

The impact of economic factors on the relationships between psychological contract breach and work outcomes

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The impact of economic factors on the relationships between psychological contract breach and work outcomes: a meta-analysis

The impact of
economic
factors

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Abstract

Purpose – The purpose of this paper is to explore the macroeconomic factors that may moderate the psychological contract breach (PCB) and work outcome relationship.

Design/methodology/approach – This study conducted a meta-analysis based on data from 134 studies.

Findings – The study revealed that the inflation rate and the unemployment rate of a country moderated the association among employee PCB, job performance and turnover.

Research limitations/implications – The availability of more detailed macroeconomic data against the PCB and outcome relationship for other countries and studies examining the impact of micro-economic data for PCB and outcome relationship would provide a better understanding of the context.

Practical implications – The authors believe that the results highlight the importance of the national economy since it impacts individual outcomes following a breach.

Social implications – Employment policies to capture the impact of macroeconomic circumstances as discussed.

Originality/value – One of the valuable contributions made by this paper is that the authors capture the current accumulative knowledge regarding the breach and performance and breach and turnover relationship. Second, the study examines how the inflation rate and unemployment rate could moderate the association between PCB and job performance and turnover.

Keywords Psychological contract breach, Job performance, Turnover, Inflation rate, Unemployment rate, Meta-analysis

Paper type Research paper

Introduction

Psychological contract breach (PCB) has been identified as a strong driver of employee work outcomes such as job performance and turnover (Bal *et al.*, 2008; Zhao *et al.*, 2007). PCB refers to employees' perception of their organizations not fulfilling the obligations toward them. Although it has been long acknowledged that perceptions of PCB may depend on the context (Metz *et al.*, 2012; Pate, 2006), the national economic context has largely been overlooked in PCB research. Recently a few studies have hinted that the national economy can have an impact on the association between the breach and work outcomes (Bal and Dóci, 2018; Sirola and Pitesa, 2018) but a systematic assessment has not yet been conducted. Little is currently known about how the national economic context influences individual-level work outcomes following a breach. This study attempts to bridge this gap.



The last meta-analyses of the relationships between PCB and work outcomes (such as job performance and turnover) were conducted more than 10 years ago and these revealed that the effects of PCB on job performance and turnover can indeed be moderated (Bal *et al.*, 2008; Zhao *et al.*, 2007). Yet, perhaps not surprisingly, prior meta-analyses focused on individual-level variables that moderate the breach outcome relationships (Bal *et al.*, 2008; Zhao *et al.*, 2007). In this study, we argue that it is important to understand the multilevel embeddedness of PCB experiences and examine how the national economy (at the society level) impact individual employees in their work outcomes after experiencing a breach.

Previous scholars have suggested that the economy at the macro-level influences the work outcomes of individuals through a top-down process (Roth and Wohlfart, 2019). One of the challenges is the lack of enough PCB studies that have directly measured economic indicators to assess how individual perceptions about the macroeconomic context affect their responses to PCB. Yet, there is some evidence that suggests that, despite individual economic circumstances or their perceptions, the national economy can still impact individual work outcomes (Czaika, 2015; Roth and Wohlfart, 2019). We develop a multilevel framework to understand the impact of the national economy on the associations between breach and job performance and turnover. A multilevel approach is important for understanding breach-related responses that emerged due to national economic conditions. We will, therefore, engage in a two-step procedure by first conducting a meta-analysis at the study level (i.e. individual-level) as is commonly done and then adding new macroeconomic indicators at the country level to assess possible moderating effects. We investigate the moderating effects of the macroeconomic context at the country level on the relationships between PCB and job performance and turnover at the individual level.

We use prospect theory (Kahneman and Tversky, 1979; Tversky and Kahneman, 1992) to theorize why the inflation rate and unemployment could moderate the associations between PCB and job performance and turnover (see Figure 1). We deem prospect theory useful for this, as scholars have used it previously to understand the impact of social context (at the macro-level) on various outcomes at an individual level (William, 2004; Czaika, 2015). By using prospect theory as a lens, we link national economic determinants at the macro-level to understand individual work outcomes related to a breach. This is because prospect theory starts with individual decision making but explores contextual determinants of risk in depth (William, 2004).

Literature review and hypothesis

Psychological contracts and job outcomes

To understand how economic factors may moderate breach-related outcomes, we need to first build evidence requiring an understanding of breach-related outcomes at the individual level. Findings of previous meta-analyses have revealed that there is a negative relationship between PCB and job performance and a positive relationship between PCB and turnover (Zhao *et al.*, 2007). However, they only found a significant relationship with turnover intentions, but not with actual turnover. Besides, this meta-analysis has been conducted more than 10 years ago and therefore does not capture the current accumulative knowledge regarding the breach and performance and breach and turnover relationships.

In the PC literature, relationships between PCB and work outcomes have traditionally been explained based on social exchange theory (SET; Blau, 1964). SET suggests that people engage in exchange relationships to receive inducements for what they provide to another party (Blau, 1964; Gouldner, 1960). Each party expects that the other party will reciprocate such actions, and this process leads to mutual obligations over time (Cropanzano *et al.*, 2017). In case an employee experiences that the employer does not fulfill its obligations (i.e. PCB), he/she is likely to consequently change their job behavior to restore a balance in their

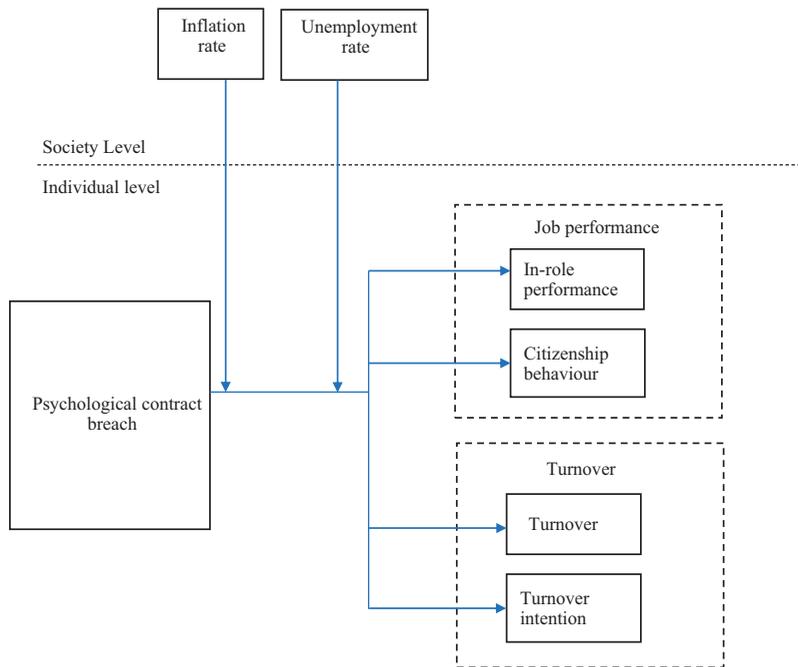


Figure 1. Theoretical model

relationship with their employer. However, to determine this balance, we will argue below that employees might consider the economic context. For now, we want to highlight that economic conditions are most likely to influence an employee’s job behavior, including job performance and turnover (Park and Shaw, 2013). This is because job performance and turnover are key outcomes that have direct organizational consequences (Park and Shaw, 2013). To understand job performance, previous researchers have commonly adapted a two-dimensional approach to job performance by examining in-role performance and contextual performance (Zhao et al., 2007). Given that job performance is inherently multi-dimensional (Johnson and Meade, 2010), we follow the commonly used two-dimensional approach to understanding job performance (Bal et al., 2008; Zhao et al., 2007). We focus on the effectiveness of an individual employee to perform formal job tasks (in-role performance) and the ability of an individual to perform tasks beyond the formal requirements (organizational citizenship behaviors, or OCBs) (see Borman and Motowidlo, 1993). To understand turnover, we focus on turnover intention (refers to as an individual’s intention to leave the job) and actual turnover.

Our first goal is to test the associations between PCB and job performance and turnover by accumulating the contemporary research findings to extend the previous meta-analysis (Zhao et al., 2007). Drawing on SET, we expect PCB to be negatively related to in-role performance and OCB, while being positively related to turnover intention and actual turnover (Bal et al., 2008; Clinton and Guest, 2013; Conway and Briner, 2005), therefore we expect:

- H1. Psychological contract breach is negatively related to in-role performance (H1a) and organizational citizenship behavior (H1b).

H2. Psychological contract breach is positively related to turnover intention (H2a) and actual turnover (H2b).

The role of economic factors in psychological contract breach

Research has shown that macroeconomic factors can have a direct impact on employee behaviors (Fenwick and Tausig, 1994; Sarnecki, 2015). We theorize that they could have similar effects on PCB and its relationships with work outcomes. To understand the impact of the macro-economy on employee PCB related responses, we apply prospect theory (Kahneman and Tversky, 1979; Tversky and Kahneman, 1992), which suggests that people put more effort into preventing the loss of a position than in achieving a potential gain based on contextual factors (Kahneman, 2011). In line with prospect theory, scholars have suggested that employee wage expectations are shaped by aggregated unemployment and inflation (Angrave *et al.*, 2017; Holden, 2005). Employee wage expectations remain low when there is a high level of aggregated unemployment and inflation (Angrave *et al.*, 2017). When employee wage expectations are low, they are more likely to accept and be tolerant of poor working conditions (Dick and Floyd, 2001). This can be explained from a loss aversion and value function perspectives. For example, employees are more likely to dislike losing their job during times of higher inflation and higher unemployment in the economy as they find it increasingly difficult to manage their lives with wages (Dick and Floyd, 2001). This view is also supported by empirical evidence that suggests that employees value their jobs and wages during uncertain economic times reflected by higher unemployment (Hoskins, 2017) and inflation (Faccini and Melosi, 2019).

Moreover, to assess the status quo and possible gains/losses, individuals tend to use a reference frame, which is a psychological point that can be altered due to various situational factors (Stokvik *et al.*, 2016; Kahneman and Tversky, 1979). We argue that how people come to understand what they gain and lose can be shaped by the national economic context (Czaika, 2015) as this might alter the perceived status quo and/or the value function of people. Besides, the macro-economy limits the actual resources of an individual and therefore has not only a direct impact on an individual's assessment of the status quo (Levy, 1992) and possible future gains and losses but actual gains and losses (Carr and Chung, 2014; Calvo *et al.*, 2015). For example, studies have shown that inflation rates impact an individual's ability to purchase goods (Roth and Wohlfart, 2019) and quality of life regardless of personal income, status or skill levels (Yam, 2016). Similarly, aggregated unemployment shapes individual behaviors regardless of a person's labor force status or income (Henry, 2008) because the national unemployment impacts an individual's ability to find employment regardless of the person's circumstances such as age (Acemoglu, 2001). High unemployment rates encourage people to underestimate self-worth in the job market (Worach-Kardas and Kostrzewski, 2013) and even when they are employed, they might still feel that their well-being in the future is at a risk (Di Tella *et al.*, 2003). Often, anticipatory purchasing ability and anticipatory job loss are interrelated to actual inflation rates and unemployment rates of a country (Roth and Wohlfart, 2019).

Inflation is understood as the increase in the price level and the decline in the value of money (Kuchler and Zafar, 2019). Inflation is a key economic indicator and understanding how inflation impacts behavior is important (Gandelman and Hernández-Murillo, 2009) because it is a major part of people's thinking (Kuchler and Zafar, 2019). Besides, many households are concerned about the expenses that incur to buy the goods and services that are important to maintaining an appropriate living standard (Armantier *et al.*, 2015). Previous studies have shown that inflation of the economy is linked to lower employee job performance and turnover at the individual level (Gentry *et al.*, 2007).

Unemployment rates are important because unemployment rates have been found to be a unique determinant of an individual's work-life perceptions (Kassenboehmer and Haisken-DeNew, 2009). Much of unemployment at the national level implies the risk of losing employment at a personal level (Stavrova *et al.*, 2011). For instance, national-level unemployment provokes concerns about finding a new job and alternative source of income (Sun *et al.*, 2007), subsequently strengthening the link between the desire to retain existing jobs by performing better or not quitting (Carr and Chung, 2014). National economic unemployment has been found to have an impact on employee job performance (Iverson and Deery, 2000; Sun *et al.*, 2007; Nyberg, 2010) and turnover (Carsten and Spector, 1987; Gentry *et al.*, 2007).

Based on prospect theory, we reason that the perceived potential losses of reacting to PCB will be higher under adverse economic conditions. For example, potential losses are accentuated under conditions of high inflation and high unemployment, as people will be concerned with the decreasing value of their salaries (i.e. high inflation) and the increasing difficulties of obtaining a new job (i.e. due to high unemployment). Contemporary knowledge in the PCB field is that in the event of a breach, the employee tends to underperform or quit their jobs (Zhao *et al.*, 2007). However, we argue that this becomes much less so when there is a bad economic context in a country as indicated by high inflation or high unemployment. Under such adverse economic conditions, decisions to underperform and quit their jobs will have more risk and this will change people's value function by increasing the risk of potential losses. Moreover, this increased risk might even change their perception of the status quo as uncertainty regarding inflation and unemployment imposes a liability on the people to appreciate their existing jobs (Jacobs *et al.*, 2014) and makes them more devoted to their jobs (Augner, 2015). Therefore, based on prospect theory, we expect that when faced with high unemployment and high inflation, relationships of PCB with job behaviors will be attenuated. Therefore, we expect:

- H3.* The inflation rate moderates the relationship between psychological contract breach and in-role performance (H3a), organizational citizenship behavior (H3b), turnover intention (H3c) and actual turnover (H3d). Relationships will be weaker under conditions of high inflation.
- H4.* The unemployment rate moderates the relationship between psychological contract breach and in-role performance (H4a), organizational citizenship behavior (H4b), turnover intention (H4c) and actual turnover (H4d). Relationships will be weaker under conditions of high unemployment.

Method

Search strategy and coding procedure

We adopted meta-analysis to examine the conceptual model and used several complementary steps to collect relevant studies. At the first stage, we searched for published studies. We searched through key databases, namely Psycinfo, EBSCO, ABI-INFORM and Google Scholar. Moreover, we searched through the reference lists of previous meta-analyses (Bal *et al.*, 2008; Zhao *et al.*, 2007; Vantilborgh *et al.*, 2015). We also manually searched through the reference lists of published articles on PCB.

As a final check, we also looked for unpublished papers. In doing so, we contacted the members of both the OB division and HRM division of the Academy of Management requesting unpublished studies. Besides, we contacted the authors who have published the abstract papers at the Academy of Management and the Society of Industrial and Organizational Psychology meetings requesting for unpublished papers. We contacted

psychological contract scholars and requested their published or unpublished works and/or leads to other studies. We also searched for Ph.D. theses available at various library catalogs.

We set up an inclusion criterion to select studies (Jiang *et al.*, 2012). The selected studies must have met various inclusion criteria. The first inclusion criterion was that a study must focus on PCB or fulfillment and published during the period from 1990 to 2018. Going through the databases and hand-searched journals and studies, we identified 2,897 studies. Second, only those studies which are empirical were included. This initial search resulted in 2,436 studies. Third, only those following quantitative methods were selected resulting in 2,088 studies. Fourth, only those studies that investigated PCB or fulfillment were included (i.e. excluding studies on for instance PC content, state, or type). This resulted in 1,791 studies. Fifth, we removed duplicate studies and studies that measured psychological contract violation (Morrison and Robinson, 1997), in doing so, we retained 838 articles. Sixth, only studies measuring the relations between PCB and PC fulfillment and the relevant work outcomes (in-role performance, OCB, turnover intention and turnover) were included, excluding a further 633 studies on relationships with job attitudes and other outcomes. Seventh, only the studies reporting in English, French or Dutch languages were included, and this resulted in 172 studies. Eighth, only employee perspectives of PCB and fulfillment were included. This resulted in a set of 160 published articles reporting the relationship between PCB and fulfillment and the relevant outcomes. Finally, only the studies reporting the statistical information needed to calculate the correlations among the selected variables of this study were included. This resulted in a final database of 90 articles, which contained 95 independent samples. These 90 articles come from published sources and despite our very best attempts, we could not retain unpublished studies because the unpublished studies that we found failed to meet one of the eight inclusion criteria. For instance, some studies did not report the statistics that we required, or some failed to examine the selected variables and so on. Appendix shows the full list of papers included in the meta-analysis.

We designed a coding protocol to record information about the study (author, publication date, the actual date of publication), sample (sample size, sample type, industry, country and demographic characteristics), measurement (mean, SD, reliability) and effect size (correlation) following previous research. Because many studies used the term breach, fulfillment and violation interchangeably, we relied on measurements used by the original authors to identify PCB to guide our coding. We calculated the composite correlations and reliabilities according to the formulas provided by Hunter and Schmidt (2004) to approach the correlation between the breach and the selected work outcomes. When studies reported longitudinal correlations or when multi-dimensions or distinct dimensions of breach and fulfillment (e.g. transactional and relational dimensions) were reported (Lui and Ngo, 2004; Malhotra and Lumineau, 2011), we computed composite scores [1]. We calculated the composite correlations for longitudinal studies by taking the first and the distal points into account. This is appropriate because distant events happened more recently (Lassale *et al.*, 2019) and capturing the first and the distal events is more relevant to capturing trajectories (Lui and Ngo, 2004). we were able to compute a composite score because the formula was available and therefore, we did not compute an aggregate effect size [2].

To calculate inter-rater reliability, the first and second author coded all of the 95 studies. They deliberated ambiguous items to confirm uniformity through the coding process. Once the coding was completed, the authors examined the coding for discrepancies or errors among the common coded studies. Thereafter, we calculated inter-rater reliability estimates. Among the study inputs coded by the first two authors, a 99 percent agreement on study characteristics and a 99 percent agreement on study numbers were met, leading to an overall agreement of 99 percent between both raters. We checked all recorded information three months later, and few discrepancies (less than 1%) were identified and solved through discussions (Geyskens *et al.*, 2006).

Meta-analytic procedure

Data were first manually entered into an SPSS sheet to create familiarity with the detailed data. Then, data were transferred to an Excel spreadsheet provided by Wilson (Developed by Schwarzer, 1996) which can be found on his website) to calculate true-score correlations using the Hunter and Schmidt (2004) approach. The Hunter and Schmidt (2004) method progressively make corrections for individual study variances. We used the correlation statistics r due to its wide availability. By using Mark's XI version, we calculated meta-analytic results including the reliabilities, fail-safe n and Q statistics. To analyze moderating effects, we used meta-regression using the SPSS syntax based on Hunter and Schmidt (2004) method developed by Wilson (2010). These are SPSS syntax files for running meta-analysis procedures (Field and Gillett, 2010).

We used the correlation statistic r due to its wide availability. We made sample-weighted averages for each individual study. Then, we corrected random variation due to sample size. Thereafter, we corrected variances in independent and dependent variables for measurement error by multiplying an attenuation factor calculated from the construct reliabilities. Missing reliability data were imputed with average reliability (Lipsey and Wilson, 2001). Variances were corrected by subtracting artifact errors. We gained consistency by correcting for measurement and sampling errors. The corrected and combined results are more generalizable to the true population.

We examined all measurements of the variables to identify variables with the same or slightly different names as identical. Moreover, we used correlation as the effect size to avoid the problems of different scales (Campbell-Hunt, 2000). We first calculated reliability corrected sampling errors to correct for measurement and sampling error (Hunter and Schmidt, 2004). We used Cronbach's alpha or composite reliability to represent reliability (Lipsey and Wilson, 2001). Thereafter, we transformed the correlation which is originally reported into Fisher's z to adjust distribution skewness (Geyskens *et al.*, 2006; Kirca *et al.*, 2011). Following prior research (Campbell-Hunt, 2000), we interpreted each sample as random and coming from different populations.

We used the random effect methods of Hunter and Schmidt (2004) because if the individual studies show a wide variation in the outcome estimates (heterogeneity) then a random-effects model is appropriate. We reported the sample-weighted mean uncorrected correlation (F). We also report the 95% confidence intervals and credibility intervals. We calculated the Q statistics (Hunter and Schmidt, 2004) to detect the moderating effects (Hunter and Schmidt, 2004). We only confirmed the moderating effect when regression results proved significant. To examine potential publication bias, we computed the fail-safe N with the method suggested by Hunter and Schmidt (2004, p. 501). The findings show that the average of Fail-Safe N across studies [3] is high which suggests that publication bias is not a major concern for this study (see Table 1).

Measures

The main independent variable PCB was coded only when breach or fulfillment was measured. In line with the method suggested by Zhao *et al.* (2007), we reversed the signs of the correlations between fulfillment and job outcomes to indicate a PCB [4]. When multiple dimensions of breach [5] or fulfillment were measured (e.g. transactional and relational PCB), then a composite score was calculated using formulas of Hunter and Schmidt (2004).

The in-role performance was coded for any performance outcome measure that reflected an assessment of an employee's performance in one's core task description. OCBs were coded as any extra-role performance that is not part of the core task description. The turnover intention was measured as the self-reported intention of employees to leave their organization, and actual turnover was assessed only if the study reported correlations

Table 1.
Meta-analysis results
of the main effects of
psychological contract
breach on job
behaviors

Outcomes	Study	<i>k</i>	<i>N</i>	<i>r</i>	ρ	SD ρ	95% Confidence interval		90% Credibility interval		Q	Fail safe K
							Lower	Upper	Lower	Upper		
In-role performance	Current study (Zhao <i>et al.</i> , 2007)	34	8287	-0.21	-0.22	0.12	-0.26	-0.17	-0.42	-0.01	138	54
	(Zhao <i>et al.</i> , 2007)	16	3504	-0.20	-0.24	0.09	-0.29	-0.18	-0.37	-0.11	32	56
OCB	Current study (Zhao <i>et al.</i> , 2007)	33	20268	-0.22	-0.24	0.06	-0.24	-0.21	-0.39	-0.06	211	54
	(Zhao <i>et al.</i> , 2007)	21	12662	-0.11	-0.14	0.09	-0.18	-0.10	-0.28	-0.02	69	51
Turnover intentions	Current study (Zhao <i>et al.</i> , 2007)	61	20753	0.32	0.34	0.18	0.29	0.39	0.02	0.70	947	79
	(Zhao <i>et al.</i> , 2007)	22	6268	0.34	0.42	0.15	0.36	0.49	0.19	0.65	109	80
Actual turnover	Current study (Zhao <i>et al.</i> , 2007)	6	6869	0.13	0.18	0.04	0.07	0.12	0.03	0.16	13	2
	(Zhao <i>et al.</i> , 2007)	5	730	0.05	0.06	0.18	-0.12	0.23	-0.21	0.32	20	3

Note(s): *k* = number of studies; *N* = number of observations; *r* = mean uncorrected correlation; ρ = true score correlation; SD of ρ = standard deviation of true score correlation; Q = Cochran's homogeneity test statistic; Fail safe *k* = Number of studies required to refuse the significance of the correlation

between PCB and actual leave from the organization. Composite correlations were calculated if an outcome was measured via multi-dimensional scales (Hunter and Schmidt, 2004).

Inflation and unemployment rate were taken from Euromonitor (2018). To provide comparable statistics for each study, we inspected per study when the study's data were collected (for longitudinal studies we used the year of assessment of PCB), and we contacted authors when the year of data collection was not reported in the study. If authors were not available to provide the requested information, we used the mean time lag of 4 years (as estimated by the available information in our data) between data collection and publication of the paper in a journal. For each study, we then searched in Euromonitor for the macroeconomic factors of the specific country and the specific year in which the study's data were collected. We used the original figures related to the economic variables as they were presented without centering before running the analysis [6].

Statistical procedure

The hypotheses regarding the main effects of a breach on the job behaviors were tested with the formulas of Hunter and Schmidt (2004). To test the hypotheses concerning the macroeconomic factors, the correlations between the breach and the outcomes were regressed on the macroeconomic factors using a weighted least squares (WLS) estimation. WLS estimation allows us to correct for differences between sample sizes, as well as unreliability in the variables measured (Hunter and Schmidt, 2004). The weights were set at $(n_i - 3)$ to correct for sample size (Hunter and Schmidt, 2004). We applied the Fisher Z-transformation to all correlations, to investigate the moderating effect of the macroeconomic factors.

Results

First, we assessed the main effects of PCB on the outcomes. Table 1 shows the results of the main-effects meta-analysis [7] and reports the study's true-score correlations including comparisons to those reported in the Zhao *et al.* (2007) meta-analysis. As expected by H1a and H1b, PCB significantly and positively related to in-role performance (true score correlation $\rho = -0.22$) and citizenship behavior ($\rho = -0.24$). Additionally, in line with H2a and H2b, PCB related significantly and negatively to turnover intention ($\rho = 0.34$) and actual turnover ($\rho = 0.18$). As can be seen in Table 1, none of the 95% confidence intervals contained zero indicating that all of these correlations were significant. It is notable how the correlations between PCB and job performance and turnover intentions are quite similar to the Zhao *et al.* (2007) meta-analysis, while the correlations between PCB and OCB and actual turnover are considerably larger in the current meta-analysis. Lastly, while none of our confidence intervals contained zero, actual turnover did contain zero in Zhao *et al.* (2007). In sum, H1a, H1b, H2a and H2b are supported.

The homogeneity statistics in Table 1 (i.e. Q and the 90% credibility intervals) show that the true score correlations between the breach and the outcomes contain sizeable variation which supports our idea that there might be moderating variables in these relationships (Hunter and Schmidt, 2004). More specifically, hypotheses 3 and 4 stated that macroeconomic factors of a country moderate the relationships between PCB and job behaviors.

Table 2 shows the results for the macroeconomic factors. Inflation rate moderated the relationship between contract breach and in-role performance ($\beta = 0.54, p < 0.001$). Since the correlation between the breach and in-role performance is negative (see Table 1), the positive beta indicates an attenuating effect; the negative correlation becomes smaller when there is a higher inflation rate. The explained variance (R^2) was 0.29, indicating that 29% of the variance in the correlations between the breach and in-role performance can be attributed to the effects of economic inflation. H3a is therefore supported. Inflation did not moderate the

relation between contract breach and citizenship behavior ($\beta = 0.04, ns$), and H3b was thus not supported. Inflation rate did moderate the relation between PCB and turnover intention ($\beta = -0.32, p < 0.001$). Since the correlation between PCB and turnover intention is positive (see Table 1), the negative beta indicates that this positive correlation becomes smaller when the inflation rate becomes higher, thereby supporting H3c (i.e. an attenuating effect of inflation rate). Finally, inflation rate moderated the relation between PCB and actual turnover ($\beta = 0.12, p < 0.001$). Since the correlation between PCB and actual turnover is positive [8] (see Table 1), the positive beta indicates that this positive correlation becomes larger when the inflation rate becomes higher. This is in the opposite direction as we expected in H3d and we will discuss this in more detail in the discussion. In sum, the main premise underlying hypothesis 3 was that the inflation rate could moderate the relationships between PCB and job behaviors, and our findings support the general idea, yet interestingly our findings also revealed that this is for some relationships more complex than we anticipated (Tables 3 and 4).

Table 2 also shows that unemployment rate moderated the relationship between PCB and in-role performance ($\beta = 0.48, p < 0.001$). Since the correlation between PCB and in-role performance is negative (see Table 1), the positive beta indicates that this positive correlation becomes larger when the unemployment rate becomes higher, supporting H4a. The unemployment rate did not moderate the relation between PCB and citizenship behavior ($\beta = -0.18, ns$), and thus H4b was not supported. Unemployment rate did moderate the relation between PCB and turnover intention ($\beta = 0.30, p < 0.001$). Since the correlation between breach and turnover intention is positive (see Table 1), the positive beta indicates that this positive correlation becomes larger when the unemployment rate becomes higher, which was opposite as expected by H4c. The unemployment rate did not moderate the relation between PCB and actual turnover ($\beta = 0.74, ns$), thereby rejecting H4d. In sum, the

Table 2. Meta-analytic results of the moderating roles of economic factors in the relationships between contract breach and work outcomes

Economic factor	Outcomes	<i>k</i>	<i>N</i>	Beta	S.E.	<i>p</i> -value	<i>R</i> ²
Inflation rate	In-role performance	34	8632	0.54	0.03	0.00	0.29
	OCB	33	20268	0.04	0.01	n.s	0.00
	Turnover intentions	61	20753	-0.32	0.01	0.01	0.10
	Actual turnover	6	6879	0.12	0.01	0.00	0.01
Unemployment rate	In-role performance	34	8632	0.48	0.01	0.00	0.23
	OCB	33	20268	-0.18	0.00	n.s	0.03
	Turnover intentions	61	20753	0.30	0.01	0.01	0.09
	Actual turnover	6	6879	0.04	0.00	n.s	0.55

Note(s): *k* = number of studies; *N* = number of observations; Beta = interaction coefficient; S.E. = standard error of Beta; *p*-value = significance of *t*-test; *R*² = explained variance

Table 3. Meta-analytic results of the moderating roles of economic factors in the relationships between contract breach (reverse coded from fulfillment- by the authors) and work outcomes

Economic factor	Outcomes	<i>k</i>	<i>N</i>	Beta	S.E.	<i>p</i> -value	<i>R</i> ²
Inflation rate	In-role performance	6	600	0.08	0.02	0.01	0.42
	OCB	5	6514	0.01	0.00	n.s	0.49
	Turnover intentions	11	3002	-0.78	0.01	0.00	0.61
Unemployment rate	In-role performance	6	600	0.82	0.01	0.03	0.58
	OCB	5	6514	-0.01	0.02	n.s	0.12
	Turnover intentions	11	3002	0.67	0.04	0.02	0.45

Note(s): *k* = number of studies; *N* = number of observations; Beta = interaction coefficient; S.E. = standard error of Beta; *p*-value = significance of *t*-test; *R*² = explained variance

Outcomes	Study	k	N	r	ρ	SD ρ	95% Confidence interval		90% Credibility interval		Q	Fail safe K
							Lower	Upper	Lower	Upper		
Turnover intentions	Transactional	2	408	0.40	0.39	0.13	0.31	0.42	0.24	0.55	10	0
	Relational	2	408	0.38	0.37	0.12	0.30	0.48	0.25	0.54	10	0

Note(s): k = number of studies; N = number of observations; r = mean uncorrected correlation; ρ = true score correlation; SD of ρ = standard deviation of true score correlation; Q = Cochran's homogeneity test statistic; Fail safe k = Number of studies required to refute the significance of the correlation

Table 4. Meta-analytic results of the transactional and relational contract breach and work outcomes [9]

general expectation of hypothesis 4 received support, yet – as was the case for our findings concerning hypothesis 3 – our findings also unearthed a more complex reality than we initially expected. [Tables 3](#) shows the findings related to our supplementary analysis [\[4\]](#).

Discussion

The findings of this meta-analysis show that PCB is strongly linked to work behaviors (i.e. in-role performance, OCBs, turnover intentions and actual turnover). These results are in line with SET ([Blau, 1964](#)) and the findings of previous studies (e.g. [Vantilborgh et al., 2015](#)) and meta-analyses ([Zhao et al., 2007](#)). For in-role performance and turnover intentions, there were some variations in the results of the current and [Zhao et al.'s \(2007\)](#) meta-analysis, and both their and our meta-analyses indicate that PCB is an important predictor of these work behaviors. However, what our study revealed differently was stronger relationships for OCB and actual turnover than [Zhao et al.'s \(2007\)](#) study (up from -0.14 to -0.24 for OCB and 0.06 to 0.18 for actual turnover). Our explanations are twofold. On the one hand, it might be that since 2007, employees may have responded more strongly to PCBs in relation to OCBs and turnover, potentially as a result of changing economic circumstances, such as layoffs and austerity ([Bohle et al., 2017](#)).

The changing reality of workplaces was part of our focus by investigating how macroeconomic factors of a country can moderate the relation between PCB and work outcomes. Based on prospect theory ([Kahneman and Tversky, 1979](#)), we expected that job behavior following a breach is partly influenced by people's assessment of potential losses and gains, which are dependent upon the economic situation of a country ([Mohnen and Pokorny, 2005](#)). We expected people to be less affected by a breach when there are higher inflation and higher unemployment. Overall, our results support the notion that economic factors can shape the relationships between PCB and work behaviors and these findings will be put central in the rest of the discussion.

PCB effect on work outcomes: macroeconomic moderators

Our meta-analysis showed that the inflation rate moderated the relation between contract breach and in-role performance and turnover intention in the expected direction. Hence, in a macroeconomic context of high inflation, people are less likely to decrease their performance or increase their turnover intention when they experience PCB. Inflation rate also moderated the relationship between contract breach and actual turnover, yet did so in the opposite direction (i.e. when there is higher inflation, the positive relationship between the breach and actual turnover becomes larger suggesting that the degree of actual turnover among people is higher when there is higher inflation). This unexpected effect of inflation can be due to various reasons. One explanation may be that under conditions of inflation, people do change jobs more frequently to overcome the negative effects of the devaluation of their income, as changing jobs may be a relatively straightforward way to negotiate higher salaries to cope with the negative implications of inflation ([Myant et al., 2016](#)). Inflation may thus play a complex role ([Vogel et al., 2009](#)). On the one hand, inflation is an indicator of an economic downturn and may thus signal that people need to secure their income in order to prevent any further losses of their salaries ([Lucy and Broughton, 2011](#)) becoming worthless with rising prices due to inflation. This may lead them to perform well in their jobs even when their organization is not upholding their side of the deal (i.e. when PCB occurs). However, on the other hand, employees are also leaving such “PC breaching” organizations and search for a new employer, to secure or increase their income and purchasing power.

The unemployment rate moderated the relation between contract breach and in-role performance in the expected direction, with higher unemployment predicting attenuated

responses to breaches. Yet, the unemployment rate moderated the relation between contract breach turnover intention in the opposite direction (i.e. when there is higher unemployment, the positive relation between breach and turnover intention becomes larger suggesting that the degree of turnover intention among people is higher when there is higher unemployment). This unexpected effect of unemployment can be due to similar reasons as discussed above. In times of high unemployment in a country, people may still retain their performance at work (Calvo *et al.*, 2015) but at the same time, they also start looking increasingly for other job opportunities (Luechinger *et al.*, 2010). Hence, what might be observed is a dual-process through which people, despite having experienced breach, may continue to perform well in one's job and therefore not risking losing one's job and at the same time, start looking more intensely for other jobs to offset the risks and losses that co-align with experiencing breaches. This is a new insight above the prior conclusions of Zhao *et al.* (2007) that PCB normally elicits negative responses.

Overall, our findings show that it is important to consider the macroeconomic environment in managing employee behavior and dealing with PCB as economic factors can moderate these relationships. PCB had a less negative effect on in-role performance in harsh economic times, yet our results showed that extra-role performance (i.e. OCB) was not moderated by the economic situation. This means that even in a difficult economy setting, employees still react negatively to PCB by reducing their OCB (cf. Zhao *et al.*, 2007). For the long-term viability of organizations, OCB is crucial (Rousseau, 1989), and reducing PCB is thus still important in challenging economic settings. Our findings could also be interpreted that employees engaging in a form of impression management, as PCB still negatively relates to their OCB, but many effects less so employee in-role performance. Our findings that economic factors might increase turnover add to that by showing that even when it seems like employees are still performing after PCB, they are actually already thinking of a life beyond the "breaching" organization.

Theoretical implications

This study has several theoretical implications. First, the psychological contract literature has thus far assumed that psychological contract evaluations are shaped by individuals through using cues from their immediate environment (e.g. Morrison and Robinson, 1997). Our study is among the first in the PCB literature to show that macroeconomic content can influence people's behavior. While individuals may be unlikely to be aware of the *precise* unemployment figures in a particular period, these statistics serve as important proxies for how people assess the macroeconomic context (Dunlap *et al.*, 2010; Di Tella *et al.*, 2003; Sevak and Schmidt, 2011). Future research may shed more light upon the precise mediating mechanisms that explain how such proxies influence decision making processes following PCB.

Moreover, as we have shown, these cues are not merely uniform in how they signal to individuals when they have to cope with PCBs but may depend on both the type of economic indicator and the specific behavior in the workplace. In all, psychological contract theory would benefit from taking a wider perspective on the coping processes of people following a breach and incorporate their decision based on the wider economic environment. Prospect theory (Adriaenssen and Johannessen, 2016; Kahneman, 2011; Kahneman and Tversky, 1979) offers a useful theoretical angle to study not only how psychological contracts are processed emotionally, but also how the resulting behavior of employees is also influenced by assessments of risk and therefore subject to wider contextual macroeconomic factors. In other words, while SET perspectives (Blau, 1964) predict that employees actively restore a balance when PCB occurs, prospect theory would predict that this balance may be absent when employees perceive the potential losses of withholding their efforts to be too great. The notion

of structural imbalance between employee and organization has been somewhat absent from the psychological contract literature (Bal; Dóci, 2018), but prospect theory may explain why individuals do not *always* reciprocate breach, and will they might still (appear to be) performing well after PCB.

Moreover, the study also has implications for the wider organizational behaviour (OB) and human resource management (HRM) literature. While in OB the focus has traditionally been on individuals in the workplace, there is now increasing evidence that individual decision making does not just occur in isolation but is increasingly dependent on the context (Blomme *et al.*, 2010; Johns, 2018). Beyond a rich tradition on the impact of national culture on individual behavior and work climates, it has been less well understood that economic factors do have an impact on attitudes, behaviors and decision making (Gelade *et al.*, 2006). Our study contributes to this by not only theoretically integrating the psychological contract literature with prospect theory to explain the impact of macroeconomic factors but also by empirically testing our hypotheses using a large number of studies that have been conducted across the world across the last 25 years. In sum, we argue that research areas which traditionally focus on the explanation of individual behavior in the workplace should also take into account theoretically and empirically the notion of the wider socio-economic, political and cultural context, which may profoundly influence how people feel, behave and make decisions in the workplace (Bal and Dóci, 2018).

Strengths, limitations and suggestions for further research

The study also has some strengths and limitations. First, although we were able to collect a large dataset, most studies that we incorporated for this meta-analysis were cross-sectional. Therefore, it is not possible to draw causal conclusions on the impact of the relationships under study. Moreover, the current study has a clear focus by zooming-in on PCB relationships with work outcomes. However, even though it has been argued that breach-outcome relationships are mediated by the violation (Zhao *et al.*, 2007), we were unable to test this given the low number of studies present in our dataset that investigated such mediated relationships. If the number of studies is too small it might be better not to summarize them statistically and inappropriate to perform a meta-regression (Borenstein *et al.*, 2009). Given the limited number of studies, we did not perform a new analysis using a mediator into account when testing the influence of economic factors on the relationships between PCB and work outcomes. However, this is an interesting avenue for further research, and we recommend that future studies could look into this area. Moreover, there has been some critique in recent decades (e.g. Lambert *et al.*, 2003) suggesting that breach and fulfillment form distinct continua/ Although we performed a new analysis to see whether studies measuring PC fulfillment alone would produce different, our findings show that there were not many changes between coding it one way or the other. Therefore, we encourage future research to keep reverse coding fulfillment to treat as breach. However, we suggest that future research still explore whether the breach and fulfillment represent a single underlying continuum for various other work outcomes and how effects of breach might differ from fulfillment in relation to macroeconomic factors for various other work outcomes. Besides, at present, little do we know how economic factors might impact on the effects of distinct dimensions of breach and fulfillment (e.g. transactional and relational PCB) related to work outcomes beyond job performance and turnover such as job satisfaction, commitment or even misbehaviors. This may be an interesting avenue for future research. Moreover, we have explored two economic factors in our study, namely, inflation and unemployment. However, there may be other economic factors such as the Gini index or GDP growth rate can be used in future research. Furthermore, other aspects of the psychological contract may also be influenced by economic factors, such as the content of the contract itself (Vantilborgh *et al.*,

2014; Vogel *et al.*, 2009) and thus their perceptions of possible gains and losses in the context of contract evaluations.

Finally, we had a limited number of studies reporting turnover (and reliability) in original studies. Besides, publication bias was a concern. Thus, findings related to turnover must be treated with caution. Moreover, one of our six turnover studies include a sample of air force employees (Clinton and Guest, 2013), it may not necessarily be appropriate to consider this sample as representative of a national population, and therefore, we encourage future researchers to more in-depth investigate the national economic context as a moderator influencing the breach and actual turnover relationship. There are also other factors that could be relevant, such as inequality, ideology, institutions and culture, which may similarly – or differentially – impact psychological contract processes (Thomas *et al.*, 2010; Vantilborgh *et al.*, 2014).

Practical implications and conclusions

The findings of our meta-analysis show that macroeconomic factors can alter the ways in which employees respond to PCBs. Our study supports the notion that PCBs are generally negatively related to performance-related outcomes and positively related to turnover (intentions), yet our study also demonstrates that these general relationships are contingent upon the state of the economic environment. Therefore, organizations and managers should be aware that while employees may reduce their in-role performance less after a PCB in adverse economic circumstances, their intentions to leave the organizations might be increased at the same time, and the negative effect of PCB on extra-role performance (i.e. OCB) is not reduced. Thus, taking all of our findings together, reducing PCB is crucial also in economic dire times, because although employees will react with higher in-role performance to enhance their employability by performing well, they will also deal with the PCB by reducing their extra effort for the company and looking for other jobs at the same time. In conclusion, both scholars and practitioners will thus gain from a deeper understanding of how macroeconomic factors affect employee reactions to PCB. While some effects are wakened under conditions of losses due to an economic downturn (i.e. high inflation and unemployment), other effects might be strengthened (i.e. PCB's relationship with turnover).

Notes

1. There were 15 longitudinal studies and 5 studies that reported different dimensions of a breach in our database.
2. We did not compute an aggregate effect size because it is recommended that an aggregate effect size should only be computed when it is not possible to perform a composite score (Geyskens *et al.*, 2006).
3. The high values of fail-safe N (see Table 1) have suggested that there are at least 54 studies are needed for in-role performance, OCB and turnover intention, to obtain different results. For turnover, 2 studies are needed, which is due to the overall low number of studies conducted on the relationships between PCB and turnover ($k = 6$). The findings for turnover should be taken more cautiously.
4. There has been some critique in recent decades (e.g. Lambert *et al.*, 2003) who have suggested breach and fulfillment form distinct continua. We ran a supplementary analysis using the studies in which we reverse-scored fulfillment to represent breach.
5. We had 5 studies that measured PCB using dimensional measures.
6. Centering predictor variables does not necessarily enhance statistical power, model fit, or reliability of product terms (Dalal and Zickar, 2012).
7. We also conducted a supplementary analysis to examine the main effects of PCF on work outcomes. We could only perform this analysis for turnover intentions because of the limited number of studies

reporting transactional ($n = 2$) and relational components ($n = 2$) within our sample. The results of the transactional and relational constructs show transactional breach ($r = 0.40$) has only a very slightly larger effect than relational breach ($r = 0.38$). However, fail safe K is zero, suggesting that results must be interpreted with caution, please see [Table 4](#), p. 39.

8. Findings related to actual turnover must be treated with caution.
9. Fail safe K remains 0 suggesting that results must be interpreted with caution. In other words, if the effect is consistent across studies, we would report that the effect is robust. By contrast, if the effect varies substantially from study to study, we would want to consider the impact of the dispersion.

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Appendix

The Appendix files are available online for this article.

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