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An Educational Economic Crisis? Research on the Effect of the Economic Crisis of 2008 on the Competencies of Financial Top- and Mid-Level Bureaucrats

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An Educational Economic Crisis?

Research on the Effect of the Economic
Crisis of 2008 on the Competencies of
Financial Top- and Mid-Level Bureaucrats

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Abstract

The economic crisis of 2008 is a perfect example of governance failure resulting in a global economic crisis. Crises form windows of opportunity for change, while a crisis is living proof that the status quo is unsustainable. Since the economic crisis was caused by inadequate and the lack of financial regulations, countries all over the globe changed their financial policies. These policies, however, were a product of policy-makers. Since these policy-makers, or bureaucrats, bear responsibility for developing these policies, one would expect that changes also occurred at these bureaucrats. Nevertheless, literature on the effect of the economic crisis on the competencies of these bureaucrats is missing. This research, therefore, aimed to fill this gap. This resulted in the following research question: *‘How has the economic crisis of 2008 influenced the competencies of top and mid-level financial bureaucrats working at the financial ministries of the United Kingdom and Germany?’* The expectations were that the crisis resulted in a change of the economic ideas and technical competency of these top- and mid-level bureaucrats. In order to test these expectations, a quantitative statistical large-N analysis ($N = 124$) is conducted. The research results were that the economic crisis of 2008 did not affect the economic ideas and technical competency of top- and mid-level bureaucrats. The conclusion on the latter, however, may be false negative. The analysis provided indications that the economic crisis actually did affect the technical competency of top- and mid-level bureaucrats. Besides that, the number of observations used for this research was relatively small. Further research with more observations is, therefore, necessary.

Keywords: *Crises, Economic Crisis, Top- and Mid-level Bureaucrats, Competencies, Economic Ideas, and Technical Competency.*

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1. Introduction

The economic crisis of 2008 was the worst economic disaster since the great depression in 1929. House prices dropped massively, and even in 2010, the unemployment rates in the United States were above 9% (Amadeo, 2020). The economic crisis of 2008 started in the United States. Amadeo (2020) explained that the US federal government implemented two laws that deregulated the financial system. The Financial Services Modernization Act of 1999 and the Commodity Future Modernization Act resulted in a situation in which banks were allowed to invest in housing-related derivatives. These financial products were so profitable that they encouraged banks to lend ever-riskier borrowers. This instability ultimately led to the crisis (Amadeo, 2020). Nevertheless, not only the US government was responsible for the economic crisis. Al Bassem (2013) recognizes the US as the epicenter of the economic crisis and explains that globalization was responsible for the spread and intensity of the financial crisis around the world. However, on the other hand, Al Bassem (2013) also recognizes that national governments, other than the US government, hold blame for the intensity of the crisis. Lack of regulations and short-term strategies of national governments were causes of the crisis and determinants for the crisis's intensity (Al Bassem, 2013). Therefore, the economic crisis of 2008 is a perfect example of governance failure resulting in a global economic crisis.

As this economic crisis, crises are moments of emergency that can result in a change of the status-quo (Randma-Liiv & Kickert, 2017; Béland & Cox, 2010; Pollit, 2010). With the most recent crisis, the COVID crisis, Rahm Emmanuel (2020), former mayor of Chicago, emphasized that the crisis should not be wasted as an opportunity to do things differently. According to Emmanuel (2020), the crisis forms an opportunity to do things you think you could not before (Emmanuel, 2020). Crises, thus, are seen as windows of opportunity to do things differently. The failures form lessons for preventative measures in the future (Randma-Liiv & Kickert, 2017). The global economic meltdown in 2008 was nothing different. Nair (2020) explains that the business sector improved overall as a consequence of the crisis. As explained, the economic crisis of 2008 was, among other factors, a result of governance failure. The fact that governments bear responsibility for the economic crisis of 2008 and crises are seen as incentives to do things differently raised the interest to empirically examine whether this crises-reform link also occurred at governments after the economic crisis.

Countries like the United Kingdom and Germany changed their financial policies after the economic crisis (Benz & Heinz, 2016; Hodson & Mobbet, 2009). Both countries realized

that the current financial system was not correctly working and was filled with significant economic risks. Thus, the governments of the United Kingdom and Germany appear to have learned from the economic crisis of 2008. Changing policies, however, is only changing first-order causes. Boin, 't Hart, and McConnel (2008) explained that not only first-order causes of a crisis need to be handled, but the conditions under which these causes could happen must also be resolved. Otherwise, the crisis will inevitably happen again (Boin, 't Hart & McConnel, 2008).

The first-order causes of the economic crisis were, as explained, the lack of or bad financial policies. Bureaucrats form an essential part of the policy-making process. The fact that bureaucrats form an essential part of the policy-making process originates from the reality that present-day knowledge societies are often based on scientific expertise (Grundman, 2009). While bureaucrats tend to have superior expertise on subjects, politicians delegate responsibilities to them. The expertise of bureaucrats gives authority to their produced advice for politicians (Christensen, 2020). Since politicians rely heavily on bureaucrats, this indicates that problematic financial policies before the crisis were conditioned by bureaucrats working at governments. Moreover, Crotty (2009) explained that state officials, indeed, partly conditioned the existence of problematic financial policies that caused the economic crisis (Crotty, 2009). This raised the expectation that, besides changing their financial policies, the United Kingdom and Germany also reformed their bureaucracies due to the economic crisis.

Reform of bureaucracies can refer to a broad set of changes. Reform, in this case, refers to changing the competencies of bureaucrats. As mentioned, bureaucrats play an essential role in making policy. To fulfill their policy-making function, bureaucrats possess specific competencies (OECD, 2016). The fact that bureaucrats made insufficient policies resulting in the economic crisis indicates that bureaucrats were incompetent to make sound financial policy. Since crises are perceived to form lessons for preventative measures in the future, it would be logical that the competencies of bureaucrats changed due to the economic crisis. Therefore, this research will examine whether the economic crisis of 2008 changed the competencies of top- and mid-level bureaucrats working at the financial ministries of the United Kingdom and Germany. This resulted in the following research question:

How has the economic crisis of 2008 influenced the competencies of top and mid-level financial bureaucrats working at the financial ministries of the United Kingdom and Germany?

The competencies of financial bureaucrats are a broad understanding. In 2016 the OECD published a governance review in which the skills for a high-performing civil service were

assessed. The skill mentioned the most in competency profiles of European countries was 'values and ethics' (OECD, 2016). Neo-liberalism is perceived as the ideology that caused the economic crisis of 2008 (Randma-Liiv & Kickert, 2017). Therefore, one of the competencies this research will focus on are the economic values of financial bureaucrats. Besides values and ethics, professionalism is also an essential skill of bureaucrats (OECD, 2016). Professionalism in government refers, among other explanations, to expertise on the profession a bureaucrat is carrying out (Kearney & Sinha, 1998). Cleassens, Dell'Araccia, Igan, and Laeven (2010) mentioned that civil servants lacked financial expertise before the crisis. Financial expertise is, therefore, the second competence this research will focus on.

1.2 The Scientific and Societal Relevance

The economic crisis of 2008 is a subject that received much attention in the literature. However, this literature focuses mainly on the structural causes of the economic crisis and lessons learned from it (Al-Bassem, 2013; Krotz, 2009; Crotty, 2009; Kirkpatrick, 2009; Walker, 2009). Literature on the economic crisis resulting in reforms focuses mainly on reforms at the board of non-governmental financial institutions or governmental leaders (Pastorella, 2016 and Hallerberg & Wehner, 2012). The literature examining the effect of the economic crisis on public administrations looks more into structural reforms like budget cuts, centralization, or improvement of regulatory capacities (Randma-Liiv & Kickert, 2017; Peters, Pierre, and Randma-Liiv, 2010). Literature on the effect of the economic crisis on the competencies of top- and mid-level bureaucrats working at governmental financial institutions is minimal. The available literature is, as mentioned, focused on governmental leaders (ministers) rather than bureaucrats. The fact that there is only limited research on this topic makes this research scientifically relevant.

The societal relevancy of this research lies in the fact that this research can teach about the learning ability of bureaucracies. As mentioned, not only do first-order causes of crises need to be handled, but the conditions under which these causes could happen must also be resolved. Otherwise, the crisis will inevitably happen again (Boin et al., 2008). By examining the effect of the crisis on the competencies of bureaucrats, this research can show whether governments can or cannot recognize certain conditions and handle them accordingly. Since a crisis will inevitably happen again if these conditions are not changed, this research can show whether the danger of a new economic crisis due to bad governance is lurking.

1.3 Overview of the Research

This research will start with an examination of the effect of (financial) crises on public administrations. This examination will discuss crises' mechanisms of change but also its sources of continuity. The theoretical framework ends with the expectations for the economic crisis of 2008 specifically. Afterward, a description of the methods will follow. The methods will contain a description of how data was attained and the effect of the crisis was measured. Next, the empirical analysis will show the results of the statistical tests in tables, figures, and text. Finally, the research ends with a conclusion. This conclusion contains a brief description of the main results and will answer the research question. Afterward, a discussion will follow. This discussion is an attempt to explain the outcomes of the empirical analysis. Finally, the conclusion will reflect on the theoretical framework, explain this research's theoretical and practical implications, and give recommendations for future research.

2. Theoretical Framework

In this part of the research, literature on the effects of crises will be discussed. After this general discussion, the framework will discuss the literature that led to the expectations of the effect of the economic crisis on the competencies of top- and mid-level bureaucrats.

2.1 (Financial) Crises and Public Administrations

This research aims to find whether the economic crisis of 2008 resulted in a change of public administrations. Namely, the research aims to find whether the competencies of the bureaucrats working at these public administrations changed due to the economic crisis of 2008. Existing studies on crises' effect on public administrations are contradictory. This contradiction gets best illustrated by historical institutionalism. Historical institutionalism is best understood as an approach to study politics and societal change. This approach focuses on real-world empirical questions and uses history to explain how and why institutions change (Steinmo, 2012). Two main concepts of historical institutionalism are the concept of path-dependency and that of critical junctures. The concept of path-dependency is best understood as a situation in which it becomes more challenging to reverse a particular path over time. Critical junctures, on the other hand, refer to a period of significant change. Critical junctures are seen as short and critical moments in time that makes it possible to reverse paths (Fioretos, Falleti & Sheingate, 2016).

There is a significant difference between both concepts. Path-dependency refers to a mechanism of continuity, while critical junctures refer to sources of change. This distinction between continuity and change is best suited to describe the literature on the effects of financial crises on public administrations. For instance, Peters, Pierre, and Randma-Liiv (2010) explain in their article that historical institutionalists expect that governments tend to hold on to the same policies and certainly hold on to the same governance patterns during crises. This explanation means that historical institutionalists expect governments to hold on the same path. Two essential factors explain the mechanism behind this path-dependency: the policies and governance patterns are supported by ideas about the best way to govern, and the status-quo is reinforced by institutions (Peters et al., 2010). Ladi (2014) adds to this argument that once a government decides to follow a particular path, the costs of changing this path become very high, and therefore path-dependency occurs (Ladi, 2014).

Randma-Liiv and Kickert (2017), on the other hand, mentioned that it is possible that a fiscal crisis can create a 'critical juncture' or, in other words, a significant moment in time to reverse a chosen path. Ladi (2014) adds to this argument that the economic crisis of 2008

appeared to be a critical juncture for Greece. It formed a critical juncture because the Greeks were aware that the costs of following the same path were higher than the costs of changing it (Ladi, 2014). Another example comes from the work of Asatryan, Heinemann, and Pitlik (2015). These authors explain that a financial crisis can be a critical juncture as a crisis makes the public aware that the status quo is no longer an available option.

As mentioned, the literature is contradictory. Therefore, the first part of this theoretical framework, which looks into the effects of crises on public administrations, will be divided into two parts. The first part will look into literature that perceives crises as a source of change and the various mechanisms behind this. The second part will do the same, but then for continuity.

2.1.1 Crises and Change

Crises as Opportunities

Asatryan et al. (2015) explain that crises are supposed to foster a sense of urgency to overcome the status-quo bias. This is, as explained earlier, because the status-quo showed to be ineffective while a crisis occurred. According to Asatryan et al. (2015), there are various reasons why crises are ‘windows of opportunity’ to reform public administrations. First of all, deep crises are expected to reduce political opposition to reforms. This expectation exists because the pay-offs of obstruction get lowered, while the pay-offs of a policy change increase for national governments. Besides that, governments have a higher propensity to bear the higher risks of economic hardship during times of structural policy change (Asatryan et al., 2015).

Randma-Liiv and Kickert (2017) also touch upon the effect of the financial crisis on public administration. In this article, the authors explain, similar to Asatryan et al. (2015), that crises are often seen as windows of opportunity for reforms. According to this article, crises demonstrate the status quo’s unsustainability and disrupt the interest coalitions that previously resisted reforms. This way, crises can form significant reform opportunities. Economists and Business scholars also agree that crises in finance force change because people only search for new approaches when faced with problems. In addition, Vis, Van Kersbergen, and Hylands (2011) explain that calls for reform are often not translated into actual reform because of political and institutional forces against them. However, Vis et al. (2011) also acknowledge that a crisis is assumed to set these forces free and enables governments to bring more radical reforms into existence (Vis, Van Kersbergen & Hylands, 2011).

A third reason why crises get seen as windows of opportunity comes from the work of Béland and Cox (2010). These authors look at it from an ideational perspective and emphasize

that crises are periods in which previously unaccepted ideas about public administration reforms are more likely to get accepted (Béland & Cox, 2010).

Randma-Liiv and Kickert (2017) recognize a fourth reason why crises get seen as windows of opportunity for change. People may become less risk-averse in times of crisis. This means that people become more willing to take the risk of change. When there is no immediate threat of losses in normal circumstances, individuals tend to overestimate risks and underestimate the benefits of reforms. In the situation of a crisis, this estimation changes (Randma-Liiv & Kickert, 2017).

Learning from Crises

Besides being windows of opportunity, crises can also lead to reforms in another way. Boin, 't Hart, and McConnel (2008) explain that people expect more from their governments than just the restorage of the order from before the crisis after times of sorrow. Boin et al. (2008) explain that it is relatively easy to find first-order causes of a crisis. Before their findings, crisis-induced learning meant fixing these first-order causes. However, as Boin et al. (2008) state, fixing these first-order causes is not perceived as enough anymore. People expect their governments to pay more attention to the conditions under which these first-order causes could have happened. This expectation of people resulted in a new approach of governments after a crisis. Thus, crisis-induced learning goes beyond just fixing first-order causes and is also about making structural reforms that make it impossible that specific crises appear again (Boin, 't Hart & McConnel, 2008, p. 309-310). The mechanism Boin et al. (2008) describe would imply that governments learn from the crises and change the circumstances under which this could have happened.

The mechanism of learning as a source of change after crises is also described by Randma-Liiv and Kickert (2017). As Boin et al. (2008) explained, finding first-order causes of crises is not hard. Randma-Liiv and Kickert (2017) touch upon a first-order cause of the economic crisis: the failure of governments. However, the authors also explain the conditions under which this government failure could have occurred. Problems of vertical and horizontal coordination fragmented control and steering mechanisms, and shortcomings in the principal-agent relationship are examples of conditions that facilitated governments' failure, which partly caused the financial crisis in 2008. In this article, the authors state that governments bear partial responsibility for the consequences of this financial crisis by acknowledging government failures leading to the financial crisis. According to the authors, a logical consequence of acknowledging this responsibility is that governments learn from their mistakes. The crisis became evidence that the old patterns of public administration were not effective and reform

was necessary (Randma-Liiv & Kickert, 2017). While the work of Boin et al. (2008) is a description of a broader mechanism induced by crises, the work of Randma-Liiv and Kickert (2017) proclaims a similar mechanism but specifically for a major crisis as the economic crisis of 2008.

2.1.2 Crises and Continuity

This literature overview, so far, appears to show that crises are certainly causing reforms at public administrations. However, as mentioned earlier, there is a flip side to this argument. There are various arguments of why crises do not result in reform or even hinder administrative reform. This part of the theoretical framework will touch upon the sources of continuity

Politics

The first argument originates from a political context. Randma-Liiv and Kickert (2017) mention that public administration reforms generally tend to be of low political salience. Moreover, during financial crises, citizens are much more concerned with their pensions or unemployment. Therefore, reforms in certain areas have, because of their higher social demand, political priority over reforms of public administrations. In addition, crises can be seen as opportunities and threats of the existing order for politicians. These politicians are, therefore, reluctant to support administrative reforms (Randma-Liiv & Kickert, 2017).

Peters, Pierre, and Randma-Liiv (2010) also mention the higher political risks of performing reforms during financial crises. Carrying out structural reforms at a government is disruptive, but doing it amid a crisis can lead to undesirable confusion, or even worse, governance failure (Peters, Pierre & Randma-Liiv, 2010). Pollitt (2010) also mentions that it is challenging for politicians to present reforms as desirable in the long-term and not merely as unavoidable 'cuts'. If politicians fail in presenting these reforms as desirable in the long-term, governments face the risks of social pressure to reverse the reforms when the crisis is over (Pollitt, 2010).

Time Pressure

Boin et al. (2008) explained that first-order causes of crises are not hard to find. However, the conditions under which these first-order factors cause a crisis are hard to find. The authors explain that governments do not have great difficulties constructing narratives that combine various causality levels that are quickly agreed upon after crises. This explanation means that, when searching for the conditions under which the first-order factors cause crises, governments

find logical explanations everyone agrees upon. However, these narratives are nothing more than hypotheses. The constructed narratives are just possible explanations and need much more research to be accepted as truths. Truth-seeking, however, is not something governments can do after crises. Truth-seeking means that all possible factors must be considered, and no stone can be left unturned. In practice, this costs a lot of time. While crises often require immediate responses, governments do not have enough time to seek the truth about the structural, second-order causes of a crisis (Boin et al., 2008, p. 310). The urgency of crises and time pressure at governments can, thus, lead to no or insufficient public administration reforms.

Cepiku and Savignon (2012) also mention the concept of time pressure. Like creating a new workforce with different competencies, structural reforms can take up to years to implement. However, crises instill urgency in the public and at political and administrative elites. To solve a crisis or reduce the harms of a crisis, politicians and administrations deal with time pressure. The longer it takes, the more damage the crisis does. This damage can be a reason for politicians to focus on short-term measures rather than on time-consuming structural reforms (Cepiku & Savignon, 2012). Pollitt (2010) adds to this argument that making structural reforms during crises, during times of time pressure, can lead to rushed reforms and, therefore, poorly implemented reforms. This is an argument to perform no reforms during crises because it can become more harmful than beneficial for a country (Pollitt, 2010).

Organizational Climate

Another argument comes from the organizational climate of public administrations. Asatryan et al. (2015) touch upon the bureaucratic resistance against reforms during crises. The argument is that reforms during good times are more likely to be supported by civil servants than reforms during bad times. While reforms during good times are expected to be seen as beneficial by public employees because they expect positive effects for their own (due to economic prosperity), these employees also understand that reforms during bad times can be harmful. For instance, reforms during crises can mean that employees with imperfect employment protection lose their jobs or that lifetime civil servants lose agency budgets, income, or prestige. The authors explain that a country's public administration plays a crucial role in implementing these public administration reforms. The reforms, namely, have to be implemented by public employees. The support of public employees for reforms can, therefore, be crucial for the outcome of reforms. Thus, there are counterbalancing forces at work. On the one hand, political opposition for reforms reduces due to fiscal crises. On the other hand, the possibility exists that bureaucratic opposition for reforms increases due to fiscal crises. Because the authors see

bureaucratic support as crucial for public administration reforms, they expected that the crisis-reform-link would be less evident in countries with large and powerful bureaucracies (Astryan et al., 2015).

Pollitt (2010) adds on this argument that during cutbacks, the organizational climate has been argued to be unsupportive of innovations and changes. The organizational climate is unsupportive because making organizational reforms requires risk-taking. Especially in crises, when public employers are already uncertain about their jobs and income, they are in disfavor of taking any more risks (Pollitt, 2010). Besides that, Randma-Liiv and Kickert (2017) explain that cooperation between and within an organization is required to manage structural reforms properly. However, when public employees do not favor structural changes, this cooperation within an organization is not present (Randma-Liiv & Kickert, 2017). Therefore, the organizational climate of public administrations can be a reason why crises do not result in any structural reforms.

2.2 The Expectations

It is now clear that there is significant disagreement about the effect of (financial) crises on public administrations reforms. This part of the theoretical framework will discuss literature that resulted in the expectations of this research.

2.2.1 Economic Ideas

The economic crisis of 2008 was not the first economic crisis the world has experienced. The effect of economic crises from before 2008 received much attention in the literature. One of the things literature on this subject touched upon was the transformation of economic ideas.

Blyth (2002) calls economic ideas a vitally essential component of institutional construction and change. According to Blyth (2002), economic ideas do not always illustrate the real world but are nonetheless very important. Economic ideas provide agents a scientific and normative account of the current economy and polity. Besides that, economic ideas give agents a vision that specifies how these elements should be constructed. This way, economic ideas form an essential role in the construction of institutions. Furthermore, Blyth (2002) explains that economic ideas are more important during specific periods than usual. These are so-called periods of 'Knightian-Uncertainty', or in other words, periods of economic crises with uncertain causes. Economic ideas are more important during such periods because they form blueprints for agents and tell them what to do and expect. Especially in a period of uncertainty,

something that provides a blueprint on what to do is much appreciated. Based on these premises, Blyth (2002) explains how economic ideas can change.

To illustrate this argument, Blyth (2002) looked into the role of economic ideas during the period called the Great Inflation, another economic crisis during the 1960s and 1970s. This period was marked by stagflation and high unemployment and created great uncertainty for business, labor, and government. As mentioned, such a period of uncertainty made economic ideas important. A growing interest in economic ideas meant that there was a call for 'new' theories. The economic ideas that characterized the period before the crisis favored activist monetary policy from governments. The crisis resulted in the rise of theories against the activist monetary policy from governments. Specific ideas gained a lot of support and sponsorship from the business sector. This way, the crisis of the 1960s and 1970s resulted in the discreditation of activist monetary policy from governments, while non-activist theories claimed this caused the crisis. This discreditation resulted in a period after the 1970s dominated by new economic ideas favoring as little market regulation as possible (Blyth, 2002).

In addition, Campbell and Pedersen (2014) explain a similar argument by explaining how knowledge regimes, organizations that produce and disseminate policy ideas, changed. In this work, economic crises are also seen as essential incentives for change. Campbell and Pedersen (2014) explain that policymakers need ideas produced by knowledge regimes to make sense of their problems. Just as in the work of Blyth (2002), the authors mention that, especially during times of great uncertainty, this sense-making by knowledge regimes becomes even more important. Crises are such times of uncertainty because the problems are unfamiliar, and the conventional policy prescriptions no longer work. During the economic crisis of the 1960s and 1970s, knowledge regimes struggled to make sense of the problems. People began to recognize that their knowledge regimes, the organizations that produce economic ideas, had become dysfunctional, while these regimes could not make sense of the problems and were unable to provide solutions. A logical consequence is that the knowledge regimes changed, and, thus, ideas changed (Campbell & Pedersen, 2014).

Even though the work of Blyth (2002) focuses on the change of ideas and the work of Campbell and Pedersen (2014) focuses on the change of knowledge regimes, the argument of both works is very similar. A simplified explanation of that argument:

Ideas are important because they provide a normative and scientific account of the existing order. An economic crisis is a period of great uncertainty. Periods of great uncertainty make ideas more important because agents want to reduce the uncertainty and know what to

do. Ideas can reduce particular uncertainty. The existing ideas cannot explain the causes or solutions of a specific crisis. They cannot reduce the uncertainty and cannot form a blueprint on what to do. New ideas that can explain the causes and provide solutions emerge and get noticed. While these new ideas could do what the old ideas could not, the old ideas were discredited, and new ideas were accepted.

For the economic crisis of the 1960s and 1970s, previously accepted ideas about the activist monetary policy of governments got discredited. This activist policy was perceived as the cause of the crisis. The crisis of 2008 had other causes. Al Bassem (2013) mentioned that the lack of regulations and short-term strategies of national governments caused and determined the intensity of the crisis in 2008. These are examples of first-order causes of the economic crisis. The conditions under which this could happen got also mentioned in the literature. Peters et al. (2010) explained that the loss of memory and willingness to allow ideology made governments blind to the possibilities of economic failures coming from insufficient market supervision. The authors mean that the ideological neo-liberal perception of a 'free' market was successful, while it caused significant economic growth, but this success resulted in a situation in which governments forgot what they had learned in the past. While, according to the authors, governance relies heavily on ideas and information, and the governance of economics before the crisis relied too much on the neo-liberal ideas, which made information obscure, governance failure occurred (Peter, Pierre, and Randma-Liiv, 2010).

In addition, Kotz (2009) gives three explanations of why neo-liberal capitalism was the cause of this crisis: it resulted in growing inequality, a speculative financial sector, and a series of asset bubbles. Especially the second, the speculative financial sector is of the essence for this research. Kotz (2009) explains that neo-liberal capitalism resulted in the deregulation of the financial sector. This deregulation meant that banks and other financial institutions could pursue whatever financial activity would bring the highest profits. This ultimately led to a situation in which banks and other financial institutions favored very speculative activities. These speculative activities had much more chance of high profits, but the risks were also much higher. The risks these banks and other financial institutions took were fatal, and the economic system collapsed (Kotz, 2009). Al-Bassem (2013) described that a lack of financial regulation is a first-order cause of the economic crisis. The neo-liberal idea of economics conditioned these deregulations, while neo-liberal economists favor as little government regulation as possible (Peters et al., 2008; Smith, 2019). As Boin et al. (2008) mentioned, crisis-induced learning by governments is not only fixing first-order causes anymore. Governments also fix

the conditions under which these first-order causes could have happened. Since neo-liberal ideas conditioned the lack of regulations, a logical expectation is that, in this case, governments shifted away from the neo-liberal idea of economics and regulated markets more strictly.

As mentioned, the activist monetary policy of governments was perceived as the cause of the crisis in the 1970s and 1980s. To solve this and to prevent it from happening again, new theories against activist monetary policy gained popularity, while this provided a solution in these times of uncertainty (Blyth, 2002). Based on this work, one would expect that neo-liberalism, the economic ideas that caused the crisis of 2008, would also be discredited. This discreditation, however, does not necessarily have to mean that the competencies, or in this case ideas, of bureaucrats changed. This depends on whether neo-liberal ideas were dominant at bureaucrats before the crisis and, if present, how much this contributed to the occurrence of the crisis.

Crotty (2009) mentions the role of government officials before the crisis, or in other words, bureaucrats. These government officials were responsible for overseeing US financial markets but unfortunately failed to do so. According to Crotty (2009), there were two determinative factors of why government officials failed to oversee US financial markets. First, the government officials were strongly influenced by efficient market ideology. Second, government officials got corrupted by campaign contributions and other emoluments lavished on them by financial corporations. Crotty (2009) mentions that between 1998 and 2008, the financial sector of the US spent 3.4 billion dollars to lobby federal officials.

Besides lobbying, Crotty (2009) also mentions that powerful appointed officials working at the US Treasury Department, the Federal Reserve System, and other agencies responsible for overseeing financial markets were former employees of large financial corporations (Crotty, 2009). The financial sector is, logically, searching for as much profit as possible. To obtain these profits, this sector is in favor of as little regulation as possible. In other words, the financial sector was very much in favor of a neo-liberal economic system. While these corporations were lobbying heavily and people working at agencies responsible for overseeing financial markets came from these corporations, the officials working at governmental financial institutions were also very much in favor of a lightly regulated environment (Crotty, 2009). The article of Crotty (2009) proves the dominance of neo-liberal ideas at government officials in the US (the epicenter of this crisis) before the crisis and demonstrates that this dominance was one of the reasons why this economic crisis came into existence.

Neo-liberal ideas in general and the dominance of neo-liberal ideas at bureaucrats being causes of the crisis are already a good reason to assume that specific ideas were discredited. This expectation gets even more significant when considering the mechanism behind the change, as described by Blyth (2002) and Campbell and Pedersen (2014). Still, instead of assuming this, it is essential to see whether specific ideas got discredited. Therefore, this part will shortly demonstrate literature that, indeed, explains that the economic crisis of 2008 did discredit neo-liberal ideas.

Birch and Mykhenko (2010) explain how neo-liberalism had self-destructed. Neo-liberal economists want as little market regulation as possible, while neo-liberalism believes that deregulation of markets is beneficial. During the crisis, governments supported the financial system because of the significant losses this sector made. Besides supporting the financial system, governments worldwide took rapid action to save giant transnational corporations from financial meltdown. Birch and Mykhenko (2010) emphasize the contradiction in this. The only thing that could save the world from even more damage of the crisis caused by the dominance of neo-liberalism was the one thing neo-liberal economists were so strongly against: government interference. Birch and Mykhenko (2010) substantiate the fall of neo-liberalism by giving an example of the reaction of IMF. The IMF, one of the most important neo-liberal financial institutions, praised governments for their interference. Moreover, the leading financial capitalist (neo-liberal) newspaper, the Financial Times, recognized the system's structural failure. According to Birch and Mykhenko (2010), the neo-liberal economic ideology was finished (Birch & Mykhenko, 2010, 254-257).

The mechanism Birch and Mykhenko (2010) describe is very similar to the mechanism Blyth (2002) and Campbell and Pedersen (2014) described for the crisis of the 1960s and 1970s. The dominant neo-liberal ideas of as little market regulation as possible were not only the cause of the crisis but were also unable to provide a solution to the crisis. The solution to the crisis, government interference, was at odds with the dominant economic idea of the time. The new 'old' ideas of activist monetary policy of governments even got accepted and promoted by known neo-liberal institutions like the IMF and Financial Times (Birch & Mykhenko, 2010).

Boin et al. (2008) and Randma-Liiv and Kickert (2017) explained how governments learn from their failures after crises. Moreover, Blyth (2002) and Campbell and Pedersen (2014) showed how an economic crisis could discredit economic ideas. In addition, the economic crisis of 2008 was caused by neo-liberal ideas (Peters et al., 2010 and Kotz, 2009). Also, the dominance of neo-liberal ideas at bureaucrats was one of the conditions that enabled

governments to fail so badly with an economic crisis as a result (Crotty, 2009). Thus, while crises can be incentives for governments to change the conditions that enabled failure to occur and economic crises can discredit economic ideas, it is logical to expect a shift away from neo-liberal ideas within these public administrations. Moreover, Birch and Mykhenko (2010) explained that the economic crisis of 2008 actually did discredit neo-liberal ideas. Therefore, a logical expectation of this research is that neo-liberal ideas became less central and governments searched for different kinds of economists for their financial ministries. This leads to the first hypotheses:

H1: The economic crisis resulted in the recruitment of economists with alternative economic ideas to the neo-liberal one.

However, the theoretical framework also provided various reasons why crises do not result in any public administration reforms. In addition, Schmidt and Thatcher (2013) wrote about the resilience of neo-liberal ideas despite the economic crisis. The neo-liberal ideas resulted in an economic system that failed. The economic crisis was a result of these ideas, yet, still, these neo-liberal ideas continued and flourished despite this crisis, according to Schmidt and Thatcher (2013). This work sheds new light on the subject. Schmidt and Thatcher (2013) give explanations on why neo-liberal ideas remained resilient within Europe.

A change in the competencies of top- and mid-level bureaucrats refers to an institutional change. Institutions are formal organizations with formal and informal rules and regularities. These organizations can shape political discourse and debates, while the organization's formal and informal rules and structures affect which rules are regarded as practicable and legitimate (Schmidt and Thatcher, 2013). New rules, or requested competencies, mean that the formal rules of an institution change. This can, in itself, result in a change of political debate and discourse. The first hypothesis expects that the economic crisis changed the competencies of top- and mid-level bureaucrats. Furthermore, this hypothesis expects that the economists working at financial ministries after the crisis had alternative economic ideas to the neo-liberal ones. Nevertheless, according to Schmidt and Thatcher (2013), neo-liberal ideas remained resilient within institutions.

Two possible explanations originate from historical and sociological institutionalism. First, historical institutionalism suggests that when ideas are institutionalized, it is difficult to change this. This concept is, as previously mentioned, called path-dependency. Schmidt and Thatcher (2013) explain that the pacts for stability in the Eurozone ensure that neo-liberal ideas about fiscal consolidation are institutionalized. These pacts have created path dependence rules

of EU monetary policy that are difficult to reverse. Second, within sociological institutionalism, ideational influence and reproduction result from institutional isomorphism, which means that institutions become more and more the same because of mimetism, normative processes, or coercion. The authors explain that neo-liberal ideas can be seen as a form of 'fashion' to be copied as a recipe to be applied. Organizations as the IMF, ECB, and EU commission have cast neo-liberal ideas as norms, and therefore these ideas remained resilient even after the economic crisis (Schmidt and Thatcher, 2013). The institutional change to different rules for the recruitment of bureaucrats is, looking at the work of Schmidt and Thatcher (2013), unlikely. These mechanisms of continuity make it, in contrast to the first expectation, unlikely that the competencies of top- and mid-level bureaucrats changed.

Besides Schmidt and Thatcher (2013), Crouch (2011) also wrote about the strange non-death of neoliberalism. In this book, Crouch (2011) explains that the financial crisis of 2008 was often explained as a consequence of neo-liberalism and its doctrine of open markets. According to Crouch (2011), a logical consequence of neo-liberalism being the source of the financial crisis would be to leave the idea of neo-liberalism behind and look at alternatives. This argument gets substantiated by the fact that when the market failure occurred, the solution had to come from the intervention of governments. Government intervention only leads, according to neo-liberalists, to market inefficiency. The financial crisis was proof that this was not the case (Crouch, 2011). This argument is very similar to the discussed argument of Birch and Mykhenko (2010)

However, Crouch (2011) mentions that neo-liberalism did not disappear and that politicians did not focus on alternative economic ideas, but that the neo-liberalist idea of economics got even more popular. According to Crouch (2011), this is because societies get dominated by giant firms. These firms can influence the terms of their markets by their actions and use their organizational capacity to develop market-dominating strategies. Firms like that are not aberrations but logical outcomes of the imperfections of the free market, while their tendency to eliminate competition, establish monopoly's and influence consumer choice comes from free-market ideology. These corporations want the neo-liberal idea to be central because it is the most beneficial. Giant corporations can influence governments because they have substantial power in politics and control the economy, legitimated by their control over the media. This resulted in a situation in which governments were highly influenced by these corporations and captured by the market. This influence made governments neither interested

nor capable of resisting market outcomes. This way, corporations were able to keep the neo-liberal ideas central (Crouch, 2011)

Crouch (2011) also mentions state officials. Most state officials are, according to Crouch (2011), self-serving. Therefore, most state officials are more interested in the ideals of the corporations than that of society because this can result in good jobs in the future. According to Crouch (2011), these self-serving state officials were one reason why corporations did not only control the market but were also very powerful within governments. Since most state officials remain self-serving, corporations' ideals remain more important than that of society within governments (Crouch, 2011). This again indicates that neo-liberal ideas remained to be dominant at bureaucrats, this time because of their self-serving attitude. These finding resulted in the following null-hypothesis:

H1*: The economic crisis did not result in the recruitment of economists with alternative economic ideas to the neo-liberal one.

2.2.2 Technical Competency

The change of the competencies can go beyond economic orientation. It is possible that governments still recruit bureaucrats with neo-liberal ideas, but that the competencies of bureaucrats still changed.

In 2009 Queen Elizabeth II visited the London School of Economics and asked how the economists could not foresee the crisis. A group of economists made an effort to answer this question. The economists explained that, despite being bright people, they could not understand the risks of the economic system before the crisis (Stewart, 2009). The last part of this framework made clear that the dominance of neo-liberal ideas was one reason why economists were unable to foresee the crisis. However, 'unable to understand the risks' can also indicate a lack of technical competence. This raises the question: were bureaucrats of financial ministries unable to understand the risks of the economic system because of their lack of knowledge about economics? In other words, did the financial ministries lack technically competent bureaucrats?

Hau and Thum (2009) found evidence that state-owned banks performed significantly worse than banks in the private sector. The relevant part for this research is the reason behind this underperformance. Hau and Thum (2009) found that financial incompetence of the boardroom at state-owned banks is why these banks underperformed during the crisis. Although this is about banks and does not say anything about the future effects of these findings, the authors state in the conclusion that if banks are state-owned, the board must consist of financial

experts. These financial experts proved that during financial crises, they are more competent to handle a financial institution. Therefore, especially the involvement of politically connected board members should be reduced, while this proved to be harmful for a financial institution (Hau & Thum, 2009).

Another example in line with the findings of Hau and Thum (2009) comes from the article of Kirkpatrick (2009). In this article, Kirkpatrick (2009) writes about the financial crisis lessons for financial institutions. One of the main findings is that the excessive risk-taking of financial institutions was, among other causes, a consequence of a lack of financial expertise in the board and senior management of financial institutions (Kirkpatrick, 2009). The same argument comes from Walker (2009), who reviewed corporate governance at banks in the United Kingdom. Just as Kirkpatrick (2009), Walker (2009) found that the excessive risks financial institutions took before the financial crisis could have been prevented if the board of these institutions had more financial expertise (Walker, 2009). These articles are not about governments but are about financial institutions with public functions. While information about the financial expertise of civil servants before the crisis is limited, articles about semi-public financial institutions are used to illustrate the situation. These articles, again, hint at the expectation that after the economic crisis, there was a call for more financial expertise within financial ministries, while these experts proved to be more suitable to handle a financial institution efficiently and a lack of financial expertise is perceived as one of the causes of the crisis.

Claessens, Dell’Ariccia, Igan, and Laeven (2010) do speak about the expertise of civil servants before the crisis. According to the authors, public surveillance managed to identify risks of the financial sector at a broad level but could not drill down deep enough to expose the extent of the vulnerabilities or draw specific policy conclusions based on their findings. The authors argue that governments should rely more on economic reasoning to identify market failures and solve the incentive problems to prevent financial crises in the future. Public servants should have macro-financial expertise so that they can identify critical risks and propose practical remedies (Cleassens, Dell’Ariccia, Igan, & Laeven, 2010). This article indicates that public servants lacked specific skills before the crisis, and their call for more macro-financial expertise keeps on feeding the expectation that the financial crisis led to more financial expertise of bureaucrats.

The call for more expertise is a call for more ‘technocratic’ governance. There is literature that shows that crises result in more technocratic governance. In 2012, Hallerberg and

Wehner released an article on the technical competence of economic policymakers in developed democracies. Technocratic governance means, according to these authors, that policymakers have narrow technical skills. Bureaucrats with narrow technical skills have more expertise on a specific subject and tend to have less generalist knowledge. Hallerberg and Wehner (2012) desired to determine when governments appoint 'technically competent' economic policy-makers. Essential for this research is the finding that financial crises affect the technical competence of economic policy-makers. Namely, during financial crises, governments are more likely to appoint economic policy-makers with formal qualifications in economics (Hallerberg & Wehner, 2012).

Moreover, Pastorella (2016) did research on why countries choose a technocratic government. One of the explanations is moments of emergency, or in other words, crises. Crises raise widespread doubts about the effectiveness of officeholders. Therefore, to enhance the quality of public administrations, politicians become in times of crises more likely to delegate authority to technocrats (Pastorella, 2016). There are two processes Pastorella (2016) describes that apply to this research. The first is that when a country is in an economic crisis, non-technocratic policymakers are unable and unwilling to solve the crisis. They are unable because they lack economic expertise. They are unwilling because they do not want to take the blame for unpopular policies (Pastorella, 2016). The second process described by Pastorella (2016) is that harmful economic conditions and fear on behalf of the markets (consequences of economic crises) increase the likelihood of technocrats entering the cabinet. This likelihood increases because having technocrats as central bankers or ministers reassures voters and markets (Pastorella, 2016).

Even though Pastorella's (2016) work focuses more on technocrats entering the cabinet or having technocrats as prime ministers and this research is focused on the top- and mid-level bureaucrats of countries, the findings are relevant for this research. Pastorella's (2016) work explains that technocrats are wanted during crises because of their ability to solve crises and their ability to reassure voters and markets. Moreover, Pastorella (2016) mentions that technically incompetent politicians delegate authority to technocrats because they are unable and unwilling to solve crises. Since technically incompetent politicians are unable to solve economic crises, it is logical that the same applies to technically incompetent bureaucrats. Moreover, as mentioned in the introduction, bureaucrats play an essential role in policy-making (Grundmann, 2009). Therefore, creating policy to solve an economic crisis or reassure markets requires technocrats in the cabinet and technically competent bureaucrats. The work of

Pastorella (2016), therefore, also raises the expectation that the crises resulted in more technically competent top- and mid-level bureaucrats at the financial ministries of Germany and the United Kingdom due to the economic crisis.

The findings of Hau and Thum (2009) proved that financial experience is beneficial for the performance of financial institutions. The articles of Kirkpatrick (2009) and Walker (2009) both indicated that a lack of financial expertise of people working at (non- or semi-governmental) financial institutions was one of the leading causes of this crisis. Both authors called for more financial expertise. The article of Claessens et al. (2010) illustrated the same argument as Kirkpatrick (2009) and Walker (2009) but argued specifically about civil servants. The articles of Pastorella (2016) and Hallerberg and Wehner (2012) proved that governments are more likely to appoint technical competent economic policy-makers during and after financial crises. Therefore, the expectation is that governments shifted to more financial experience and technical competence as a result of the economic crisis. This leads to the second hypothesis:

H2: The economic crisis led to more technically competent economic policy-makers at financial ministries.

In the discussion on the discreditation of neo-liberal ideas, there is an undeniable contradiction found in the literature. On the one hand, literature states that economic crises discredit economic ideas and that the crisis of 2008 isn't any different (Blyth, 2002; Campbell & Pedersen, 2014 and Birch & Mykhenko, 2010). On the other hand, literature explains the resilience of neo-liberal ideas despite the economic crisis (Schmidt & Thatcher, 2013). Such a contradiction is not found in the literature of the effects of economic crises on the technical competence of bureaucrats. However, as mentioned previously, there are enough arguments to argue that an economic crisis, in general, does not result in any change.

Some arguments that are specifically applicable to this case are the arguments made by Astryan et al. (2015) and Pollit (2010). The earlier discussed work of Astryan et al. (2015) explained that, on the one hand, political opposition for reforms of public administrations gets reduced by crises. On the other hand, the authors explained that bureaucratic resistance grows. Reforms during bad times, during crises, means that the reforms can be harmful to civil servants. Resistance against public administration reforms from these civil servants, therefore, grows. However, these civil servants are crucial to implementing the proposed reforms (like reforming the workforce to a more technically competent workforce). Because of this bureaucratic resistance against reforms, the authors expected that the crisis-reform-link would

be less evident in countries with large, powerful bureaucracies. After examining whether this expectation was correct, the authors found, indeed, that the crisis-reform-link was less evident in countries with large, powerful bureaucracies (Astryan et al., 2015).

After Russia, Germany, and the United Kingdom are the countries with the biggest population on the European continent (Clark, 2021). A logical consequence is that these countries have big and powerful bureaucracies. While creating a technically competent workforce means that people without technical competency in economics need to get replaced, it is logical to expect that there could be bureaucratic resistance against such plans. Based on the fact that the United Kingdom and Germany having big and powerful bureaucracies and the findings of Astryan et al. (2015), it is possible that the proposed crisis-induced reforms in these countries did not succeed in real life.

In addition, Pollit (2010) explained that making reforms requires risk-taking. During times of crisis, bureaucracies are already subject to much uncertainty. Creating a new technically competent workforce and replacing employees with new ones is a risk for bureaucracies. While these bureaucracies are already subject to uncertainty, these institutions become risk-averse and unwilling to make any reforms (Pollit, 2010). These arguments of Astryan et al. (2015) and Pollit (2010) lead, therefore, to the second alternative hypothesis:

H2*: The economic crisis did not lead to more technically competent economic policy-makers at financial ministries.

3. Methodology

In this part of the research, the methodology will be described. The methodology will start with describing what kind of research it will be. Afterward, the studied population, dependent variables, independent variables, and control variable will be described. Next, a description of the methods of data analysis will follow. Finally, to finish off the methodology, the methodology will touch upon the reliability and validity of this research.

3.1 Kind of Research

The research aims to look at the effect of the economic crisis on the competencies of bureaucrats. Certain kind of research is X-Y focused. This focus means that the research will analyze whether the independent variable impacts the dependent variable. The independent variable is the economic crisis of 2008, and the dependent variables are the competencies of top- and mid-level bureaucrats working at financial ministries. As mentioned in the theoretical framework, this research will touch upon economic ideas and technical competency. In order to test this impact, a quantitative statistical large-N analysis ($N = 124$) is conducted. The unit of analysis of this research is the top- and mid-level bureaucrats who worked at financial ministries of the United Kingdom and Germany. By performing desk research, it became clear that there were 124 top and mid-level bureaucratic positions, with names and background information of the people who held these positions in 2008 or 2012 available online. The hypotheses are tested by examining the curriculum vitae of the people who held these positions in 2008 and 2012. This eventually answered whether the economic crisis resulted in other competencies of top and mid-level bureaucrats working at financial ministries.

3.2 Studied Population

The studied population is the top- and mid-level bureaucrats working at the financial ministries of the United Kingdom and Germany. This part of the methodological framework explains why the focus is on top- and mid-level bureaucrats and the financial ministries of Germany and the United Kingdom. In addition, the in- and exclusion criteria will be discussed.

3.2.1 Focus of the Research

The reason why there is focused on top- and mid-level bureaucrats originates from two reasons. First, in the introduction of this research, the scientific relevancy of this research was discussed. It was discussed that most of the works on the effects of economic crises were on focused on

governmental leaders (ministers) rather than bureaucrats. This fact made it particularly interesting and relevant to focus on top- and mid-level bureaucrats. The second reason was a more practical one. At the beginning of the research, the focus was merely on top-level bureaucrats. However, the focus merely on top-level bureaucrats resulted in a tiny population. Moreover, to perform a quantitative large-N analysis, the general rule is the more, the better (Tokshov, 2016). It was therefore unthinkable to only look at top-level bureaucrats. To create a more significant population is why mid-level bureaucrats were also included in the population.

The reason why there is focused on financial ministries is because of the nature of the crisis. The crisis was an economic crisis. Logically, the financial ministries of countries were most involved in handling the consequences of this crisis. Financial ministries being the governmental institutions that were most involved in this economic crisis, made them most relevant to look at—this why there is chosen to examine financial ministries.

The reason that particularly the financial ministries of the United Kingdom and Germany are chosen is that the number of countries with names of bureaucrats working at financial ministries in 2008 and 2012 publicly available was minimal. In fact, the United Kingdom and Germany were the only countries that had this publicly available. In the data collection part, there will be further justified how this came about.

3.2.2 In- and exclusion criteria

The first inclusion criterium was that the bureaucrat was working at the financial ministry of the United Kingdom or Germany in 2008 or 2012 (or both).

The second criterium was that the bureaucrat working at the financial ministry of the United Kingdom or Germany in 2008 or 2012 was a top- or mid-level bureaucrat. In order to determine whether a bureaucrat was a top- or mid-level bureaucrat, top- and mid-level bureaucrats needed to be defined. Based on these definitions, a bureaucrat working at a financial ministry was in or excluded from the observations.

A top-level bureaucrat is a broad concept. Hansen, Steen, and de Jong (2013) previously performed research on top civil servants. In the methodological framework, the authors explain that they wanted to look at the civil servants with the highest ranks. Therefore, top-level bureaucrats were defined as the heads of state departments falling under the financial ministries of countries (Hansen, Steen & de Jong, 2013). Because mid-level bureaucrats are less analyzed than street- and top-level bureaucrats Cavalcante, Lotta, and Yamada (2018) performed research on the performance of mid-level bureaucrats. In this research, mid-level bureaucrats

are conceptualized. Mid-level bureaucrats are distanced to bureaucrats who deliver service to users (street-level bureaucrats). In addition, mid-level bureaucrats are distanced to bureaucrats who have higher positions and are therefore exposed to political decisions. According to these authors, mid-level bureaucrats are bureaucrats with management and policymaking positions within bureaucratic institutions (Cavalcante, Lotta & Yamada, 2018). Mid-level bureaucrats were, therefore, defined as bureaucrats with management and policymaking functions.

The final criterium was that information about the top and mid-level bureaucrats' educational background, or professional trajectory was publicly available online. After controlling for all these criteria and performing desk research, 102 bureaucrats met all the criteria. Germany made up for 56 of the bureaucrats, with 16 top-level bureaucrats and 40 mid-level bureaucrats. The remaining 46 positions came from the United Kingdom and were all top-level bureaucrats. Twenty-two of these bureaucrats were working at the financial ministries of Germany and the United Kingdom in 2008 as well as 2012. These people were duplicated and made independent observations for 2008 and 2012. This resulted in a total population of 124.

3.3 Data Collection

Now that the studied population is presented, this part of the methodological framework will discuss *how* this population came about.

In order to test whether the economic crisis of 2008 affected the competencies of top- and mid-level bureaucrats, it was necessary to find the names of the people working at financial ministries in 2008 and 2012. By performing desk research, it became clear that very few countries have certain kinds of information publicly available. Two factors can explain this. First of all, mid-level bureaucrats have lower visibility (Cotta, 1991). Secondly, 2008 is 13 years ago, which means that certain information is, most of the time, already erased from the websites of financial ministries. Besides financial ministries, there was also searched for names of people working at the European Commission's directorate-general for Economic and Financial Affairs. Unfortunately, the names of the civil servants working there during and after the crisis were not publicly available. Because of this low visibility, there was decided to email the financial ministries of the Netherlands and Australia. The European Commission was also emailed with a request to provide names of civil servants working there in 2008 and 2012. The Netherlands responded that certain kinds of information could not be handed over due to privacy restrictions. The European Commission and Australia's Department of Finance never responded.

The names of top- and mid-level bureaucrats working at a financial ministry in 2008 and 2012 were publicly available for one particular country: Germany. This information was retrieved from the Organisationsplan des Bundesministeriums der Finanzen (BMF) 2008 and 2012 (BMF, 2008; BMF, 2012). The names of top-level bureaucrats working at a financial ministry were also publicly available for another country: the United Kingdom. This information was retrieved from HM Treasury Annual Report and Accounts 2008-9 and 2012-13 (HM Treasury, 2008; HM Treasury, 2012). A total amount of 251 names were found in these documents. All the names of these people were written down in an excel-document. Afterward, the educational background and professional trajectory of these people also needed to be publicly available. Certain information was looked for on the internet. Every one of the 251 names was looked for on the internet. Especially the German bureaucrats were very hard to find. This is probably because most of the German bureaucrats were mid-level bureaucrats. As Cotta (1991) explained, mid-level bureaucrats have lower visibility. Eventually, 102 persons with the necessary information were found. As mentioned, 22 of these persons worked in 2008 as well as 2012 at the financial ministries. These people were duplicated and made independent observations for 2008 and 2012. This resulted in a total of 124 observations. The information about the bureaucrats' educational background and professional trajectory came from governmental websites, interviews, LinkedIn, Wikipedia, introductions to new non-governmental jobs, news articles, and even obituaries.

3.4 Variables

This part of the methodological framework will first discuss this research's dependent, independent, and control variables. Furthermore, this part contains a description of how these variables got operationalized.

3.4.1 Dependent Variables

The literature review raised the expectation that the economic crisis affected two specific kinds of competencies. These competencies are economic ideas and technical competency. The research, therefore, has four dependent variables, which capture different dimensions of the competencies. The four dependent variables are *Neo-Liberal Ideas*, *Economic Experience*, *Economic Expertise*, and *Economic Education*.

The operationalization of the first dependent variable, *Neo-Liberal Ideas*, is inspired by the work of Chwioroth (2007). In this research, Chwioroth (2007) searched for indicators that indicate that economists are neo-liberal economists. As the hypothesis states, this research only

expects alternative economic ideas to the neo-liberal idea, but what kind of alternatives is not specified. Therefore, it is only essential to determine whether the bureaucrat working at the financial ministry is a neo-liberal economist. The way Chwioroth (2007) researched this was by looking at the professional training of economists. However, Chwioroth (2007) used a list of neoclassical economic departments that were likely to promote neo-liberal ideas. Therefore, the economist who followed professional training at such a department got classified as a neo-liberal economist. Unfortunately, such a list is not available for Germany and the United Kingdom.

Still, Chwioroth's (2007) work shows a way to determine whether a bureaucrat is a neo-liberal economist. The distinction to determine whether an economist is a neo-liberal economist is based on the professional training of these economists. Chwioroth (2007) explained that neo-classical institutions are likely to promote neo-liberal ideas. This subject did get enough attention in Germany and the United Kingdom. For Germany, Heise and Thieme (2016) wrote an article about the marginalization of heterodox economics in Germany. The distinction between mainstream and heterodox economics is precisely the same distinction that is used in this research. Mainstream economics is neo-classical economics. Heterodox economics is all the alternatives (an example is Marxism) (Heise & Thieme, 2016). To determine whether heterodox economics were present in Germany, Heise and Thieme (2016) looked, similar to Chwioroth (2007), at educational institutions. By looking at these institutions' programs and the number of heterodox economists working at these institutions, the authors concluded that most educational institutions in Germany are mainstream, and thus neo-classical, institutions. Essential for this research is that Heise and Thieme (2016) identified educational institutions promoting heterodox economics. These institutions are: the University of Frankfurt, the University of Bremen and the and Hochschule für Wirtschaft und Politik (HWP) in Hamburg (Heise & Thieme, 2016). All other institutions that provide academic economic degrees in Germany can be classified as neo-classical institutions.

For the United Kingdom, authors Lee and Harley (1998) gave attention to the same subject: the dominance of mainstream economics over heterodox economics at educational institutions. The authors predicted that the organization of academic work in the United Kingdom would lead to even more dominance of mainstream economics (Lee & Harley, 1998). In 2007, Lee controlled for this prediction and found that the vast majority of economic, educational institutions are mainstream, or, in other words, neo-classical institutions in the United Kingdom. Unfortunately, Lee (2006) did not provide any names of the institutions that

did promote heterodox economics. Fortunately, Lee (2005) did in other work. Lee, Cohn, Schneider, and Quick (2005) wrote an informational directory for heterodox economists. This directory lists heterodox journals, book series, websites, and educational institutions that teach heterodox economics. Especially the latter, the educational institutions, are used for this research. The British institutions' Lee et al. (2005) named were the Nottingham Trent University, 'School of Oriental and African Studies, University of London UK', and the University of Leeds. Besides these British institutions, the authors also identified another German institution, Berlin's University of Applied Sciences (Lee, Cohn, Schneider & Quick, 2005).

The approach Chwioroth (2007) used with a list of neo-classical institutions is not possible. However, the work of Heise and Thieme (2016) and Lee et al. (2005) did provide a list of institutions that promote heterodox economics. Moreover, their work proved that the 'rest' of the economic, educational institutions in Germany and the United Kingdom promote neo-classical (mainstream) economics and, thus, neo-liberal ideas. For this reason, the variable *Neo-Liberal Ideas* was determined by looking at the educational background (professional training) of top and mid-level bureaucrats. If a top- or mid-level bureaucrat working at the financial ministry of Germany or the United Kingdom had no academic economic degree or an academic economic degree from one of the identified heterodox institutions, they were classified as a bureaucrat without neo-liberal ideas (*Neo-Liberal Ideas* = 0). On the other hand, if a top- or mid-level bureaucrat working at the financial ministries of Germany or the United Kingdom had an academic economic degree from an educational institution that was not identified as an institution that promotes heterodox economics, they were classified as a bureaucrat with neo-liberal ideas (*Neo-Liberal Ideas* = 1).

The operationalization of the variables *Economic Experience*, *Economic Expertise*, and *Economic Education* is inspired by Hallerberg and Wehner's work (2012). Hallerberg and Wehner (2012) measured technical competence in economics based on two indicators: educational background and professional trajectory. This research followed the same way of measuring technical competency. However, the difference with the work of Hallerberg and Wehner (2012) is that educational background was subdivided into two dependent variables for this research. Namely, *Economic Expertise* and *Economic Education*.

Economic Expertise will look at the expertise of top – and mid-level bureaucrats on economics. The measurement was done the same as in the work of Hallerberg and Wehner (2012). These authors worked with an ordinal variable that can take four values. Those values

are: no economic academic degree (*Economic Expertise* = 0), economic undergraduate degree (Bachelor) (*Economic Expertise* = 1), economic graduate degree (Master) (*Economic Expertise* = 2), and economic doctorate (Ph.D.) (*Economic Expertise* = 3). This variable will provide insight into the improvement (or not) of the expertise on economics within financial ministries. If the number grows significantly, this shows that the level of economic expertise grew. The third dependent variable *Economic Education* is the dummy variable of *Economic Expertise*. This binary variable is operationalized in the same way. There is looked whether a bureaucrat had an academic economic degree (*Economic Education* = 1) or not (*Economic Education* = 0). It was decided to include both because the *Economic Expertise* provides insight into whether the level of economic knowledge increased, while *Economic Education* only provides insight whether significantly more economists were employed at financial ministries.

The professional trajectory is in the work of Hallerberg and Wehner (2012) divided into different professions. However, this research does not need to determine what kind of profession the bureaucrats did before this job. The only thing this research is interested in is whether the professional trajectory was a (partly) economic one. Therefore, there was only looked at if the professional trajectory was partly economic or not. Experiences classified as economic are jobs in the financial sector, jobs as a professor that teaches economics, or jobs at financial institutions of governments. The financial sector is vast and needs some more clarification. The financial sector is a name for institutions and firms that provide financial services to commercial and retail customers (Kenton, 2020). If a bureaucrat working at the financial ministry of Germany of the United Kingdom had before this position at the ministry an economically classified job, they were classified as economically experienced (*Economic Experience* = 1), if a bureaucrat did not, they were classified as economically unexperienced (*Economic Experience* = 0).

3.4.2 Independent Variable

The independent variable is the global economic crisis of 2008. As mentioned in the introduction, the term economic crisis refers to a general slowdown of economic activity with a decrease in GDP, a drying up of liquidity, and a high unemployment rate. The consequence of such a crisis can be a recession, which refers to a period of economic decline. Economic decline means that the GDP of a country declines. The economic crisis of 2008 resulted in a recession till June 2009 (Amadeo, 2020). However, in the Netherlands, Ireland, and Portugal, the consequences of the economic crisis were still felt in 2011 (CBS, 2019). Therefore, this research will measure the effect of the crisis on the competencies of bureaucrats by comparing

2008 and 2012. In order to make the effect of the economic crisis measurable, there was a dummy variable created. This dummy variable, *Economic Crisis*, could take two values. The first value referred to the bureaucrats working at the financial ministries of Germany and the United Kingdom in 2008 (*Economic Crisis* = 0). The second value referred to the bureaucrats working at the financial ministries of Germany and the United Kingdom in 2012 (*Economic Crisis* = 1).

3.4.3 Control Variable

The research focuses on two particular countries. These countries formed the only used control variable. The countries form a natural control variable because if one country shows a very different result than the other, it can be concluded that the changes are not attributable to the independent variable: the economic crisis. In order to use the countries as a control variable, there was a second dummy variable created. This dummy variable *Country=UK* could take two values. The first value referred to the bureaucrats who worked at the financial ministry of Germany (*Country=UK* = 0). The second value referred to the bureaucrats who worked at the financial ministry of the United Kingdom (*Country=UK* = 1).

3.5 Research Methods

In this part of the methodological framework, there will be discussed what research methods were used to test the hypotheses.

The data analysis was divided into two sections. The first section was a statistical test to see whether there was a significant difference between the means of the dependent variables between 2008 and 2012. The second part was a statistical test to determine whether the independent variable is a significant predictor of the dependent variables when controlled for *Country=UK*.

As mentioned, there was looked at significance. ‘Significant’ means that the findings of the statistical tests are not attributable to chance only. The standard for academic research is a significance level of 5%. This level means that a finding is significant if the *p*-score is smaller than ,05 (Tokshov, 2016). For this research, the same significance level was used.

3.5.1 Mean Comparison

The first part of the data analysis was a two-sample mean comparison. The choice for the correct statistical test depends on the scale of measurement of the variables. The independent variable *Economic Crisis* and the dependent variables *Neo-Liberal Ideas*, *Economic Education*, and

Economic Experience are all categorical. The appropriate statistical test to test whether there is an association between two categorical variables is the Chi-Squared Test. However, the Chi-Squared Test is inappropriate to test whether the differences between the two means are significant (Kumar, 2015). Nevertheless, a mean comparison was preferred while the numbers can be easily shown and compared in figures and tables.

Therefore, there was decided to perform a z test for the difference between two proportions. This test makes it possible to compare means and is appropriate to test whether there is a significant difference between two means, or in this case, proportions between two independent groups (Statkat, 2021). Means and proportions are for the categorical variables used in this research the same in essence. A short explanation:

The categorical variables can take two values: 0 and 1. This means, for instance, that when the mean of variable *Neo-Liberal Ideas* is for 2008 0,67. Thus, a proportion of 67% of the bureaucrats were neo-liberal economists in 2008. If the mean for 2012 is 0,89, this means that in 2012 the proportion of bureaucrats that were neo-liberal economists was 89%.

As mentioned, the z test for the difference between two proportions is appropriate to test whether the difference between these proportions is significant (Statkat, 2012). Moreover, as discussed in the theoretical framework, the expectations are that there are differences between 2008 and 2012. This way, the statistical z test for the difference between two proportions helped to test the hypotheses.

For the ordinal variable, *Economic Expertise*, a mean comparison is impossible. This originates from the fact that the variable is ordinal, and means are not illustrative for ordinal variables (Bhandari, 2020). For this particular reason, the frequencies of the four categories of *Economic Expertise* were compared between 2008 and 2012.

In order to use a z test for the difference between two proportions, some basic assumptions must be met. The first assumption is that the sample must be large enough. Large enough, in this case, means that the number of 0's and 1's are each ten or more for both sample groups. This means, for instance, that for *Neo-Liberal Ideas*, the groups of 2008 and 2012 both need to contain at least 10 zero values and 10 one values. The second assumption is that the populations from which the proportions are taken are independent of each other (Statkat, 2021).

After controlling in SPSS, the first assumption was met for all the sample groups of *Neo-Liberal Ideas*, *Economic Education*, and *Economic Experience*. The second assumption needs some discussion. 22 of the 102 bureaucrats worked at the financial ministries in 2008 as well as in 2012. One could argue that the populations are not independent of each other.

However, the gross of the observations (80) was independent of each other. Moreover, all significance tests to test the difference between two means or proportions have this assumption. The z test remained the most appropriate to use, while the independent and dependent variables were categorical. At the same time, a t -test for the difference between two means is only appropriate to use when the dependent variable is measured on interval/ratio level, and a Chi-Squared test is not appropriate to determine whether differences are significant (Kumar, 2015).

3.5.2 Regressions

The second part of the data analysis consisted of regressions. The dependent variables *Neo-Liberal Ideas*, *Economic Education*, and *Economic Experience* are all dichotomous. The data was, therefore, investigated using a binary logistic regression analysis method. This method is the appropriate statistical technique to use when the dependent variables are dichotomous. Besides that, this method is suitable to provide insight into the relationship between variables. The remaining dependent variable is *Economic Education*. This variable is not dichotomous but ordinal. For this particular reason, an ordered logistic regression was applied. The outcome of logistic regressions tells whether the independent variable is a significant predictor of the dependent variables. This means that the regressions in this research show whether *Economic Crisis* is a significant predictor of the dependent variables when controlled for *Country=UK*. If these scores were significant, this would indicate that the differences between 2008 and 2012 (if present) were partly attributable to the economic crisis of 2008 and not to chance only.

The R-squared (R^2) was also included in the model. However, it is impossible to use the ordinary R-Squared in models with a categorical or ordinal dependent variable (IBM, n.d.). In this research, all the dependent variables are categorical or ordinal. This means that the pseudo R squared was used. There are various pseudo-R-squared measurement methods. Nagelkerke's R^2 was used for this research, while this is the appropriate variance measurement for a model with categorical dependent variables. The pseudo-R-squared is appropriate to determine what percentage of variation of the dependent variables gets explained by the independent variable and will therefore be appropriate to determine the overall fit of the regression model (Moehle, 2020).

For the usage of a binary and ordered logistic regression, some basic assumptions must be met. This part of the methodological framework will reflect whether these assumptions were met for this research. The first assumption is that observations must be independent of each other. The second assumption is that there should not be multicollinearity among the

independent variables. The last assumption is that there should not exist any strongly influential outliers in the dataset (Stolzfus, 2011).

The first assumption, is as explained in the discussion on the z test, not entirely met. Just as with the z test, the logistic regressions remained the most appropriate tests to use. The second assumption is met. To determine whether there is no multicollinearity between *Economic Crisis* and *Country=UK*, a test in SPSS was run. The test to determine whether there is multicollinearity is called the Variance Inflation Factors (VIF). If the outcome of the VIF is lower than one or bigger than ten, there is multicollinearity between the independent variables (Frost, n.d.). The outcome of the test in SPSS was a VIF of 1,013. Thus, this is between 1 and 10, meaning no harmful correlation between the independent variables *Economic Crisis* and *Country=UK* was present. The last assumption that there should not be any strongly influential outliers was also met. The dependent variables are, as mentioned before, dichotomous or ordinal. There was no possibility of any strong influential outliers because three variables can take up to two values, and one can take up to 4.

3.6 Reliability and Validity

In this part of the methodological framework, the research's reliability, internal- and external validity will be discussed.

3.6.1 Reliability

Research can be seen as reliable when various researchers can do it over time, and the results remain consistent (Middleton, 2020). The research is quantitative. All datasets used are stored and can when asked for, be handed over. This transparency is already beneficial for reliability, while the outcomes can be controlled on measurement errors. Moreover, all the information used to create this dataset is publicly available on the internet. This public availability means that all the used data for this research is traceable, making it possible that the results will be consistent if the research is reconducted. There are, however, also some concerns. As mentioned in the data collection, the information of mid-level bureaucrats was tough to find. The information, therefore, came from various places on the internet. Even though observations were only included when the information contained all the necessary information, it is possible that the source missed out on specific critical information. This is the risk of using publicly available data and may weaken the reliability.

3.6.2 Validity

Internal validity refers to whether the used research methods are appropriate to determine a causal link between the variables (Bhandari, 2021). What contributed to this question is that all the operationalizations of variables were based on peer-reviewed research work. This means that the variables were appropriately operationalized. This proper operationalization ultimately contributes to a better measurement of the causal link between the independent and dependent variables, while the variables in themselves measured what needed to be measured. There is, however, a concern. As mentioned, the general rule for large-N research is the more cases, the better (Tokshov, 2016). However, the amount of observation used in this research was relatively small ($N = 124$). The relatively small amount of observations may miss a causal link that would be found if more observations were included. Therefore, the small number of observations may be problematic for the internal validity of the research.

External validity refers to the generalizability of the findings. This means that the external validity is high if the research findings on a sample of a larger population are generalizable to this larger population (Tokshov, 2016). This research' larger population refers to the total amount of mid- and top-level bureaucrats working at the financial ministries in Germany and the United Kingdom in either 2008 or 2012. For Germany, the external validity can be considered high. The observations are picked based on the availability of information online. As the German ministry of finance organization is divided into different sections, the danger existed that certain sections would be overrepresented, making the findings less generalizable for the larger population. This, however, was not the case. The distribution was pretty equal. For the United Kingdom, the story is different. As mentioned earlier, all the observations were top-level bureaucrats. Therefore, the research cannot be used to generalize the findings to mid-level bureaucrats of the United Kingdom. This weakens the external validity. The benefit of finding only top-level bureaucrats was the higher visibility of this group. Almost all found top-level bureaucrats from the United Kingdom had the necessary information publicly available. The inclusion of almost all top-level bureaucrats means that the findings are generalizable to the total population of top-level bureaucrats. This inclusion, therefore, strengthens the external validity.

4. Statistical Analysis

In this part of the research, the outcomes of the statistical tests will be discussed and illustrated in tables and figures. The first part will contain descriptive statistics. The second part discusses the mean comparisons for the total population and the separate countries. The third part contains the outcomes of the correlations and regressions. Finally, the implications for the hypotheses will be discussed.

4.1 Descriptive Statistics

In Table 1, the descriptive statistics of the independent variables *Economic Crisis* and *Country=UK* can be found. For both the variables, the minimum, maximum, mean, and standard deviation are shown in Table 1. The mean of *Economic Crisis* is 0,54 ($SD = ,500$). This number indicates that of the total observations ($N = 124$), more observations were included from 2012 (*Economic Crisis* = 1) than from 2008 (*Economic Crisis* = 0). The mean of *Country=UK* is 0,41 ($SD = ,494$). This number indicates that of the total observations ($N = 124$), more observations were included from Germany (*Country=UK* = 0) than from the United Kingdom (*Country=UK* = 1).

Table 1

Descriptive Statistics of Independent Variables

	N	Min.	Max.	Mean	St. Deviation
Ec. Crisis	124	0	1	,54	,500
Country=UK	124	0	1	,41	,494

The variables *Economic Crisis* and *Country=UK* are both categorical and dichotomous. For this reason, the frequencies were also included. These frequencies are helpful to illustrate the distribution of the population ($N = 124$) between the different categories of the variables. Table 2 shows that 57 of the total amount of observations used in this research worked at financial ministries at the beginning of the economic crisis in 2008 (*Economic Crisis* = 0), 67 worked at financial ministries after the economic crisis in 2012 (*Economic Crisis* = 1). Moreover, Table 2 shows that 73 of the total amount of observations used in this research worked at the German Ministry of Finance (*Country=UK* = 0), 51 worked at the Ministry of Finance of the United Kingdom (*Country=UK* = 1).

Table 2

Frequencies of Independent Variables

	Value	Frequency	Percent
Ec. Crisis	0	57	46%
	1	67	54%
	Total	124	100%
Country=UK	0	73	58,9%
	1	51	41,1%
	Total	124	100%

Table 3 illustrates the descriptive statistics of the binary dependent variables *Neo-Liberal Ideas*, *Economic Experience*, and *Economic Education*. The mean for *Neo-Liberal Ideas* is 0,48 ($SD = ,501$). This number means that 48% of the total observations working at financial ministries in 2008 and 2012 were educated at a mainstream economically educational institution. As illustrated in the methodology, mainstream economically educational institutions are institutions that teach and promote mainstream economics. ‘Mainstream’ economics are neo-classical economics. As Chwioroth (2007) explained, neo-classical economics promote neo-liberal ideas. This number is misleading because it does not portray neo-liberal ideas’ dominance (less than half of the total observations). Table 4 is therefore included. Table 4 shows that of the 65 observations that were not educated at mainstream economically educational institutions, 59 (90,8%) were not educated in economics at all and were, thus, non-economists. Merely 6 (9,2%) of the 65 observations that were not educated at mainstream economically educational institutions were educated at an educational institution that promotes and teaches heterodox (alternative) economics and were, thus, non-neoliberal economists.

The variable that illustrates whether a bureaucrat working at a financial ministry had economic experience, *Economic Experience*, has a mean of 0,69 ($SD = ,463$). This number means that 69% of the total population working at the financial ministries in 2008 and 2012 had economic experience.

The variable *Economic Education* shows whether an observation working at the financial ministries had an academic economic degree or not. *Economic Education* has a mean of 0,52 ($SD = ,502$). This number means that 52% of the total population working at the financial ministries in 2008 and 2012 had an academic economic degree. The remaining 48%

were non-economists. The most common academical degrees of the observations without an academic degree in economics were degrees in law, public administration, and history.

Table 3

Descriptive Statistics of Binary Dependent Variables

	N	Min.	Max.	Mean	St. Deviation
NeoLi. Ideas	124	0	1	,48	,501
Ec. Experience	124	0	1	,69	,463
Ec. Education	124	0	1	,52	,502

Table 4

Frequency of Heterodox Economists

	Category	Frequency	Percent
NeoLi. Ideas=0	Non-Eco.	59	90,8%
	Heterodox Eco.	6	9,2%
	Total	65	100%

Table 5 contains the descriptive statistics of the ordinal dependent variable *Economic Expertise*. This variable illustrates whether a bureaucrat working at the financial ministries in 2008 and 2012 had an economic degree and, if present, what level of economic degree. This frequency table shows that almost half of the bureaucrats working at financial ministries had no academic degree in economics (*No Ac. Ec. Degree* = 60) (48,4%). This number was already discussed in the descriptive statistics of *Economic Education*. Moreover, Table 5 shows that a Master's degree in economics was more common if an academic economic degree was present than a Bachelor's degree (*Ec. Master* = 31, *Ec. Bachelor* = 27). Lastly, Table 5 shows that very few observations had a Ph.D. in economics (*Ec. Ph.D.* = 6) (4,8%).

Table 5

Frequency of Variable 'Economic Expertise'

	Value	Frequency	Percent
Ec. Expertise	No Ac. Ec. Degree	60	48,4%
	Ec. Bachelor	27	21,8%
	Ec. Master	31	25%
	Ec. Ph.D.	6	4,8%
	Total	124	100%

4.2 Mean Comparisons

The first dependent variable *Neo-Liberal Ideas*, has a mean of 0,40 in 2008 ($SD = ,495$). This number means that in 2008, at the beginning of the economic crisis, 40% of the bureaucrats working at financial ministries were educated at mainstream economically educational institutions. Table 6 shows that for 2012, after the economic crisis, the mean of *Neo-Liberal Ideas* is 0,54 ($SD = ,502$). This number means that after the economic crisis in 2012, 54% of the bureaucrats working at financial ministries were educated at mainstream economically educational institutions. This difference indicates that over the total population, bureaucrats working at financial ministries of Germany and the United Kingdom, the presence *Neo-Liberal Ideas* increased by 14%. However, after performing a z test for the difference between two proportions, the difference between the proportion of the observations from 2008 ($M = ,40$, $SD = ,495$) (40%) and that of the observations from 2012 ($M = ,54$, $SD = ,502$) (54%) was not significant ($z = 1,478$, $p > ,05$).

The second dependent variable *Economic Experience* has a mean of 0,68 ($SD = ,469$) in 2008. This number means that 68% of the people working at financial ministries of Germany and the United Kingdom in 2008 had economic experience. Economic experience means that 68% of the bureaucrats had an economic profession before their position within the financial ministry. For 2012 the mean of *Economic Experience* is 0,70 ($SD = ,461$). This number means that in 2012, 70% of the bureaucrats working at financial ministries of Germany and the United Kingdom had economic experience. The mean comparison in Table 6 shows an increase of 2% of *Economic Experience*. This number indicates that the proportion of bureaucrats with experience in economics during their professional trajectory grew by 2%. However, after performing a z test for the difference between two proportions, the difference between the

proportion of the observations from 2008 ($M = ,68$, $SD = ,496$) (60%) and that of the observations from 2012 ($M = ,70$, $SD = ,461$) (70%) was not statistically significant ($z = ,207$, $p > ,05$)

The third dependent variable in Table 6 is *Economic Education*. The mean for 2008 is 0,42 ($SD = ,498$). This number means that in 2008, 42% of the bureaucrats working at the financial ministries of Germany or the United Kingdom had an academic degree in economics. For 2012 the mean is 0,60 ($SD = ,494$). This number means that in 2012, 60% of the bureaucrats working at the financial ministries of Germany or the United Kingdom had an academic degree in economics. This difference indicates that the proportion of bureaucrats with an academic economic degree grew by 18%. However, after performing a z test for the difference between two proportions, the difference between the proportion of the observations from 2008 ($M = ,42$, $SD = ,498$) (42%) and that of the observations from 2012 ($M = ,60$, $SD = ,494$) (60%) was not statistically significant ($z = 1,954$, $p > ,05$). This finding is surprising, while an increase of 18% is big. The significance level ($p = ,051$) also indicates that the difference in proportions was almost significant.

Table 6

Mean Comparison of Total Population (N = 124)

	Year		z
	2008	2012	
NeoLi. Ideas	,40 (,495)	,54 (,502)	1,487
Ec. Experience	,68 (,469)	,70 (,461)	,207
Ec. Education	,42 (,498)	,60 (,494)	1,954

In order to illustrate the exact differences of ordinal variable *Economic Expertise* between 2008 and 2012, Table 7 with the frequencies is included. The most relevant figures to interpret in Table 7 are the percentages, while the frequencies are not relevant because the population for 2012 ($N = 67$) is bigger than that of 2008 ($N = 57$). The level of academic economic education increased. The percentage of bureaucrats with an Economics Master's degree increased from

22,8% in 2008 to 26,9% in 2012. The percentage of bureaucrats with an economic Ph.D. increased from 3,5% in 2008 to 6% in 2012.

Table 7

Frequency Comparison of 'Economic Expertise' for Total Population

	Year			
	2008		2012	
	Frequency	Percent	Frequency	Percent
No Ac. Ec. Degree	33	57,9%	27	40,3%
Ec. Bachelor	9	15,8%	18	26,9%
Ec. Master	13	22,8%	18	26,9%
Ec. PhD	2	3,5%	4	6,0%
Total	57	100%	67	100%

The control variable of this research is *Country=UK*. In the next section, the mean comparison of the separate countries will be briefly described. This is done to check if the changes are somewhat the same for both countries and not only attributable to one country. Table 8 and Table 9 show that the findings of the mean comparison for the separate countries are in line with the findings of the mean comparison of the total population. The dependent variables *Neo-Liberal Ideas*, *Economic Experience*, and *Economic Education* all increased in the mean comparison for the total population. For the separate countries, this is the same. For both countries, the mean of all three variables increased. This similarity is illustrated in Figure 1, Figure 2, and Figure 3.

Figure 1

Comparison 'Neo-Liberal Ideas' Total Population and Separate Countries

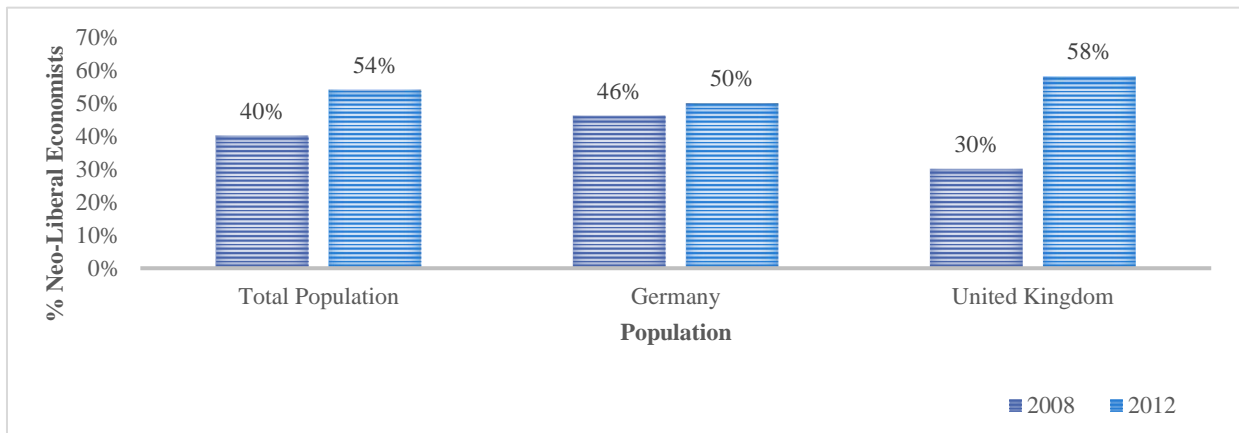


Figure 2

Comparison 'Economic Experience' Total Population and Separate Countries

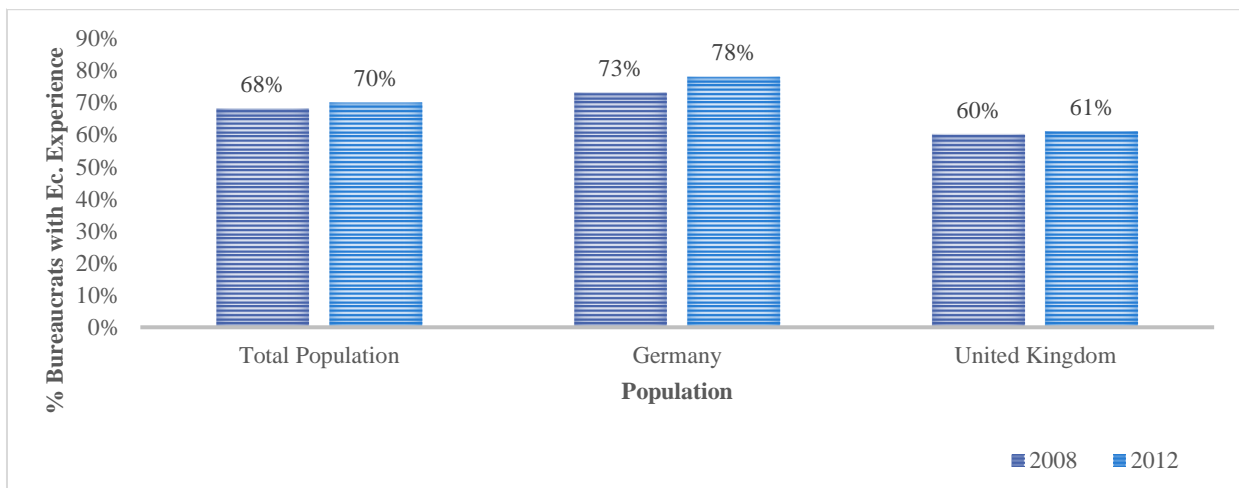
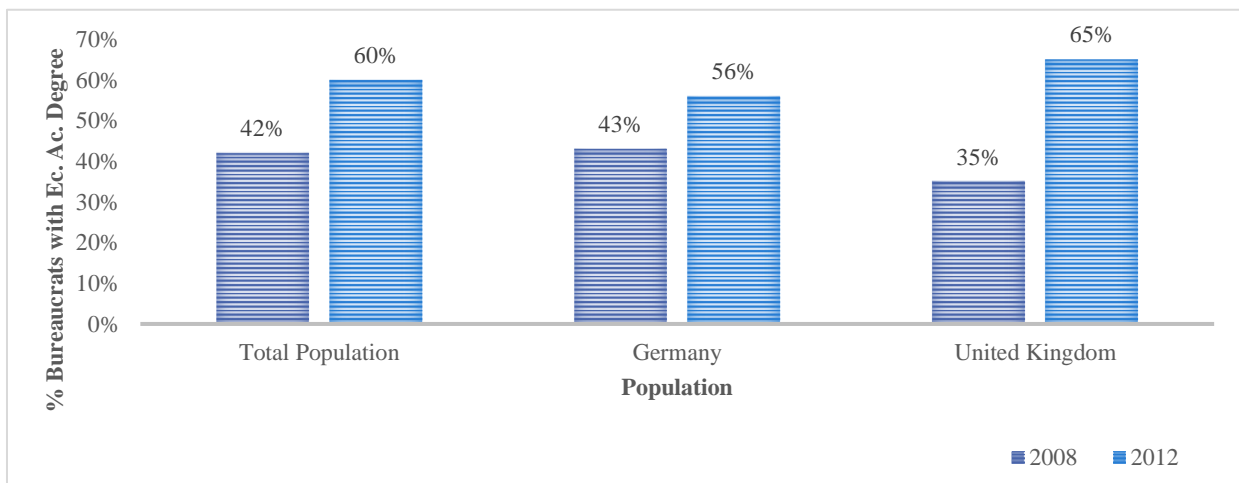


Figure 3

Comparison 'Economic Education' Total Population and Separate Countries



However, there were also differences. Table 8 shows the mean comparison for Germany, *Neo-Liberal Ideas* increased from 0,46 ($SD = ,505$) to 0,50 ($SD = ,507$), *Economic Experience* from 0,73 ($SD = ,450$) to 0,78 ($SD = ,422$), and *Economic Education* from 0,43 ($SD = ,502$) to 0,56 ($SD = ,504$). Just as in the mean comparison for the total population, there is controlled whether this difference in proportions was statistically significant. The differences between the proportions of 2008 and 2012 were for all three the variables, just as in the mean comparison of the total population, not statistically significant ($z = ,364, p > ,05$)($z = ,476, p > ,05$)($z = 1,052, p > ,05$).

Table 8

Mean Comparison for the German Observations (N = 73)

	Year		z
	2008	2012	
NeoLi. Ideas	,46 (,505)	,50 (,507)	,346
Ec. Experience	,73 (,450)	,78 (,422)	,476
Ec. Education	,43 (,502)	,56 (,504)	1,052

Table 9 shows the mean comparison for the United Kingdom. *Neo-Liberal Ideas* increased from 0,30 ($SD = ,470$) to 0,58 ($SD = ,502$), *Economic Experience* from 0,60 ($SD = ,503$) to 0,61 ($SD = ,495$), and *Economic Education* from 0,35 ($SD = ,489$) to 0,65 ($SD = ,486$). For the variable *Neo-Liberal Ideas*, the United Kingdom showed a much larger increase in the proportion of neo-liberal economists within their financial ministry than Germany. For the UK it increased by 28%, for Germany only by 4%. This difference is also illustrated in Figure 1. Moreover, in contrast to Germany, the difference between the proportions of Neo-Liberal economists within the Ministry of Finance of the United Kingdom between 2008 and 2012 was statistically significant ($z = 1,960, p \leq ,05$).

For the variable *Economic Experience*, Germany and the United Kingdom showed a minimal increase in economically experienced bureaucrats. Logically, the difference between these proportions wasn't statistically significant ($z = ,089, p > ,05$).

The third variable, *Economic Education*, showed for both Germany as the United Kingdom an increase of bureaucrats with an academic economic degree. The increase of the

United Kingdom, however, was more significant. Germany showed an increase of 13%, the United Kingdom an increase of 30%. The difference between the proportions of bureaucrats with an academic economic degree working at the financial ministry of the United Kingdom between 2008 and 2012 was, after performing a two proportions z test, statistically significant ($z = 2,062, p < ,05$).

Table 9

Mean Comparison for the British Observations (N = 51)

	Year		z
	2008	2012	
NeoLi. Ideas	,30 (,470)	,58 (,502)	1,960*
Ec. Experience	,60 (,503)	,61 (,495)	,089
Ec. Education	,35 (,489)	,65 (,486)	2,062*

Note. *Significant at the $p \leq ,05$ level

To illustrate the exact differences of Germany and the United Kingdom for ordinal variable *Economic Expertise*, Table 10, Table 11, and Figure 4 are included. Table 10 and Table 11 show that the frequencies for the separate countries align with the findings of the frequency comparison for the total population. This alignment is illustrated in Figure 4. The overall level of academic economic education, just as in the total population, increased for both countries. In Germany, bureaucrats with an Economic Master Degree working at the financial ministry grew by 0,6%, and bureaucrats working at the financial ministry with a Ph.D. in economics grew by 2,9%. In the United Kingdom, bureaucrats with an Economic Master Degree working at the financial ministry grew by 7,3%, and bureaucrats working at the financial ministry with a Ph.D. in economics grew by 1,5%.

Table 10

Frequency Comparison of 'Economic Expertise' for Germany (N = 73)

	Year			
	2008		2012	
	Frequency	Percent	Frequency	Percent
No Ac. Ec. Degree	20	54,1%	16	44,4%
Ec. Bachelor	8	21,6%	10	27,8%
Ec. Master	8	21,6%	8	22,2%
Ec. Ph.D.	1	2,7%	2	5,6%
Total	37	100%	36	100%

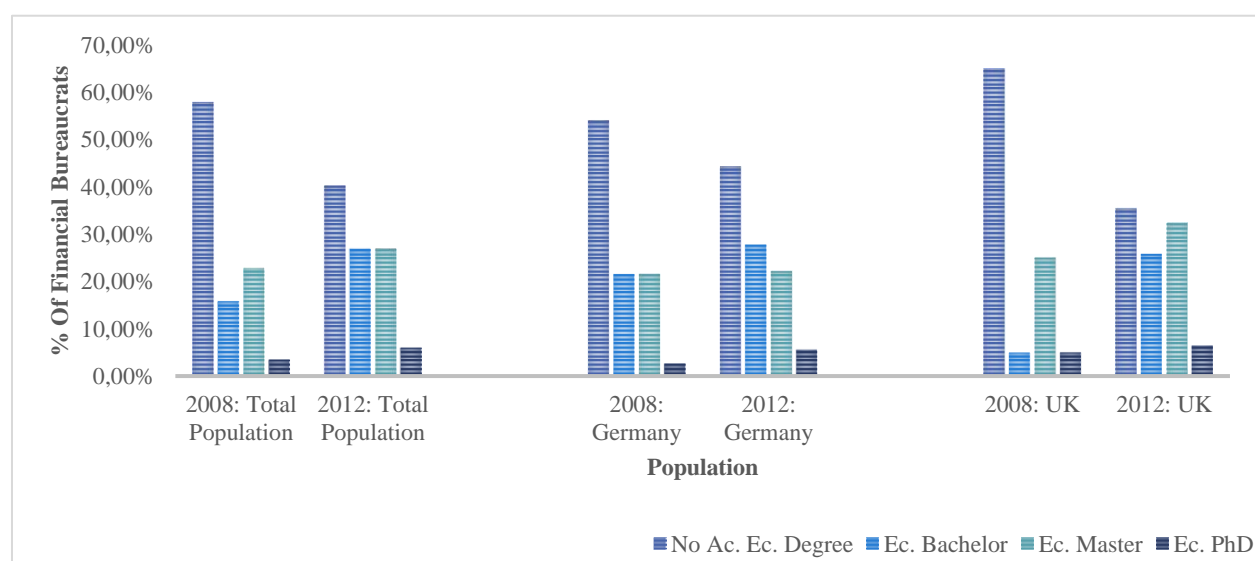
Table 11

Frequency Comparison of 'Economic Expertise' for the United Kingdom (N = 51)

	Year			
	2008		2012	
	Frequency	Percent	Frequency	Percent
No Ac. Ec. Degree	13	65%	11	35,5%
Ec. Bachelor	1	5%	8	25,8%
Ec. Master	5	25%	10	32,3%
Ec. Ph.D.	1	5%	2	6,5%
Total	20	100%	31	100%

Figure 4

Frequency Comparison of 'Economic Expertise' for Total Population and Separate Countries



4.3 Correlations and Regressions

Table 12 shows the correlations between all the variables used in the analysis, except those of the ordinal variable *Economic Expertise*. Correlation is not possible with an ordinal variable. The most important variable is the independent variable, *Economic Crisis*. *Economic Crisis* has no or a negligible correlation with the variables *Country=UK*, *Neo-Liberal Ideas*, *Economic Experience*, and *Economic Education* ($\Phi = ,133$ $\Phi = ,134$ $\Phi = ,019$ $\Phi = ,175$) (Glen, 2016). Besides the fact that there is no or a negligible correlation, there is also no significant correlation ($p > ,05$). Important to mention that correlation between *Economic Crisis* and *Economic Education* had a p -value of 0,51. This number indicates that the correlation was almost significant. The variable *Country=UK* does have no or a negligible correlation with *Neo-Liberal Ideas*, *Economic Experience*, and *Economic Education* ($\Phi = -,009$ $\Phi = -,155$ $\Phi = ,022$) (Glen, 2016). *Country=UK* has no significant correlation with any of the variables ($p > ,05$). *Neo-Liberal Ideas* does have no or a negligible correlation with *Economic Experience* and a very strong positive relationship with *Economic Education* ($\Phi = ,038$ $\Phi = ,890$) (Glen, 2016). The first correlation with *Economic Experience* is not significant, but the second with *Economic Education* is significant ($p > ,05$ $p < ,01$). *Economic Experience* does have no or a negligible correlation with *Economic Education* ($\Phi = ,063$) (Glen, 2016). This correlation is not significant ($p > ,05$).

Table 12

Correlations of All Binary Variables

	Ec. Crisis	Country=UK	NeoLi. Ideas	Ec. Exp.	Ec. Educ.
Ec. Crisis	1				
Country=UK	,133	1			
NeoLi. Ideas	,134	-,009	1		
Ec. Experience	,019	-,155	,38	1	
Ec. Education	,175	,022	,890*	,091	1

Note. *Significant at the $p < ,01$ level

Although there are no statistically significant differences between the proportions of neo-liberal economists, economically experienced bureaucrats, and bureaucrats with an academic economic degree between 2008 and 2012, it is still necessary to perform regressions. In addition, the fact that there are no strong and significant correlations between the main independent variable, *Economic Crisis*, and the dependent variables *Neo-Liberal Ideas*, *Economic Experience*, *Economic Education* is not enough to conclude that *Economic Crisis* is not a significant predictor of the dependent variables. This is because, in the regressions, the control variable *Country=UK* is included. Therefore, it is possible that an association can still be found between the independent and dependent variables when controlled for other variables. In the following section, the results of binary logistic regressions and ordinal logistic regression will be presented. All the regressions were performed on the totality of observations ($N = 124$).

Table 13, Table 14, Table 15, and Table 16 show the binary logistic regression models and the ordinal logistic regression models. The included coefficients in these models are the B , $S.E.$, and $Exp(B)$. Coefficient B tells about the relationship between the independent variable and the dependent variable. Because these are logistic regressions, the coefficient B is in log-odd units. However, Log-odd units are challenging to interpret. Therefore, $Exp(B)$ got included. This symbol stands for the odds ratio. The odds ratio is the exponentiation of coefficient B . This odd-ratio is much easier to interpret and says something about the odd of the event occurring at the two different levels of the predictor. However, the B still got included because a significant B indicates an association between the independent and dependent variable.

In Table 13, the binary logistic regressions for *Neo-Liberal Ideas* can be found. Model 2 looks into the independent dummy variable *Economic Crisis* and dependent variable *Neo-Liberal Ideas*, with *Country=UK* as the control variable. The model indicates a positive association ($B = ,552$). Moreover, the $Exp(B)$ indicates that a bureaucrat working at the financial ministry of Germany or the United Kingdom is a Neo-Liberal economist is 1,737 more likely in 2012 than in 2008. However, the association and odd-ratio are not significant ($p > ,05$). This means that *Economic Crisis* is not a significant predictor of *Neo-Liberal Ideas* when controlled for *Country=UK*.

Table 13

Binary Logistic Regression of variable 'Neo-Liberal Ideas' (N = 124)

	Model 1			Model 2		
	B	(s. e.)	Exp(B)	B	(s. e)	Exp(B)
Ec. Crisis	,540	,365	1,717	,552	,367	1,737
Country=UK				-,100	,372	,905
Constant	-,391	,270		-,356	,299	
Nagelkerke R ²	,024			,024		

In Table 14, the binary logistic regressions for *Economic Experience* can be found. Model 4 looks into the independent dummy variable *Economic Crisis* and dependent variable *Economic Experience*, with *Country=UK* as the control variable. The model indicates a positive association ($B = ,164$). Moreover, $Exp(B)$ indicates that a bureaucrat working at the financial ministry of Germany or the United Kingdom was economically experienced was 1,179 more likely in 2012 than in 2008. However, the association and odd-ratio are not significant ($p > ,05$). This means that *Economic Crisis* is not a significant predictor of *Economic Experience* when controlled for *Country=UK*.

Table 14

Binary Logistic Regression of Variable 'Economic Experience' (N = 124)

	Model 3			Model 4		
	B	(s. e.)	Exp(B)	B	(s. e)	Exp(B)
Ec. Crisis	,081	,390	1,085	,164	,399	1,179
Country=UK				-,699	,398	,497
Constant	,773	,285		1,038	,331	
Nagelkerke R ²	,000			,035		

In Table 15, the binary logistic regressions for *Economic Education* can be found. Model 6 looks into the independent dummy variable *Economic Crisis* and dependent variable *Economic*

Education, with *Country=UK* as the control variable. The model indicates a positive association ($B = ,710$). Moreover, $Exp(B)$ indicates that a bureaucrat working at the financial ministry of Germany or the United Kingdom had an academic economic degree was 2,035 more likely in 2012 than in 2008. However, the association and odd-ratio are not significant ($p > ,05$). This means that *Economic Crisis* is not a significant predictor of *Economic Education*, when controlled for *Country=UK*. This finding, however, needs some more attention. The p -value, which indicates the significance, was $p = ,052$. This means that *Economic Crisis* was almost a significant predictor of *Economic Education* when controlled for *Country=UK*.

Table 15

Binary Logistic Regression of Variable 'Economic Education' (N = 124)

	Model 5			Model 6		
	B	(s. e.)	Exp(B)	B	(s. e)	Exp(B)
Ec. Crisis	,711	,366	2,037	,710	,368	2,035
Country=UK				,010	,373	1,010
Constant	-,318	,268		-,322	,299	
Nagelkerke R ²	,041			,041		

In Table 16, the ordered logistic regressions for *Economic Expertise* can be found. Model 8 looks into the independent dummy variable *Economic Crisis* and ordinal dependent variable *Economic Expertise*, with *Country=UK* as the control variable. The model indicates a positive association ($B = ,553$). Moreover, $Exp(B)$ indicates that after the economic crisis in 2012, there is an increase of 1,738 times the opportunity that a bureaucrat had a higher level of education than in 2008. However, the association and odd-ratio are not significant ($p > ,05$). This means that *Economic Crisis* is not a significant predictor of *Economic Expertise* when controlled for *Country=UK*.

Table 16

Ordered Logistic Regression of 'Economic Expertise' (N = 124)

	Model 7			Model 8		
	B	(s. e.)	Exp(B)	B	(s. e.)	Exp(B)
Ec. Crisis	,573	,342	1,773	,553	,343	1,738
Country=UK				,150	,344	
Nagelkerke R ²	,025			,027		

4.4 Implications for Hypotheses

Now that all the comparisons and statistical tests are fulfilled, it is time to reflect on the hypotheses. This first hypothesis was:

H1: The economic crisis resulted in the recruitment of economists with alternative economic ideas to the neo-liberal one.

This hypothesis expected a negative correlation between the variables *Economic Crisis* and *Neo-Liberal Ideas*. This negative correlation meant that when the dummy variable *Economic Crisis* grew (from 0 to 1), it was expected that the amount of *Neo-Liberal Ideas* at financial ministries declined. However, the results showed something else. The mean comparison in Table 6 already showed that in 2012 the number of bureaucrats working at financial ministries educated at mainstream economically educational institutions increased compared to 2008 with 14%. Besides the fact that there was an increase instead of an expected decrease, a two proportions z test proved that the difference in proportions was not statistically significant. Table 7 and Table 8 were mean comparisons for the separate countries and indicated that both the German financial ministry and the United Kingdom were subject to an increase of bureaucrats educated at economically educational institutions that promote neo-liberal ideas. Moreover, Table 12 showed no significant correlation between the variables *Economic Crisis* and *Neo-Liberal Ideas* ($p > ,05$). In addition, the binary logistic regression in Table 13 (Model 2) showed that *Economic Crisis* is not a significant predictor of *Neo-Liberal Ideas* within financial ministries ($p > ,05$). H1 can therefore be rejected. The alternative hypothesis was:

H1*: The economic crisis did not result in the recruitment of economists with alternative economic ideas to the neo-liberal one.

This hypothesis expected no – or a positive relationship between the variables *Economic Crisis* and *Neo-Liberal Ideas*. As mentioned above, the mean comparisons hinted at a positive relationship between the variables. However, the correlation analysis and regression proved differently. The variables *Economic Crisis* and *Neo-Liberal Ideas* have no significant relationship ($p > ,05$). These findings mean that the alternative hypothesis H1* can be confirmed.

The second hypothesis was:

H2: The economic crisis led to more technically competent economic policy-makers at financial ministries.

Technical competency was measured by looking at the professional trajectory and educational background of bureaucrats. This hypothesis expected a positive relationship between the variables *Economic Crisis* and *Economic Experience*, *Economic Education*, and *Economic Expertise*. This correlation meant that the expectation was that when dummy variable *Economic Crisis* grew, it was expected that *Economic Experience*, *Economic Education*, and *Economic Expertise* within financial ministries would also grow.

The mean comparison in Table 6 showed a minimal increase of 2% of *Economic Expertise*. The mean comparison for the separate countries showed similar results, increasing 5% for Germany and 1% for the UK. Moreover, the difference between the proportions of economically experienced bureaucrats working at financial ministries of Germany and the United Kingdom was not significant ($p > ,05$). The correlation analysis showed no correlation between *Economic Crisis* and *Economic Experience* ($p > ,05$). In addition, the binary logistic regression in Table 14 (Model 2) showed that *Economic Crisis* is not a significant predictor of *Economic Experience* ($p > ,05$).

The mean comparison in Table 6 did show an increase of *Economic Education*. The proportion of bureaucrats with an academic economic degree increased from 42% in 2008 to 60% in 2012. However, this difference between proportions of bureaucrats with an academic economic degree between 2008 and 2012 was not significant ($p > ,05$). The mean comparison for the separate countries showed that there was an increase for both the countries. The increase for the United Kingdom, however, was much more significant than for Germany. Moreover, the difference between proportions of bureaucrats with an academic economic degree between 2008 and 2012 was, for the United Kingdom, significant ($p < ,05$). However, Table 16 showed no significant correlation between *Economic Crisis* and *Economic Education* ($p > ,05$). In

addition, the binary logistic regression in Table 15 (Model 2) showed that *Economic Crisis* is not a significant predictor of *Economic Education* ($p > ,05$).

The frequency comparison in Table 7 showed that the level of *Economic Expertise* also increased, while the percentages of bureaucrats with an Economics Master's degree and Ph.D. in economics also increased by 4,1% and 2,5%. However, the ordered logistic regression in Table 17 (Model 2) showed that *Economic Crisis* is not a significant predictor of *Economic Expertise* ($p > ,05$). This finding means that even though the technical competency (in terms of education) of bureaucrats grew between 2008 and 2012, this was not due to the economic crisis of 2008. H2 can therefore be rejected. The alternative hypothesis was:

H2*: The economic crisis did not lead to more technically competent economic policy-makers at financial ministries

This hypothesis expected no – or a negative relationship between independent variable *Economic Crisis* and dependent variables *Economic Experience*, *Economic Education* and *Economic Expertise*. Therefore, based on the statistical tests, this alternative hypothesis should be confirmed.

However, the rejection and confirmation of these hypotheses need some discussion. There were a couple of interesting findings in the statistical analysis. First of all, the z test for difference between two proportions showed that the difference between the proportions of bureaucrats with an academic economic degree between 2008 and 2012 was almost significant ($p = ,051$). Moreover, the z test for the difference between the two proportions for the United Kingdom was significant ($p < ,05$). The correlation between *Economic Crisis* and *Economic Education* crisis and the odds ratio in the binary logistic regression were also almost significant ($p = ,051$)($p = ,052$). Thus, stating that the economic crisis did not affect technical competence (in terms of economic education) is too short-sighted.

Especially the ministry of finance of the United Kingdom showed a significant increase of employees with an academic degree in economics. The difference between the two proportions of 2008 and 2012 was significant ($p < ,05$). In a review on the HM Treasury's (the financial ministry of the UK) management response to the economic crisis, the subject economic expertise received extra attention. In this review, there is explained that the ministry did not see the crisis coming. In addition, the review explained that the ministry was unable to handle the consequences of the crisis. In order to handle the crisis, the ministry relied on

expertise from people working outside of the ministry. Based on these facts, the ministry realized that the level of economic expertise was too low inside the ministry. Moreover, the review explains that after the crisis, the ministry deepened the economic expertise of its staff (White, 2012). The findings of this research show, indeed, that the level of economic expertise got deepened in the United Kingdom.

For Germany, a similar review is not available. The differences, however, were also obtainable for Germany. Not as big as in the United Kingdom and not significant ($p > ,05$). The difference not being significant for Germany is why the mean comparison and regressions of the total population did not present any significant association between the independent variable and *Economic Education*. While there was an increase obtainable for Germany, the possibility exists that the outcome could have been significant if more observations got included. As mentioned, the amount of observations used for the analysis is relatively small.

The statistical tests have proved that the second hypothesis cannot be confirmed with a high degree of certainty, while $p > ,05$ for every statistical test. However, there are some concerns:

- The tests showed almost significant associations.
- The ministry of the United Kingdom mentioned they deepened their expertise due to the crisis and the mean comparison for the United Kingdom backed this up.
- Furthermore, last but not least, the small number of observations can be a reason why no significant relationship was found. The possibility exists that with a larger amount of observations, the relationship would have been significant.

These concerns indicate that the rejection of the second hypothesis may be a false negative.

5. Conclusion

This research started with the following research question:

How has the economic crisis of 2008 influenced the competencies of top and mid-level financial bureaucrats working at the financial ministries of the United Kingdom and Germany?

After a thorough investigation of the literature on this subject, it was expected that the crisis would have caused a shift away from neo-liberal ideas and that ministries appointed more bureaucrats with alternative economic ideas. The second expectation was that the crisis would have resulted in the recruitment of more technically competent bureaucrats.

After performing several statistical tests, the results are that the expectations were not correct. The amount of neo-liberal economists working at the financial ministries increased from 2008 to 2012. This difference, however, was not significant and was not directly attributable to the economic crisis of 2008. Technical competency grew within the financial ministries of Germany and the United Kingdom after the economic crisis. Nevertheless, the statistical tests proved that this difference was not significant and was not attributable to the economic crisis. However, as discussed in the empirical analysis, this result may be a false negative. Still, based on the results of this research, the answer to the research question is that the economic crisis in 2008 has not influenced the economic ideas and technical competency of top- and mid-level bureaucrats working at the financial ministries of the United Kingdom and Germany.

5.1 Discussion on the Results

The alternative hypotheses that expected no or opposite results to the expectations were adequately discussed in the theoretical framework. This was done because, based on the general literature of the effect of crises, the possibility that these hypotheses were true was realistic. Thus, the alternative hypothesis that expected no or a positive effect of the economic crisis on neo-liberal economists within financial ministries can be confirmed with certainty. There are two possible explanations why the amount of neo-liberal economists and, therefore, the amount of neo-liberal ideas did not decline within financial ministries.

The first explanation comes from the work of Crouch (2011). To put it simply, Crouch (2011) explained that neo-liberal ideas remained to be dominant because society gets run by giant firms and these giant firms are in favor of neo-liberal ideas (Crouch, 2011). Interestingly, Blyth (2002), who explained the discreditation of the dominant economic ideas after the Great

Inflation in the 1960s and 1970s, emphasized that one of the key factors behind the success of the discreditation of the dominant economic ideas at the time was the heavy support and sponsorship of the business sector behind it (Blyth, 2002). The difference between the economic crisis of the 1960s and 1970s and that of 2008 appears to be the support of the business sector behind the discreditation of ideas. Based on Blyth's (2002) and Crouch's (2011) works, the support of the business sector appears to be crucial for the discreditation of economic ideas. The fact that this was not the case in 2008 may well explain the results of the research.

A specific explanation for Germany and the United Kingdom comes from the works of Heise and Thieme (2016), Harley and Lee (1998), and Lee (2006). These works were already mentioned in the methodological framework and provided the list of heterodox economically educational institutions. There were only nine educational institutions that promoted heterodox economics. This number is meager, considering the size of the United Kingdom and Germany. In the named articles, the authors explain why this number was that low in these countries. The explanation is that mainstream economics were heavily institutionalized and standardized within the organizations that organized the academic work in Germany and the United Kingdom. Therefore, the vast majority of universities in Germany and the United Kingdom taught neo-classical (mainstream) economics with professors that were neo-classical economists (Heise & Thieme, 2016; Harley & Lee, 1998; Lee, 2006). The vast majority of universities in both countries promote neo-liberal ideas, which means that if a British or German person gets an economic, academic degree, the chance is vast that this comes from an educational institution that promotes neo-liberal ideas. Furthermore, the analysis proved that the number of bureaucrats with an academic economic degree increased. Considering the small number of heterodox institutions, this would mean that the amount of neo-liberal ideas would also increase. The very strong and significant correlation between *Neo-Liberal Ideas* and *Economic Education* proved, indeed, that this was the case ($\Phi = ,890, p < ,01$).

For the findings on the technical competency, the discussion of the results is more complicated. This complication originates from the fact that the findings on the education of bureaucrats may be false negative. The alternative hypothesis that expected no- or a negative effect of the economic crisis on technical competency cannot be confirmed with a great degree of certainty. There is, however, one thing that can be concluded for sure: the economic crisis did not lead to more bureaucrats with experience in the field of economics. The findings on the education of bureaucrats do need to be interpreted in the same way, while no effect of the economic crisis can be confirmed based on the statistical tests. In the theoretical framework,

the work of Astryan et al. (2015) was given as a possible reason why the economic crisis did not affect the competencies of bureaucrats. Astryan et al. (2015) explained that the crisis-reform-link is less evident in countries with large bureaucracies because of bureaucratic resistance against reforms. Considering the size of the United Kingdom and Germany, this is a reasonable explanation.

By looking at the data more closely, there can be found a difference between Germany and the United Kingdom. The mean comparison for the latter proved there was a significant difference between 2008 and 2012 in terms of bureaucrats with an academic economic degree. This significant difference was not found for the German financial ministry. Germany did show an increase, but this increase was not significant. A possible explanation for this difference is that the observations of the United Kingdom were all top-level bureaucrats, while in Germany, the majority of observations were mid-level bureaucrats. The works of Hallerberg and Wehner (2012) and Pastorella (2016) proved that governments were more likely to appoint technically competent policymakers during crises. These works were, as explained, one of the reasons why there was an increase of technical competency expected. However, the findings of these authors were based on governmental leaders (ministers) rather than top- and mid-level bureaucrats. The fact that the United Kingdom's top-level bureaucrats did show a significant difference between 2008 and 2012, the mid-level bureaucrats of Germany did not, and the works of Hallerberg and Wehner (2012) and Pastorella (2016) proved that crises affect the technical competency of governmental leaders may indicate that the effect of a crisis is less or not evident for lower positioned bureaucrats. The findings of this research are not enough to conclude such a thing, but the findings do indicate it.

5.2 Theoretical and Practical Implications

There are several theoretical implications. First, the literature that described the mechanisms of change and continuity of crises cannot be confirmed nor rejected by the findings of this research. This research did not look into the mechanisms but only whether a change occurred and what changed. There is, however, one exception. Randma-Liiv and Kickert (2017) and Boin et al. (2008) described that crises form lessons for governments and cause, therefore, change. However, one of the most important causes of the crisis was neo-liberalism and its dominance at bureaucrats (Randma-Liiv & Kickert, 2017; Crotty, 2009). If governments learned from the crisis, neo-liberal ideas would, logically, have declined inside their institutions. Instead, the findings proved the opposite. This way, the research contributes to the theoretical discussion on the learning ability of governments from crises.

The findings of this research align with Schmidt and Thatcher's (2010) and Crouch's (2011) works, while the findings proved that, despite the economic crisis, neo-liberal ideas remained dominant among economists working in the financial ministries of Germany and the United Kingdom. The work of Birch and Mykhenko (2010), in which got explained that neo-liberalism was finished due to the economic crisis of 2008, is contradicted by the findings of this research. Neo-liberalism, at least in the financial ministries of Germany and the United Kingdom, only grew after the economic crisis.

The works of Hallerberg and Wehner (2012) and Pastorella (2016) explained that governments are more likely to appoint technically competent policymakers during crises. Based on the statistical tests of the whole population, these findings cannot be supported by this research. However, as explained, the United Kingdom did show a significant difference in technical competency between 2008 and 2012, and the findings of the total population may be false negative. The research is, therefore, not adequate to support or reject the findings of these works.

Besides theoretical implications, the research provided some practical implications. First of all, the research showed that the learning ability of governments is limited. The dominance neo-liberal ideas and technical incompetency of top- and mid-level bureaucrats proved to have contributed to the cause and severity of the crisis. Still, both did not decrease and increase, although the latter may be false negative. Even with the most recent crisis, the Covid-health crisis, governments made mistakes (Maxmen, 2021). Based on the findings of this research, one should not expect much change in the competencies of bureaucrats responsible for making mistakes. Moreover, the risks of having neo-liberal economists are that their ideology favors little government regulation. Little government regulation is one of the leading causes of this crisis (Randma-Liiv & Kickert, 2017; Crotty, 2009). As Boin et al. (2008) mentioned, not only do first-order causes of crisis need to be handled, but the conditions under which these causes could happen must also be resolved. Otherwise, the crisis will inevitably happen again (Boin et al., 2008). Neo-liberal ideas are what conditioned too few regulations. Therefore, this research's practical implication is that it shows that governments have not learned from the previous economic crisis and, therefore, the danger of a new one is lurking.

5.3 Limitations and Recommendations

There are also some limitations of the research. The most significant limitation was already mentioned in other parts of this research. That limitation is the relatively small amount of observations used. The other limitation is the fact that there were only two countries included.

In the statistical analysis there was explained that the rejection of the second hypothesis might be a false negative. Including more observations could have resulted in other conclusions. This small amount of observations is, therefore, a limitation of this research. Second of all, this research tried to fill the existing gap in the literature on the effect of crises on the competencies of top- and mid-level bureaucrats. By only including two countries from Europe, the findings are not generalizable to bureaucrats worldwide. The gap, therefore, remains to exist.

Still, I think this research is a good starting point of research on the effect of crises on the competencies of top- and mid-level bureaucrats. Based on the limitations of this research, there are several recommendations for future research. As mentioned, the findings indicate that the effect of crises is less evident for lower-positioned bureaucrats. This indication, however, cannot be concluded by the findings because these are too limited. In order to give a sufficient answer to the question of what effect financial crises have on the competencies of bureaucrats, research with more observations is needed. In this case, more refers to more top- and mid-level bureaucrats and more countries and, thus, more financial ministries. Doing similar research with more bureaucrats, especially more mid-level bureaucrats, will make the findings more robust and answer the question of what effect the financial crisis had on the competencies of bureaucrats more reliable. This inclusion of more observations also makes it possible to conclude what this research indicated: Is the effect of the financial crisis is less evident for lower-positioned bureaucrats? Including more financial ministries from other continents and countries makes research more able to determine whether the findings are attributable to the financial crisis instead of domestic factors. Moreover, the inclusion of countries from other continents makes the findings more generalizable and can fill the existing gap in the literature on the effect of financial crises on the competencies of bureaucrats.

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