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The Effect of Economic Conditions on the Prevalence of Abusive Supervisory Behaviors: A Cross-Temporal Meta-Analysis

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THE EFFECT OF ECONOMIC CONDITIONS ON THE PREVALENCE OF ABUSIVE SUPERVISORY BEHAVIORS: A CROSS-TEMPORAL META-ANALYSIS

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ABSTRACT

The antecedents of abusive supervisory behaviors have been largely examined at the individual and organizational level. Hardly any attempts have been made to investigate abusive supervisory behaviors in a context broader than the organization. I try to answer the question "does a recession really unleash abusive supervisory behaviors?" by conducting a cross-temporal meta-analysis to examine the effect of economic conditions on the prevalence of abusive supervisory behaviors. Considering economic conditions as an antecedent to abusive supervisory behaviors provides a more comprehensive understanding of the phenomena. I proposed four reasons to explain how economic conditions affect employee's perception of abusive supervisory behaviors. The results show that PPP per capita is a more valuable economic indicator to predict abusive supervisory behaviors. My findings are suggestive of a negative relationship between PPP per capita and abusive supervisory behaviors, but more investigation needs to be done and the results should also be interpreted with caution. Implications and limitations are also discussed.

To Mom and Dad

For their endless love, encouragement, and support

Love you forever

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

In 2007, the Workplace Bullying Institute polled 7,740 respondents, which showed that 37% of workers were bullied and 72% of bullies were bosses. Another poll by the Workplace Bullying Institute in 2009, in which 454 were workers surveyed, reported that 97% workers had experienced or witnessed bullying, and 28% workers reported that the bullying got worse after September 2008. It seems that some managers see their employees to be all but disposable, and the economic slump has triggered a rise in belligerent behaviors on the part of supervisors. But does a recession really unleash abusive supervisory behaviors?

Research on abusive supervisory behavior has developed dramatically in the last two decades, resulting in a large and diverse selection of literature (Mackey, Frieder, Brees, & Martinko, 2017). Abusive supervisory behavior is an umbrella term that includes similar concepts, such as abusive supervision, tyrannical leadership, and destructive leadership. While these behaviors have distinct elements, they are all harmful behaviors executed by supervisors that are targeted at subordinates (e.g., profanity; Tepper, 2000). These behaviors account for a variety of detrimental consequences to employees' well-being and attitudes, such as job and life satisfaction (Tepper, 2000).

Given the importance of this topic, researchers have been interested in the antecedents of abusive supervisory behaviors. Many studies have focused on both supervisors' and subordinates' individual characteristics and organizational justice as antecedents of abusive supervision (Tepper, Duffy, Henle, & Lambert, 2006). However, few studies investigate a wider context beyond the organization. Context can interact with personal attributes to affect behaviors and the influence of context has been so far unrecognized or underappreciated (Johns, 2006).

Time, as an omnibus and ever-developing contextual factor, not only represents the year of the study conducted, but also co-changes with social and economic conditions, which may affect many aspects of organizational and personal behaviors (Johns, 2006). To be specific, social trends over time can determine the questions asked, research methods used, and effect sizes reported in many research studies (Wagner & Gooding, 1987). Furthermore, economic recessions, industrial restructuring, global competition, and advanced technology all lead to changes to the workplace (Howard, 1995), and many organizations respond by restructuring, layoffs, and "rightsizing" to cut back labor costs and improve competitiveness (Sverke & Hellgren, 2002). Because organizations view human capital as a cost not an investment on the financial report to stakeholders, they often cut costs related to human capital to survive during economic downtime (Schein, 1996). All of these changes may directly or indirectly impact supervisors and further impact how supervisors act toward their subordinates. Thus, chronological time may be an important but neglected antecedent of abusive supervisory behaviors.

Location is another omnibus contextual factor that would be beneficial to consider in relation to abusive supervisory behaviors. Location reflects, among other things, economic conditions and national culture (Johns, 2006). There is a major stream that emphasizes the external market factors in determining firm success in the business policy literature; environmental factors (e.g., sociological, political, economic, and technological) affect organizational climate (such as decision making practices, goal emphasis, leadership, etc.), which affect individual behaviors and organizational performance sequentially (Hansen & Wernerfelt, 1989). In addition, people from different cultures also have different expectations for leaders (Den Hartog et al., 1999). For example, leadership perceptions in Europe can be clustered geographically and, within the clusters, countries share similar leadership prototypes (Koopman, Den Hartog, & Konrad, 1999). Moreover, attributes, such as risk taking, compassionate, unique, enthusiastic and sensitive, are seen to contribute outstanding leadership in some cultures, but these attributes are seen to impede outstanding leadership in other cultures (Den Hartog et al., 1999). Leaders' behaviors often reflect those different expectations because of the self-fulfilling prophecy, which indicates the positive feedback between belief and behavior directly or indirectly cause a prediction to become true itself (Merton, 1948). In summary, changes in time and locations can significantly impact how people think and behave. Hence, studying both contexts helps researchers to understand person-situation interactions and to better convey the application of research results (Johns, 2006).

The purpose of this thesis is to examine how macroeconomic conditions, such as GDP and unemployment rate, impact the incidents of abusive supervisory behaviors globally. By examining the effects of macroeconomic conditions of multiple countries, I try to build a bridge linking the macro and micro research domains, and fill the gap on how macro contextual factors (i.e., economic conditions which incorporate both time and locations) affect abusive supervisory behaviors at the societal level. This article could provide insights on a more comprehensive mechanism of how abusive supervisory behaviors are affected by contextual factors considering different stakeholders together (i.e., supervisors, co-workers, subordinates, and the organization). This study responds to the call for "cross-level/comparative research" emphasizing the indispensable role of context by conducting a cross-temporal meta-analysis (Johns, 2006). By introducing time and location into this study, the trends in abusive supervisory behaviors are visible and we can test if the fluctuating economic conditions play a role in the incidents of abusive supervisory behaviors.

LITERATURE REVIEW

The Effects of Economic Conditions on People's Behaviors

People contribute to economic conditions and are also reactive to economic conditions. According to Alfred Marshall (1890),

> "Economics is a study of mankind in the ordinary business of life; it examines that part of individual and social action which is most closely connected with the attainment and with the use of the material requisites of wellbeing. Thus it is on the one side a study of wealth; and on the other, and more important side, a part of the study of man (*p*. 1)".

The aggregated production, consumption, saving, and investment behaviors by people influence economic growth, business cycles, unemployment, and inflation. The fluctuating macroeconomic conditions in return fundamentally influence people's work and non-work life and findings are mixed for both economic growth and economic contractions. To be more specific, during periods of economic growth, people spend more time working, and therefore spend less time with family, sleeping, and participating in recreational behaviors (Barnes, Lefter, Bhave, & Wagner, 2016). In contrast, the economic stress hypothesis (Catalano & Dooley, 1983; Catalano et al., 2011) states that economic contractions lead to undesirable job and financial events, and is thus positively related to illness and injuries. Economic theories of labor adjustment propose that organizations use less human capital resources during economic downtime because of fewer product demands (Varian, 2010). According to cross-sectional and longitudinal studies, unemployment causes substantial loss of life satisfaction (Frijters, Haisken-DeNew, & Shields, 2004). Furthermore, labor market fluctuation induces adjustment of marriage timing, and increased unemployment rate is associated with reduction in both marriage and divorce (Kondo, 2012; Schaller, 2013).

Time-series research by Brenner (1976) showed that a 1% increase in the unemployment rate would lead to thousands of additional deaths due to suicide, homicide, or natural causes, accompanied with increases in psychiatric admissions. It is intuitive to link poor economic conditions — indicated by the increased unemployment rate — with increased psychological problems and changes in people's behaviors. But do poor economic conditions actually create increased psychological problems and changes in people's behaviors? A study showed that losing jobs put people under more than twice the risk of having significant increases in depressive symptoms, but not clinical depression diagnosis (Dooley, Catalano, & Wilson, 1994). The unemployment rate in the participants' community at time of the study was not directly related to psychological depression; however, it appeared to be indirectly associated with depression via the impact of the potential of becoming unemployed (Dooley, Catalano, & Wilson, 1994). A meta-analytic review endorsed the assumption that unemployment both correlated with and caused distress (Paul & Moser, 2009). There was a significant difference on mental health (mixed symptoms of distress, depression, anxiety, psychosomatic symptoms, subjective well-being, and self-esteem) between employed and unemployed people; 34% unemployed people had psychological problems compared to the 16% among employed individuals. In conclusion, research suggests that worse economic conditions negatively affect people's well-being.

Additionally, regarding questions on how and to what extent poor economic conditions cause increased psychological problems, Dooley and Catalano (1984) built a diagram to show that the economic conditions affected people's depressive symptoms via more than one pathway.

The economic conditions had a small direct effect on people’s psychological symptoms and a small indirect effect mediated by increased undesirable life events, even after controlling for prior symptoms and concurrent noneconomic events. The results showed that unemployment had a worse effect in countries that were less developed, had larger unequal income distributions, or weaker unemployment protection systems (Paul & Moser, 2009).

Economic conditions offer useful insights into people’s behaviors because they influence how people allocate their scarce resources of time and money to maximize their happiness (Cawley, 2004). Although people can perceive the fluctuation of economic conditions in their lives, researchers use standard indicators to better describe economic conditions.

Indicators of economic conditions.

Researchers use various indicators to measure economic conditions. Based on the purpose of this study, I selected five indicators from Coccia’s (2007) taxonomy of country economic performance. The indicators are listed as below:

1. Gross Domestic Product (GDP) per capita, in constant 2010 US dollars;
2. GDP per capita adjusted by Purchasing Power Parity (PPP);
3. Inflation, given by % change per annual of consumer prices;
4. Unemployment rate, in % of labor force;
5. Labor costs in Index Points.

GDP is considered as the “world's most powerful statistical indicator of national development and progress” (Lepenies, 2016, *p*. 5) and “the best single measure of a society’s economic well-being” (Mankiw, 2014, *p*. 196). GDP per capita is commonly used as a gauge of a country’s living standards, despite the fact that the standards of living of poorer countries is more responsive to GDP per capita than that of richer countries (Dowrick, Dunlop, & Quiggin, 2003;

Kakwani, 1993). In other words, with the same percentage increase in GDP per capita, the standards of living (i.e., mortality rate and life expectancy) of poorer countries increases more than that of richer countries. Moreover, PPP measures the countries' economic welfare by converting the GDP of individual countries from local currency to the U.S dollars (Kakwani, 1993), but it does not necessary co-linear with GDP per capita. Although PPP is calculated from GDP per capita, PPP is a better indicator to compare people's standards of living across countries by addressing the adverse effect of income over time. Moreover, the annual inflation and unemployment rate are the two components of the "misery index" (Welsch, 2007). A study reported data on a quarter of a million people across 12 European countries and the U.S, and it showed that people appeared to be happier when inflation and unemployment were low after controlling for the personal characteristics of the people, year effects, and country-specific time trends (Di Tella et al., 2001). In other words, people mark systematically lower well-being ratings when there is inflation or unemployment in their country. Furthermore, labor costs can be viewed as a measure of labor income (Triplett, 2007, *p*. 3). Labor costs also have a significant effect on people's behaviors at work. In 1996, the Kohl government of Germany cut the statutory sick pay level from 100% to 80% of foregone gross wages. As a result, the ratio of people having zero days of absence increased 7.5% in private sectors, and the mean number of absence days per day decreased by about 5% (Ziebarth & Karlsson, 2010). In summary, these five indicators help researchers to understand the changes in people's standards of living, provide insights on people's well-being, and are both universally used by most countries in the world and commonly accessible from various data resources (See The World Bank). In the sections below, I discuss each indicator in greater depth and review general research on how it impacts behavior at work.

GDP.

GDP is “the market value of all final good and services produced within a country in a given period of time” (Mankiw, 2014, *p*. 198). For an economy as a whole, the income should equal to the expenditure, and thus GDP can be calculated by how much income the country earned or by how much the country spent (Mankiw, 2014, *p*. 196). For instance, the expenditure equation for GDP is equal to the sum of consumption, investment, government expenditure, and net exports (Mankiw, 2014, *p*. 200). There are many benefits to using GDP as an economic indicator. Because the calculation of GDP is uniform across the world, it can be used to compare the productivity of various countries (Lepenies, 2016, *p*. 6; Mankiw, 2014, *p*. 211). In addition, the measure of GDP can be tracked over a long span of time and show the expanding or declining of a nation’s economic conditions (Lepenies, 2016, *p*. 6). GDP is also widely used and cited (e.g., United Nations, 1987; Martin et al., 2012; Pao & Tsai, 2011). According to Lepenies (2006), GDP is not only calculated by the government, but it also feeds back into government actions. Governments can use GDP as a guide to decide whether to stimulate a stagnant economy by making more expenditure or apply a strict money policy to prevent the economy from becoming over-heated or a “bubble economy” in which there are robust economic growth, exceptionally high inflation level, and swift currency appreciation (Chung, Ip, & Chan, 2009). In other words, the changes of GDP show whether the economy is growing at an unsustainable rate.

There are also two subcategories of GDP. Nominal GDP is the production of goods and services valued at current prices, whereas real GDP is the production of goods and services valued at constant prices or the nominal GDP adjusted for inflation (Mankiw, 2014, *p*. 205). Because real GDP is not affected by prices, and changes in real GDP only reflect the amount being produced, real GDP is a better measure of economic well-being. When economists talk about GDP and the growth of economy, they usually mean real GDP and the percentage change in real GDP (Mankiw, 2014, *p*. 205). There are two obvious features of real GDP: 1) real GSP growth over time; 2) the growth is not steady and is occasionally interrupted by periods when real GDP declines, which are called recessions (Mankiw, 2014, *p*. 206). Recessions are often accompanied by decreasing income, rising unemployment, falling profit, and increased bankruptcies (Mankiw, 2014, *p*. 206).

Recessions have catastrophic influence on organizations. A report in 2009 summarizes the impact of the 2007-09 economic recession on 363 nonprofit organizations in the U.S (Salamon, Geller, & Spence, 2009), and the report reflects that organizations experienced significant economic stress (83 percent of organizations reported some level of fiscal stress and about 40% considered the stress to be “severe” or “very severe”), impressive resilience (37% of organizations reported “severe” or “very severe” fiscal stress comparing to 51% organizations during the recession that followed 9/11), and a range of coping strategies (substantial proportion of organizations chose to cutting administrative costs, instituting salary freezes, postponing new hires, and relying more heavily on volunteers).

Moreover, organizations may be directly affected by recessions in three ways (Long & Warner, 1987). Recessions may let organizations recognize that traditional management approaches have become inadequate and seek for a fundamental change in the relationship between employees and management. Second, organizations could also see recession as a temporary phenomenon and respond to the pressure by experimenting new ways of organizing work, such as introducing new technologies and provide employee consultation prior to implementation (see Warner, 1984). The third approach is to layoff labor and cut wages and benefits. Organizations may also be affected indirectly (Long & Warner, 1987). For instance, recessions may cause third parties to intervene. To be more specific, the state may change the law on industrial democracy (e.g., workers make decisions and share responsibilities and authorities), so organizations would encourage more flexible and collaborative work practices (see Industrial Democracy in Europe & International Research Group, 1981a). Recessions may also change public opinions and lead to election of left-inclined government that support industrial democracy (cf. Industrial Democracy in Europe & International Research Group, 1981b; see Long & Warner, 1987).

Recessions also affect individuals. Specifically, millennials respond to recessions by lowering their expectations regarding work-life balance (e.g., respect for one's personal situation) and social atmosphere (e.g., good relationships with colleagues; De Hauw & De Vos, 2010). A study conducted in the European Union found that the incident of long-term unemployment among young people increased faster than for older people, and young people predominately became temporary workers during recessions (O'higgins, 2012). Moreover, severe economic conditions make organizations prone to provide fixed-term contacts and employees are more likely to accept them. For example, the number of temporary workers grew explosively during economic recessions in 1990, 2001, and 2007 in the USA (Luo, Mann, & Holden, 2010). Holmlund and Storrie (2002) argued that the recession in 1990 was a primary reason for the increased temporary workers in Sweden. In recessions, there is usually an initial decline in temporary workers and a sharp rise from the trough to the end of the recession (Holmlund & Storrie, 2002). In fact, in the recessions of 2001 and 2007 in the USA, temporary workers declined before total employment did and increased before the total market did (Luo, Mann, & Holden, 2010). In other words, the temporary workers are first to be hired during economic expansion and first to be laid off during recessions. Recessions also have a larger effect on temporary workers; about 19 percent (over 484,000) temporary workers lost jobs during December 2007 to December 2008, whereas the total employment dropped by 2.3 percent (Luo, Mann, & Holden, 2010).

But what does different GDP tell about the people in different countries? Because GDP is the aggregated national wealth, a multinational study shows a large correlation between the wealth of nations and the subjective well-being reported by people (Diener & Suh, 2003). A county's standards of living depends on its ability to produce goods and services; hence, as mentioned above, GDP allows researchers to compare standards of living across countries. Standards of living and GDP have been used to measure and predict subjective well-being of the nations (e.g., Bérenger & Verdier-Chouchane, 2007; Diener, Diener, & Diener, 2009).

The GDP per capita is a standard measure, which depicts the total amount of money a country makes divided by population. GDP per capita is a better measure than GDP because GDP per capita controls for the population of the country; therefore GDP per capita will better represent the life quality of individuals other than the aggregated wealth of the whole country (Mankiw, 2014, *p*. 206). Across countries, GDP per capita shows a clear pattern on people's life expectancy, literacy (the percentage of adult population who can read), and Internet use (the percentage of the population that regularly uses the Internet; United Nations, 2009). In richer countries, such as the U.S, Japan, and Germany, people can live up to 80 years old, 99% adult can read, and the majority of the population use the Internet. In poor countries, such as Pakistan, Nigeria, and Bangladesh, people usually die about 10-20 years earlier, a substantial number of adults are illiterate, and Internet use is rare. GDP per capita, however, does not account for how expensive it is to live in a country. Hence, I also use PPP to more accurately describe the economic conditions.

PPP.

PPP is a special subcategory of nominal GDP. The PPP attempts to account for how expensive it is to live in a country by comparing how many services and goods an exchange-rate-adjusted amount of money can purchase in different countries. Thus, PPP is not necessary co-linear with GDP. For example, the exchange rate between US dollars and Chinese Yuan is 6.87 (Bloomberg, 2018), whereas the general price level of the United States (114) is almost two times more than that of China (59; OECD, 2018). As a result, even though the United States' nominal GDP per capita is more than that of China, after converting to PPP, China may have a higher PPP or standard of living. Clearly, the large gap between nominal GDP and PPP in emerging markets and developing countries is due to the general lower price level of goods and services. For more advanced countries, the gap is much smaller. Again, the PPP is a relative measure, which takes into account the price of service or the standards of living within the country. Another real life example would be a person earns $100,000 a year and lives in the United States. Another person earns $50,000 a year and lives in China. It looks like the person in the US is better off, but because the price of clothing and food in the US is three times as much as in China, the person in China actually has a higher real income. As shown by this example, PPP is beneficial when we examine the actual living quality in different countries.

Inflation Rate.

Economists use the term inflation to describe a situation in which the overall price of the economy is rising (Mankiw, 2014, *p*. 206) or continuously falling value of the money (BLS, 2018b). The inflation rate is "the percentage change in some measure of the price level from one period to the next" (Mankiw, 2014, *p*. 206). To calculate inflation rate, first we need to calculate consumer price index (CPI). Imagine a basket that reflects all goods and services that consumers need for daily life. The families and individuals report the items in the basket about their detailed expenditure information on what they actually bought, such as transportation, food, and medical care. The U.S Bureau of Labor Statistics contacts about 14,500 families for Telephone Point-of-Purchase Survey (TPOPS) to serve as participants. These families provide a diary list on everything they buy during a 2-week period. Surveyed people are all urban consumers who represent about 93 percent of the total U.S population. They can be professionals, self-employed, the unemployed, and retired people as well as wage earners and clerical workers (BLS, 2018a). Now we sum up the total cost of the same basket at a base year price and a current price. The CPI is the ratio of the basket cost at current prices to the same basket cost at base year prices and then multiplied by 100.

CPI = (CPI basket cost @ current prices)/ (CPI basket cost @ base year prices)*100

In other words, CPI is a measure of the average change in price for the same basket of goods and services purchased by urban consumers. Then, the inflation rate of the year is the difference between this year CPI and last year CPI divided by last year's CPI, multiplied by 100.

Inflation rate = (this year CPI-last year CPI)/ (last year CPI)*100

The inflation rate represents the rise of general price of goods and services; thus, it is also an indicator of the drop of the purchasing power of currency. In other words, given the same amount of money, people are able to buy less goods and services today, compared to a year ago, because of a high inflation rate. There are several reasons for inflation to go up. Inflation occurs because the demand of services and goods goes up and the competition on the services and goods drives the price up. Inflation also occurs because the cost of making goods and services goes up, so businesses need to reset the price higher to earn profits. Moreover, the inflation can occur simply because of an oversupply of money in the economy. A higher inflation rate in society actually reduces the real income everyone can use. People may respond to a higher inflation rate by increasing their expenditures on more stable goods such as gold, because they know their money value less in the future. Hence, inflation rate is an essential economic indicator for researchers to predict behavioral changes among people.

Although there is no explicit research on how people's behaviors are directly affected by the inflation rate, at societal level a reduction of inflation from hyperinflation significantly lowers the level of income inequality, and income inequality has been negatively related to people's health (Kawachi & Berkman, 2000; Kawachi & Kennedy, 1999) and positively related to crime rate (Hsieh & Pugh, 1993), which may indirectly affect people's work and life behaviors.

Unemployment Rate.

The unemployment rate is a measure of the prevalence of unemployment. The U.S. Bureau of Labor Statistics (BLS) defines the unemployment rate as "the number unemployed as a percent of the labor force" (BLS, 2018b). It is calculated by the number of people who are actively seeking job in the market divided by the total labor force. It is a lagging indicator, meaning that it rises and falls following the current economic conditions. When the economy is poor and jobs are scarce, we expect a higher unemployment rate; when the economy is booming and prosperous, we expect a lower unemployment rate. A rising unemployment rate is an essential sign of a weak economy, with slow growth and little expanding. In addition, if people are out of work for a long period, they may eventually give up looking for jobs and become discouraged workers. Discouraged workers are people who are available to work and have looked for a job sometime in the past 12 months, but they are not currently looking for a job because they believe there is no job available or job they would qualify for (BLS, 2018b). Discouraged workers lead to long-term systemic issues that are hard to solve. To be specific, these discouraged workers will keep the unemployment rate high because when the economy is improving and discouraged workers start to look for jobs, before they find jobs, the discouraged workers become unemployment workers.

There is a positive relationship between unemployment rate and perceived job insecurity (Green, 2003; Green et al., 2000). In other words, increased job insecurity is accompanied by an uplift in unemployment rate. Perceived job insecurity affects people's voting choices (Mughan & Lacy, 2002), attitudes (Sverke, Hellgren, & Näswall, 2002), subjective well-being (Sverke, Hellgren, & Näswall, 2002), performance (Staufenbiel & König, 2010), and even their kids' academic performance (Barling, Zacharatos, & Hepburn, 1999). For people at work, it is clear that job insecurity leads to increased intentions to quit (Ashford, Lee, & Bobko, 1989), and reduced organizational commitment (Ashford, Lee, & Bobko, 1989; Sverke, Hellgren, & Näswall, 2002), trust (Ashford, Lee, & Bobko, 1989; Sverke, Hellgren, & Näswall, 2002), and job satisfaction (Ashford, Lee, & Bobko, 1989; Sverke, Hellgren, & Näswall, 2002), because people seek more secure career opportunities (Greenhalgh & Rosenblatt, 1984), see their organizations as less dependable, perceive their organizations as less trustworthy (which threatens their basic attachment to the organizations), and evoke the feeling of job insecurity as a constellation of negative job events, respectively. People also suffer from job insecurity differently (Cheng & Chan, 2008). To be specific, the positive relationship between job insecurity and turnover intention is stronger for younger people and for people with shorter tenure; the negative relationship between job insecurity and subjective well-being is severer for older people and for people with longer tenure.

Job insecurity has been linked to increased bullying behavior at work (De Cuyper, Baillien, & De Witte, 2009; Notelaers, De Witte, & Einarsen, 2010). On one hand, from the perspective of target being bullied, job insecurity is positively associated with withdrawal behavior (De Cuyper, Baillien, & De Witte, 2009), and these withdrawal behaviors, such as turnover, theft, and feeling of helpless, may make people “safe,” “legitimate,” and “easy” targets, which attract more bullying behaviors. Moreover, job insecurity may signal weakness, which has been identified as the most essential factor leading to workplace bullying (Leymann, 1996). On the other hand, from the perspective of perpetrators, the perception of job insecurity may induce the feelings of frustration and ambiguity, which leads to people unleash their aggressiveness to co-workers to regain control (De Cuyper, Baillien, & De Witte, 2009). Other studies also argue that job insecurity mediates the relationship between organizational changes and workplace bullying (Baillien & De Witte, 2009).

Labor Costs.

Labor costs include pay on working hours, holiday pay, insurance program costs, and other labor taxes (Banerji, 2005). In other words, the labor cost is the sum of all wages paid to employee, as well as the sum of the cost on employee benefits and payroll taxes paid by employers. Labor cost can be measured by unit labor cost (ULC; e.g., Banerji, 2005; King & Watson, 2012), which is the labor cost for a unit of production, or Average Hourly Earnings (AHE; Banerji, 2005), which is basically labor cost per hour. Labor cost can be measured by index points as well. The U.S. Bureau of Labor Statistics uses Employment Cost Index (ECI) to measure changes in the cost of labor compensation. Because labor cost is the most controllable project cost and can be decreased in the shortest time period, decreasing labor cost is considered the first step in decreasing organization costs and increasing short-term profit (Ernzen & Schexnayder, 2000).

Research shows that income impacts people at work in multiple ways. In the workplace, income is the monetary incentive for employees. The general theme of the effect of monetary incentives on effort and performance is that monetary incentives will increase employees' effort by changing its direction, duration, intensity, and strategy, which lead to better performance (Bonner & Sprinkle, 2002). There are four predominant theories on why monetary incentives would affect the direction, duration, intensity, and strategy of efforts. First, Vroom's expectancy theory (1964) states that people would change their effort based on expectancy, instrumentality, and valence. Expectancy is the belief of to what extent the increased effort would boost performance; instrumentality refers to how closely the performance and outcome are linked; and valence is the value people put on the outcome. In this case, money can have valence because it allows people to buy things they desire, and it also have symbolic value because of its relationship with prestige and status (Furnham & Argyle, 1998; Zelizer, 1994; also see Bonner & Sprinkle, 2002). Moreover, monetary incentives, rather than no pay or noncontingent incentives, leads to higher expectancy (Jorgenson, Dunnette, & Pritchard, 1973; Locke & Latham, 1990). Second, agency theory (Baiman, 1982, 1990; Eisenhardt, 1989) presumes that people are fully rational and are motivated by a utility function that contains two arguments: wealth and leisure. Therefore, people will not exert effort on a task unless it contributes to their wealth or leisure. Third, goal-setting theory posits that a specific and challenging goal leads to improvements in performance, such that the personal goal acts as a primary determinant of effort (Locke & Latham, 1990; also see Bonner & Sprinkle, 2002). Although how the monetary incentives affect effort is not completely clear, Locke, Shaw, Saari, and Latham (1981) proposes three processes. In particular, monetary incentives motivate people to set goals when otherwise they would not; monetary incentives cause people to set more challenging goals; and monetary incentives result in higher goal commitment. These three process result in greater effort to achieve people's goals.

Last but not least, self-efficacy theory (Bandura, 1991, 1997) proposes a more complex procedure about how monetary incentives affect self-efficacy. Self-efficacy refers to one's belief about whether he or she can execute actions to accomplish a specific task (Bandura, 1997). Self-efficacy affects effort through cognitive, motivational, affective, and task mechanisms (Bonner & Sprinkle, 2002). Specifically, cognitive and motivational mechanisms involve the procedure of goal setting and the belief about expectancy, so in both cases people with higher self-efficacy work harder for their goals and increase their performance, in addition to adopting more high-quality problem solving strategies (Bonner & Sprinkle, 2002). Self-efficacy also positively influences the emotional state prior taking the task and alleviates the adverse effects during completion of the task (Bonner & Sprinkle, 2002). People with higher self-efficacy are more likely to choose more challenging tasks and hence exert more effort (Bonner & Sprinkle, 2002). Bandura (1997) explains the relationship between monetary incentives and self-efficacy by highlighting how monetary incentives uplift task interests and result in more effort. The increased effort leads to better performance. Hence, higher income should motivate people to work harder and boost performance.

However, before we make a firm conclusion about the effect of monetary incentives on performance, there are a few theories that support the opposite. One example is the Yerkes and Dodson (1908) inverted-U shape relationship between arousal and performance. According to this model, arousal helps performance to a point, and once the arousal is more than the moderate level, anxiety begins to hurt performance. In this case, monetary incentives could induce arousal, so monetary incentives could both promote or impede performance. In addition, cognitive evaluation theory (Deci, Koestner, & Ryan, 1999; Deci & Ryan, 1985) posits that external rewards, such as monetary incentives, can hurt intrinsic motivation, which can lead to decreased effort and performance. Monetary incentives can also affect people's well-being. A study showed that service job lawyers (positions include public defender, criminal prosecutor, government agency, legal services to the indigent, and in-house counsel for nonprofit organizations) are happier than money job lawyers (positions are all in private practice), even with lower incomes (Sheldon & Krieger, 2014). A meta-analysis illustrated the complex relationship between monetary incentives and performance, showing that monetary incentives were not relate to performance quality, but were moderately correlated (r = .34) with performance quantity (Jenkins Jr, Mitra, Gupta, & Shaw, 1998).

Because labor cost examines the price of human capital, organizations and workers also react to changes in labor cost. According to the sticky-wage theory (Bordo, Erceg, & Evans, 2000), if workers expect a lower level of wage, they start to strike and bargain because of the low wages; however, the reduction in labor cost encourages firms to hire more workers and expand production at any given level of selling price (see Mankiw, 2014, *p*. 446).

Summary of economic indicators regarding economic recessions.

The decline of the economy is manifested by a decreased GDP per capita, a decreased growth of real GDP, an abnormal high inflation rate (higher than 2%; Weidner & Williams, 2011), a decreased labor cost per hour, and an abnormally high unemployment rate (higher than 5%; Weidner & Williams, 2011). All the indicators described above provide information on the nation's wealth, economic stability, and labor market (Coccia, 2007), and they provide comprehensive information on the state of the economy from complementary perspectives. These economic indicators also fluctuate over time, as shown in Figure 1, so we can use the indicators to predict the change of abusive supervision over time. Figure 1 describes the economic conditions of the United States from 2007 to 2018. The purple line represents inflation rate; the blue line represents GDP per capita (PPP is in almost identical shape); the aquamarine line represents unemployment rate; and the orange line represents labor cost per hour.

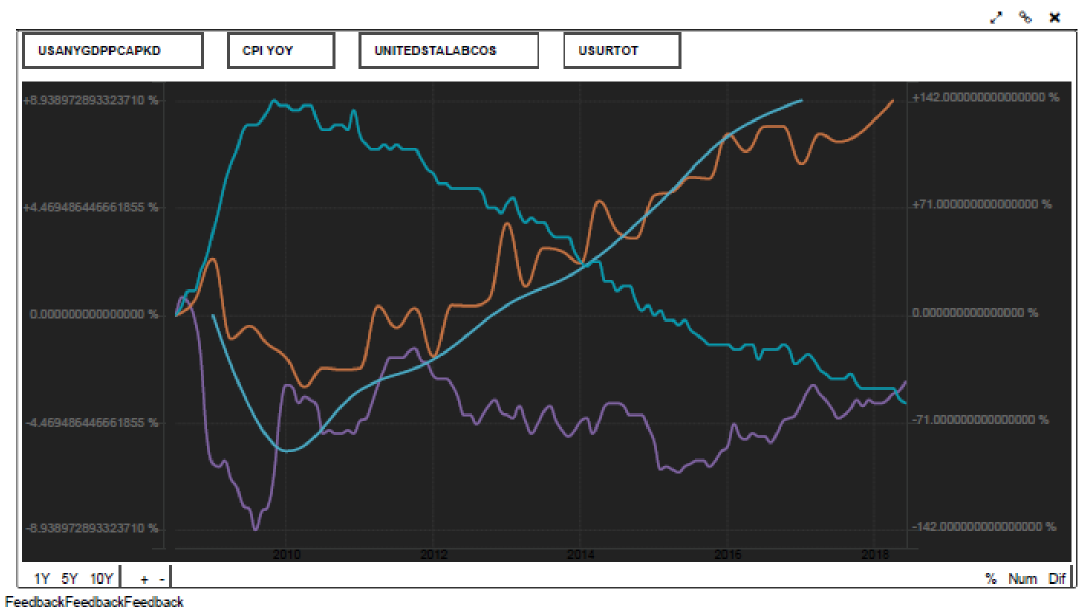

Figure 1 The fluctuating economic indicators of United States

Note: The figure was created using online data by the author.

<u>Abusive Supervisory Behaviors and the Antecedents of Abusive Supervisory Behaviors</u>

Considering the purpose of this meta-analysis study, the definition of abusive supervisory behaviors should be specific enough to exclude similar behaviors, while also being inclusive enough to have sufficient data and power to detect the hypothesized effects. From this standpoint, I adapted the definition of abusive supervisory behaviors from Tepper (2000, 2007) as supervisors' hostility towards subordinates either physically, verbally, or non-verbally, with or without an intended outcome. According to Tepper (2007), there are eight constructs (e.g., abusive supervision and supervisor aggression) that capture nonphysical supervisor hostility; however, depending on 1) if the behaviors are directed downward; 2) if it excludes physical hostility; 3) if it encompasses content other than hostility (e.g., physical and sexual); and 4) if its definition includes reference to intended outcomes, these constructs slightly diverge from each other. Abusive supervisory behavior fits as an umbrella term because the definition highlights the hierarchical relationship between the perpetrator and the victim, but only focuses on the harmful behaviors of supervisors and excludes the same effect from hierarchically superior coworkers. Additionally, abusive supervisory behavior enables the scope of this study to stay broad. Because the interest of this study is how supervisors negatively cope with the economic downtime pressure and target subordinates, it is unnecessary to constrain the form, content, and intended outcome of the expressed hostility. To be specific, abusive supervisory behavior in the context of this study includes abusive supervision, petty tyranny, supervisor aggression, supervisor undermining, and destructive leadership. Although I use abusive supervisory behavior as an overarching term to address a range of similar concepts, to be clear and precise in the literature review, I will follow the extant literature which uses various terms and identifies different antecedents, because there are so many related forms of abusive supervisory behaviors, and different researchers use different definitions in their studies.

Abusive supervision.

One form of abusive supervisory behavior is abusive supervision. Abusive supervision has been defined as the subjective perception of employees on the supervisor's sustained verbal and nonverbal behaviors as hostile (Tepper, 2000). Abusive supervision highlights the subjective assessment of a supervisor's continuing hostile behaviors by employees, and that the supervisor can be using an inappropriate tactic to encourage high performance and not necessarily meaning to cause harm.

Research demonstrates that employees under abusive supervision are more likely to experience occupational stress and poor personal well-being (Schyns & Schilling, 2013). They tend to have more work-family conflict and less life satisfaction (Tepper, 2000). In addition, abusive supervision undermines important outcomes for organizations. To be specific, abusive supervision is negatively related to satisfaction with the leader and organization (Schyns & Schilling, 2013; Tepper, 2007), job satisfaction (Schyns & Schilling, 2013; Tepper, 2000; Tepper et al., 2004;), commitment (Schyns & Schilling, 2013; Tepper, 2000), and individual performance (Schyns & Schilling, 2013), and is positively associated with organization deviance (Schyns & Schilling, 2013; Tepper et al., 2009; Mitchell & Ambrose, 2007; Tepper et al., 2008; Thau & Mitchell, 2010). Further, turnover intentions increase as a result of disappointment with the organization because of the abusive supervision (Schyns & Schilling, 2013; Tepper, 2000; Shoss, et al., 2013; Tepper et al., 2009).

Antecedents of abusive supervision include the characteristics of the subordinates. Employees who are high on negative affectivity and low on self-determination are popular targets of aggression (Hoobler & Hu, 2013; Aquino et al., 1999). People with high negative affectivity are more distressed, fearful, hostile, upset, and have a negative view of self, and they are also more likely to be nervous, worried, guilty, self-dissatisfactory, and vulnerable (Watson & Clark, 1984). Because they appear to be weak and unable to defend themselves, and their continuing anxiety leads to problems in social interaction and work performance, supervisors may recognize those employees' problems as annoying and disrespectful (Tepper et al., 2006). Moreover, dominant employees may also experience abusive supervision as a retaliation; thus, individuals who are high or low in dominance tend to be targets of workplace hostility rather than those with moderate dominance (Aquino & Bradfield, 2000; Aquino & Byron, 2002).

In addition to personal characteristics, researchers have also identified organizational factors as antecedents of abusive supervision. First of all, in the study by Tepper and colleagues (2006), they found the relationship between organizational injustice, more specifically procedural injustice, and abusive behaviors were mediated by supervisors' depression. Procedural injustice occurs when individuals do not have voice or control over the decision making process (Tepper et al., 2006). Supervisors get upset and depressed if they do not have control and then become abusive. Second, the employees have inherently perceptual beliefs about the terms and conditions of a reciprocal exchange agreement between the employees and the organization, which are called psychological contracts (Robinson, 1996). Hoobler and Brass (2006) stated that psychological contact violation occurs when the organization fails to meet the expectations of supervisors, which may cause supervisors to be unpleasant and then abusive. The results also supported that supervisor's hostile attribution bias, where they attribute others' behaviors as hostile even when it is not, moderated the positive relationship between psychological contract violation and aggression (Hoobler & Brass, 2006). Third, displacement of aggression has also been pointed as an antecedent of abusive supervision. Displacement refers to altering the target of aggression from an unacceptable or infeasible figure to a more acceptable option, and the target of the actual aggressive behavior has meaningful association to the original target (Baumeister, Dale, & Sommer, 1998). Hence, the combination of a feeling of psychological contract breach and a tendency to interpret frustrating events as intentional leads to supervisors releasing aggressive emotion towards subordinates who also work for the organization (Tepper, 2007). As a final example, a study found that the authoritarian leadership style moderated the relationship between interactional injustice and abusive supervision (Aryee, Chen, Sun, & Debrah, 2007). Interactional justice both considers to what extent people are treated with dignity and focuses on the conveyed information (Colquitt et al., 2001). In other words, supervisors, who believe that they have absolute power over the subordinates and authority, are more likely to abuse subordinates when supervisors experience interactional injustice.

Based on the extant literature, Tepper (2007) suggested an emergent model of abusive supervisions. In the model, the causal relationship between supervisors' perceptions of injustice and abusive supervision is moderated by the subordinates' characteristics and behaviors. As mentioned above, the vulnerable subordinates are more likely to be treated as targets of aggression by supervisors (Tepper, Duffy, Henle, & Lambert, 2006.), which supports the displacement-aggression explanation of the occurrence of abusive supervision.

Petty Tyranny.

Another type of abusive supervisory behavior is petty tyranny, which describes supervisors who use power oppressively, have a tendency to control others and treat employees carelessly, arbitrarily, and punitively (Ashforth, 1997). Petty tyranny is different from abusive supervision because of the lack of emphasis on the perception of subordinates and also because it encompasses content other than hostility (Tepper, 2007). Petty tyranny is associated with lower levels of employees' self-esteem, performance, work unit cohesiveness, and leader endorsement (Ashforth, 1994). Petty tyranny also results in high frustration, stress, reactance, helplessness, and work alienation among subordinates. These negative effects on subordinates further trigger a vicious circle by irritating supervisors which helps sustain the abusive supervisory behaviors (Ashforth, 1994).

The antecedents of petty tyranny include trait anger and trait anxiety (Kant et al., 2013). More specifically, leader trait anger is associated with subordinate-reported petty tyranny and subordinate trait anxiety predicts subordinate-reported petty tyranny. The relationship between leader trait anger and subordinate-reported petty tyranny is strongest when subordinate trait anger is low.

The occurrence of petty tyranny is also argued to be a joint function of specific individual predispositions and situational facilitators theoretically (Ashforth, 1994). The individual predisposition manifests in the beliefs about the organization, about subordinates, about the self, and the preference for action. First, if individuals have a bureaucratic orientation, which suggests they are domineering, impersonal, inflexible, and insists on the rights of authority, they are more likely to perform overbearing abusive supervisory behaviors, and thus bureaucratic orientation is positive related to petty tyranny. Second, managers who hold "theory X" (McGregor, 1960) meaning they hold assumptions that average people dislike work, lack ambition, avoid responsibility and prefer directions towards the human nature, are more likely to provide more instruction, less consideration and more tyrannical supervision. Third, managers who have low self-confidence compensate personal insecurity by over controlling others (Kets De Vries & Miller, 1984), which leads to tyrannical supervision. Fourth, directive supervisors like to impose one's will on others and the concept of directiveness is core element in any definition of authoritarianism (Ray, 1976; Ray, 1981), and hence directiveness predicts the tendency to over-control subordinates. Fifth, intolerance of ambiguity refers to the extent to perceive an equivocal stimulus as a threat (Budner, 1962) and is positively associated with rigidity and dogmatism

(Feather, 1971; Norton, 1975). Additionally, authoritarian management style, which is summarized as rigid, dogmatic, and rule-bounded in the literature (e.g., Duckitt, 1989; Stellmacher & Petzel, 2005), moderates the positive relationship between employees' perceived interactional justice and abusive supervision, such that the relationship is stronger for supervisors with higher authoritarian leadership style (Aryee et al., 2007).

Situational facilitators of petty tyranny include macro-level and micro-level factors (Ashforth, 1994). Macro-level factors are the institutionalized values and norms. Institutions such as prisons, mental hospitals, and army barracks are frequently deindividualized through the use of uniform and derogatory labels and subject to authoritarian supervision (Goffman, 1961; Haney, Banks, & Zimbardo, 1973). Similarly, mechanistic organizations, such as auto manufacturers and mechanistic departments may engender tyrannical supervision because of the emphasis on compliance with centralized decision and formalized operating tasks (Mintzberg, 1989).

Entrepreneurial organizations may also evidence tyrannical supervision because entrepreneurs are susceptible to question the actions and motives of subordinates and set others up as scapegoats (Ashforth, 1994). On one hand, the power is associated with tyrannical behaviors in a U-shaped function at micro-level, in which the moderate power leads to lowest petty tyranny (Ashforth, 1994). Powerless managers prefer a "psychological distance" between themselves and subordinates to exhibit more influence, enhance self-perception of superiority and self-efficacy, and affirm the legitimacy of hierarchical control (House, 1988; Kipnis, 1976). Managers achieve the psychological distance by using controlling leadership. Ironically, powerful managers also use controlling leading style because they attribute subordinates' success to managerial control instead of subordinates themselves, believing that they are always right and subordinates need closely supervision (Kipnis, 1976). On the other hand, subordinates turn to supervisors for directive instructions when facing stressful situations, and managers become more directive to make centralized, strong, and task-oriented decisions, especially when the stressors are from a crisis (Bass, 1990; Janis, 1982). Literature on burnout suggests that people experiencing chronic stressors often psychologically withdrawal from others and treat others as objects other than people (Maslach, 1982). Overall, petty tyranny shares components (e.g., belittling subordinates; Tepper, 2007) with abusive supervision and is a product of interaction between individual predispositions and situational facilitators.

Supervisor aggression and supervisor undermining.

Supervisor aggression (Schat, Desmarais, & Kelloway, 2006) and supervisor undermining (Duffy, Ganster, & Pagon, 2002) align more closely with abusive supervision (Tepper, 2007). All three terms exclude physical contact. Supervisor undermining also focuses on the intentional and insidious harm towards interpersonal relationships and favorable reputation (Duffy et al., 2002). There is almost no research explicitly on antecedents of supervisor aggression and supervisor undermining, so I list them here only to explain the differences in definitions.

Destructive leadership.

Destructive leadership is defined as the systematic and repeated behavior by a supervisor that "violates the legitimate interest of the organization by undermining and/or sabotaging the organization's goals, tasks, resources, and effectiveness and/or the motivation, well-being or job satisfaction of his/her subordinates" (Einarsen, Aasland, & Skogstad, 2007, *p*. 208).

Moreover, destructive leadership is proposed to cause serious consequences to the organization and followers theoretically (Krasikova, Green, & LeBreton, 2013). The possible proximal organizational outcomes are exhausting organizational resources, foiling the accomplishments of organizational goals, and causing legal problems to the organization. For instance, destructive leaders may ask their followers to follow orders and meanwhile put their followers at risk of against legal actions (Brief, Dukerich, Brown, & Brett, 1996; Gimein, 2003). Furthermore, followers may experience negative consequences, such as impaired physical and psychological well-being and low job and life satisfaction (Krasikova, Green, & LeBreton, 2013). A recent meta-analysis examined the effect of destructive leadership on job performance, OCBs, and CWBs (Mackey, McAllister, Maher, & Wang, 2018). In general, the authors found that destructive leadership had a negative relationship with performance and OCBs and a positive relationship with CWBs.

Beyond the proximal organizational outcomes, destructive leadership is also associated with distal organizational outcomes, such as fraudulent accounting (Carpenter & Reimers, 2005) and decreased firm performance (Hmieleski & Ensley, 2007). Consequences of supervisor aggression, a form of destructive leadership, range from impeding the subordinates' ability to function at work (Harris, Kacmar, & Zivnuska, 2007; Tepper, 2000) to threatening the subordinates' sense of self (Thau & Mitchell, 2010) and home life (Carlson, Ferguson, Perrewé, & Whitten, 2011). In general, aggressive supervisors provoke destructive reactions from employees (Mitchell & Ambrose, 2012).

One proposed predictor of destructive leadership is goal blockage (Krasikova, Green, & LeBreton, 2013; Bardes & Piccolo, 2010). Leadership involves setting goals and monitoring the process to pursue these goals (House & Shamir, 1993). Goal blockage could come from subordinates and the organizational context. When the managers perceive the accomplishment of goals is thwarted by the subordinates, the managers are more likely to adopt destructive leading style. Contextual factors that impede the goal achievement might be that the organization lacks of available resources or the followers are incompetent and unmotivated. Similar antecedents have also been examined for destructive leadership, including the two contextual antecedents of goal difficulty and goal-contingent rewards (Bardes & Piccolo, 2010). Goal difficulty and goal-contingent rewards both work as stressors on managers and trigger destructive leadership (Bardes & Piccolo, 2010).

The leader's characteristics might also affect the occurrence of destructive leadership (Krasikova, Green, & LeBreton, 2013). Managers with Machiavellian, narcissistic, and psychopathic personality are manipulative, self-focused, and lack of empathy towards others and are more likely to engage in destructive leadership.

What constructs are not abusive supervisory behaviors?

The concepts of workplace victimization (Aquino, 2000) and workplace bullying (Hoel & Cooper, 2001) do not specify the sources of harm and thus do not meet the definition of abusive supervisory behaviors, because of missing the hierarchical feature between the perpetrator and the victim. Negative mentoring experiences (Eby, McManus, Simon, & Russell, 2000) examine the relationship between experienced senior employees and inexperienced junior employees. Although sometimes the supervisors serve as mentors of junior employees, the intended outcomes of mentorship is to effectively provide guidance to protégés, which is more educational and different from the functional relationship between supervisors and employees at workplace (Eby et al., 2000; Tepper, 2007).

The Relationship between Economic Conditions and Abusive Supervisory Behaviors

Given the various definitions of abusive supervisory behaviors, the antecedents described in the previous section are definitely not an exhaustive list of antecedents of abusive supervisory behaviors. However, it is clear that the literature has mostly overlooked the broader economic context, which is important to consider given the economic conditions have significant impact on both individual and organizational behaviors. The environment of organizations and the characteristics of employees and supervisors may not be able to fully account for the prevalence of abusive supervisory behaviors. As a result, by considering economic conditions as an antecedent to abusive supervisory behaviors, we will have a more comprehensive understanding of the phenomena. There are four explanations through which poor economic conditions can lead to greater abusive behaviors on the part of supervisors. I argue that the supervisor, co-workers, subordinates, and the organization all react to contextual changes due to the declining economic conditions, and these reactions from the four stakeholders evoke destructive behaviors from supervisors as outlined below.

Stress and diminished self-regulation.

Supervisors, who are responsible to carry out changes in turbulent economic conditions, are more likely to experience an increased level of work stress (Burton, Hoobler & Scheuer, 2012). First, in a study using data from the 1973-77 Quality of Employment Panel of full-time workers who experienced the 1974-75 recession, researchers found a substantial mean level of growth in distress and dissatisfaction because of undesirable job and financial events, such as increased job demands, cumulatively inadequate pay, and unemployment experiences (Tausig & Fenwick, 1999). Another study conducted in three Italian organizations also showed that fear of economic crisis was positively associated with psychological stress (Giorgi, Shoss, & Leon-

Perez, 2015). As a result, supervisors, like everyone else, are also likely to experience more stress in economic recessions. According to Agnew's (1992) general strain theory, strains increase the likelihood of negative emotions like anger and frustration. These emotions create pressure for corrective actions, of which one coping mechanism is delinquency (also see Aseltine Jr, Gore, & Gordon, 2000). Along the same line, other possible mechanisms to cope with anger and frustration include explicitly expressing it. In other words, people are more likely to be aggressive and engage in violent behaviors. In accord with the theory, unemployment rate, as an indicator of poor economic conditions, has also been associated with violence-related absence (Shoss & Penney, 2012). It is possible that the strains from the poor economic conditions lead to anger and frustration and then explain the absence due to violence. For supervisors, a more direct way to cope with this anger is being aggressive.

Constraining these negative behaviors comes with a price for supervisors. Coping with stress and regulating personal negative behaviors require self-control; however, practicing self-control consumes energy from a finite energy pool and reduces the energy of subsequent need of self-control (Muraven & Baumeister, 2000). The depleting energy pool makes supervisors less likely to control their behaviors until the resources are recovered. The impaired performance due to the diminished self-control energy is known as ego depletion (Hagger et al., 2010). Studies supported the ego depletion theory by showing that resisting unethical behaviors both required and depleted self-control resources (Gino et al., 2011; Barnes, Lucianetti, Bhave, & Christian, 2015). Another study demonstrated that lost cognitive self-control, measured by cognitive fatigue, was positively related to impulsivity (Barnes et al., 2011).

The high requirements on performance during economic recessions may also act as a chronic stressor on supervisors, and literature of burnout suggests that supervisors may be psychologically withdrawn from, be indifferent towards, and mistreat the subordinates as objects (Maslach, 1982). Additionally, depersonalization is positively related to supervisor's abusive behaviors (Yagil, 2006). Hence, supervisors may behave abusively due to negative economic conditions.

In conclusion, supervisors are likely to become more impulsive under the strains of poor economic conditions and suppressing these aggressive behaviors requires self-control from the finite energy pool; the diminishing self-control can lead to more abusive behaviors, and the burned-out supervisors may be less likely to care for their subordinates.

Spillover effects of aggression.

Supervisors may also be indirectly affected by economic recessions. People may hear stories and incidents from the news or their friends and families who have gone through negative experiences in other workplaces. The depressed mood and aggression can be carried by employees and spill over to organizations.

In general, people are more prone to abusive behaviors during tough economic times. Studies have supported that a rise in the unemployment rate is usually accompanied by a subsequent rise in rates of violence among job losers and other employees (Catalano, Novaco, & McConnell, 1997, 2002; Shoss & Penny, 2012). Furthermore, the aggregated effect of rising unemployment rate influences the intentional violent deaths at national and community levels (Stuckler, Basu, Suhrcke, Coutts, & McKee, 2009; Shoss & Penney, 2012). In this case, spillover refers to when the events in one context happened because of something else in other context. Thus, the increased incidents of violence in the community may cause increased incidents of violence in organizations. Additionally, people learn aggressive behaviors by observing, imitating, and modeling behaviors of other people (Bandura, 1978). It is plausible that supervisors imitate others aggressive behaviors and practice these aggressive behaviors in the workplace as well.

While the depressed mood is contagious (Joiner Jr& Katz, 1999), the transferred effects could influence the leadership in organizations. Supervisors must regulate their emotions substantially because the anxiety and sadness may demotivate their followers (Barsade & Gibson, 2007). As mentioned earlier, supervisors only have limited cognitive resources to constrain their negative behaviors and failing to do so would lead to perceived abusive supervision. Supervisors must manage others' emotions as well, because the distressed and anxious feelings also converge among work group members. A study by Bartel and Saavedra (2000) supported the idea that group members experience group moods by detecting and displaying observable behavioral expressions; moods that are categorized as high arousal, such as distressed and anxious, yield more accurate assessment and better group convergence. It is very likely that negative moods, such as anxiety, depression, aggression, and distress, are "floating" in the organizations under economic recessions. According to the cognitive theory of stress, emotional reactions are the most proximal antecedents of subsequent behaviors (Lazarus, 1991). The literature demonstrated that anxiety and anger have been linked to abusive supervision (e.g., Burton, Hoobler, & Scheuer, 2012; Mawritz, Folger, & Latham, 2014). Not only do supervisors act more aggressively when they are anxious or distressed (Neuman & Baron, 1998), but they also may engage in abusive behaviors as a coping strategy (Burton, Hoobler, & Scheuer, 2012).

Subordinates' poor performance.

Employees may also decrease their performance during economic down time. As mentioned above, Yerkes and Dodson (1908) developed the inverted U-shape relationship between arousal and performance. Performance increases as the arousal level goes up, but only to a point. When the level of arousal becomes too high, the performance is impeded. Dealing with all the negative moods and strains from economic recessions can hinder employees' performance. For example, research has shown that there was a curvilinear relationship between job insecurity and both task and contextual performance (Selenko et al., 2013; Lam et al., 2015). Although Jamal (1984) and Abramis (1994) argued there was more supportive evidence for a negative linear relationship between stress and performance than a curvilinear relationship, the results still suggested that performance would decrease under high stress and anxiety. Employees may lack coping strategies facing the strain from the high pressure and economic recessions could act as an influential stressor leading to more performance mistakes. Once the supervisors perceive the pathway to the accomplishment of the goal is blocked by employees' poor performance, supervisors are more likely to adopt destructive leadership styles and become tyrannical (Krasikova, Green, & LeBreton, 2013; Bardes & Piccolo, 2010; Mawritz, Folger, & Latham, 2014).

The original intent of abusive supervisory behaviors is not necessarily to cause harm. Subordinates become more alert and are more likely to turn to supervisors for directive instructions when facing stressors, and managers become more directive to make centralized, strong and task-oriented decisions, especially when the stressors are from a crisis, such as the bad economy (Bass, 1990; Janis, 1982). As a result, supervisors may use tyrannical supervisory styles as tactics to enhance subordinates' performance. In fact, group members with a supervisor with a negative mood exert more effort and are more creative because they perceive the negative moods as a signal that the supervisor considers working progress to be inadequate (George, & Zhou, 2002; Sy, Côté, & Saavedra, 2005).

Anger displacement and reacting to injustice.

Organizations also respond to the decline of economy. It is more likely for organizations not to meet the expectations of supervisors during economic recessions, which results in a psychological contract violation. The aggression from the psychological contract violation of the organization can be displaced to subordinates. A common metaphor for this displaced aggression is to “kick the dog.” As stated by Marcus-Newhall and his colleagues (2000, *p*. 670), “a man is berated by his boss but does not retaliate because he fears losing his job. Hours later, when he arrives home to the greeting barks of his dog he responds by kicking it.” Hence, the supervisors’ perception of psychological contract violation leads to abusive supervision of subordinates (Hoobler & Brass, 2006).

Moreover, organizations also gain competitiveness by reducing costs, especially for larger firms (Andersson & Mattsson, 2010; Latham, 2009). Labor events, such as layoffs, terminations, recessionary indicators, and job unavailability, are prevalent and institutional acceptable way to cut costs (Kozlowski et al., 1993). The supervisors, as third-party observers, would react negatively to the organizational injustice anticipated by the laid off employees; in fact, the supervisors may be more strongly affected depending how they perceive their organization’s intent (Umphress et al., 2013).

Furthermore, organizations tend to make authoritarian decisions to survive the “urgent situation.” Therefore, organizations leave supervisors with less voice in the decision making process. Organizational justice, more specifically, procedural justice is harder to achieve due to the lack of voice (Lind et al., 1990; Konovsky, 2000). Supervisors may perceive the procedural injustice and become upset and depressed, and then engage in abusive supervisory behaviors (Tepper et al., 2006).

Summary.

In summary, the decline of economy as indicated by various economic indicators should affect the behaviors of supervisors, workers, subordinates, and the organization, which all leads to more abusive supervisory behaviors. Deriving from above analysis, I propose as following:

Hypothesis 1. Employees will report their supervisors as more abusive during worse economic conditions.

METHODS

Literature Search

Studies were located using PsycINFO, Human Resources Abstract, Academic Search Premier, PsycARTICLES, ABI/INFORM Collection, Dissertations & Theses @ University of Central Florida-FCLA, ProQuest Dissertations & Theses A&I, ProQuest Dissertations & Theses Global, and Web of Science. Sample key words (e.g., "abusive supervision," "narcissistic leadership," and "supervisor undermining") were adapted from the meta-analysis by Schyns and Schilling (2013; see Appendix I). In order to include all related articles about abusive supervision, I also checked other meta-analysis on abusive supervision (i.e., Mackey, et al., 2017; Schyns & Schilling, 2013; Zhang & Bednall, 2016). In total, 600 non-redundant citations between January 1990 and October 2017 were identified.

Criteria for Inclusion and Exclusion

Studies were retained if (a) they had followers as the targets of abusive behaviors or the behaviors were directed downwards; (b) followers had the perception of intent; (c) they included verbal or non-verbal abusive behaviors. A special notice is that I included longitudinal studies, in which cases I chose the measure of abusive supervisory behaviors at time 1. The publication bias or file drawer problem of meta-analysis has been critiqued as the one problem with meta-analysis (Scargle, 1999; Wolf, 1986). According to Rosenthal (1979), the file drawer problem refers to the tendency that academic journals prefer significant results, and studies that failed to reject the null hypothesis are more likely to be "buried away in file drawers" (Hubbard & Pratt, 2002). To minimize the file drawer problem, I included both published and unpublished studies. These criteria for exclusion are very similar to the other meta-analysis on abusive supervision (Schyns

& Schilling, 2013). I excluded articles based on the criteria listed in Appendix II. Based on these criteria, 264 papers were included in the cross-temporal meta-analysis, yielding 319 independent samples and a total sample size of 100,791. The references are listed in Appendix III.

Coding of Studies

Main effect.

The publication year, mean, standard deviation, and employee sample size of abusive supervision were collected from each study. To be precise about the data collection year, I sent out emails to those authors who failed to report that information and 64 authors responded within two weeks. If the response from author was not available or data collection year was not reported in the study, I followed the suggestions of Oliver and Hyde (1993) and to be consistent with other cross temporal meta-analysis studies (i.e., Wegman et al., 2016), I set the year of data collection as two years prior the study's publication year (see also Twenge, 2000, 2001a, 2001b; Twenge & Campbell, 2001; Wegman et al., 2016).

Country/region.

The country/region of the study was also collected from each study to examine the effect of contextual factor on abusive supervisory behaviors while minimize the confounding effect of location and culture. If the information is not explicitly reported, I made the assumption of the country/region based on the affiliation of the first author.

Other coded variables include journal name, the title of the article, first name and last name of the first author (or corresponding author's name if noted), author's contact email, supervisor sample size, the scale of abusive supervision being used (e.g., Tepper, 2000), number of items in the survey, response scale in points (e.g., a 5-point Likert scale would be 5), and response scale (e.g., strongly disagree-strongly agree). Missing values in number of items in the survey were assumed based on the questionnaire author chose (e.g., if the author chose Tepper's questionnaire published in 2000, I entered 15 items) or was replaced with the mean number of items across all studies. All studies were coded by two trained coders independently and disagreement were resolved by the discussion from another two trained coders. The agreement on mean and standard deviation of abusive supervisory behaviors among raters was high (91%).

Cross-Temporal Meta-Analysis

Cross-temporal meta-analysis has been applied in previous studies (e.g., Twenge, 1997a, 1997b, 2000, 2001a, 2001b; Twenge & Campbell, 2001; Wegman, Hoffman, Carter, Twenge, & Guenole, 2016). It is similar to traditional meta-analysis in the procedure for identifying and collecting studies. However, cross-temporal meta-analysis does not compute an effect size for each coded study; it examines the change in the mean scores of psychological measures over time. Researchers code data collection year and other sample characteristics, such as sample size and region in cross-temporal meta-analysis.

The data are analyzed in a way similar to traditional meta-analysis, but weighted by sample size, which allows larger studies or studies with more samples to carry more weight in the computation (Twenge & Campbell, 2001). I chose cross-temporal meta-analysis over traditional meta-analysis since cross-temporal meta-analysis was an analytic technique that was able to estimate age, period , and cohort effects (Rudolph et al., 2018). According to Rudolph et al. (2018), period effects referred to the influence of time reflecting variation among individuals based on the impact of historical events that affect people across ages, which matched my hypothesis and data.

Temporal effect

As suggested by Shoss and Penney (2012), the temporal effects take three forms. The relationship between economic conditions and occurrence of abusive supervisory behaviors can be immediate, lagged, or aggregated. The immediate effect of economic conditions influences the occurrence of abusive supervisory behaviors in the same year; the lagged effect of economic conditions induces the occurrence of abusive supervisory behaviors in the following year or several years later; and the aggregated effect of economic conditions influences occurrence of abusive supervisory behaviors cumulatively, “reflecting additive combinations of immediate and lagged effects” (Shoss & Penney, 2012, *p*. 3). More precisely, the cumulative effect also has two forms. One is that the immediate and lagged effects are identical, meaning the economic conditions several years before and the focal year have the same impact on prevalence of abusive supervisory behaviors. An alternative explanation is that the effect of economic conditions is diminishing, meaning that economic conditions of the current year have a larger impact on the prevalence of abusive supervisory behaviors. The lagged effect of economy was supported by Shoss and Penney (2012). Although few studies have examined the temporal effects systematically, the effects of unemployment rates tend to be linear and the peak lag appears to be around two years (Brenner, 2005). As a result, I used the focal year economic indicators, the economic indicators of one year prior, and the economic indicators of two year prior to capture the temporal effect.

Analytical Strategy

I tested the changes in abusive supervisory behaviors by using a mixed-effect model (Lipsey & Wilson, 2001), which is similar to the meta-analysis by Eisenberger and his colleagues (2019). This model considers both individual level sampling error and random study sampling error by using a random approach to estimate the effect sizes (Eisenberger et al., 2019). The model can also test the variance in effect sizes across studies that is explained by predictors beyond sampling errors (Eisenberger et al., 2019). In this case, I tried to predict abusive supervisory behaviors while considering the variability of abusive supervisory behaviors due to both country and time. Because the mixed-effect model had three levels, it also allowed me to test the nesting effects of country and time.

For my study, I included five indicators of economic conditions — GDP per capita, PPP, inflation rate, unemployment rate, and labor cost — as predictors in all mixed effect models to test the effect of economic conditions in the prevalence of abusive supervisory behaviors. I collected economic indicators from Trading Economics (https://tradingeconomics.com/), which was a website providing accurate information for 196 countries for more than 20 million economic indicators. The data from Trading Economics was based on official sources without third party data providers. Because these indicators have much larger variance than the scores of abusive supervisory behaviors, I linearly transformed all predictors to standard scores with equivalent variance to that of abusive supervisory behavior scores. More specifically, I calculated the z-score for all predictors and then divided them by 10. This transformation had no effect on the *p* value of predictors in all regression models.

Next, to compare the mean score of abusive supervisory behaviors across studies, I converted the mean into the percent of the maximum possible score (POMP; Cohen, Cohen, Aiken, & West, 1999; also see Eisenberger et al., 2019). POMP score ranges from 0 to 1 and does not affect the reliability of the measures (Cohen et al., 1999). I used the standard deviation divided by the square root of the sample size to calculate the standard error of POMP score (Lipsey & Wilson, 2001).

For the model, I tested the effects of economic conditions on abusive supervisory behaviors over time using a three-level variance known meta-analysis (Fischer & Mansell, 2009; Konstantopoulos, 2011). The three-level variance known meta-analysis treated the study effect size (mean of abusive supervisory behaviors) as random effects at level 1, included study characteristics as random effects at level 2 (the time level), and included country characteristics as random effects at level 3 (the country level). I treated the country level as level 3 because different studies may come from the same country, which implied a nesting effect within countries. At level 1, I tested the overall effect of country-level factors on abusive supervisory behaviors. To test the hypothesis at the country level, I also entered the year of publication (at the study-level) into the model. I implemented these analyses using the metafor package in R (Viechtbauer, 2010) and the annotated R code provided from the Eisenberger et al. (2019) meta-analysis.

RESULTS

The literature search identified 264 empirical studies that satisfied inclusion criteria with 319 independent sample of abusive supervisory behaviors in 28 countries. Here, variability of abusive supervisory behaviors across countries and time were not significant (see Table 1). The total number of people included was 100,791. Means, standard deviations, and correlations are reported in Table 2. Effect sizes for the effect of economic indicators (current year indicators, one-year-prior indicators, and two-year-prior indicators) on abusive supervisory behaviors are reported in Table 3. The unbiased effect size estimate in cross-temporal meta-analysis was annotated as d_+ (Cohen, 1962), which investigated and summarized the overall effect of economic conditions on abusive supervisory behaviors across study and countries. Again, I used all five indicators to predict abusive supervisory behaviors and I also used each indicator to predict abusive supervisory behaviors individually to address the high overlapping variance among economic indicators.

First of all, I tested the hypothesis using current year or data collection year economic indicators. There were no significant predictor when regressing all five indicators simultaneously on abusive supervisory behaviors (d_+ = .17, p = .67; d_+ = -.41, p = .25; d_+ = .08, p = .35; d_+ = -.09, p = .62; d_+ = .11, p = .29, GDP, PPP, unemployment rate, inflation, and labor cost respectively); however, PPP was significant when regressing abusive supervisory behaviors on current year economic indicators separately (d_+ = -.35, p = .01). The negative coefficient indicated that the higher living standard was associated with lower perceived abusive supervisory behaviors.

Additionally, the results were the same when using economic indicators one-year-prior. There was no significant predictor using all five indicators (d_+ = .31, p = .42; d_+ = -.52, p = .15; d_+ = -.01, p = .90; d_+ = .16, p = .31; d_+ = .12, p = .25, GDP, PPP, unemployment rate, inflation, and labor cost respectively) and PPP was the only significant indicator when testing individually (d_+ = -.34, p = .02). Again, although the five one-year-prior economic indicators failed to predict abusive supervisory behaviors, one-year-prior PPP was negatively related to abusive supervisory behaviors. In other words, people were less likely to experience abusive supervisory incidents when they had higher living standards. In addition, regarding all two-year-prior indicators, PPP marginally predicted abusive supervisory behaviors when the predictors were included simultaneously (d_+ = -.62, p = .08) and significantly predicted abusive supervisory behaviors when it was the single predictor (d_+ = -.33, p = .02). None of the other indicators was significant when they were used individually (d_+ = -.24, p = .19; d_+ = -.02, p = .80; d_+ = .07, p = .37; d_+ = .13, p = .23, GDP, unemployment rate, inflation, and labor cost respectively). In general, the results indicated that there was a trend that people were more likely to experience abusive supervisory behaviors when the economic condition was bad.

One thing to notice is that the number of studies included in the analysis dropped as I consider longer look-back windows (i.e. from 253 to 230). The drop raised a potential question whether the effect is due to the longer time-lag of economic indicators or due to a different set of studies included. Hence, I ran the same analysis on the same data set after eliminating all missing data listwise. The new data set included 195 empirical studies with 230 independent samples and 78,798 people in total. The variability of abusive supervisory behaviors was not significant across 28 countries nor across time, as shown in Table 4. Effect sizes for the effect of economic indicators (current year indicators, one-year-prior indicators, and two-year-prior indicators) on abusive supervisory behaviors are listed in Table 5. When I regressed abusive supervisory behaviors on current year, one-year prior, and two-year prior individual indicators, PPP became non-significant (d_+ = -.21, p = .12; d_+ = -.20, p = .15; d_+ = -.18, p = .20, respectively). The result's patterns of the listwise-deleted data were the same as that of the three multiple regressions (i.e. current year, one-year-prior, and two-year-prior, respectively) with all five economic indicators using the original data . In other words, two-year-prior PPP (d_+ = -.41, p = .08) marginally predicted abusive supervisory behaviors when all the economic predictors were included.

Supplementary Analysis

Although economic conditions are proposed to correlate to abusive supervisory behaviors, history can potentially threat the internal validity of this relationship (Shadish, Cook, & Campbell, 2002, *p*.55). History here refers to all events that occurring concurrently with economic conditions. Hence, I used year to test whether other history events have effects on abusive supervisory behaviors. To be consistent, I adopted the same year as economic indicators. For example, in the regression examining the effects of all five two-year-prior economic indicators on abusive supervisory behaviors, I added an additional predictor, which is two-year-prior data collection year.

The results of analysis of original data set are listed in Table 6. Using all five indicators and year to predict abusive supervisory behaviors, I obtained similar results. None of current year indicators with year (d_+ = .17, p = .66; d_+ = -.42, p = .24; d_+ = .08, p = .39; d_+ = -.08, p = .66; d_+ = .10, p = .31; d_+ = .02, p = .80, GDP, PPP, unemployment rate, inflation, labor cost, and year respectively) nor one-year-prior indicators with year (d_+ = .31, p = .43; d_+ = -.52, p = .16; d_+ = -.06, p = .90; d_+ = .15, p = .34; d_+ = .12, p = .26; d_+ = .02, p = .95, GDP, PPP, unemployment rate, inflation, labor cost, and year respectively) were significant. For two-year-prior indicators with year, PPP was significant ($d_+ = -.70$, $p = .04$), but year was not significant ($d_+ = .07$, $p = .38$). Furthermore, when I regressed each current year indicator as the only economic indicator with year to predict abusive supervisory behaviors, GDP became marginally significant ($d_+ = -.31$, $p = .08$), but year was not ($d_+ = .07$, $p = .29$). PPP remained significant ($d_+ = -.36$, $p = .01$) and year was not significant ($d_+ = .08$, $p = .23$). The results for one-year-prior individual indicator with year and two-year-prior individual indicator with year were the same as that without year. Both of one-year-prior and two-year-prior PPP were significant predictors ($d_+ = -.36$, $p = .01$; $d_+ = -.35$, $p = .01$, respectively).

Regarding the possibility of getting different results only because of using different set of studies. I again deleted all missing values listwise from the original data set. Results of the new data set using both economic indicators and year as predictors of abusive supervisory behaviors are reported in Table 7. The results were basically the same as without adding year, which two-year-prior PPP remained significant ($d_+ = -.46$, $p = .04$) in regression models with all economic predictors. In conclusion, two-year-prior PPP per capita were the best indicator of abusive supervisory behaviors.

DISCUSSION

In the introduction, I brought up a question: does a recession really unleash abusive supervisory behaviors? The findings were based on national level data which provided associations between individual level behaviors and economic conditions based on the four explanations about how supervisors, coworkers, subordinates, and companies react to poor economic conditions. By investigating this effect, I contributed to the growing body of research on the effects of macro-economic conditions on the workplace and helped to fill the gap in the literature that macro environmental features were perhaps most relevant to senior executives by focusing on a lower-level leadership (Hiller, Piccolo, & Zaccaro, 2019). As suggested in Blustein's book (2006, *p*.9), "By including a focus on macro-level factors, psychologists are able to understand how working serves as one of the most vital playing fields in life, the location of both dreams and disappointments." I also responded to the call for greater use of multilevel theory and techniques on occupational stress research (Bliese, Jex, & Halverson, 2002) and more research on economy-related issues in the workplace (Jiang, Probst, & Sinclair, 2013). The current study can serve as a starting point to the critical question how might economic indicators constrain or exaggerate leader behaviors (Hiller, Piccolo, & Zaccaro, 2019).

In the cross-temporal meta-analysis, PPP was the best predictor when only one economic indicator was used to predict abusive supervisory behaviors regardless of the data collection year. However, when using all five indicators (GDP per capita, PPP per capita, unemployment rate, inflation rate, and labor cost) to predict abusive supervisory behaviors, all the indicators were non-significant, except for two-year-prior PPP per capita. It was a little surprising that two-year-prior PPP per capita became marginally negatively related to abusive supervisory behaviors.

The fact that individual indicators were significant in the simple regressions but became “less significant (i.e. non-significant or marginally significant)” in the multiple regressions was because of multicollinearity. As shown in the Table 2, the correlation between current year GDP and one-year-prior GDP as well as current year PPP and one-year-prior PPP ranged from .90 to .91. The highly correlated predictors in the multiple regressions could cause the estimated coefficients to swing wildly based on other predictors in the model, and also cause the estimated coefficients to be sensitive to small changes in the data (Gunst & Webster, 1975). A more serious consequence was that the multicollinearity weakened the statistical power of the regression model, which might have been the main reason that the models with all five economic indicators of current year and one-year-prior failed to be significant (Gunst & Webster, 1975).

Next, after I included the same set of samples in each regression, current year, one year prior, and two year prior PPP became non-significant, which was possibly due to three reasons. First, the different set of samples had effects on the results. In other words, the significant predictor in the simple regressions was only because of including different set of samples. However, I see this reason to be the least likely. If the significant effects were due to inclusion of different set of cases, the results should be less consistent than what I found. In other words, if this is the reason, when I include all cases in the simple regression, one or two indicators in the current year, one year prior, and two year prior PPP per capita should be non-significant and others are significant (i.e., not all would be significant). Second, because the number of cases included in the analysis decreased, I did not have enough power to detect the real relationships due to the limited study cases. Third, there was specific patterns in the missing value cases that bring valuable variance that belong both to PPP per capita and abusive supervisory behaviors. After I deleted these cases, the covariance between PPP per capita and abusive supervisory behaviors was significantly reduced. Moreover, although the two-year-prior PPP remained marginally significant when all five indicators were included, as mentioned above, the result was less reliable due to multicollinearity.

Furthermore, I added an additional predictor "year" in all analysis and the results pattern is basically the same. One noticeable difference was that when all missing values had been deleted listwise and all six indicators (i.e. five economic indicators and the data collection year) were included in the regression, two-year-prior PPP was significant. However, again the results were less reliable due to the high correlation between two-year-prior PPP and two-year-prior GDP. The data collection year might also partial out some random variance in abusive supervisory behaviors.

Other indicators failed to support the hypotheses. It seemed that abusive supervisory behaviors were more related to personal wealth (i.e. PPP per capita) rather than workforce conditions (i.e. unemployment rate, inflation rate, and labor cost), which were more likely to affect companies not supervisors. Given that PPP per capita described the economic conditions from people's perspective and other indicators showed the economic conditions by describing the conditions of the job market, people might be more responsive to changes of their living standard.

In conclusion, PPP per capita is a more valuable economic indicator to detect abusive supervisory behaviors. I am inclined to say that there is a negative relationship between PPP per capita and abusive supervisory behaviors, but more investigation is needed and the results should also be interpreted with caution.

Implications for Theory and Practice

By understanding the abusive supervisory behaviors under macro-level context, the findings have implications for both researchers and managers. In accordance with the arguments of Hiller, Piccolo, & Zaccaro (2019), I find significant effects of macroeconomic conditions on the perceived behavior of leaders. Specifically, people are more likely to perceive abusive supervisory behaviors when the economic condition is bad, which is reflected by the negative regression coefficients of PPP per capita in the simple regressions. The results match the results of Stoker and colleagues's (2019) study about the 2008 Global Financial Crisis and lower organizational level leaders. Drawing on a threat-rigidity paradigm, they propose that the threat from economic crisis causes leaders to maximize control and they find a higher level of directive leadership (i.e. centralize power and increase monitoring of employees) after the global economic crisis than before (Stoker et al., 2019). Lacking voice and decision-making opportunity leads to procedural injustice, which is a major antecedent of abusive supervisory behaviors (Tepper et al., 2006). Hence, practitioners should be cautious about the adopted strategies in economic crisis, so that the organization can gain a balance between work efficiency and positive perception of leaders. Along the same line, Zivin and colleagues (2011, *p*. 1344) argued "policymakers should consider the psychological implications of their economic decisions."

Given that workforce condition indicators (i.e. unemployment rate, inflation rate, and labor cost) at the national level fail to associate with individual level abusive supervisory behaviors, it is possible that these indicators are more useful for aggregated level outcomes. This explanation is consistent with prior research findings. For example, Shoss and Penney (2012) documented the link between unemployment rate and absences at an aggregated level. Another study examined the effect of unemployment rate on "district"-level retention rates of blue-collar part-time employees (Gentry, Kuhnert, Mondore, & Page, 2007). I also encourage future studies that use national level data to empirically test the most appropriate level of outcomes.

Limitations

Although the present study contributes to the literature in multiple ways, it is important to acknowledge that it is not without flaws and the results should be interpreted with caution. One limitation of the analyses is that because I was not able to collect all the data collection years from the authors, I adopted the common practice in the literature, which assumed an interval of two years between the data collection and publication. In doing so, there are more "noise" in the data, where the actual data collection year does not match with the year I assumed and the economic indicators I chose are different from the reality. Because of the possible error variance, the relationships between economic conditions and abusive supervisory behaviors should be stronger than what I find. Moreover, it is important to note that I focus on the perceptions of abusive supervisory behaviors, which does not necessarily mean that there is more abusive supervisory behaviors. However, this limitation is more salient to those studies that are interested in how abusive supervisory behaviors affect important organizational outcomes (e.g., intention to quit or organizational commitment). Because there is a gap between perception and reality, researchers should choose subjective or objective measure of abusive supervisory behaviors that best fit their needs. Given this study treats abusive supervisory behaviors as a consequence and almost all of the articles in this field use self-report to measure abusive supervisory behaviors, this limitation has minimal effects on the current study.

The results should be interpreted cautiously. The current study is correlational and cannot show any causal relationship. In other words, higher PPP does not necessarily cause people to experience less abusive supervisory behaviors. Other unmeasured factors, such as laws, policies, and culture of the regions could serve as third variables and affect both PPP per capita and the prevalence of abusive supervisory behaviors. For example, in the United States, the laws and social policies of the South and West which contain a strong ethic of self-protection and honor favors violence (Cohen, 1998). Although I did not find county had significant effects on abusive supervisory behaviors, it does not mean that culture does not play an important role on abusive supervisory behaviors. The culture of favoring violence leads to differences in approaching leadership (Den Hartog & Dickson, 2004) and it is also related to economic conditions (e.g., GDP per capita; see Pinillos & Reyes, 2011). In addition, personal experience and attitude also varies a lot among individuals and culture. In a survey study of 147 people, 64% felt violence was an expected part of the job and they tended to have a higher than expected level of tolerance to violence (Copeland & Henry, 2017). Given the policies of the South and West United States, it is not surprising that people there are more favorable toward violence (Cohen, 1998). Hence, the results should not be applied to a particular person.

Suggestions for Future Research

As mentioned above, I define abusive supervisory behaviors as perceptions of employees rather than the reality. Future research can investigate how the different measures of abusive supervisory behaviors impact the results. It is also interesting to examine whether the perceived abusive supervisory behaviors are a function of the subordinates or the supervisory. Furthermore, although I provide four explanations of the relationship between economic conditions and abusive supervisory behaviors, it is an interesting avenue for future researchers to dig in and empirically test each explanation to complete the model.

Although I examined the effect of time and location on abusive supervisory behaviors by including data collection year and controlling for country in the analysis, a possible future route to examine the effects is lab experiment. For future research, I recommend to use agent-based modeling to study temporal effects (Castillo & Trinh, 2018). According to Macy and Willer (2002), agent-based models are computational simulations that capture actors' behaviors that are interdependent upon one another. Agent-based models are able to generate controlled computational experiments and the experiments can be reproduced over time and space (Castillo & Trinh, 2018). Other than field study, the experiment can provide more information on the causal relationships and possibly identify confounding, moderating, and mediating variables.

Future research should also consider examining the effects of other macro-level factors other than economic conditions on abusive supervisory behaviors. I previously discussed that country did not impact abusive supervisory behaviors, but culture and country are not always parallel: there can be multiple cultures within a country, or several countries share a very similar culture. Specifically, culture may shape what leaders will do (House, Wright, & Aditya, 1997). Organizational leaders are immersed in their own societal culture and they are likely to follow the leader behavior patterns in that culture. In the culture that favors violence, leaders may be more aggressive. Moreover, people in cultures that are high on humane orientation, which collectively encourage and reward people who are fair, altruistic, generous, caring and kind to others (House, Javidan, Hanges, & Dorfman, 2002), may be less likely and more sensitive to report abusive supervisory behaviors. Hence, future research considering the effects of cultural dimensions on abusive supervisory behaviors is needed. Examining how culture affect abusive supervisory behaviors can be a great complimentary analysis to the current study, which may provide more insights to interpret the results and will be useful for future reviews.

Conclusions

Responding to the call for macro-level research on occupational health psychology and economy-related issues in the workplace, the current study sheds light on an under-researched area, which is the effect of macro-level economic conditions on the prevalence of abusive supervisory behaviors. I believe economic conditions represented by PPP per capita play a critical role in examining abusive supervisory behaviors. This cross-temporal meta-analysis also provided an empirical base to inspire more research in the field.

APPENDIX A. KEY WORDS OF ABUSIVE SUPERVISION IN SEARCHING (ADAPTED FROM SCHYNS & SCHILLING, 2013).

Abusive supervision

Supervisor abuse

Abusive leadership

Bossing

Conflictual supervisory relationship

Despotic leadership

Despotic supervision

Destructive leadership

Destructive supervision

Narcissistic leadership

Narcissistic supervision

Negative leadership

Negative supervision

Petty tyranny

Psychopathic leadership

Psychopathic supervision

Toxic leadership

Toxic supervision

Tyrannical leadership

Tyrannical supervision

Supervisor aggression

Supervisor undermining

APPENDIX B. EXCLUSION CRITERIA TABLE

Exclusion Criteria	Number of article excluded
(a) did not refer to hierarchical relationships (e.g., social undermining, a third person as reporter)	8
(b) included physically abusive behaviors	2
(c) was not in English	9
(d) used multinational data	15
(e) reported on the same data set for a second time (i.e. dissertation and publication or publish on the same sample twice)	5
(f) did not provide quantitative data (e.g., interviews, reviews)	24
(g) did not include a form of abusive supervisory behaviors (e.g., irrelevant articles were included in the searching step)	188
(h) did not report samples size	7
(i) did not report response scale points.	13
(j) only report mean as factors, dimensions, behaviors, at group level, or no mean reported	13
(k) used experiments to manipulate (e.g., read vignette)	5
(l) used sample of US soldiers working in other countries	2
(m) reported the mean-centered abusive supervisory behaviors	1
(n) could not find the article anywhere	35
(o) excluded participants if no abusive supervisory behaviors reported	1
(p) measured abusive supervisory climate instead of the construct	1
(q) conducted meta-analysis	7

APPENDIX C. REFERENCES FOR ARTICLES INCLUDED IN THE CROSS-TEMPORAL META-ANALYSIS

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Table 1. Estimate of Covariance Parameters of the Null Model before Deleting.

Parameter	Abusive Supervisory Behaviors (SE)
Residual	.013*** (.001)
Intercept (country)	.003 (.002)
Intercept (year)	.000 (.000)

Note: Level 1 N = 100791; Level 2 N = 319; Robust standard errors are in parentheses; *** p < .001

Table 2. Means, Standard Deviations, and Correlations before Deleting.

		M	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Abusive supervisory behaviors	.33	.12	-															
2	Current year GDP	32875.82	20246.84	-.27**	-														
3	Current year PPP	36079.71	18990.55	-.27**	.90**	-													
4	Current year unemployment	6.38	2.70	-.14*	.37**	.26**	-												
5	Current year inflation	2.58	2.72	.03	-.38**	-.35**	-.24**	-											
6	Current year labor cost	111.60	106.54	.07	-.14*	-.13*	-.42**	-.09	-										
7	One-year-prior GDP	32422.43	20132.32	-.26**	.96**	.88**	.41**	-.45**	-.15*	-									
8	One-year-prior PPP	35530.72	18974.40	-.27**	.88**	.97**	.29**	-.42**	-.12*	.91**	-								
9	One-year-prior unemployment	6.43	2.59	-.15**	.45**	.34**	.91**	-.12*	-.35**	.41**	.29**	-							
10	One-year-prior inflation	2.59	2.00	-.12*	.45**	.42**	.60**	-.004	-.26**	.42**	.39**	.61**	-						
11	One-year-prior labor cost	110.77	107.53	-.08	-.16*	-.16*	-.24**	-.37**	.90**	-.08	-.08	-.30**	-.29**	-					

12	Two-year-prior GDP	40824.41	14792.93	-.23**	.87**	.80**	.53**	-.53**	-.26**	.94**	.86**	.44**	.46**	-.06	-				
13	Two-year-prior PPP	37997.21	18696.54	-.25**	.80**	.90**	.40**	-.51**	-.23**	.86**	.95**	.32**	.42**	-.06	.92**	-			
14	Two-year-prior unemployment	6.27	2.44	-.18**	.50*	.38*	.73**	-.03	-.21**	.44**	.32**	.88**	.53**	-.24**	.35**	.24**	-		
15	Two-year-prior inflation	2.79	2.05	.12*	-.25**	-.27**	.07	-.05	.06	-.22**	-.24**	-.06	-.02	.16*	-.12*	-.14*	-.24**	-	
16	Two-year-prior labor cost	109.98	108.34	.13	-.15*	-.16*	-.02	-.43**	.70**	-.12	-.12	-.06	-.11	.86**	.05	.03	-.21**	.15*	-

Note. M, *SD*, and values below the diagonal are the descriptives and correlations for the data before deleting; N_1 ranges from 230 to 319; * $p < .05$, ** $p < .01$.

Table 3. Results of Meta-Analysis of Abusive Supervisory Behaviors before Deleting.

Effect	k	d_+	d_+ CI95		SE	p
			LL	UL		
Current year						
All five indicators	253					
GDP		.17	-.61	.95	.40	.67
PPP		-.41	-1.11	.29	.36	.25
Unemployment rate		.08	-.09	.26	.09	.35
Inflation		-.09	-.43	.25	.17	.62
Labor cost		.11	-.09	.30	.10	.29
Individual indicator						
GDP	313	-.29	-.64	.06	.18	.11
PPP	313	-.35*	-.62	-.07	.14	.01
Unemployment rate	318	.11	-.05	.28	.08	.17
Inflation	316	.003	-.15	.16	.08	.96
Labor cost	260	.11	-.08	.31	.10	.26
One-year-prior						
All five indicators	242					
GDP		.31	-.45	1.08	.39	.42
PPP		-.52	-1.23	.18	.36	.15
Unemployment rate		-.01	-.22	.20	.11	.90
Inflation		.16	-.15	.47	.16	.31
Labor cost		.12	-.08	.32	.10	.25
Individual indicator						
GDP	313	-.27	-.62	.09	.18	.15
PPP	313	-.34*	-.62	-.06	.14	.02
Unemployment rate	318	.06	-.10	.23	.08	.44
Inflation	315	.13	-.06	.32	.10	.19
Labor cost	247	.12	-.08	.32	.10	.25
Two-year-prior						
All five indicators	230					
GDP		.42	-.33	1.18	.39	.27
PPP		-.62†	-1.31	.07	.35	.08
Unemployment rate		-.07	-.24	.11	.09	.46
Inflation		-.08	-.33	.18	.13	.55
Labor cost		.10	-.10	.30	.10	.33
Individual indicator						
GDP	313	-.24	-.60	.12	.18	.19
PPP	313	-.33*	-.61	-.05	.14	.02
Unemployment rate	318	-.02	-.18	.14	.08	.80
Inflation	314	.07	-.08	.21	.08	.37
Labor cost	235	.13	-.08	.34	.11	.23

Note. k = no. studies in meta-analysis; d_+ = estimate effect size; CI_{95} = 95% confidence intervals; LL = lower limit of confidence interval; UL = upper limit of confidence interval; *SE* = standard error of d_+; † $p < .1$, * $p < .05$.

Table 4. Estimate of Covariance Parameters of the Null Model after Deleting Missing Values Listwise.

Parameter	Abusive Supervisory Behaviors (SE)
Residual	.014*** (.001)
Intercept (country)	.003 (.002)
Intercept (year)	.000 (.000)

Note: Level 1 *N* = 78798; Level 2 *N* = 230; Robust standard errors are in parentheses; *** *p* < .001

Table 5. Results of Meta-Analysis of Abusive Supervisory Behaviors after Deleting Missing Values Listwise.

Effect	*k*	d_+	d_+ CI_{95} LL	d_+ CI_{95} UL	*SE*	*p*
Current year						
All five indicators	230					
GDP		.11	-.45	.68	.29	.69
PPP		-.21	-.71	.29	.26	.40
Unemployment rate		.11	-.09	.31	.10	.28
Inflation		-.03	-.20	.14	.09	.71
Labor cost		.12	-.11	.34	.11	.30
Individual indicator						
GDP	230	-.10	-.44	.24	.17	.57
PPP	230	-.21	-.47	.06	.13	.12
Unemployment rate	230	.15	-.04	.33	.09	.12
Inflation	230	-.05	-.21	.11	.08	.53
Labor cost	230	.12	-.09	.34	.11	.26
One-year-prior						
All five indicators	230					
GDP		.21	-.31	.72	.26	.43
PPP		-.36	-.82	.11	.24	.13
Unemployment rate		-.03	-.26	.20	.12	.81
Inflation		.17	-.13	.47	.15	.27
Labor cost		.12	-.09	.33	.11	.26
Individual indicator						
GDP	230	-.06	-.41	.28	.18	.72
PPP	230	-.20	-.46	.07	.14	.15
Unemployment rate	230	.09	-.09	.27	.09	.33
Inflation	230	.13	-.12	.38	.13	.30
Labor cost	230	.13	-.09	.34	.11	.25
Two-year-prior						
All five indicators	230					
GDP		.28	-.22	.79	.26	.27
PPP		-.41†	-.86	.04	.23	.08
Unemployment rate		-.07	-.25	.12	.09	.46
Inflation		-.05	-.22	.12	.09	.55
Labor cost		.10	-.10	.31	.10	.33
Individual indicator						
GDP	230	-.03	-.38	.32	.18	.88
PPP	230	-.18	-.45	.10	.14	.20
Unemployment rate	230	-.005	-.18	.17	.09	.95
Inflation	230	-.05	-.21	.12	.08	.58
Labor cost	230	.14	-.08	.35	.11	.22

Note. k = no. studies in meta-analysis; d_+ = estimate effect size; CI_{95} = 95% confidence intervals; LL = lower limit of confidence interval; UL = upper limit of confidence interval; *SE* = standard error of d_+; † $p < .1$, * $p < .05$.

Table 6. Results of Supplementary Analysis of Abusive Supervisory Behaviors before

Effect	k	d_+	d_+ CI_{95} LL	UL	SE	p
Current year						
All five indicators with year	253					
GDP		.17	-.60	.95	.40	.66
PPP		-.42	-1.11	.30	.36	.24
Unemployment rate		.08	-.10	.26	.09	.39
Inflation		-.08	-.43	.27	.18	.66
Labor cost		.10	-.10	.30	.10	.31
Data collection year		.02	-.13	.17	.08	.80
Individual indicator with year						
Model 1	313					
GDP		-.31†	-.66	.04	.18	.08
Data collection year		.07	-.06	.21	.07	.29
Model 2	313					
PPP		-.36**	-.63	-.09	.14	.01
Data collection year		.08	-.05	.21	.07	.23
Model 3	318					
Unemployment rate		.10	-.06	.27	.08	.23
Data collection year		.04	-.09	.18	.07	.51
Model 4	316					
Inflation		.01	-.14	.17	.08	.86
Data collection year		.06	-.07	.20	.07	.37
Model 5	260					
Labor cost		.10	-.09	.30	.10	.29
Data collection year		.04	-.11	.18	.07	.62
One-year-prior						
All five indicators with year	242					
GDP		.31	-.46	1.09	.40	.43
PPP		-.52	-1.24	.20	.37	.16
Unemployment rate		-.06	-.23	.20	.11	.90
Inflation		.15	-.16	.48	.16	.34
Labor cost		.12	-.09	.32	.10	.26
Data collection year		.02	-.16	.17	.08	.95
Individual indicator with year						
Model 6	313					
GDP		-.29	-.64	.07	.18	.11
Data collection year		.07	-.06	.21	.07	.29
Model 7	313					
PPP		-.36*	-.63	-.08	.14	.01

Data collection year		.08	-.05	.22	.07	.23
Model 8	318					
Unemployment rate		.05	-.12	.22	.09	.59
Data collection year		.05	-.09	.19	.07	.48
Model 9	315					
Inflation		.11	-.09	.31	.10	.27
Data collection year		.04	-.10	.18	.07	.60
Model 10	247					
Labor cost		.11	-.09	.32	.10	.27
Data collection year		.03	-.12	.17	.07	.71
Two-year-prior						
All five indicators with year	230					
GDP		.47	-.26	1.19	.37	.21
PPP		-.70*	-1.37	-.02	.34	.04
Unemployment rate		-.11	-.30	.09	.10	.28
Inflation		-.08	-.33	.17	.13	.54
Labor cost		.08	-.12	.28	.10	.41
Data collection year		.07	-.09	.24	.08	.38
Individual indicator with year						
Model 11	313					
GDP		-.26	-.62	.09	.18	.15
Data collection year		.07	-.06	.21	.07	.29
Model 12	313					
PPP		-.35*	-.62	-.07	.14	.01
Data collection year		.08	-.05	.22	.07	.22
Model 13	318					
Unemployment rate		-.05	-.22	.12	.09	.54
Data collection year		.08	-.06	.22	.07	.29
Model 14	314					
Inflation		.07	-.08	.22	.07	.35
Data collection year		.06	-.07	.19	.07	.36
Model 15	235					
Labor cost		.12	-.09	.33	.11	.25
Data collection year		.03	-.12	.17	.08	.74

Note. k = no. studies in meta-analysis; d_+ = estimate effect size; CI_{95} = 95% confidence intervals; LL = lower limit of confidence interval; UL = upper limit of confidence interval; *SE* = standard error of d_+; † $p < .1$, * $p < .05$, ** $p < .01$.

Table 7. Results of Supplementary Analysis of Abusive Supervisory Behaviors after Deleting Missing Values Listwise.

Effect	*k*	d_+	d_+ CI_{95} LL	d_+ CI_{95} UL	*SE*	*p*
Current year						
All five indicators with year	230					
GDP		.11	-.45	.68	.29	.70
PPP		-.21	-.72	.30	.26	.41
Unemployment rate		.11	-.10	.32	.11	.30
Inflation		-.03	-.21	.14	.09	.73
Labor cost		.12	-.11	.34	.12	.31
Current data collection year		.002	-.18	.18	.09	.98
Individual indicator with						
Model 1	230					
GDP		-.11	-.45	.23	.18	.52
Data collection year		.04	-.12	.21	.08	.61
Model 2	230					
PPP		-.22	-.48	.05	.13	.10
Data collection year		.05	-.11	.22	.08	.52
Model 3	230					
Unemployment rate		.14	-.04	.33	.10	.13
Data collection year		.008	-.16	.18	.09	.92
Model 4	230					
Inflation		-.04	-.22	.13	.09	.60
Data collection year		.02	-.15	.20	.09	.81
Model 5	230					
Labor cost		.12	-.10	.34	.11	.28
Data collection year		.03	-.14	.19	.08	.75
One-year-prior						
All five indicators with year	230					
GDP		.20	-.32	.73	.27	.44
PPP		-.35	-.83	.12	.24	.15
Unemployment rate		-.03	-.26	.21	.12	.82
Inflation		.16	-.15	.48	.16	.30
Labor cost		.12	-.09	.33	.11	.27
Data collection year		.004	-.18	.19	.09	.96
Individual indicator with						
Model 6	230					
GDP		-.08	-.43	.27	.18	.66
Data collection year		.04	-.12	.21	.08	.62
Model 7	230					
PPP		-.21	-.47	.06	.14	.13

Data collection year		.06	-.11	.22	.08	.51
Model 8	230					
Unemployment rate		.09	-.10	.28	.10	.37
Data collection year		.01	-.16	.18	.09	.91
Model 9	230					
Inflation		.13	-.14	.40	.14	.35
Data collection year		-.0001	-.18	.18	.09	1.00
Model 10	230					
Labor cost		.12	-.09	.34	.11	.26
Data collection year		.03	-.14	.19	.08	.76
Two-year-prior						
All five indicators with year	230					
GDP		.31	-.18	.80	.25	.21
PPP		-.46*	-.90	-.02	.22	.04
Unemployment rate		-.11	-.31	.09	.10	.28
Inflation		-.05	-.22	.12	.09	.54
Labor cost		.09	-.12	.29	.10	.41
Data collection year		.08	-.10	.26	.09	.38
Individual indicator with						
Model 11	230					
GDP		-.04	-.40	.31	.18	.81
Data collection year		.04	-.13	.21	.09	.64
Model 12	230					
PPP		-.19	-.46	.08	.14	.17
Data collection year		.06	-.11	.22	.08	.51
Model 13	230					
Unemployment rate		-.03	-.22	.17	.10	.79
Data collection year		.05	-.13	.23	.09	.61
Model 14	230					
Inflation		-.04	-.21	.12	.08	.61
Data collection year		.03	-.13	.20	.08	.71
Model 15	230					
Labor cost		.13	-.08	.35	.11	.23
Data collection year		.03	-.14	.19	.08	.77

Note. k = no. studies in meta-analysis; d_+ = estimate effect size; CI_{95} = 95% confidence intervals; LL = lower limit of confidence interval; UL = upper limit of confidence interval; *SE* = standard error of d_+; † $p < .1$, * $p < .05$, ** $p < .01$.

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