledge disproportion concerning the standard of quality of work between employers and employees. In this context, the institutional question is not about how to protect an employee, but rather how to educate an employer by providing him with information on his performance. Voice has an important role in such situations because compared to exit, it provides rich and detailed information. Furthermore, exit may not even convey the existence of discontent with the quality of work.

Employers' ignorance, or the substantial degree of ignorance they have about satisfying certain demands, is a common subject of discussion. At first sight, it seems that if an individual is unsatisfied with the quality of work, he would be likely to exit the firm. However, the individual with a poorly articulated complaint about the quality of work is advised to help the organization and to intensively collaborate with the management through the active use of voice. Hirschman argues that voice rather than exit is recommended for poorly understood problems because it transmits direct feedback about overlooked poor quality of work.

Confronted with a collective complaint about the quality of work, an employer can improve working conditions through three channels: by improving the working conditions, by compensating for poor working conditions with a pay increase (Smith 1776; Rosen 1986), or by offering a combination of these two improvements. We expect the solution to depend on the relative cost of work improvement and of differential compensating. When working conditions are very bad, we can assume that the cost of improving them is lower than the cost of compensating for them.

H2: Collective voice improves the quality of work.

Workers coping with low pay

Let us now discuss the strategies adopted by those dissatisfied with their pay. The complexity of the labor market, the imperfection of information, the magnitude of transactions costs, and the decentralization of the labor market lead to a multiple price equilibrium (MacLeod/Malcomson 1993). The wage offered for the same job and the same worker characteristics is not unique and can be viewed as a statistical distribution. Workers who *ceteris paribus* earn lower wages are more likely to find improved offers among other firms. Inversely, those with higher wages are less likely to find better offers.

Contrary to employees dissatisfied by the quality of work, employees dissatisfied with their pay generally have information about the salary offered by other jobs. Acemoglu (2001) thus argues that workers generally benefit from information about the sectors that pay higher wages. Furthermore, pay is generally the first informational element that will be disclosed and discussed during recruitment. This simple statistical phenomenon enables us to formulate the two following hypotheses.

H3: Low pay favors exit.

H4: Exit improves salary.

Collective voice is also viewed as a traditional working class means to increase wage. In France, June 1936 and May 1968 are spectacular examples of successful strikes. Nevertheless, participation in collective voice is costly, and its cost depends on collective coordination. Its success rate is limited and a pay increase following participation in collective voice is uncertain. On the contrary, quitting does not require that much collective coordination, and when an employee exits for another job, he has accurate information on the presumably higher salary being offered by his next firm.

H3b: Low pay favors exit more than collective voice.

H4b: Exit more than collective voice improves salary.

Individual negotiation may be less costly than collective voice, and therefore more common. In some situations, it can be a strong leverage for wage increase, especially if the employee has an exit option. But in many cases, employers may doubt that employees have a real exit option and may not pay much attention to individual claims for higher wages.

H3c: Low pay favors exit more than individual negotiation.

H4c: Exit more than individual negotiation improves salary.

Data and method

Data

We have used and matched two French datasets to come to our findings. The first dataset comes from a cross-sectional survey of 3,000 French employees, SalSa *(les Salaires vus par les Salariés)*, undertaken in December 2008 and January 2009, focusing on the way they perceive their wage. The survey was funded by the *Corpus* program of the French National Research Agency (ANR) and was run by the French statistical office (Insee). Interviews were conducted by telephone when possible otherwise and face to face.

To produce the SalSa sample, Insee extracted a random sample of employees from the 2006 annual declaration of social data DADS *(Déclarations annuelles de données sociales)*. The DADS panel data is an declaration procedure imposed on French employers. It contains the wages of every wage-earner working in the private sector, in public hospitals, and in local governmental administrations. Social contributions paid by national civil servants are collected through a different system, so the latter are not included in this database. In order to overcome this under-representation of the public sector, the designers of the survey decided to oversample employees of public hospitals and local governmental administrations. As such, 20 % of the initial sample was selected from these two groups. Similarly, 10 % of the sample was selected from the top decile of the private sector's wage distribution. In order to limit the cost of the survey, the sample was drawn from employees living in the following regions: Alsace, Auvergne, Centre, Languedoc-Roussillon, Lorraine, Midi-Pyrénées, Basse-Normandie, Pays de la Loire, Picardie, and Rhône-Alpes, as well as in the Essonne department of the Ile-de-France (Paris) region. The final sample was made up of 3,117 interviews.

We were therefore able to match responses to the cross-sectional survey with a limited selection of variables (due to privacy issues) from the DADS panel data. This selection mainly contains the employees' work career (wages, number of working hours, sector, social category, type of job) since 1976.

Strategy variables

We focus on those interest variables that could be interpreted as ways of improving the work situation: *voice*, *exit*, and *individual negotiation*.

In the SalSa survey, the Hirschmanian notion of voice is best captured by a question asking whether the employee participated in some form of collective action such as a strike, demonstration, or petition (Table 1). 23 % reported such collective participation.

Table 1 Voice strategy

1. During the last five years, did you participate in collective action (strike, demonstration, petition) linked to your work? (n = 3,117)	
... yes	22.6 %
... no	76.4 %
... doesn't know or refuses to answer	1.0 %
2. [If yes at 1] Consequent to this collective action, did you receive a wage increase, a bonus or a promotion? (n = 704)	
... yes	23.4 %
... no	73.9 %
... doesn't know or refuses to answer	2.7 %
3. [If yes at 1] Consequent to this collective action, did you get another improvement? (n = 704)	
... yes	25.6 %
... no	70.2 %
... doesn't know or refuses to answer	4.2 %

Note: 22.6 % of the 3,117 respondents participated in collective action at least once in the five years before the survey.
Source: SalSa (Insee, ANR, CMH, CREST, 2009).

This strategy, although traditionally viewed as "working class," is not the most frequent among blue-collar workers (Table 2); it can be measured in all social categories, with a peak among *technician* type workers. SalSa also gives subjective indications regarding the outcome of the mobilization. Almost a quarter of those who participated report an improvement in their pay, and a little more than a quarter report other improvements.[1]

Table 2 Cross-tables for social categories and strategies

	Collective action		Exit		Individual negotiation	
	Yes	n	Yes	n	Yes	n
Managers and professionals (CS = 3)	18.4 %	365	18.5 %	368	44.2 %	362
Technicians and assimilated (CS = 4)	28.9 %	731	17.6 %	735	50.2 %	731
Clerks (CS = 5)	23.9 %	1,032	16.7 %	1,030	39.7 %	1,015
Qualified blue-collar (CS = 61–65)	21.1 %	650	18.8 %	656	46.3 %	650
Non-qualified blue-collar (CS = 66–69)	13.7 %	307	25.0 %	312	39.5 %	309
All	22.8 %	3,085	18.4 %	3,101	44.1 %	3,067

Note: 18.4 % of the 365 managers surveyed participated in collective action at least once in the five years prior to this study. Missing answers were excluded. Consequently, the number of respondents changes slightly from one question to another.
Source: SalSa (Insee, ANR, CMH, CREST, 2009).

SalSa has several *exit* strategy proxies at different levels of realization. Our main variable is given by a question asking whether the respondent ever voluntarily left his job in the past five years (Table 3). 18 % did. Quitting is quite common and evenly distributed among all social categories of wage-earners (Table 2). We only observe a peak of this strategy among non-qualified blue-collar workers, which is coherent with what we know about turnover (Kraft 1986). We also know that 42 % of those who quit did so in order to obtain a better wage. A second measure is given by the subjective intention of quitting. In January 2009, 16 % of the workers wanted to quit, half of them for a bet-

1 The two improvements are positively correlated: 9 % enjoyed both improvements, 15 %, pay improvement only, 17 % other improvements only, and 59 % no improvements at all.

ter wage (Table 3). Nevertheless, we must be cautious when interpreting this variable. There might be a gap between the intention to quit and its realization. As such, the worker needs to find another option by which he can improve his situation. Thanks to the DADS, we have one last measure of exit, given by the people who changed firms between the time of the interview (December 2008 or January 2009) and the end of the year 2009. We know only whether the respondent changed firms, but not whether he did so voluntarily (quit) or non-voluntarily (dismissal, outsourcing, or even a move between two different subsidies of the same conglomerate). In order to limit the number of dismissals, we count only changes of firms separated by less than three months following the end of the contract with the first firm. We believe that this variable, although not perfect, is a fair representation of voluntary quits in 2009. This variable is interesting because it reports an event that occurred after the survey, thereby enforcing causal interpretations of survey variables on its occurrence.

Table 3 Exit strategies

1. In the last five years, have you ever voluntarily left your job? (n = 3,117)	
... yes	18.3 %
... no	81.2 %
... doesn't know or refuses to answer	0.5 %
2. [If yes at 1] Was the last time for a better wage? (n = 570)	
... yes	42.3 %
... no	56.5 %
... doesn't know or refuses to answer	1.2 %
3. Do you plan to voluntarily leave your job now? (n = 3,117)	
... yes	16.2 %
... no	81.5 %
... doesn't know or refuses to answer	2.3 %
4. [If yes at 3] Is it (n = 504)	
... essentially in order to receive a better wage	49.6 %
... not because of wages	45.8 %
... doesn't know or refuses to answer	4.6 %
5. Changed firms in 2009 after the SalSa survey (n = 3,117)	
... yes	5.7 %
... no	94.3 %

Source: SalSa (Insee, ANR, CMH, CREST, 2009).

Individual negotiation with the supervisor is the last strategy reported in SalSa. In our survey, people were asked whether they tried such an approach in order to improve their salary. 44 % reported doing so (Table 4). We must note that contrary to the two previous strategies, the question is directly framed in terms of wage improvement only. We do not have information on other possible improvements – especially in working conditions – through such means. This strategy is common among all social categories (Table 2), with a peak among technicians and assimilated workers (*i.e., professions intermédaires*). This strategy is reported to be partially or totally successful by 60 % of those who tried it.

Table 4 Individual negotiations

1. In the last five years, did you personally approach one of your supervisors in order to ask him for a wage increase, a bonus, or a promotion, or to otherwise ask him to help you get one? (n = 3,117)	
... yes	43.4 %
... no	55.0 %
... doesn't know or refuses to answer	1.6 %
2. [If yes at 1] Were you successful? (n = 1,353)	
... totally	24.2 %
... partially	35.6 %
... no	39.0 %
... doesn't know or refuses to answer	1.3 %

Source: SalSa (Insee, ANR, CMH, CREST, 2009).

Finally, Table 5 indicates the correlation between the three basic strategies employed (or not) in the last five years. As established by previous literature (Freeman 1984; Spencer 1986), we find a strong negative correlation between voice and exit strategies. 11 % of those who voiced have also exited, whereas 21 % of those who did not voice exited their firm. Several mechanisms might explain this negative correlation. For one, it corresponds to different types of investment (collective versus individual orientation). When a person moves to a new firm, he has a trial period and may not be secure enough to participate in collective action. He is also less integrated and less socially constrained to join collective action. When someone participates in collective action, he is more likely to be integrated into some kind of work group and less likely to abandon it.

Table 5 Correlation between the three main strategies

	Exit in [t-5,t[		Individual negotiation in [t-5,t[	
	Yes	n	Yes	n
Collective action in [t-5,t[				
... yes	10.7 %	702	43.0 %	700
... no	20.7 %	2,379	44.5 %	2,346
Chi-squared test	Chi2 = 35.7 p-value = 2.3e-09		Chi2 = 0.6 p-value = 0.46	
Exit in [t-5,t[				
... yes			47.5 %	559
... no			43.3 %	2,500
Chi-squared test			Chi2 = 3.40 p-value = 0.07	

Note: 10.7 % of 702 respondents who participated in collective action in the past five years quit their job during the same period at least once.
Source: SalSa (Insee, ANR, CMH, CREST, 2009).

We do not find any significant first-order correlation between collective action and individual negotiation. There is, however, a mild positive correlation between exit and individual negotiation. Moreover, the full matrix of correlations for our 14 measures of workers' strategies shows that there is a fairly strong correlation of unsuccessful individual negotiation and exit strategies (realized or intended) in order to get pay increases (Table A1, Appendix).

Bad quality of work

In the current paper, we look to test the impact of quality of work on the adoption of different work-improving strategies. More specifically, we discuss dissatisfaction with the quality of work; as such, the main independent variable is the bad quality of work. We built the index BQ_{2008} with the most negative items of the six working conditions variables contained in the 2008–2009 SalSa survey. These variables are high-speed work, physically hard work, mentally hard work, dangerous work, convenient working schedule, and liking the work (Table 6). Most working conditions variables are yes/no dichotomous variables, except high-speed work (4 items) and liking the work (3 items).

Table 6 Descriptive statistics and correlation of the bad quality of work variables

	Mean (sd)	1	2	3	4	5	6
1. Works at a fast rate: Yes, most of the time	0.433 (0.496)	1.000					
2. Work is physically hard	0.372 (0.484)	0.095	1.000				
3. Work is mentally hard	0.636 (0.481)	0.322	0.046	1.000			
4. Work is dangerous	0.272 (0.445)	0.002	0.340	0.024	1.000		
5. Work schedule is not convenient	0.169 (0.375)	0.099	0.123	0.099	0.048	1.000	
6. Likes what one does during work: Generally no	0.032 (0.176)	0.036	0.090	0.051	0.007	0.093	1.000
7. Bad quality of work index	4.209 (2.991)	0.520	0.566	0.515	0.475	0.489	0.427

Note: The first column contains mean and standard deviation in parentheses.
Source: SalSa (Insee, ANR, CMH, CREST, 2009).

We believe that these six questions give a balanced picture of the dimensions of the quality of work. We constructed the index by adding together the worst items of our six questions. In order to give equal importance to each item in the variance of the index, we standardized each of these items with its standard deviation.

$$\begin{aligned} BQ_{2008} = {} & \text{high\_speed}/\sigma_{high\_speed} + \text{physically\_hard}/\sigma_{physically\_hard} \\ & + \text{mentally\_hard}/\sigma_{mentally\_hard} + \text{dangerous}/\sigma_{dangerous} \\ & + \text{inconvenient}/\sigma_{inconvenient} + \text{dislike}/\sigma_{dislike} \end{aligned} \quad (1)$$

Unfortunately, the survey only provides us with working conditions at the end of 2008 and the DADS panel data doesn't provide us with any information on working conditions. This may be problematic when we use our 2008 working-conditions index in order to explain a work-improving strategy employed in the last five years – that is, between 2004 and 2008. We therefore have a clear temporal bias. From this point, two approaches are possible.

The first consists in using our 2008 bad quality index BQ_{2008} as a proxy for the bad quality in 2003 BQ_{2003}, before the occurrence of the work strategy. This option is reliable if the given strategies had a rather negligible impact on the working-conditions index measured. However, if the strategy did effectively improve working conditions, we would be underestimating the impact of quality on the strategy. If our Hirschmanian theory is correct, this would lead to an underestimation of the role of quality on voice much more than that of quality on exit.

The second approach consists in using imputation techniques (Schafer/Graham 2002) in order to get an estimation of BQ_{2003} – bad working conditions in 2003. We can model BQ_{2008} with the 2008 variables, and hypothesize that the parameters will also be correct for 2003. This means that we treat the values of BQ_{2003} as missing observations and that we assume that the parameters of the BQ_{2003} are the same as those of BQ_{2008}. A rationale for such assumption is that the broad determinants of quality of work do not change quickly. Although the parameters are given for 2008, for the imputed variable we use the values of explanatory variables in 2003. The information contained in the imputed variable BQI_{2003} therefore largely depends on the situation in 2003.[2]

Estimation: $$BQ_{2008} = \Sigma_k \, a_{k\ 2008} * x_{k\,2008} + u \qquad (2)$$

Imputation: $$BQI_{2003} = \Sigma_k \, a_{k\,2008} * x_{k\,2003} \qquad (3)$$

The relation between the real 2003 bad quality of work index and our imputation can be viewed as a linear relation, as in equation 4.

$$BQ_{2003} = b_0 + b_1 * BQI_{2003} + v \qquad (4)$$

$$S_{2003–2008} = c + d * BQ_{2003} + \Sigma_l f_l * z_l + w \qquad (5)$$

$$S_{2003–2008} = c + d * b_0 + d * b_1 * BQI_{2003} + \Sigma_l f_l * z_l + v + w \qquad (6)$$

A condition for estimating the impact d of the real unknown variable BQ_{2003} strategy in equation (5) when we replace it with the imputation variable BQI_{2003} is that $b_1 = 1$. This condition is met if $a_{k\,2008} = a_{k\,2003}$. Therefore, if the real parameters of quality of work did not change between 2003 and 2008, our imputation variable is suitable to estimate the impact of the working conditions on the work-improving strategy chosen between 2003 and 2008.

---

2 More precisely, we use information in 2003 when the respondent entered the panel data in 2003 or before (80 % of the sample). Otherwise, we use information at the date of entrance in the panel data. That is: 2004 information for 10 % of the sample, 2005 information for 6 % of the sample, and 2006 information for 3 % of the sample. As the panel data contains all respondents' job positions in the French private sector, local governmental administration, and hospital administration since 1976, it is very unlikely that an exit, a collective action, or an individual negotiation "in the last five years" took place for those people before their entrance in the panel data. For simplification, we will designate those variables dating from 2003 to 2006 as "2003."

In order to model BQ_{2008}, we use the following panel variables that are known for both 2003 and 2008: age, age squared, social categories, sector, number of working hours, number of working hours squared, region, type of firm, type of contract, and an interaction of sectors and social categories. We also use SalSa 2008 variables that we can presume correctly inform the situation in 2003, such as gender and education. Estimates of this regression can be found in Table A2 (Appendix).

In order to avoid collinearity problems while estimating the second stage equation 6, it is important for some variables x_k used in the first stage equation 2 for estimation and after imputation, to differ from the control variables z_l in the second stage equation 6. The following variables are used in the first stage regression and not in the strategy regression: sector, number of working hours, number of working hours squared, region, type of firm, type of contract, and an interaction of sectors and social categories. An analysis of variance is given in Table A3 and shows that these sets of specific first-step variables have a significant impact on the quality of work.

Pay

The great advantage of SalSa is that we have details about employees' full careers. Here, we take into account the net *salary* of individuals (firm declared) and the number of working hours (firm declared, as well) in order to compute the log hourly wage. This variable is calculated both for 2003 and 2008.

In order to see the impact of strategy on pay, we also compute the *increase of salary* from 2003 to 2008 as the difference between the logarithm of 2008 hourly wage and the logarithm of 2003 hourly wage.

Other control variables

The strategy models contain continuous variables such as *age* and *number of housemates,* as well as categorical variables such as *gender, relationship status* (living with a partner or not), and *nationality* (French or foreigner). *Education* is measured with a six level nomenclature: elementary education, professional technical degree, high school degree, 2 years of college, bachelor's degree, and master's degree and above. These variables are measured in the 2008/2009 survey. Apart from age, which we can compute for 2003, we assume that the respondent did not change in these aspects and that they are good proxies of the 2003 situation.

For *social categories* we use the French social category nomenclature (firm declared), which gives us a five level variable: managers and professionals *(CS = 3)*, technicians and assimilated workers *(CS = 4)*, clerks *(CS = 5)*, qualified blue-collar workers *(62 ≤ CS ≤ 65)*, and non-qualified blue-collar workers *(66 ≤ CS ≤ 69)*. This variable is available both in 2003 and in 2008.

We also control for the *year of entrance in the panel data*, in order to control for 20 % of the sample – generally the youngest, who were not part of the panel in 2003 and began (or returned to) the panel between 2004 and 2006.

Results

In order to test the combination of pay and working conditions on workers' strategies, we performed Linear Probability Models with the classical OLS technique and corrected for heteroscedasticity. In a first version, we performed logistic regressions, but such techniques can be problematic when having to compare coefficients from one regression to another and when computing interactions (Ai/Norton 2003; Mood 2010). The advantage of LPM is that it provides a direct estimation of marginal effects. Advantages and limits of both techniques are subject to recent debates in econometrics. In any event, qualitative results are very similar. Results are given in Table 7. As the comparison of marginal effects in different models may be difficult when those marginal effects are applied to very different base probabilities (5 % versus 20 %), we used the base probabilities and the parameters in order to compute odds ratios and their 90 % confidence interval.[3]

The first part of the table contains models based on our 2008 working-conditions index BQ_{2008}, models in which we have a better description of the working conditions but that may be suspect to temporal bias leading to an underestimation of the impact of bad working conditions on strategy. The second part of the table contains models based on our imputation for 2003 of the working conditions, BQI_{2003}.

3 For instance, in the first voice model, the base probability of voicing is 23 %. One unit of our 2008 work-condition index raises this basis probability by 2.1 percentage points to 25.1 % (with a 90 % confidence interval between 24.6 % and 25.5 %). We compare these two proportions (25.1 % and 23 %) with the classical odds ratio formula: $p/(1–p)/[q/(1–q)]$.

Bad quality and strategies

Our first hypothesis stated a positive impact of bad working conditions on collective action. Based on the 2008 index, this premise holds. One unit from our index significantly increases the probability of participation in some form of collective action by 2 percentage points. As we explained above, this result is subject to temporal bias. As collective action is likely to ask for improvements in job quality and sometimes to obtain it, we believe that the 2008 coefficient underestimates its true value. The fact that the bad working coefficient is also highly significant regarding the probability of obtaining non-monetary advantages through voice (and its odds-ratio of 1.13 even higher – Model 4) shows that it is very unlikely that collective voice has worsened job quality. This also strengthens our interpretation in terms of underestimation of the real parameter with the 2008 index. Hence, when we use our 2003 imputed coefficient, we find a much stronger coefficient. One unit of the 2003 bad working index marks a very significant increase in the probability of participating in collective action by 5 percentage points. The fact that bad working conditions have a stronger and more significant impact on the probability of participation in collective action leading to non-monetary advantages (that are very likely to be work quality improvements) than on that of participating in pay-increasing collective action shows that our interpretation is coherent with our Hirschmanian framework.

Let us now compare the voice strategy with other strategies such as exit and individual negotiation when quality of work is at stake. The impact of our 2008 index is clearly higher and more significant on voice strategy than it is on exit strategy: 2.10 point effect in Model 1 versus 0.1 points in Model 5, or formulated as an odds ratio for this comparison, a 1.12 effect on voice versus a 1.01 effect on exit. Nevertheless, we must not forget that those who changed jobs may have radically improved their working conditions and are now enjoying good working conditions, while having suffered bad working conditions before their move. The temporal bias might be much more profound than for the voice strategy. In order to validate our first result, we can use our 2003 imputed index. When we do so, the impact of bad working conditions on exit increases substantially and almost reaches the 10 % level of significance. Nevertheless, it remains much lower than its impact on voice when we measure it with marginal effects (1.3 % versus 4.9 %) or with odds-ratios (1.1 versus 1.3). Moreover, the 90 % confidence intervals of the two impacts do not overlap, showing that the difference of impact is significant.

In order to validate this interpretation, we can use other measures of exit that are not subject to temporal bias measurement, such as the intention to quit at the date of the survey and the fact that a change of employer actually took place in 2009. At first sight, bad working conditions in *t* seem to be a strong and significant determinant of quit intentions (Table 8). Nevertheless, their impact is lower on exit intention than their impact on voice (when we use our 2003 imputed variable). Moreover, there is a substantial difference between the desire to quit and effectively quitting. The desire may not be realistic – there may be no information about alternative jobs, and, as Hirschman

Table 7 Impact of pay and of work quality on workers' strategies

	Collective action in [t-5,t[				Exit in [t-5,t[			Individual negotiation in [t-5,t[	
	Participation	… successful	… pay increase	… other advantage	Realized	… for pay	… for other reason	Realized	… successful
BQ_{2008} Models	1	2	3	4	5	6	7	8	9
2003 Hourly wage (log)	0.0885*** (0.0235)	0.0360** (0.0179)	0.0174 (0.0154)	0.0359*** (0.0120)	–0.0396* (0.0238)	–0.0289* (0.0172)	–0.0138 (0.0187)	–0.0341 (0.0267)	–0.0027 (0.0236)
2008 Bad working conditions	0.0210*** (0.0025)	0.0075*** (0.0018)	0.0016 (0.0013)	0.0073*** (0.0015)	0.0011 (0.0024)	0.0006 (0.0016)	0.0002 (0.0019)	0.0018 (0.0030)	–0.0041* (0.0024)
N	3,042	3,042	3,042	3,042	3,057	3,057	3,057	3,023	3,023
R2	6.0 %	2.2 %	0.9 %	2.6 %	8.7 %	4.3 %	4.8 %	6.5 %	6.5 %
Odds ratios: Wage	1.57 [1.3–1.86]	1.45 [1.08–1.84]	1.35 [0.84–1.89]	1.68 [1.3–2.08]	0.75 [0.52–1]	0.61 [0.25–0.99]	0.85 [0.54–1.19]	0.87 [0.72–1.04]	0.99 [0.8–1.19]
Working conditions	1.12 [1.10–1.15]	1.09 [1.05–1.13]	1.03 [0.99–1.07]	1.13 [1.09–1.18]	1.01 [0.98–1.03]	1.01 [0.97–1.05]	1.00 [0.97–1.04]	1.01 [0.99–1.03]	0.98 [0.96–1.00]
BQI_{2003} Models	11	12	13	14	15	16	17	18	19
2003 Hourly wage (log)	0.0842*** (0.0248)	0.0350* (0.0188)	0.0195 (0.0163)	0.0332*** (0.0124)	–0.0479** (0.0244)	–0.0329* (0.0171)	–0.0183 (0.0189)	–0.0174 (0.0277)	0.0092 (0.0249)
2003 Imputed bad working conditions	0.0487*** (0.0095)	0.0187*** (0.0066)	–0.00004 (0.0049)	0.0226*** (0.0054)	0.0125 (0.0077)	0.0037 (0.0053)	0.0094 (0.0063)	–0.0450*** (0.0100)	–0.0226*** (0.0086)
N	3,000	3,000	3,000	3,000	3,016	3,016	3,016	2,981	2,981
R2	4.9 %	1.9 %	0.8 %	2.5 %	8.3 %	4.2 %	4.6 %	7.1 %	7.0 %
Odds ratios: Wage	1.53 [1.26–1.84]	1.43 [1.05–1.85]	1.39 [0.86–1.96]	1.62 [1.23–2.03]	0.69 [0.46–0.95]	0.55 [0.19–0.93]	0.80 [0.48–1.14]	0.93 [0.77–1.12]	1.05 [0.84–1.28]
Working conditions	1.29 [1.20–1.40]	1.23 [1.09–1.36]	1.00 [0.84–1.16]	1.42 [1.25–1.59]	1.09 [1.00–1.18]	1.05 [0.93–1.18]	1.10 [0.99–1.22]	0.83 [0.78–0.89]	0.89 [0.82–0.96]

Note: Estimates of the linear probability models were obtained through OLS regressions. We use the Huber-White sandwich estimator to correct for heteroscedasticity and compute robust standard errors in parentheses. Only variables of interest are reported. Besides those variables, we use the following as control variables: gender, diploma (6 items), social category in 2003 (5 items), age in 2003, age squared, nationality (2 items), relationship status (2 items), number of housemates, and year of entrance in the panel data (4 items). Full regression for models 10, 14, and 17 can be found in the appendices (Table A4). In the last two rows, we compute parameters odds ratio and their 90 % interval confidence in square brackets.

* p<0.1; ** p<0.05; *** p<0.01.

Source: SalSa (Insee, ANR, CMH, CREST, 2009).

stresses, it is quite likely that the quality of work in other firms, on which a worker has little information, is as bad as in the present firm. It is not surprising, then, to see the impact of bad working conditions shrink when we analyse their impact on firm change the year after the survey (Table 4, Model 24). We can therefore consider that our hypothesis *H1b* holds.

In the same vein, we also posited that bad working conditions have more impact on collective voice than on individual negotiation. The result clearly holds statistically true with the measures used. At best, those who engage in individual negotiation enjoy better working conditions than those who do not (Table 7, Models 9, 18 and 19). But we must recognize that we do not measure all forms of negotiation, only negotiation in order to improve wages. We therefore cannot properly evaluate individual negotiation with supervisors in order to improve working conditions. As such, while the result is compatible with *H1c*, we would not say that we have truly confirmed it.

Table 8 Impact of pay and of quality of work on exit (alternative measures)

	Intends to quit	Intends to quit for pay	Intends to quit for other reason	Changes firm in]t,t+1]
Wage models	21	22	23	24
2008 Hourly wage (log)	–0.0310 (0.0198)	–0.0297** (0.0150)	–0.0009 (0.0134)	–0.0345** (0.0152)
2008 Bad working conditions	0.0156*** (0.0024)	0.0089*** (0.0018)	0.0063*** (0.0018)	0.0010 (0.0014)
N	2,878	2,878	2,878	2,939
R2	5.4 %	4.0 %	2.5 %	4.1 %
Odds ratios: Wage	0.79 [0.58–1.01]	0.62 [0.33–0.93]	0.99 [0.68–1.3]	0.35 [–0.1–0.81]
Working conditions	1.11 [1.08–1.14]	1.12 [1.08–1.16]	1.09 [1.05–1.13]	1.02 [0.97–1.07]
Wage satisfaction models	31	32	33	34
2008 Wage satisfaction	–0.0989*** (0.0105)	–0.0917*** (0.0086)	–0.0050 (0.0073)	–0.0105* (0.0061)
2008 Bad working conditions	0.0100*** (0.0025)	0.0037** (0.0018)	0.0062*** (0.0019)	0.00002 (0.0015)
N	2,844	2,844	2,844	2,900
R2	8.6 %	9.0 %	2.5 %	3.9 %

Note: Estimates of the linear probability models were obtained through OLS regressions. We use the Huber-White sandwich estimator to correct for heteroscedasticity and compute robust standard errors in parentheses. Only variables of interest are reported. Besides those variables, we use the following as control variables: gender, diploma (6 items), social category in 2003 (5 items), age in 2003, age squared, nationality (2 items), relationship status (2 items), and number of housemates. On the last two lines of wage models, we compute parameters odds ratio and their 90 percent interval confidence in square brackets.
* p<0.1; ** p<0.05; *** p<0.01.
Source: SalSa (Insee, ANR, CMH, CREST, 2009).

Pay and strategy

Let us now turn to the examination of the impact of low pay on improvement strategies. Interpretation is much easier here as we can use information on pay in 2003, before the strategy is adopted. Table 7 shows the significant and negative impact of pay on exit strategies (Models 5 and 15). We find nearly the same relation for quitting intentions (parameter almost significant in Model 21, table 8) and for a change of firm strategy after the survey (Table 8, Model 24). The relation is all the more important given that the person quit in order to improve his pay (Table 7, Models 6 and 16; Table 8, Model 22). Pay still has a negative impact on the probability of quitting for other reasons than pay, but the magnitude is less important and the effect is less significant. Finally, in Table 8, we can use wage satisfaction instead of pay in order to predict quit intentions and effective exits (Models 31 to 34). Results are globally similar. We can therefore say that our statistical results largely confirm *H3*.

If a person wants to improve a bad wage, he can hesitate between quitting, joining a collective action, or trying individual negotiation. We have explained that as far as wage is concerned, exit may be more effective than voice considering the collective cost of the latter and the uncertainty of its result. In fact, it is not workers with the lowest wages who voice the most. Voice is rather associated with higher wages (Table 7, Models 1 to 4 and 11 to 14). This result is also in line with classical research on industrial relations showing that unions and collective action develop in sectors that are protected from competition and that can therefore attribute higher wages (Dickens/Katz 1987). A simple comparison of the negative significant impact of pay on exit and its positive significant impact on voice shows that our results are compatible with *H3b*.

Comparison of exit and individual negotiation is a little difficult since the question on individual negotiation focuses only on wage increases while exit may have other goals. As such, we may instead compare exit for pay and individual negotiation for pay. The simple comparison of marginal effects (–2.9 % in Model 6 and –3.4 % in Model 8) might be misleading, since the basis probability is very different (8 % of the sample exited for pay while 44 % tried to negotiate the wage with their supervisor). Using odds ratios takes into account that –3 % is a much bigger effect when the basis probability is of 8 % than when it is of 44 %. Using this criteria of comparison, it is clear that pay has a stronger negative impact (and, moreover, is more significant) on exit than on individual negotiation (Table 7, Models 6 versus 8, 16 versus 18). Nevertheless, the significance of this difference depends on the model options. A rule of thumb for deciding the significance of the difference of two odds ratios could be to see whether the first one is outside the confidence interval of the second. This is the case when we compare Models 16 and 18, but it is not the case when we compare Models 6 and 8. We can therefore say that *H3c* is at least partially confirmed.

Strategy and improvements

SalSa allows us not only to determine the strategy chosen but also to evaluate the result. Panel information on wages makes it possible to estimate the impact of the discussed strategies on the hourly wage increase between 2003 and 2008 (Table 9). This estimation is similar to a first difference model. It therefore accounts for constant unobserved individual heterogeneity.[4]

Voluntary exit significantly increases wages by 6.3 % (Table 1, Model 41). It has a significantly higher impact than voice or individual negotiation. We can thereby confirm *H4, H4b,* and *H4c.* Model 42 provides more in-depth detail regarding the combination of the strategy, its motivation, and its results on wage. Voluntary exit for pay is associated with a 9 % wage increase, while exit for other reasons leads to a milder wage increase of 3 %. The null effect of individual negotiation in Model 41 is the combination of a 3 % positive impact of successful negotiation and of a –5 % impact of unsuccessful negotiation on pay. Voice strategy reported to have increased pay have a 2 % impact on pay, which is not significant.

Table 9 The impact of strategies on pay and quality increase

	Impact of strategies on pay increase	
	41	42
Collective voice	–0.0180 (0.0146)	
... unsuccessful		–0.0180 (0.0186)
... pay increase		0.0191 (0.0281)
... other advantage		–0.0379 (0.0264)
Voluntary exit	0.0630*** (0.0166)	
... for pay		0.0936*** (0.0231)
... for other reason		0.0378* (0.0217)
Individual negotiation	0.0037 (0.0125)	
... successful		0.0299** (0.0142)
... unsuccessful		–0.0470*** (0.0173)
N	2,068	2,068
R2	0.9 %	1.9 %

Note: All models are OLS regressions. Only variables of interest are reported. Besides those variables, the year of entrance in the panel data was introduced.
* p<0.1; ** p<0.05; *** p<0.01.
Source: SalSa (Insee, ANR, CMH, CREST, 2009).

With our data, it is rather difficult to test *H2* properly, which states that voice strategies tend to improve working conditions. In a first version, we tried to measure the impact of the strategies on the variation of prediction of our bad working conditions. But our imputation techniques are not precise enough to capture local variations of working conditions (we only use broad determinants). Strategies therefore have no significant impact. Another possibility would be to use subjective reports of success. The fact that

4 Besides improving strategies, other time-varying variables such as occupation could be introduced in the model, but we did not introduce them because they could be consequences of the strategies rather than independent covariates.

people suffering the worst working conditions are the most likely to report non-monetary improvements (among which we may find better working conditions) is clearly in line with *H2* (Table 7, Models 4 and 14). But it is true that this theoretical element still needs more robust and more detailed confirmation.

Discussion and conclusion

To our knowledge, this contribution is the first detailed application of Hirschman's exit–voice framework to the labor market stressing the importance of job quality. It provides the main reasons why bad working conditions tend to favor voice strategies and low pay tends to favor exit strategies. Our main statistical findings support this framework: a deterioration by one unit in our index of working conditions increases the probability of participation in collective action by 5 percentage points. An increase in log hourly wage by one unit decreases the probability of quitting the job by 5 percentage points. Moreover, an exit strategy increases salary by 6 %. Due to data limitation, we are unfortunately unable to measure the impact of collective action on the improvement of work quality.

Our first results, although suggestive, have some limitations that we would like to stress here. The first is due to the lack of knowledge of working conditions prior to the measured strategies. Although we try to circumvent this limitation by various means and we believe to have a reliable estimation of the qualitative effect of bad working conditions, it is true that we can not claim to precisely estimate their true effect. Panel surveys containing information on our four variables – quality, pay, exit and voice – could provide a way of confirming our first result in future research.

The second limitation is common to many statistical studies. Our result holds true as long as the classical unobserved heterogeneity problem is not a significant issue. More detailed panel data could be a way of overcoming this limit. Another possibility would be to find instrumental variables for wage and working conditions, but such instruments are difficult to imagine.

We should mention a third limitation that is more theoretical. Provided our results still hold true with a better statistical apparatus, they may also be explained within a different theoretical framework. The classical framework used for collective action is based on bargaining power and on the degree of competition (Budd 2005). In sectors protected from competition, unions can raise wages efficiently, perhaps at the expense of worsening working conditions, which could seem compatible with the main correlations described in Table 7 (Models 1 and 11). The relative power of our explanatory framework compared to others and the possibility of combining diverse theoretical frameworks should therefore be submitted to careful scrutiny.

We focused on the situation in France in the late 2000s, a period when the unions were in a rather defensive position. It would be interesting for future studies to compare different periods and labor market regimes, such as France and the UK. A cross-national comparison would provide an opportunity to understand behavioral patterns of individuals in different unionized settings.

Finally, if our results and theoretical framework hold true, they could be an invitation to revise views on collective action. Our study challenges two traditional views about collective action. The market view sees collective action as relatively inefficient and even when it leads to improvements for workers it does so at the cost of deviating from market equilibrium. Exit, on the other hand, is viewed as a pure market strategy that is both individually improving and helps to discover the true market equilibrium. In the Marxist view, exit is viewed as an individualistic petit-bourgeois strategy that undermines class consciousness, whereas collective action is the main means for obtaining global and permanent improvements. Our Hirschmanian approach is situated somewhere between the two. It shows the accuracy of the market view in regard to pay and of the Marxist view in regard to working conditions. As such, it invites us to associate the study of collective action and of unionization more strongly with the issue of working conditions, a question that is understudied in the traditional bargaining model. Much collective action is in fact, either directly or indirectly, concerned with working conditions. Traditional claims for shorter working days and for increased recruiting, as well as disputes concerning redundancy, are also ways of improving working conditions or of resisting their degradation.

References

Acemoglu, Daron, 2001: Good Jobs versus Bad Jobs. In: *Journal of Labor Economics* 19, 1–21.

Ai, Chunrong/Edward C. Norton, 2003: Interaction Terms in Logit and Probit Models. In: *Economic Letters* 80, 123–129.

Akerlof, George A., 1970: The Market for "Lemons": Quality Uncertainty and the Market Mechanism. In: *The American Economic Review* 84(3), 488–500.

Akerlof, George A., 2002: Behavioral Macroeconomics and Macroeconomic Behavior. In: *The American Economic Review* 92(3), 411–433.

Angrist, Joshua D./Jörn-Steffen Pischke, 2009: *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton: Princeton University Press.

Amossé, Thomas/Catherine Bloch-London/Loup Wolff (eds.), 2008: *Les relations sociales en entreprise: un portrait à partir des enquêtes relations professionnelles et négociations d'entreprise (REPONSE 1992–1993, 1998–1999, 2004–2005)*. Paris: Editions la Découverte.

Barry, Brian, 1974: Review Article: "Exit, Voice, and Loyalty." In: *British Journal of Political Science* 4(1), 79–107.

Bréda, Thomas (forthcoming), Une première estimation du salaire des délégués syndicaux et ses possibles interprétations. In: *Revue Économique.*

Budd, John W., 2005: *The Effect of Unions on Employee Benefits and Non-Wage Compensation: Monopoly Power, Collective Voice, and Facilitation.* Working Paper February 2005. Minneapolis: University of Minnesota, Industrial Relations Center.

Coutrot, Thomas, 1998: La force de la loi et le royaume du contrat. In: *Travail et Emploi* 75.

Dickens, William T./Katz, Lawrence F., 1987: *Inter-Industry Wage Differences and Theories of Wage Determination.* Working Paper no. 2271. Cambridge, MA: National Bureau of Economic Research.

Dowding, Keith/Peter John/Thanos Mergoupis/Mark van Vugt, 2000: Exit, Voice and Loyalty. In: *European Journal of Political Research* 37, 469–495.

Freeman, Richard B., 1978: Job Satisfaction as an Economic Variable. In: *The American Sociological Review* 68(2), 135–141.

Freeman, Richard B., 1980: The Exit–Voice Tradeoff in the Labor Market: Unionism, Job Tenure, Quits, and Separations. In: *The Quarterly Journal of Economics* 94(4), 643–673.

Freeman, Richard B./Medoff James L., 1984: *What Do Unions Do?* New York: Basic Books.

Hammer, Tove H., 2000: Non-Union Representative Forms: An Organizational Behavior Perspective. In: Daphne G. Taras/Bruce E. Kaufman (eds.), *Non-Union Employee Representation: History, Contemporary Practice and Policy*. Armonk, NY: M.E. Sharpe, 176–195.

Hirschman, Albert O., 1970: *Exit, Voice and Loyalty: Responses to Decline in Firms, Organizations, and States.* Cambridge, MA: Harvard University Press.

Hirschman, Albert O., 1974: "Exit, Voice and Loyalty": Further Reflections and a Survey of Recent Contributions. In: *Social Science Information* 13(1), 7–26.

Ionescu-Ittu, Raluca/Michal Abrahamowicz/Louise Pilote, 2012: Treatment Effect Estimates Varied Depending on the Definition of the Provider Prescribing Preference-based Instrumental Variables. In: *Journal of Clinical Epidemiology* 65, 155–162.

Kraft, Kornelius, 1986: Exit Voice in the Labor Market: An Empirical Study of Quits. In: *Journal of Theoretical and Institutional Economics* 142, 697–715.

MacLeod, W. Bentley/James M. Malcomson, 1993: Investments, Holdup, and the Form of Market Contracts. In: *American Economic Review* 83(4), 811–837.

Miller, Paul/Charles Mulvey, 1991: Australian Evidence on the Exit/Voice Model of the Labor Market. In: *Industrial and Labour Relations Review* 45, 44–47.

Mood, Carina, 2010: Logistic Regression: Why We Cannot Do What We Think We Can Do, and What We Can Do about It. In: *European Sociological Review,* 26(1), 67–82.

Nelson, Phillip, 1970: Information and Consumer Behavior. In: *Journal of Political Economy* 78(2), 311–329.

Nelson, Richard R./Michael Krashinsky, 1972: *Some Questions of Optimal Economic Organization: The Case of Day-Care for Children.* Unpublished manuscript.
Olson, Mancur, 1971: *The Logic of Collective Action: Public Goods and the Theory of Groups.* Cambridge, MA: Harvard University Press.
Peterson, Richard B./David Lewin, 2000: Research on Unionized Grievance Procedures: Management Issues and Recommendations. In: *Human Resource Management* 39, 395–406.
Schafer, Joseph L./John W. Graham, 2002: Missing Data: Our View of the State of the Art. In: *American Psychological Association* 7(2), 147–177.
Smith, Adam, 1776: *An Inquiry into the Nature and Causes of the Wealth of Nations.* London: W. Strahan.
Spencer, Daniel G., 1986: Employee Voice and Employee Retention. In: *Academy of Management Journal* 29(3), 488–502.
Rosen Sherwin, 1986: The Theory of Equalizing Differences. In: Orley C. Ashenfelter/Richard Layard (eds.), *Handbook of Labor Economics,* Volume 1. New York: Elsevier, 641–692.
Walker, Bernard/Robert Hamilton, 2011: Employee–Employer Grievances: A Review. In: *International Journal of Management Reviews* 13, 40–58.
Willman Paul/Alex Bryson/Rafael Gomez, 2006: The Sound of Silence: Which Employers Choose No Employee Voice and Why? In: *Socio-Economic Review* 4, 283–299.

Appendix

Table A1 Correlation matrix between the different strategies

		1	2	3	4	5	6	7	8	9	10	11	12	13
1	Collective voice in [t–5,t[	1.00												
2	… successful	0.59	1.00											
3	… pay increase	0.44	0.74	1.00										
4	… other advantage	0.46	0.78	0.30	1.00									
5	Exit in [t–5,t[	–0.11	–0.07	–0.04	–0.06	1.00								
6	… for salary	–0.05	–0.01	0.00	–0.01	0.61	1.00							
7	… for other reason	–0.09	–0.08	–0.05	–0.06	0.72	–0.10	1.00						
8	Desire to quit	0.02	–0.02	–0.02	0.00	0.09	0.08	0.05	1.00					
9	… for pay	–0.01	–0.02	–0.01	–0.01	0.09	0.10	0.03	0.67	1.00				
10	… for other reason	0.03	0.00	–0.01	0.01	0.03	0.00	0.04	0.64	–0.08	1.00			
11	Exit in]t,t+1]	–0.06	–0.04	–0.03	–0.03	0.09	0.04	0.07	0.07	0.01	0.09	1.00		
12	Individual negotiation in [t–5,t[	–0.01	0.01	0.02	–0.01	0.03	0.05	0.00	0.12	0.13	0.02	–0.03	1.00	
13	… successful	–0.03	–0.01	0.01	–0.03	0.02	0.00	0.02	0.04	0.06	–0.02	–0.02	0.68	1.00
14	… unsuccessful	0.03	0.02	0.02	0.02	0.02	0.06	–0.03	0.11	0.10	0.05	–0.01	0.52	–0.27

Source: SalSa (Insee, ANR, CMH, CREST, 2009).

Table A2 Estimation of the work quality index

Variables	Estimate	SE	Variables	Estimate	SE
Intercept	2.2690**	1.0590	*Type of contract:* Workers at home	–0.2474	1.0580
Gender: Female	0.0839	0.1347	Part-time work	–0.3163*	0.1791
Diploma: Professional technical degree	–0.1095	0.1830	*Social category × sector:* Technical and assimilated workers × Construction	0.9282	0.9743
High school	–0.1482	0.2131	Clerks × Construction	–0.2704	1.1420
2 years of college	–0.1169	0.2362	Qualified blue-collar × Construction	0.7946	0.9073
Bachelor's degree	–0.1663	0.2858	Non-qualified blue-collar × Construction	0.6592	1.1580
Master's degree and above	–0.0137	0.2972	Technical and assimilated workers × Retail	–0.2146	0.6416
Number of *working hours*	–0.0005	0.0005	Clerks × Retail	1.2870*	0.6915
Number of working hours (squared)	2E-07	1E-07	Qualified blue-collar × Retail	0.2129	0.6406
Age 2008	0.0823**	0.0413	Non-qualified blue-collar × Retail	0.0290	0.9308
Age 2008 (squared)	–0.0010**	0.0005	Technical and assimilated workers × Hotels and restaurants	0.2244	1.7440
Social category: Technician type professions	–0.1150	0.4173	Clerks × Hotels and restaurants	2.1450	1.6130
Clerks	–1.0840**	0.5512	Qualified blue-collar × Hotels and restaurants	1.2810	1.7040
Qualified blue-collar	0.6342	0.4029	Non-qualified blue-collar × Hotels and restaurants	–3.3500	2.5600
Non-qualified blue-collar	0.7730	0.5012	Technical and assimilated workers × Transportation and communication	0.2921	0.9582
Sector: Construction and energy	–0.0482	0.8449	Clerks × Transportation and communication	3.0120***	0.9922
Retail	0.1176	0.5032	Qualified blue-collar × Transportation and communication	1.4460*	0.8721
Hotels and restaurants	0.5169	1.4930	Non-qualified blue-collar × Transportation and communication	2.7260**	1.2930
Transportation and communication	–0.6176	0.7872	Technical and assimilated workers × Financial services	–0.6687	0.8737
Financial services	0.4033	0.7143	Clerks × Financial services	–0.0554	1.0650
Real estate and service to business	–0.2121	0.4449	Qualified blue-collar × Financial services	–2.9880	2.9860
Public administration	–0.5471	0.6860	Non-qualified blue-collar × Financial services	–2.3300	3.0280
Education	–1.4730	1.2590	Technical and assimilated workers × Real estates and service to business	–0.0713	0.5796
Health	0.9000	0.7030	Clerks × Real estates and service to business	1.2790*	0.6726
Other personal and collective services	–0.9922	1.0890	Qualified blue-collar × Real estates and service to business	0.8514	0.6090
Region: Paris basin (except Paris region)	–0.3421*	0.1877	Non-qualified blue-collar × Real estates and service to business	1.1390*	0.6519
North	0.8613*	0.4922	Technical and assimilated workers × Public administration	0.7987	0.7395
East	–0.2092	0.2024	Clerks × Public administration	1.9830**	0.7801
West	–0.5425***	0.1988	Qualified blue-collar × Public administration	0.6688	1.3560
South West	–0.2153	0.2362	Non-qualified blue-collar × Public administration	–1.6120	1.3150
Central East	–0.4240**	0.1662	Technical and assimilated workers × Education	1.7440	1.4180
Mediterranean	–0.8339***	0.2430	Clerks × Education	3.6550**	1.5230
Type of firm: Local public establishments	0.2608	0.3692	Technical and assimilated workers × Health	0.4135	0.7326
Medical social establishments	1.4240***	0.4244	Clerks × Health	1.5670**	0.7963
Public national establishments	0.0479	0.6387	Qualified blue-collar × Health	–1.5700*	0.8684
Public establishment in industrial and commercial character	0.9409	0.5867	Non-qualified blue-collar × Health	–2.6530**	1.2800
Associations	0.2536	0.3852	Technical and assimilated workers × Other personal and collective services	1.7190	1.2310
Individual enterprises	0.2008	0.4645	Clerks × Other personal and collective services	1.6580	1.2250
Companies and quasi companies	0.4993	0.4101	Qualified blue-collar × Other personal and collective services	–0.0607	1.3830
			Non-qualified blue-collar × Other personal and collective services	0.8044	1.4620

Note: OLS regressions. The reference situation for the qualitative variables is as follows: male, no diploma or elementary diploma, manager or professional, industrial sector, Paris region, local administration and full time worker.
* p<0.1; ** p<0.05; *** p<0.01
Multiple R-squared: 9.4 %

Table A3 Analysis of variance of the work quality index regression

Variables	Df	F value	Pr(>F)
Gender	1	0.052	0.820
Diploma	5	1.872	0.096
Number of working hours	1	3.169	0.075
Number of working hours (squared)	1	0.692	0.406
Age in 2008	1	2.916	0.088
Age in 2008 (squared)	1	4.319	0.038
Social category	4	8.412	0.000
Sector	10	11.726	<2.2e-16
Region	7	3.232	0.002
Type of firm	7	3.666	0.001
Type of contract (full/part time)	2	1.249	0.287
Social category × Sector	38	2.128	0.000

Note: * $p<0.1$; ** $p<0.05$; *** $p<0.01$.
Source: SalSa (Insee, ANR, CMH, CREST, 2009).

Table A4 Descriptive statistics and complete regressions for the three main strategies

	Descriptive statistics		Collective action		Exit		Individual negotiation	
	m	sd	b	se	b	se	b	se
Intercept			–0.6026***	0.0888	0.6087***	0.0992	0.0667	0.1149
Gender: Female	0.49	0.50	0.0211	0.0170	–0.0374**	0.0156	–0.1315***	0.0202
Diploma: Professional technical degree	0.37	0.48	0.0573**	0.0240	0.0594***	0.0196	0.0461	0.0300
High school	0.18	0.38	0.0472*	0.0285	0.0332	0.0251	0.1219***	0.0356
2 years of college	0.17	0.38	0.0623**	0.0307	0.0427	0.0270	0.1042***	0.0380
Bachelor's degree	0.08	0.27	0.0602	0.0371	0.1134***	0.0360	0.1253***	0.0444
Master's degree and above	0.08	0.28	0.1079***	0.0383	0.0727**	0.0352	0.1168**	0.0463
Social category (2003): Technicians and assimilated workers	0.24	0.43	0.1215***	0.0275	0.0060	0.0266	0.0773**	0.0347
Clerks	0.34	0.47	0.0950***	0.0276	–0.0299	0.0300	0.0417	0.0366
Qualified blue-collar	0.21	0.40	0.0658**	0.0301	–0.0375	0.0326	0.0728*	0.0398
Non-qualified blue-collar	0.10	0.30	0.0016	0.0338	0.0096	0.0392	0.0737	0.0455
Age 2003	36.14	10.54	0.0154***	0.0051	–0.0131**	0.0052	0.0368***	0.0064
Age 2003 (squared)	1417.18	761.76	–0.0002***	0.0001	0.0001	0.0001	–0.0005***	0.0001
Nationality: Other	0.03	0.18	–0.1058***	0.0345	0.0759*	0.0442	–0.0792	0.0485
Relationship: Doesn't live with a partner	0.73	0.44	0.0287	0.0189	0.0196	0.0186	–0.0618***	0.0223
Number of *housemates*	2.99	1.31	0.0017	0.0065	–0.0065	0.0063	–0.0012	0.0077
Entered on the panel data: 2004	0.10	0.29	0.0578**	0.0266	0.0274	0.0259	–0.0720**	0.0299
2005	0.06	0.24	0.0063	0.0307	0.0056	0.0302	–0.0888**	0.0360
2006	0.03	0.18	–0.0416	0.0343	–0.0573	0.0432	–0.2771***	0.0377
2003 Hourly *wage* (log)	2.23	0.44	0.0842***	0.0248	–0.0479**	0.0244	–0.0174	0.0277
2003 Estimated *bad working conditions*	4.21	0.95	0.0487***	0.0095	0.0125	0.0077	–0.0450***	0.0100

Note: Estimates of the linear probability models were obtained through OLS regressions. We use the Huber-White sandwich estimator to correct for heteroscedasticity and compute robust standard errors in parentheses. The reference situation for the qualitative variables is as follows: male, no diploma or elementary diploma, manager or professional, French, in couple, entered the panel data in 2003 or before.
* $p<0.1$; ** $p<0.05$; *** $p<0.01$.
Source: SalSa (Insee, ANR, CMH, CREST, 2009).

MaxPo Discussion Paper Series

13/2
L. Kastner
Transnational Civil Society and the Consumer-friendly Turn in Financial Regulation

13/1
M. Fourcade, P. Steiner, W. Streeck, C. Woll
Moral Categories in the Financial Crisis

Ordering information

MaxPo Discussion Papers
Order printed copies from MaxPo (at a charge) or download PDF files from the MaxPo website (free of charge).

www.maxpo.eu
Go to *Publications*.

New Titles

Consult our website for the most complete and up-to-date information on MaxPo publications and publications by MaxPo researchers. To sign up for our newsletter, please go to *News* > *Newsletter* on the MaxPo website.

The Max Planck Sciences Po Center on Coping with Instability in Market Societies (MaxPo) is a Franco-German research center which was jointly founded by the Max Planck Society and Sciences Po. Researchers at MaxPo investigate how individuals, organizations, and nation-states are coping with the new forms of economic and social instability that have developed in Western societies as a result of policy shifts, the expansion of markets, technological advances, and cultural changes. Located at Sciences Po Paris and cooperating closely with the Max Planck Institute for the Study of Societies (MPIfG) in Cologne, the Center aims to contribute substantially to the social sciences in Europe and enrich academic and political dialogue between France and Germany.

The MaxPo Discussion Paper Series presents research in economic sociology, political economy, economic history, and related fields conducted at MaxPo and its partner institutions, in joint research projects, and in projects by visiting scholars.