

**GOVERNMENT CONTINGENT LIABILITES:
HIDDEN DEBT AND FISCAL RISK
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Abstract

As ideas of economic management have developed, governments around the globe have taken an increasingly large role in their domestic economies. Leaders have faced increasing pressure to simultaneously decrease annual deficits, offer more services, and maintain economic growth. As a result, many leaders have intentionally and unintentionally turned to contingent liabilities. Contingent liabilities, often unrecorded or recorded insufficiently on the balance sheet, allow the offering of services or subsidies through the creation of off-balance sheet obligations – effectively allowing a governing party to provide more to citizens without having to deal with the political consequences of deficits or a growing national debt. As the topic of contingent liabilities has become an area of focus for scholars, it has become clear that while contingent liabilities do not cause fiscal crises, their propensity to occur at the same time create a more fragile fiscal state than traditional debt indicators such as gross debt show. This literature review compiles and represents the major sources within the field showing the causes, impacts, and solutions for government contingent liabilities.

Keywords: *Government, contingent liabilities, fiscal risk, fiscal sustainability, government debt, gross debt, debt indicators.*

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1. Introduction

1.1 Primer

Global economic events, such as the 2007 – 2008 crisis, have drawn additional attention and concern to public finances around the globe. The majority of western countries saw their public debt grow throughout the crisis as new stimulus packages and bailouts were created (Mora, 2018). However, the area of contingent liabilities has become a space of particular interest for academics, independent government funded organizations, and government departments which focus on risk management (Mora, 2018). While a common understanding of contingent liability risk has been developed by the private sector through universal standards and treatments, and its risks are able to be properly interpreted by educated decision makers (Darabi & Faghani, 2012), the same can not be said for public sector contingencies.

The concept of a contingent liability is simple at face value and is best explained within the context of a private enterprise. A contingent liability is a liability that may arise when one or more future events do or do not occur (Young, Wiecek, McConomy, Kieso, Wetdgandt, & Waterfield, 2016). Their function within the context of accounting theory is relatively straightforward: to communicate the information that management held about possible future events to shareholders and thereby reduce information asymmetry to portray a more accurate valuation of the firm (Scott, 2012). While different accounting standards have taken different approaches to contingencies in terms of recognition and disclosure, the ultimate goal of providing a more accurate depiction of a firm through information has been maintained (Dykeman & Entwistle, 2014).

Governments, as a result of their large role in the economy, increasingly large and consolidated private companies and the pressures of the political system, face contingencies which private corporations do not and that can often be defined by public pressure and opinion rather than legal obligation (Towe, 1991). Political leaders are tasked with governing the country and creating positive change. While this is not limited to economic prosperity, it is expected that governments help to grow the economy and improve the wellbeing of the electorate while responsibly managing the public accounts. When an economic crisis occurs, political leaders are faced with a serious problem. They can allow corporations that have taken on excessive risk to fail, or lend them the financial supports to survive, weighing the loss of employment and economic activity against the cost to the public (Mora, 2018). Mora (2018) asserts that the consolidation of businesses has led to organizations which are “too big to fail”, meaning the economic and social loss of their failure is unacceptable to governments. This ultimately creates a moral hazard for big businesses to take on excessive risk which otherwise would be unacceptable. Finally, the nature of politics creates a moral hazard for political leaders to use contingent liabilities to hide debts off of the balance sheet (Brix, 2012; Towe, 1991; Smith, 2009; Ozkaya, 2014).

The link between contingent liabilities and fiscal risk is made through the financial statements of government's and their use as a performance indicator. Financial accounting standards for governments are aware of the additional risk which they face yet are unable to provide guidelines that allow for their reporting within the financial statements as a result of measurement uncertainty (ISPAS, 2020). No comprehensive list of all sources of government contingent liabilities exists, and common measurement methods can not be applied universally due to the high complexity and differing nature of contingencies, only providing further

challenges to their official inclusion. Yet nonetheless, gross debt, based on government financial statements, is used as a primary indicator of fiscal sustainability, fiscal risk, and government performance (Barnhill & Kopits, 2004). The result is that budgets, decisions, and forecasts are made using incomplete information.

In turn, these factors lead to increased fiscal risk and are a threat to fiscal sustainability (See for example Brixi, 1998; Ozkaya, 2014; Towe, 1991; Kaplan-Appio, 2002; Fernandez, Andrews, & Conrecode, 2012). While contingent liabilities do not cause fiscal crises, they are often triggered by them (Ozkaya, 2014). An external event beyond the control of the government can lead to contingent claims from different areas to be realized simultaneously, creating significant variances from predicted fiscal outcomes in government budgets and forecasts (Ruiz-Arranz, 2019). Furthermore, the reported financial positions of governments can appear to be better than their actual state, in turn negatively impacting sustainability and providing decision makers with incorrect information.

Authors have presented a wide array of solutions to the issue of contingent liabilities. However, these proposed solutions can be divided in to three primary categories: changes to the accounting systems and standards used by governments to report more if not all contingent liabilities on the balance sheet; the creation of reports and other education methods outside of the financial statements to make decisions and the public more aware of contingent liabilities and their threats; and, finally, alterations to the policies and strategies used by governments to monitor and manage contingent liabilities with a focus on risk mitigation. However, no compilation of these highly diverse recommendations currently exists. While a consensus has emerged as to a framework for analyzing the sources of contingent liabilities, the extent of the impacts and the proposed solutions for governments vary widely.

1.2 Previous Literature Reviews

The literature on the subject of government contingent liabilities is substantial but fragmented. Pockets of literature exist in several areas. Unlike many topics, whose primary forum is in academic journals, the discussion of public contingencies occurs in formal academic settings, government organizations, and governmentally funded organizations. At the time of the preparation of this literature review, no other available literature reviews are available in any of the databases used for research. Furthermore, no government agency or government funded organization has created a literature review for the subject. While it is unclear as to whether or not the lack of previous literature reviews stems from the scattered nature of the literature itself or that the subject has not warranted it to this point, the increasing importance of contingent liabilities and the now substantial body of literature points to the conclusion that the subject merits a review now.

1.3 Purpose of Study

The goal of this examination is to accurately and fully explore, consolidate, and represent the intricacies of the conversation surrounding government contingent liabilities that is occurring in more formal forums. Specifically, to consolidate the scattered literature into a single paper covering the sources of government contingent liabilities, their effects on debt indicators and fiscal risk, and finally proposed solutions. To this end, literature and other relevant information has been gathered from a wide variety sources using specific search guidelines outlined in the methods section. After a stronger foundational understanding of contingent liabilities and the literary structure has been established, the major topics are then summarized, compared, and contrasted in the discussion section before ultimately being synthesized for the reader in a more concise summary. Finally, concluding remarks will be offered about the results of the literature

and potential future research which could be conducted in the area or to extend the readers understanding of the available literature

2.1 Methods

As mentioned above, the literature on government contingent liabilities is substantial but scattered in both its location and nature. The many fora of the discussion are unsurprising given the number of stakeholders interested in government contingencies. Academic, national government, and government funded organization interest have led to a mix of peer reviewed articles and reports. The nature of contingent liabilities has also lent to the diversity of the literature, as two different genera of contingency have significant differences. Furthermore, the exposure of every government to contingent risk varies greatly based on commitments and political environment, lending to a body of literature which is focused on the analysis of a single type of contingent liability in a specific country.

In order to fully explore this environment, research was divided into four distinct stages. In the first stage, a search was conducted into two major business databases, Business Source Complete and ProQuest Central, for high quality peer reviewed articles. No date filter was applied and the whole texts of articles were searched using a wide array of key words such as contingent liabilities, government, and fiscal risk – an exhaustive list is provided in table 1, Appendix A. Second, the references of each article were searched for other potentially valuable sources. Third, based on the finding of several auditor general reports in the references sections of papers found in step 1, a search was conducted for articles and reports on government contingent liabilities by the supreme audit offices of Canada, the United Kingdom, the United States, Australia, and the twenty-nine countries currently using or in the process of adopting IPSAS listed in table 2 of Appendix A (IPSAS Implementation, 2017). However, because

countries that had not planned on implementation until after 2019 were part of this list, only the supreme audit offices of the eighteen countries listed in table 3 of Appendix A were searched. These searches involved using the same key terms as part 1. Both the search functions built into the websites of the supreme audit offices and any available databases were searched. Fourth, and finally, a search was conducted of four major independent government funded entities for reports, working papers, recommendations, and presentations. Specifically, the databases and websites of the Organization for Economic Co-operation and Development (OECD), the Commonwealth Secretariat, the International Monetary Fund (IMF), and the World Bank were reviewed. The results of this search are listed in table 4 of Appendix A. The results of these searches were 22 high quality peer reviewed articles, 3 reports done by supreme audit offices, and 10 working papers, reports, recommendations, and presentations by government funded organizations.

2.2 Types of Articles Collected

Of the documents collected during the research phase, 59% came from high quality peer reviewed sources, 8.10% came from supreme audit offices, and 32.43% came from government funded organizations. Ultimately, this indicates that most of the awareness of government contingent liabilities rests in the academic sphere and non-governmental organizations tasked with aiding world development through finance. This is reinforced by the distribution of papers by field. While contingent liabilities are ultimately an accounting concept, only 24.32% of the collected articles were written by accountants or published in accounting journals. The largest group, which composed 45.95% of the literature gathered, were written by economists or published in economic journals. The reviewed literature covered three themes: sources of government contingencies, the impacts of contingent liability realizations, and proposed

solutions. The articles were coded using these categories yielding table 5 of appendix A. Articles were not limited to any single category, and a majority covered at least two of the four. The coding revealed that most articles covered categories one and three, 59.46% and 56.76% respectively, with only 43.24% touching on the impacts which government contingent liabilities have. An even smaller percentage within category two offered quantitative analyses of the true size of governments debts (see figures 1, 2, and 3 of Appendix A for more graphical representations of the types of articles collected). In keeping with the lack of literature within accounting on the topic, none of the literature reviewed recommended changes that could be directly translated into International Public Sector Accounting Standards (IPSAS), the Canadian Public Sector Accounting Standards (PSAS), or any other standards used by governments around the world. These two facts indicate that the literature shies away from the quantitative analysis which must be refined in order to gain a greater understanding of contingent liabilities and that there is a disparity between the discussions occurring in the economic and accounting fora.

2.3 Literature Review Exclusions

This literature review examined two major business databases, twenty-two supreme audit offices, and four of the most well-known government funded organizations in the world. This mix was chosen to accurately cover the various areas of discussion on contingencies. However, achieving an accurate mix meant limiting each of the areas. Beginning with journals, future literature reviews should look to expand the number of databases included in the search. Furthermore, the addition of more economic and political science databases would help to lend breadth to the research. A deeper understanding of the political maneuvering and stakeholders involved would also serve to deepen the understanding of the topic. Additional government organizations, outside of supreme audit offices, may also be included in future reviews. While

the supreme audit offices of many western countries publish reports on salient risks, this role is not universal. The expansion of searches to central bank databases and government agency databases in the future will likely yield more literature as well. Finally, while four government funded independent organizations were searched, only the reports published in their databases were included. Many provided meeting notes and conference slides which could be included in the future. The additional of more independent government funded organizations in the future may also yield results, as they were a strong source of literature for this review.

2.4 Challenges

The review of the collected literature created two significant challenges. The first and most significant of these challenges was the lack of a consistent typology between articles and reports. While the underlying meaning was the same, differences often exist in the words used to represent them. To this end, a typology has been established for the use of this review based on the most commonly used terms (table 6, Appendix A). Articles were carefully reviewed individually to ensure that meaning was not being distorted in this process. The terms used therefore reflect the meaning of the paper but may not necessarily reflect the exact vocabulary of the original document.

The second challenge was the intersection of the accounting and economic fields which occurs on the topic of contingent liabilities. Both economists and accountants alike opine on government contingencies, but from significantly different perspectives. Accountants, generally concerned with issues of reliability, accuracy, and timeliness, take an approach which focuses on the standards and whether they are achieving their goal. Economists take a more macroeconomic approach and are more concerned with the conceptual idea of the government's real debt, possible forms of measurement, and solutions. These articles often prescribe complicated

solutions for specific scenarios which may or may not fulfill the requirements of accounting. As a result, this literature review has blended the two approaches and taken articles of both classes to provide a more holistic view of contingencies, fitting of a topic at the intersection of both fields.

3.0 Discussion

In order to reflect the themes in the literature, the discussion has been divided in to three core subsections identified in section two. The first section establishes a foundational understanding by reviewing the sources of government contingent liabilities and expounding on the relevant accounting standards. The second section, further divided into two subsections, focuses on the issues which government contingent liabilities and standards cause to balance sheets and measurement metrics. Section three then compiles and summarizes the major forms of recommendations which academics make to governments in order to address the fiscal risk which contingencies cause. A fourth, and final, section of the discussion then takes the discussion in the previous three categories and synthesizes it in order to create a final summary in which all of the major themes are integrated.

3.1.1 Contingent Liabilities and Relevant Standards

Before delving into the sources of government contingent liabilities, it is useful to establish an understanding of what contingent liabilities generally are and the standards which are used to account for them in the public and private sector. Organizations are often involved in situations where it is uncertain whether an obligation to transfer cash or other assets will exist at the date of the statement of financial position. These situations are broadly referred to as contingencies and are defined in accounting as “an existing condition or situation involving

uncertainty as to possible gain or loss to an enterprise that will ultimately be resolved when one or more future events occur or fail to occur” (Wiley, 2016). In a scenario where perfect information about the future was available, all future costs that would be incurred could be represented appropriately in financial statements. However, given that there is no scenario where perfect information is available for possible future events, contingencies serve as a way to deal with uncertainty.

3.1.1.1 Private Sector Standards for Contingent Liabilities

Unfortunately, there is no unified methodology to deal with contingencies and it is a topic that stirs up significant debate (Dykeman & Entwistle, 2004; Holder, 1993). Treatments can vary broadly depending on the standards which are being used. Under the International Financial Reporting Standards (IFRS, 2020), contingent liabilities refer only to existing possible obligations that are not recognized – where possible outflows which are more likely than not and can be reliably measured, are already treated as liabilities. Provisions are not required under IFRS (2020) because contingent liabilities are viewed as being possible obligations whose existence will only be confirmed by the occurrence of a future event. Instead, disclosure is required depending on the situation. On the other hand, the Accounting Standards for Private Enterprises (ASPE) treats contingent liabilities as the whole population of existing or possible obligations that depend on the occurrence of one or more possible future events to confirm their existence or their amount (Wiley, 2016). However, a contingent liability, from the total population of all possible events, are only accrued if they are likely and the amount of the loss can be reasonably estimated (Wiley, 2016). In effect, both IFRS and ASPE agree on the existence of off-balance sheet contingent liabilities but neither require accruals unless the probability of an occurrence is greater than not, and if the possible liability can be reliably

measured. In an instance where the probability is greater than not and reliable measurement is not available, disclosure should be made. Finally, if the contingent liabilities occurrence is not probable then no accrual or disclosure is made.

3.1.1.2 Contingencies Under IPSAS

This system has worked effectively for private sector companies because a common understanding of the scope of contingent liabilities has been established, and the usership is educated in this understanding. Contingencies are effectively limited to legal obligations, and while estimates still result in figures which are lower than real liability the limited scope means the impact is less significant (Smith, 2009). Furthermore, Darabi and Faghani (2012), studied the effects of contingent liabilities and ambiguities on decision making by financial statement users. Their study, based on Einhorn and Hogarth's ambiguity model (1985), analyzed data gathered from 135 participants and found that disclosure was effective in influencing decision makers who had formal financial education; however, the disclosures had no effect on users who did not have appropriate understanding of the importance of disclosures (Darabi & Faghani, 2012). The issue of contingent liabilities becomes more complicated when considering governmental organization, on whose nature decision makers have not been educated.

No common accounting standards exist amongst all governments, however, public sector accounting standard initiatives have emerged in recognition of the differing nature of the operations and goals of governments from private corporations, and the different needs of government financial statement users (Baker & Rennie, 2018). The International Public Sector Accounting Standards (IPSAS) are the most widely adopted set of standards for public sector accounting, being used by 15% of national governments globally as of the last global implementation update (IPSAS Implementation: Current Status and Changes, 2017). Under

IPSAS, contingent liabilities are considered to be where, as a result of past events, there may be an outflow of resources embodying a future obligation or service potential (IPSAS 19: Provisions, Contingent Liabilities, and Contingent Assets, 2020). This modifier limits events which are certain in their occurrence but occur quickly such as an economic crisis requiring a stimulus package or a natural disaster which requires relief. In addition, contingencies which meet the previous requirement are only accounted for if they are more probable than not and can be reliably measured, otherwise they are disclosed in the financial statement footnotes (IPSAS 19: Provisions, Contingent Liabilities, and Contingent Assets, 2020). This position is similar to that of IFRS in that it limits contingent liabilities to stemming from past events. From an accounting perspective, this limitation is logical in that it limits the number of predictions and therefore the amount of uncertainty which is injected into financial statements.

3.1.2 Sources of Government Contingent Liabilities

However, financial statements, and specifically gross debt, are often used as indicators of the stewardship of the sitting government, fiscal sustainability, and fiscal risk (Bloch & Fall, 2016). Economists argue that current accounting measures only represent a portion of governments true financial liabilities and risks and are largely inaccurate as a result of their failure to account for the different – and much broader – sources of government contingent liabilities (eg. Bloch & Fall, 2016; Brixi, 2012; Bajo & Premorac, 2011; Towe, 1991; Amyas, 2016). Often, current standards can result in some contingencies being completely off of the balance sheet (Smith, 2009), and when they are accounted for, methods can often lead to a gross underestimation of the true liability (Bajo & Premorac, 2011).

The literature in discussion for this review takes a primarily economic view of contingent liabilities. Therefore, rather than considering whether or not the current accounting for

contingencies is correct within the accounting standards used by a specific nation, it is more useful to establish a more comprehensive understanding of the sources of contingent liabilities for national governments. A common understanding has been developed of the sources of liability risk which the public sector is exposed to, and as a result what should be accounted for in an ideal scenario. The fiscal risk matrix, first proposed by Brixi (1998), for central government obligations creates four categories in which liabilities can fall: explicit direct, implicit direct, explicit contingent, and implicit contingent (table 1, Appendix B). The goal of the fiscal risk matrix is to act as an analysis tool to identify areas which will create fiscal risk – defined as being deviations of fiscal outcomes from what was expected at the time of the budget or other forecast (Brixi, 1998). While not an exhaustive list, the matrix provides a general framework through which government liabilities can be perceived and is widely used. Relevant to this review are the categories of explicit contingent liabilities and implicit contingent liabilities (Vergara, 2018; Smith, 2009; Brixi, 2014; Commonwealth).

3.1.2.1 Explicit Contingent Liabilities

Of the two categories of contingent liabilities, the explicit variant is – by its own nature – better understood. Explicit contingent liabilities can be effectively conceptualized as a group of legal obligations that may or may not arise from prior commitments of a government. For example, legislation which ensures the right of all citizens to access a social support immediately creates a liability for the government to then offer that support. While many of these programs, such as social assistance, are documented or accounted for in some way, the scope of the potential cost of these programs has yet to be considered (Brixi, 1998). It is difficult if not impossible to cover every possible version of explicit contingent liability a public entity could

face, however traditional contingent liabilities, government guarantees, public-private partnerships, and government sponsored insurance programs are the most prolific.

3.1.2.1.1 Government Credit Guarantees

The first of the sub-categories are government credit guarantees. These guarantees are liabilities through which the government assumes the entirety of the credit risk of a loan or bond issued by another party and are the largest group of explicit liabilities used by governments (Ulgenturk, 2017). In developing nations, these measures are often used by governments to help domestic companies acquire foreign financing that would not otherwise be available to them (Bajo & Premorac, 2011; Ulgentruk, 2017; Brixi, 2012). In order for foreign firms to invest, they require that the government back the loan, effectively transferring the default risk of the entity to the government and assuming the governments default risk. However, they are also used in developed nations through programme or umbrella guarantees. These are usually provided for a large group of beneficiaries and can include housing loan and student loan programs (Smith, 2009; Shich & Kim 2011). In most cases, these guarantees are run by specialized agencies. From the government perspective, the desire to issue a credit guarantee is a function of political and economic priorities, and so fluctuates drastically over time. The goal of these guarantees is to mitigate risk in order to encourage the market to provide services to the public that they otherwise would not. These programs are documented and accounted for in some form, but the accounting is typically based off of projections (Ulgenturk, 2017).

3.1.2.1.2 Public Private Partnerships

Public private partnerships (PPP's) have become a growing source of concern for scholars engaged in the literature of contingent liabilities (Schich, 2011; Brixi, 2012; Bajo &

Premorac, 2011; Ma, 2013) as they have become a source of financing for the upgrading of public infrastructure without having to burden the government balance sheet (Bixi, 1998). In this instance, PPP's refer to arrangements between the public and private sector where the private sector provides assets or services traditionally supplied by the public sector. Proponents and politicians looking to institute these partnerships often cite the increased efficiency that can be gained from involving the private sector. There is some merit to these arguments and the profit motive of the private sector can lead to better maintenance and service. However, Leruth (2009) shows through several examples that private financing of public investments can lead to the unknowing creation hidden debts and contingent liabilities. One of the most common guarantees issued is for a minimum level of revenue, in which a decrease in revenue resulting from an exogenous or endogenous event creates an obligation for the government to pay the difference to the guarantee (Ulgenturk, 2017). Such arrangements are common for utilities such as power and water (Bixi, 2012). Furthermore, depending on the structure of the agreement, a project failure can result in the government absorbing any outstanding liabilities – called a debt assumption commitment. Unfortunately, PPP's are often abused because their potential liabilities are contingent unless firm direct and explicit commitments to liabilities are made (Ulgenturk, 2017). Under IPSAS (2020) these contingent liabilities are not accounted for, which makes PPP's an effective way for politicians to provide increased services without incurring any immediate costs.

3.1.2.1.3 Government Sponsored Insurance Programmes

Government sponsored insurance programs refer to the provision of insurance by the public sector for low frequency but high impact events such as a bank failure, earthquake, or flood where the amount of government support is pre-described by law. These programs are

some of the most important explicit contingent liabilities. The major purpose of these programmes is to mitigate the risk of bank runs in a banking failure and to create a social safety net (Ulgenturk, 2017; Schich and Kim, 2011). Of the measures included within this category, government deposit insurance is the most prolific in its application (Ulgenturk, 2017; Towe, 1991). Typically, these are administered by a separate legal entity that is either publicly or privately run (Ulgenturk, 2017). The level of risk exposure which is created through these programs varies between countries based on the limits which are set and the skill of the debt managers. These programs are accounted for, often through actuarial reports which estimate program usage, but research shows that the inflows typically fall short of the requirements of these programs during financial crises (Ozkaya, 2014). In these instances, an obligation is created by an event, qualifying it as a contingent liability.

3.1.2.1.4 Traditional Contingent Liabilities.

Governments, like private organizations, are still exposed to litigation risk (Brix, 2012), environmental contingent liabilities (Fernandez, Andrews, & Conrecode, 2012), and fines (Mifsud, 2010). Governments can be sued by their citizens domestically and by other countries in forums such as the International Court of Justice. Furthermore, agreements that countries enter into can result in fines. The report by Mifsud (2010), the Auditor General of Malta, provides an example. Being part of the European Union (EU), Malta must meet Directive 2009/28/EC on the promotion of renewable energy results. In the event that Malta were to fail to meet the directive by 2020, it would incur financial penalties from the European Union. (Mifsud, 2010). While these events can result in significant contingencies, they are generally not correlated with a fiscal crisis, and so are more bearable than the other three types of explicit contingent liabilities mentioned above. Furthermore, because they are often more predictable, they are more

effectively accounted for. The only exception to this is lawsuits, which cannot be accounted for even in the probability of loss is greater than 50% – the threshold in IFRS – in case the accounting being used the case against them (IFRS, n.d.). However, this is not unique to public entities and ultimately is well understood by decision makers (Dykeman & Entwistle, 2004).

3.1.2.2 Implicit Contingent Liabilities

Implicit contingent liabilities, best defined as being “a ‘political’ or moral obligation that reflects public and interest group pressures” (Brix, 2012) is the universal understanding within the literature. This moral obligation to the public is the logical modifier which increases the breadth of the contingent exposure of governments over that of private sector entities, whose obligations under traditional theoretical models are solely to shareholders. To this end, the National Audit Office of the United Kingdom refers to the government as the “insurer of last resort” (Morse, 2016). This is one of the greatest challenges in defining and estimating implicit contingent liabilities for governments. No exhaustive list of possible sources exist because they are highly dependent on circumstance and the political environments which lead to their creation are the same. For example, there is no legal obligation for governments to implement fiscal stimulus packages during economic crises, however, it is likely that government will be pushed to by their electorate. The problem of implicit contingent liabilities is often exacerbated by moral hazard. Organizations, understanding their importance to the economy or local community, may act recklessly on the knowledge that they may receive a public bailout. The risk of this abuse, like implicit government contingencies in general, is also highly dependent on the local political climate.

It is perhaps impossible to gauge the implicit contingent liabilities of even one nation given their political environment as a result of the high levels of complexity in the decision-

making process. Because of this, implicit contingent liabilities are not accounted for under the international public accounting standards (IPSAS) (Public Sector Accounting Standards Board, 2020, International Public Sector Accounting Standards, IPSAS 19: Provisions, Contingent Liabilities and Contingent Assets; Public Sector Accounting Board, 2020, Public Sector Accounting Standards, PS3300: Contingencies). In spite of the difficulty in creating a complete understanding of implicit contingent liabilities for public sector entities, there are several which occur frequently enough that this analysis has been undertaken.

3.1.2.2.1 Sub-National Governments

The first of the implicit government contingent liabilities that will be discussed are those of sub-national governments. According to Brixi (2012; 1998) and Ma (2013), sub-national governments expose themselves to excessive fiscal risk. While some degree of risk taking is inevitable in decentralized environments, it is posited that sub-national governments create contingent liabilities in order to circumvent difficult restructuring and deficit targets – often through many of the same contingent mechanisms to which the national level government is exposed (Brixi, 1998). Unless the national government has guaranteed the debt of the sub-national government, there is no explicit legal obligation that will be created as a result of a sub-national default. Nonetheless, as Towe (1991) and Ma (2013) rightfully point out, the national level government may have a moral obligation to fund deficiencies that would result in significant losses of employment or public wellbeing. Examples of national governments providing massive sub-national bailouts exist in many countries including, but not limited to, Argentina, China, and the United States (Brixi, 1998). This issue is only further exacerbated by the perception at sub-national levels of government that the national level government will ultimately provide a bail out in the case of insolvency – which makes overspending the best way

for sub-national governments to provide services beyond their means to their citizens (Brixi, 2012; Bourn, 1998). Like some explicit contingent liabilities, implicit contingent liabilities can be correlated with financial crises, however, are not limited to this.

3.1.2.2.2 “Too Big to Fail” Organizations

While the phrase “too big to fail” is typically associated with large financial institutions, in the instance of implicit government contingent liabilities it refers to any organization whose loss would result in a negative economic or social impact so large that it would be deemed unacceptable by the government. Examples of situations which would qualify are the largest employer in a state/province or banks whose collapse would have adverse economic consequences as a result of their market importance and interconnectedness (Mora, 2018). Similarly, to sub-national governments, there is no legal obligation for governments to provide financial relief, yet a moral obligation to the wellbeing of citizens may still result in financial assistance. How financial relief to organizations is distributed to organizations can vary broadly, the most famous example being quantitative easing in the United States, but the cost of the obligation is ultimately the same.

Furthering the similarities to sub-national governments, a moral hazard exists for these organizations to take excessive risk in the knowledge that they will likely be bailed out by the government (Towe, 1991). In the case of a financial crisis, it is this category of contingent liability which becomes the costliest because it is in no way accounted for pre-crisis (Brixi, 2012), similar to programs such as employment insurance¹. Increasing the resiliency of financial institutions and local major employers can reduce the probable size of any future contingent

¹ Use of programs such as employment insurance are likely to increase during a financial crisis but are generally either allocated funds in a budget or are self funded through direct collections.

liability, but concern still exists among academics as to the size of these potential obligations that can arise during times of crisis by organizations which qualify as being too big to fail (Mora 2018).

3.1.2.2.3 Disaster Relief

The final major category of implicit contingent liabilities is disaster relief. Some countries mitigate the implicit risk of disaster relief by creating insurance plans or explicit systems of aid to their citizens, but most record liabilities and incur costs as they occur (Towe 1991). Like all implicit contingent liabilities, the financial exposure of the government will be correlated with the political environment within the country. The larger the political pressure, the more likely the occurrence of an unplanned liability. However, unlike the previous two categories, governments do budget for disaster relief. As a result, the cost of disaster relief often falls within the budgeted amount and only more extreme disasters result in a contingent liability (Fernandez, Andres, & Conrecode, 2012). Because natural disasters are not correlated with financial crises, these events occur individually and are not a significant threat to the financial stability of most countries (Morse, 2016). Nonetheless, increasing natural disasters as a result of climate change may make this a more prominent source of contingencies in the future (Brix, 1998).

3.1.3 Discussion Summary: Section One

Ultimately, the key factors of government contingent liabilities in this section are the accounting standards and the difference in the sources of those liabilities for governments. Accounting standards are not harmonized, however, IPSAS, the most common standard for national governments, does not define contingent liabilities in a way which is broad enough to

encapsulate the future liabilities which academics suggest may arise from many sources for governments. The requirement for recognition is that a past event triggers the consideration of a contingency limit's possibilities such as the accounting of costs for future stimulus packages. Furthermore, the breadth of government contingencies is not accurately represented in current standards. No consideration is given to the moral obligations which often result in implicit contingent liabilities for governments, and the current standards allow obligations which have been triggered by a prior event to go unaccounted for if the cost cannot be reliably measured.

3.2 Impacts of Government Contingent Liabilities

While the literature is in agreement about the sources of government contingent liabilities and the inefficacy of the current standards, there are varying ideas about the impacts which they have. Different authors assign more credence to specific impacts over others. While they do not contradict one another, no consensus exists. To accurately understand the reverberating effects which contingent liabilities have, it is useful to understand how the inclusion – or lack thereof – of contingencies in the financial statements and the subsequent use of financial statement figures in analysis affects a series of decisions made by political leaders and companies. The present treatment of government contingent liabilities causes an increase to the fiscal risk and fragility of national government finances while simultaneously misrepresenting the real financial position. In the previous section, the link between fiscal sustainability, fiscal risk, and government contingent liabilities was discussed. This section will further explore this relationship and the echoing impacts. Each topic was explored individually before a series of articles which performed quantitative analysis were reviewed. Finally, attention will be paid to the impacts which realizations can have on public finances.

3.2.1 Debt Measurement

First, it is useful to establish an understanding of how authors link contingent liabilities to fiscal risk and sustainability. To do so, the use of accounting figures as economic and performance indicators must first be discussed. Gross debt, measured by the sum of the book value of all obligations, is the most widely used indicator of debt (Bloch & Fall, 2016). Early research saw budget deficits as the source of financial crises, however over time a greater focus was placed on accumulated debt, which brought about indicators such as the debt to GDP ratio (Barnhill & Kopits, 2004). However, Bloch and Fall (2016) assert that these indicators are at best incomplete, and their use has resulted in adverse outcomes. The research of Galli and Padovano (2016) supports this idea and found several different ways which Italian debt and deficits could be measured which they believe are more accurate. Traditional indicators, built off of the financial statements created by governments, contain within them the same flaws which exist in public sector accounting standards (Bloch & Fall, 2016). In the case of this topic, the insufficient treatment of government explicit and implicit contingent liabilities results in an incomplete gross debt which ultimately does not reflect governments' future cash outflow obligations or put another way does not reflect the governments' real debts (Bloch & Fall, 2016; Barnhill & Kopits, 2004; Fernandez et al., 2012).

3.2.1.1 Fiscal Risk

The use of gross debt as the primary indicator of government debt is reasonable given that it has historically been the most widely available figure, and this has implications for fiscal risk and fiscal sustainability. Fiscal risk is defined as the risk of deviations of fiscal outcomes from what was expected at the time of the approval of a budget or other forecast. Budget decisions, using gross debt as an estimate of the government's future obligations, ignore the cash

flow implications of implicit contingent liabilities and off-balance sheet explicit contingent liabilities (Bloch & Fall, 2016; Towe, 1991; Mršnik, 2012). Therefore, contingent liability realizations contribute directly to fiscal risk by potentially altering expected outcomes and can significantly alter a government's financial position in a short period of time (Brixi, 1998; Mršnik, 2012).

3.2.1.2 Fiscal Sustainability

Contingent liabilities, through their accounting treatment, also skew understandings of government's fiscal sustainability (Brixi, 1998; Barnhill & Kopits, 2004). Gross debt serves as a primary indicator of a national government's fiscal sustainability - the ability of a government to sustain its current spending, tax and other policies in the long run without threatening government solvency or default on some of its liabilities or promised expenditures (Barnhill & Kopits, 2004). According to Towe (1991) and Mršnik (2012), the ignorance of traditional fiscal accounting systems to contingent implications provides decision makers with inaccurate data that overestimates the sustainability of governments by under-representing future obligations. In turn, decision makers use this information to create a budget or make expenditures with only a partial image of the government's position – often taking on more explicit liabilities (Towe, 1991; Barnhill & Kopits, 2004).

3.2.2 Behavioural Impacts

However, the behavioural impacts of contingent liabilities are not limited to the omissions caused by inaccurate information illustrated in the two prior sections. In fact, one of the areas of greatest concern to academics is the moral hazard which is created by contingent liabilities for both political leaders and private sector organizations. For national level political

leaders, moral hazard derives from the often-off balance sheet nature of contingent liabilities that results from their treatment under public sector accounting standards (Towe, 1991; Brixi, 1998; Smith, 2009). Government debt and deficits are often weaponized in political arenas which creates a bias towards off-budget policies such as PPP's or political guarantees which will not yield any immediate cost but may result in future contingencies (Brixi, 1998). Heald and Hodges (2018) comment that pressures do not exclusively derive from political arenas, and that internal budget constraints meant to encourage fiscal responsibility often result in pushing governments to seek unrecognized financing which create contingent liabilities. Such was the case in Croatia, where a 60% debt to GDP ratio cap encouraged the government to take on contingent liabilities through guarantees and PPP's (Bajo & Premorac, 2011).

This can be extended to sub-national governments, who like national governments may also leverage contingent liabilities to circumvent fiscal and political constraints. However, a second type of moral hazard exists for sub-national governments as a result of the national level government's obligation to uphold the wellbeing of the electorate. According to Brixi (2012) sub-national governments, holding the perception that the national level government will ultimately provide a bailout, take on excessive risk. This view is supported by Chang, Yang, and Huang (2013), Ma (2013), and Towe (1991), all of whom see sub-national governments as a significant risk to national level government finances. Casey (1998) acknowledges this issue and proposes that market valuation is the only true method for accurate evaluation of the cost future cash flows. If the presumption of a bailout is true, taking on excessive risk then becomes the optimal strategy for sub-national governments to provide the most to their constituents, as was previously discussed in section 3.1.2.2.1 (Bourn, 1998, Brixi 2012). Major government bailouts

for sub-national governments have occurred in many countries around the globe including Argentina, Brazil, China, Germany, and the United States (Brixi, 2012).

Finally, contingent liabilities can impact the behaviour of the private sector. As discussed in section 3.1.2.2.2, organizations become too big to fail if the social and economic costs of their failure become unacceptable. There therefore exists an implicit subsidy of these organizations (Mora, 2018). Understanding their status within the economy, organizations which are too big to fail take on excessive risk and pass on these costs to the government and taxpayers through bailouts (Brixi, 2012). Towe (1991) notes some significant historical examples in the credit guarantees of Lockheed (1971) and Chrysler (1979). It is not difficult to find contemporary examples such as the government bailouts of financial institutions following the 2007 – 2008 crisis.

3.2.3 Research

The understanding amongst scholars that the current gross debt is not an effective wholistic representation of a government's liabilities has led to several studies attempting to model and measure the phenomena. Generally, this is difficult for the same reasons that accounting has, to this point, failed to include a wider scope of contingent liabilities in public sector financial statements. High level of uncertainty about future events makes it difficult to discern the present value of theoretical future cash outflows. Furthermore, a general lack of available data makes assessment all the more difficult. As a result, very few estimations exist and those that do tend to approach the issue retrospectively, rather than by estimating the size of the contingent liability in present terms. In this method, scholars attempt to determine what the contingent liability was a point in time with information about what occurs in the future. The estimations which do exist are still difficult to compare and contrast, as their results will vary

greatly based off of the time period, contingent liability genus, domestic political environment, domestic economy, and estimation methods.

To illustrate this, it is useful to examine the studies of Kaplan-Appio (2002) and Mora (2018) together. The study conducted by Kaplan-Appio (2002) estimated the true value of government contingent liabilities associated with deposit insurance to Thai banks prior to the Asian financial crisis of 1997. Thailand is an ideal case study for this type of analysis because of all fifteen of its domestic banks are actively traded on the stock exchange, and data was available for analysis. Furthermore, because the analysis was able to use data from all the domestic banks, a comprehensive understanding of the size of the government contingent liability was able to be established. The Thai Government had guaranteed deposit insurance and collected payments from Thai banks, however, the payments were flat rather than based on risk taken on by the bank. As a result, there existed a moral hazard whereby banks could give riskier loans in order to maximize potential revenues while taking on none of the risk themselves (Kaplan-Appio, 2002). The analysis used a put option pricing model in order to determine the true value of the Governments contingent liabilities before the crisis and found that the average estimated value totaled to 64% of bank equity – or nearly Bt350 billion (Kaplan-Appio, 2002).

The other study, conducted by Mora (2018), examined the implicit liability of the Canadian Government to domestic banks which are too big to fail just after the financial crisis of 2007 – 2008. Returning to section 3.4.2.2, an organization which is too big to fail is defined as being any organization whose loss would result in a negative economic or social impact so large that it would be deemed unacceptable by the government. Mora (2018) applied a variation of the structural credit risk model to find the expected capital shortfall given bank default probabilities using financial market pricing data and balance sheet information, effectively estimating the

support required to stop a default during a crisis scenario. The results of this analysis ultimately indicated an average contingent liability to the Canadian Government in 2009 of over \$3 billion dollars (Mora, 2018). Mora's (2018) results are substantially different than those of Kaplan-Appio (2002), indicating that the contingent liability of individual Canadian banks to the government is only 1.2% of each of bank equity.

While both examinations are interesting in their own right, it is difficult to draw conclusions through their comparison. Too many factors impact their outcomes which cannot be accounted for. Mora (2018) and Kaplan-Appio (2002) use different estimation methods and examine the effects of two different financial crises at two different points in time. Furthermore, the two countries in question have different banking sector structures, which is likely another factor which influences the size of the contingent liability. Unfortunately, the body of literature which estimates contingent liabilities is not populated enough that examinations using different methods exist for the same time period of contingent liability type. Nonetheless, information can still be drawn from the studies which do exist.

Bajo & Premorac (2011) attempted to estimate the cost of government guarantees in Croatia using a regression model and data from 1996 to 2010. The analysis comes after a period where the Croatian Government and Parliament actively used guarantees to circumvent budget limitations and illustrates the propensity of political leaders to gravitate towards off – balance sheet financing. The debt to GDP ratio of Croatia had jumped from 19.3% in 1995 to 59% in 2010 and was capped at 60% by the budget act (Bajo & Premorac, 2011). During this period, the Croatian Government had been issuing an estimated \$185 million U.S. dollars in guarantees per year to support the tourism, business, agriculture, and transport industries without increasing the government gross debt (Bajo & Premorac, 2011). In the models adopted by Croatia, the

government guaranteed loans in order to secure financing which would otherwise not be available and collected payment from the firms. However, a high level of insolvency meant that the Government effectively began to take on additional debt and only three times between 1996 and 2010 were the reserves sufficient to cover the guarantees (Bajo & Premorac, 2011). The analysis examined the relationship between these guarantees and the level of public debt, and regressions were run on the relationship between the guarantees issued in a specific year and the public debt at year zero through eight. The analysis fell short of achieving a statistically significant explanation of the growth of Croatian public debt through contingent claims, but ultimately did reveal with certainty that traditional debt was being replaced with contingent guarantees over time as a result of fiscal pressures (Bajo & Premorac, 2011).

Another analysis, performed by Chang et al. (2013), illustrates how the use of gross debt can create an inaccurate understanding of future obligations for governments. The article uses a series of methods to estimate the real value of the Chinese Governments debts. Estimates were made about the true size of pension liabilities, the explicit contingent liability resulting from policy banks², the implicit contingent liability to the banking sector as a result of the government's economic role, PPP liabilities where adequate information was available, and local government debts (Chang et al., 2013). While the reported gross debt of the Chinese Central Government was only 16% of GDP in 2011, Chang et al. (2013) estimates that its total liabilities when including contingencies increases by between 70% and 100%. They note that this is well above the OECD's warning level of 60%. The implicit contingent liability of sub-national government alone was estimated to be 28% of 2011 GDP, making a strong case for their

² Policy banks refers to the Agricultural Development Bank of China and the Export – Import Bank of China. These are state owned banks established for the purpose of financing economic trade, development, and state investment (Chang et al, 2013).

consideration in national government financial projections (Chang et al., 2013). Ma (2013) came to a similar conclusion when evaluating the hidden fiscal risk which sub-national governments pose to China's finances. Though he did not create a specific estimate, Ma (2013) concluded that China's debt was misrepresented by the debt to GDP ratio because the majority of lending was taking place at the sub-national level. The idea that implicit contingent liabilities such as sub-national debt are a greater threat to governments than explicit contingent liabilities is supported by the research of Bova, Ruiz-Arranz, Toscani, and Ture (2016), who found that 90% of contingent realizations stemmed from implicit contingent liabilities rather than explicit. At the time this article was written, China was experiencing 6 – 8% growth in GDP per year. According to Chang et al. (2013), this growth sufficient to resolve past contingent liabilities if no more contingencies were created, but large a decrease in growth would have adverse effects.

It is difficult to create a conclusive and complete picture of the size of government contingent liabilities, and therefore of government liabilities generally. Each individual study reviewed clearly reveals a level of risk for an individual contingency which is greater than what is being accounted for, and if the study estimates of Chang et al. (2013) is indicative of the contingent risk of governments globally then the risk is severe. However, it is unlikely that this study can be accurately extrapolated universally. Each country's contingencies must be viewed as *sui generis*, as they are largely a product of unique domestic factors. Differences in policies or terms of guarantees can result in large differences in contingent liabilities which are homogenous at face value. Nevertheless, the available research cannot be entirely ignored either and clearly indicates a pattern of risk. Ultimately, decision makers will need to become more aware of contingencies in the future.

3.2.4 Impact of Contingent Liability Realizations

Contingent liabilities, if realized, will eventually convert into cash outflows. It is difficult if not impossible to estimate when that conversion will occur, but Brixi (1998) asserts that government contingent liabilities tend to be realized simultaneously. This is supported by Bova et al.'s (2019) research which created a novel dataset composed of 200 events in over 80 countries to assess the impacts of realizations on government finances. Another study conducted by Bova, Arranz, Toscani, & Ture (2016) found that the contingent liabilities are a significant source of distress for governments around the globe. While explicit contingent realizations during a fiscal crisis are estimated to average 6% of GDP, implicit contingent liabilities stemming from bailouts could reach as high as 40% of GDP (Bova et al., 2019). This is indicative of the fiscal risk which can stem from contingent liabilities and the threat that they pose to government fiscal sustainability. While contingent liabilities do not cause fiscal crises (Burnside, 2002), their existence lends to a fiscally fragile position for national governments (Chang et al., 2013; Bova et al., 2019; Ozkaya, 2014; Rosengard, 2004; Kaplan-Appio (2004).

3.2.5 Discussion Summary: Section Two

Ultimately, the effects of accounting treatment deficiencies for contingent liabilities can be thought of as a tree. Several root issues such as measurement uncertainty lead to trunk, in this case the treatment itself. In turn, the trunk gives way to branches which may product their own offshoots. For government contingent liabilities, the branches stemming from the trunk are the challenges which the use of accounting figures create. Fiscal risk is created by an inadequate understanding of contingent realization risk and forecasts continually fail to consider their effects. Traditional measurements of fiscal sustainability provide inaccurate information which impacts spending decisions. Furthermore, the system creates moral hazard which encourages the

creation more contingent liabilities and the acceptance of excessive risk in sub-national governments and the private sector. Research such as that of Mora (2018) and Chang et al. (2013) supports these ideas and illustrates how government liabilities are an inadequate understanding of future cash flows. While government contingent liabilities are not the source of fiscal crises, further research such as the article of Bova et al. (2019) indicates that realizations of contingent liabilities occur at the same time and can pose a serious threat to government finances as a result of their magnitude.

3.3 Solution Recommendations

While there exists a universal understanding of the risks that contingent liabilities pose, the importance of measuring and addressing them appropriately, and the effects which the realization of contingencies can have on government finances, there is significant disagreement amongst scholars as to how to address the issue. At the core of this disagreement is the diverse and ambiguous nature of contingent liabilities and the large number of systems at play. Specifically, the interplay between accounting systems, budgeting systems, and the systems which use financial accounting figures and economic indicators brings about a large variety of perspectives. Nonetheless, the goal of all three categories is the same: to reduce the risk of the government and improve the general understanding of contingent liabilities. The recommendations of any one article to help solve the issue of government contingencies are a mixture of three categories: accounting standard changes, reporting changes, and the policy changes. Accounting standard changes specifically target areas in current standards to change and make recommendations that will help to improve representation. Reporting changes recommend the creation of new reporting mechanisms to improve awareness rather than creating any change to the current structure. The third and final category of recommendations, policy

recommendations, prescribe changes that do not impact the financial statement or budget but recommend changes to specific parts of pre-existing systems or ways of thinking.

3.3.1 Accounting Standard Changes

Given that accounting is in many ways the source of the issue with contingencies, it is natural for some to suggest changes which would make the current standards reflect the true size of the government debt. While critics agree over the inadequacy of the current system (Brixi, 2012; Bachmair, 2016; Bloch & Fall, 2016), there is no agreement as to how to reform the system. Furthermore, the type of statistical estimation which would be necessary to estimate contingencies is generally avoided by accountants because of its subjectivity. The failure of the Canadian contingencies project of the 1990's exemplifies this and shows the resistance that can arise from stakeholders as a result of contingent liability accounting based on subjective interpretations (Dykeman & Entwistle, 2004).

Brixi (2012) suggests that at the very least all explicit contingent liabilities be included on the balance sheet. To a large degree this is the current practice (IPSAS, 2020). However, standards such as IPSAS are not universally adopted and enforcement is difficult because no central authority – outside of the European Union – has the ability to hold sovereign nations accountable. Brixi (2012) notes that countries are not bound to using IPSAS, and specifically that countries who do not use any accounting standards often hide programs off book. This is difficult to address, and other than foreign analysis by organizations such as the World Bank and the Organization for Economic Co-Operation and Development (OECD) there is little space for improvement. Nevertheless Brixi's (2012) recommendations can be taken seriously given that, as Ulgenturk (2017) shows, there are countries who do use standards such as IPSAS that continue to underestimate the potential liabilities of their programs and therefore underreport debt.

A more radical example of accounting standard change advocacy can be seen in the report of the Commonwealth Secretariat (2016), the main intergovernmental agency and central institution of the Commonwealth of Nations. The report suggests three ways in which current practice could be altered. The first and most extreme of these recommendations is the implementation of provisions for the full possible cost of all contingencies (Commonwealth Secretariat, 2016). This measure would over account for any possible future expenditures and significantly decrease fiscal space but would ensure that all contingencies are appropriately funded. For example, if a revenue guarantee was made to a PPP the total guarantee would be provisioned even if a zero-revenue scenario is unlikely. In this case financial statements would effectively become an example of the “worst case scenario” for the government’s debt. However, this method would still struggle to deal with implicit contingent liabilities. The second method suggested by the Commonwealth Secretariat (2016) is the accounting of the present value of estimated future cash flows – using the sovereign risk-free rate as the discount rate. Yet this system would not eliminate the measurement challenges associated with contingencies and would force management and accountants to estimate future cash flows without sufficient data. The third and final method brought forward by the Commonwealth Secretariat (2013) is to apply the previous discount method to a Monte-Carlo simulation. The Monte-Carlo simulation would estimate the possible outcomes based on a myriad of factors and ultimately deliver a probable future cash outflow. This method, while superior to the second method in terms of its ability to estimate future cash flows, would rely heavily on the underlying assumptions and data. The report admits to this flaw, and maintains that initially this model would still reduce fiscal space more than necessary, but posits that over time the models become more accurate and fiscal space would be recovered.

Yet Smith (2009), who agrees that current standards do not accurately represent the true size of government debt, believes that changes such as those proposed by the Commonwealth Secretariat to current accounting standards are impossible. Schiff, Schiff, and Rozen (2012) take a similar stance, focusing more on the difficulty to obtaining an estimate which is remotely accurate. Bova et al. (2019) research further reinforces this assertion based on the inaccurate nature of their results. Smith (2009) refers specifically to the situation of the United Kingdom and cites the high levels of consistency required for national accounts and the modeling assumptions which would be necessary for contingent liability as the reason for this. An analysis of the literature gathered for this review provides a degree of assertion to Smith's (2009) claim. Recommendations for changes to accounting standards came from economists and failed to consider accounting factors such as the hierarchy of information. Smith (2009) and Bova et al. (2019) instead recommend that analysis be performed outside of the financial statements to present a more complete analysis of the financial burden.

3.3.2 Reports

Authors who agree with Smith (2009) but still advocate for improvements to the current position of public sector contingencies instead turn to other forms of reporting. Brixi (1998) proposes the use of comprehensive reports focused on presenting a wholistic view of governments fiscal states. These reports would not affect accounting, which would allow for more freedom in their estimates and presentation. The goal of such reports would be to educate decision makers and the public alike in order to encourage better decision making. Other articles on contingent liabilities take a similar approach but offer a more detail as to what specific mechanisms could be used to improve reporting. Brixi (2012) goes further in her second article on the topic in suggesting that formal statements of fiscal risk be made in addition to these

reports. These statements of fiscal risk would provide a more consistent annual disclosure to the public and provide more detail than is allowed for within financial statements.

Bloch and Fall (2016) propose a solution centred around the reporting of new debt indicators. They argue that the issue of public contingent liabilities is not one of accounting but economic indicators of debt. While the gross debt provided by national accounts was a logical place for economic analysis to start, it has been accepted as fact without any consideration of the underlying systems or its implication (Bloch & Fall, 2016). New and more comprehensive measurements such as government net debt, produced net worth, and net worth can be created with appropriate data. According Bloch and Fall (2016), more indicators of debt are better than fewer, and an annual report should be published with these indicators to provide context to each.

Hofmans and Covering (2014) propose another approach in the form of ex-ante reports and the inclusion of contingent disclosures in departmental budgets – or more extensive disclosures in government budgets if departmental budgeting is not made publicly available. These reports would effectively increase transparency by illustrating the sources of government realizations to the public. In doing so, they posit, areas of risk can be systematically targeted by concerned decision makers and public advocacy (Hofmans & Covering, 2014). This can, to some degree, be illustrated in the financial crisis of 2007 – 2008 which created public scrutiny of the too big to fail subsidies provided by governments around the world. Additionally, they suggest that individual departmental budgets each be forced to contain a section on contingent liabilities.

Ultimately, the recommendations for various forms of reporting can be generally classified under a desire for more transparency from governments worldwide on the assumption that more information will lead to better decision making. The IMF (2014) posits in a report on fiscal transparency that:

“Fiscal transparency – the comprehensiveness, clarity, reliability, timeliness, and relevance of public reporting on the past, present, and future state of public finances – is critical for effective fiscal management and accountability. It helps ensure that governments have an accurate picture of their finances when making economic decisions, including [the] costs and benefits of policy changes and potential risks to public finances. It also provides legislatures, markets, and citizens with the information they need to hold governments accountable” (IMF, 2014).

Heald and Hodges (2019), Currie (2012), and Ulgenturk (2017) support this view in their analysis of fiscal transparency and contingent liabilities. While Heald and Hodges (2019). While they do not recommend a specific reporting structure they do advocate for the enhancement of fiscal transparency as well. Finally, the OECD (2002) published a handbook on budget transparency with sections specifically targeting government contingent liabilities and generally recommends increased reporting as the best solution.

3.3.3 Policy Changes

Finally, policy changes are the most common form of recommendations in the literature to deal with public sector contingent liabilities. These recommendations do not impact the measurement of the contingent liabilities themselves but rather propose changes to the surrounding systems and ways of thinking that will create a more comprehensive understanding of the government’s debt position as well as mitigate fiscal risk. To this end, it is useful to further divide this section in to three categories: program measures, procedural measures, and strategic measures. While not as contentious as the proposed accounting changes, there still exist several camps within these groups.

3.3.3.1 Program Measures

Program measures propose changes to specific elements of existing programs that create contingent liabilities. These changes cannot be applied universally but may help to mitigate the risks of specific programs. Furthermore, these recommendations focus only on explicit contingent liabilities, and are ineffectual at mitigating implicit contingent liabilities for governments. While these measures vary widely based on the type of program for which they are intended, they universally focus on risk mitigation. Hofman and Covering (2014) present a series of recommendations in their article which are based on the real experiences of the Netherlands government during and after the 2007 – 2008 crisis. Like the other authors, they stand in strong agreement of the idea that improved contingency measurement is a necessity. Hofmans and Covering (2014) suggest the inclusion of sunset clauses in all government guarantees as effective measure to reduce risk. Current guarantees – especially with public private partnerships – often do not have strict end dates and rather continue as long as the service is still being provided. Along a similar line, Towe (1991) suggests a general limit on all explicit contingent liabilities where possible to mitigate potential risk. While such a measure would not reduce the probability of contingent liability occurrence, it would ultimately limit the possible size.

3.3.3.2 Procedural Measures

Procedural recommendations constitute changes that impact the way in which contingent liabilities are managed, but not the programs themselves. Once again, the goal of these proposals is to mitigate risk. The most commonly occurring proposal in this section is the creation or institution of comprehensive risk management frameworks which will help to analyze contingent risks as they arise (Commonwealth Secretariat, 2016; Brix, 2012; Bova et al., 2019; Ulgenturk, 2017; Bachmair, 2016). These frameworks propose creating change through the deliberate

creation of targets and constraints, effectively incorporating combinations of program measures to create a comprehensive risk mitigation framework. Brixi (2012) and the Commonwealth Secretariat (2016) propose going further and dividing risk management frameworks into the short and long term to better address contingencies. Bova et al. (2019) found in their research that countries with fiscal risk frameworks suffered fewer contingent realizations during times of fiscal crisis and that they were the most effective tool against fiscal risk. However, it is unclear who will manage these frameworks in many countries.

According to Morse (2016), the best way to manage the risk which derives from government contingent liabilities is to assign their management to a single government department. Morse (2016) recommends specifically that the Treasury's fiscal risk group take on the assignment in the United Kingdom, however it is difficult to extrapolate this to other governments whose nature and capabilities may vary. Ulgenturk (2017) places an emphasis on the importance that the government department, which is assigned the task, has a strong sense of independence in order to limit any political bias entering the management, but ultimately agrees that centralized management is important. Cebotari (2008) suggests a similar solution, yet Ulgenturk (2017) goes further and suggests that all PPP's, including those at a sub-national government level, should be managed by a national level department.

Other recommendations focus on more practical measures. Hofmans and Covering (2014) suggest that all proposed increases in contingent risk are automatically declined and only considered during extraordinary circumstances, believing that this denial will create a culture of contingent risk avoidance. They go further to suggest more pragmatic measures such as the use of external experts when risks are byzantine and that if space between budgetary spending and the budgetary ceiling of greater than 10% exists for several years then the ceiling should be

lowered (Hofmans & Covering, 2014). Along these lines, Currie (2002) recommends setting a standard criterion that must be met to extend guarantees.

Procedural measures fail to offer high level principles which governments can follow and instead to create series of systems which surround programs that generate contingent liabilities. In doing so, they seek to mitigate the risk of government contingent liability realization. A consensus exists within the literature that risk management frameworks governed by a single organization are the best approach at this level. Uniquely for the recommendations highlighted in this review, empirical evidence exists through the analysis of Bova et al. (2019) that supports this understanding. Their success is limited to the imagination of their creators and the situations which they can imagine themselves, and they are limited to the previous experiences that the framework has been modified to control.

3.3.3.3 Strategic Measures

Strategic measures, in contrast, provide high level concepts that can help to guide decision making even in novel cases. Several of these such measures are proposed within the literature reviewed for this compilation. For example, the Council of Principles for Public Governance of Public Private Partnerships (2012) proposes a series of high-level concepts to deal with PPP's specifically. More broadly, Schich and Kim (2011) argue that governments should prefer explicit guarantees to implicit guarantees where possible. This advice is sage within the context of guarantees such as deposit insurance and relevant research does suggest that explicit risks are more easily measured (Bova et al., 2019; Bajo & Premorac, 2011). The OECD (2012) makes a similar recommendation but more broadly encouraging the conversion of all implicit contingent liabilities where possible. Once again, this advice is sound in most instances as explicit contingent liabilities are more easily measured and limited. However, both

recommendations fail to account for moral hazard. Implicit government contingent liabilities are by nature undefined and can arise from a wide variety of sources, as discussed in section 3.1. Furthermore, legitimizing implicit subsidies such as those to sub-national government and organizations which are too big to fail could result in even greater costs as a result of these organizations opportunistically taking on more risk.

Ulgenturk (2017) provides a more reasonable recommendation by insisting that all government programs which generate guarantees should have a clearly stated objective and that the program will be decommissioned once that objective has been met. This recommendation stems from Ulgenturk's (2017) belief that many of the programs that create contingent liabilities which exist in countries do not exist for a stated reason. Many have simply continued to exist out of a fear to challenge the status quo. According to Ulgenturk (2017), the subsidy's which governments create by taking on contingent liabilities – such as in the case of implicit subsidy's to organizations which are too big to fail or loan guarantees – are less effective than traditional stimulus spending.

Finally, Morse (2016), Hofman and Covering (2014), and Ulgenturk (2017) propose that a theoretically optimal level of risk should be determined by every national level government and used as a cap on the amount of risk the government can take on. This exercise is primarily theoretical as a result of the difficulty quantifying the exact risk from a program. However, it would nonetheless force decision makers to think more critically about their decisions and could be successfully applied to every novel case. Under this model, additional contingent liability risk would only be taken on if a corresponding reduction occurred – assuming the government was at its optimal risk level before the proposed increase. While the authors who propose this recommendation are unclear on exactly how its mechanisms would operate, the idea is

fundamentally sound. However, it would be at risk of subjectivity and bad actors may purposefully underestimate risk in order to approve a program.

3.3.4 Discussion Summary: Section Three

The recommendations made in the literature are diverse and make it difficult to determine exactly which recommendations that authors are making that will help address a particular situation. Recommendations for changes in accounting standards, while well intentioned, are unlikely to succeed. Laid bare by Smith (2009), the uncertainty and assumptions required to estimate costs in a way which could be included in financial statements would not be acceptable. While models such as that proposed by the Commonwealth Secretariat (2016) show promise in estimating contingent liability costs in the future, their use is of more value outside of financial statements. Recommendations for reports outside of the financial statements are an excellent way to circumvent this. These reports, of which many forms were recommended, seek to improve fiscal management by increasing transparency. While it is possible there are adverse effects to this, democratic institutions have seen benefits in the past as a result of increasing the knowledge which is available to the public. At the very least political actors would need to be more aware of contingencies – and therefore the real financial position of the government – for fear of drawing public criticism. The final category, policy recommendations, provides a series of recommendations which governments can adopt to address the risk of individual programs, the systems which govern those programs, and apply universally in order to mitigate risk. While many recommendations were case specific, this review saw more value in compiling the recommendations in the policy section which could be applied more broadly. Ultimately, it is unlikely that any single recommendation from a category will serve to address the risk posed by contingent liabilities. Each country faces different circumstances based on economic, cultural,

and historical factors and must adjust accordingly. Nonetheless, various combinations of the recommendations put forward by authors and compiled within this literature review can serve to develop tailored plans that fit domestic needs.

4. Synthesis

Ultimately, the discussion of contingent liabilities is still in its infancy. While some academic articles observed the issue as early as 1960, most of the discussion has taken place in the 21st century. In spite of this, a strong theoretical core has been established through the understanding of the sources of government contingent liabilities. Brixi (1998) provided this when she took the commonly understood explicit and contingent forms of contingencies and created a general fiscal risk matrix. This matrix was universally referenced in peer reviewed papers and appeared in the majority of the reports published by government funded organizations. Many of the issues which arise as a result of contingent liabilities can be traced back to their sources. Explicit contingencies, while often accounted for, can still be misrepresented by faulty assumptions and insufficient collections of reserve funds (Towe, 1991). Furthermore, a lack of data can make it difficult to create a single figure to represent the future possible liability in present terms with any accuracy (Smith, 2009). Implicit contingent liabilities for public sector entities face the same issues (Commonwealth Secretariat, 2016) but are doubly difficult to account for and measure because they stem from obligations which are not legally binding (Towe, 1991). It is likely as a result of this fact that government accounting standards such as IPSAS (2020) completely exclude implicit contingent liabilities from their systems. Yet this exclusion, which makes sense in accounting terms, creates a moral hazard (Fernandez et al., 2012; Heald & Hodges, 2019). Governments, pressured by moral obligation to the public, subsidize organizations which are too big to fail because of the adverse impact their closure

would have on the country as a whole (Mora, 2018). Furthermore, governments may take on debt where they otherwise should not because of public demands (Burnside, 2002). Corporations, knowing that their position is likely secure as a result of their scale, in turn take on excessive risk which ultimately costs the public (Mora, 2018). The risks of contingent liabilities, both explicit and implicit, are only exacerbated by the fact that most politicians will seek re-election. These political leaders, whose stewardship is often judged by the public through financial performance, have an incentive to utilize contingent liability creating measures such as public private partnerships, guarantees, and insurance to provide subsidies (Bajo & Premorac, 2011).

The unpredictability, moral hazard, and systemic failure to create an accurate measurement of contingent liabilities in turn poses fiscal risk which is only added to by a lack of awareness (Brix, 1998). Government debt, traditionally understood and analyzed in gross terms, is based on the figures presented on the balance sheet (Barnhill & Kopits, 2004). Given that these figures do not include many contingent liabilities, scholars are critical of the use of gross debt as a measurement of fiscal sustainability (Brix, 2012). Yet, attempts to measure the true size of governments debts have met mixed results. Mora (2018) found that a significant implicit subsidy was being given to Canadian banks but noted that it is difficult to find an exact number to label as the total contingent debt at any one time given that they only exist in the abstract.

Additionally, different methods of analysis can achieve vastly different results and there is insufficient research in the area to compare and contrast studies using different methodologies on the same government at the same point in time. Differences in contingent liability type, local policies, timing, economic factors, political environment, and development make comparison between nations incredibly difficult even if standard measurement techniques are used – which they typically are not. This is illustrated by comparing the study of Appio (2002) to Mora (2018).

The studies examined the implicit guarantees of national governments to banks in Thailand before the East Asian financial crisis and Canada before the 2007-2008 crisis respectively. While they both gave their results in similar terms, there are far too many factors involved for a direct comparison or evaluation. Yet it is clear that contingent realizations can have a significant impact on government operations and change expected financial outcomes. While the studies by Mora (2018) and Appio (2002) are not comparable, they both point to the risk which moral hazard and the undervaluation of contingencies such as deposit insurance can have. In the case of Thailand, the situation was so dire that the national government had to nationalize several of the most exposed banks and western governments, including Canada, saw their debts grow significantly after the measures taken to respond to the 2007 – 2008 Financial Crisis. Yet, there exists a consensus amongst the existing research that contingent liabilities are historically not the source of financial crises. Several authors including Chang et al. (2013), Bova et al. (2019), Ozkaya (2014), Rosengard (2004), and Kaplan – Appio (2002) have all reached this conclusion independently. Instead, contingent liabilities, whose costs are currently underestimated and unrecognized in financial statements, create a more fiscally fragile national government and exacerbate crises when they do occur. The most salient example being 2007 – 2008 financial crisis, which was not triggered by contingencies but did cause the national debts of governments to rise globally (Mora, 2018).

The challenges of measurement are likely the reason that so few economists who write on the subject of contingent liabilities make recommendations that involve changing accounting methodologies. The most significant recommendations found during this literature review were those of the Commonwealth Secretariat (2016) and Smith (2009). Their recommendation were contained to three options: first, incurring the complete possible cost of all contingencies;

second, incurring the probable present value of all future cash flows; and third, using a Monte-Carlo simulation to estimate the probably costs of future contingent claims and accruing the present value. In theory, these methods seem sound. However, as Smith (2009) points out, estimations such as those proposed by the Commonwealth Secretariat (2016) are too unstable to be palatable for accountants to include in financial statements and in the case of overestimation would artificially reduce fiscal space. According to Smith (2009) analysis and measurement of government contingent liabilities should be done outside of the financial statements, so as to inform politicians and other users without having to compromise national accounts. Many economists agree with Smith (2009) and suggest that governments undertake such extracurricular reporting. Brixi (1998; 2012) suggests the use of an annual report and statement of contingent risk that would inform decision makers and increase public awareness. Bloch and Fall (2016) suggest a number of different measurements of government debt which could be used in such reports, and Hofmans and Covering (2014) posit that such measures would in fact result in higher accountability through public pressure. In turn, scholars suggest ways in which governments could address the issue of contingent liabilities and mitigate their fiscal risk. While these recommendations are broad, three areas of focus emerged from the literature. First, specific changes to existing programs that can limit the government's exposure such as sunset clauses to eliminate perpetual guarantees (Hofmans & Covering, 2014) and liability limits (Towe, 1991). Measures such as these allow governments to continue to use guarantees where they are necessary but absorb less risk. The second category of recommendations focuses on changing procedures to help deal with contingencies. For example, some authors suggest the setting of a theoretical optimal risk should be established and any increases of risk which would surpass this threshold should require a decrease in risk from somewhere else (Brixi, 1998; Hofmans &

Covering, 2014; Ulgenturk, 2017). Others such as Towe (1991) suggest measures such as changing budget definitions to include contingent liabilities and purchasing private sector insurance to divest the government of risk. The third and final category involves higher level changes to doctrine in order to mitigate risk. These changes generally focus on theoretical concepts or monitoring structures. For example, Morse (2016) suggests that contingencies should be centrally monitored – even those of sub national governments.

These recommendations are interesting because of their breadth. Unique solutions are provided for by different types of contingent liabilities such as the Organization for Economic Co-Operation and Development's (2012) principles of public private partnership governance. Yet based on the literature reviewed for this article, it is unlikely that any one of these measures will address a national government's issue with contingent liabilities. Through the different analyses, the literature demonstrates that every government and its contingent liabilities are different. As a result, no single prescription can be made that will effectively mitigate every government's fiscal risk from contingent liabilities. Instead, national governments should analyze their own situations independently, before leveraging the recommendations of scholars to work for their requirements.

5. Future Areas of Research

Future research into the topic of government contingent liabilities will be essential. The topic is complex and poorly defined, as indicated by the lack of a consistent typology across articles. Governments will continue to operate by trial and error until sufficiently developed ideas can be created to help project for future costs. It is unlikely that these predictions will be included into financial statements in the future as a result of the uncertainty of the required estimation. However, there is still a need to increase the awareness of decision makers within

government's around the globe. To this end, this literature review makes four recommendations to future researchers who seek to explore government contingent liabilities.

First, accountants and accounting principles should be considered more heavily. The majority of the literature reviewed for this examination did not touch on accounting standards or the goals of financial statements. While it is unlikely that the contingent estimates discussed will be included in financial statements in the future, the recommendation of reporting on contingencies outside of the financial statements means that consideration must be given to how those reports are presented and will impact decision makers. Accounting theory is well versed in these principles and there is much that proponents of reporting changes could take from the field and incorporate into their recommendations. An emphasis must not be solely placed on the development of articles which will serve to inform government decision makers of the threat which contingent liabilities pose, but also provide recommendations as to how governments' construct their reports.

Second, further studies should be conducted on the same set of contingent realizations in the same economy using different methods of estimation. Within the literature there is a distinct lack of practical application, and an even greater lack of comparable material. By conducting studies which are more controlled, a body of literature will be created that will allow for the effective evaluation of measurement methods through comparison. In turn, superior methods of estimation may then be used by governments to the create reports which inform decision makers.

Third, future literature reviews should be conducted with a greater number of databases and independent government funded organizations. This review was able to capture literature from a large variety of sources, not just formal academic literature. However, the breadth of the search limited the depth. Future examination should look to examine either databases or

independent government funded organizations and focus on gathering the entirety of the literature from that area. When reviews of each source have been conducted, they could be combined after the fact to create a single larger literature review.

Finally, future examinations within the field should seek to evaluate the efficacy of the policy measures discussed in this literature review. The research of Bova et al. (2019), discussed in section 3.3.3.2, showed that governments with stronger policy measures faced fewer realizations during times of fiscal crises. Further research to corroborate this finding could encourage governments to adopt the changes recommended by academics. However, a body of literature greater than a single study must exist in order convey the tangible value of preventative measures to government's globally before adoption will occur.

6. Conclusion

This literature review has shown that the discussion of public sector contingent liabilities is fragmented and takes a wide variety of approaches. While a significant body of high-quality peer-reviewed literature exists in the major databases used for this review, a large amount of attention given to the topic comes from government funded organizations such as the Organization for Economic Co-Operation and Development. A consensus exists amongst scholars as to the sources of contingent liabilities, and the work of Brixi (1998; 2012) to create the fiscal risk matrix has contributed to their identification. Government contingent liabilities, while similar to those faced by private companies, are far more frequent as a result of the role of governments in their respective economies. Government not only face contingencies from the explicit guarantees which they make, but also from implicit guarantees derived from public pressure. While the current consensus is that contingencies are not the source of fiscal crises and

instead only exacerbate them, the more contingent liabilities a government creates, the more fragile its fiscal state becomes.

While measurement difficulty makes it problematic to estimate exactly what the value of a national government's contingent liabilities are at one time, there is still a clear understanding that improvements should be made, and a clear path of action exists. Several suggestions for risk mitigation have merit, and the inclusion of limitations such as a cap on total contingent claims and sunset clauses have considerable merit. However, no single set of recommendations made by the articles included in this review are likely to suffice for any one government. Each government's situation is *sui generis*, as are the challenges of its time; and several of the analyses included in this review only base their recommendations off of a single country's experience. Instead, the principles of risk minimization proposed by the authors are more useful and can be adapted to any economy and government. Furthermore, this case by case approach will encourage a more active discussion about contingent liabilities for national governments in the future.

A parallel path of action exists for researchers considering an analysis of contingent liabilities in the future. With a strong underlying theory, future research should focus on two things. First, the estimation of government contingent liabilities using different methods and models with an emphasis on comparability. This will be imperative to creating advancements in the area, which may in turn drive policy change. Future evaluations can be compared and contrasted with one another in order to improve measurement methods. The second area of focus is a higher level of integration with accounting theory. Most of the articles collected for this review did not touch on or suggest changes to accounting standards, and instead simply explained why they are insufficient. While reports outside of the financial statements will help to

create awareness and incorporate contingent obligations into decision making processes, it would be far more powerful to incorporate contingencies into the current systems. By integrating more accounting theory into the research, future authors may be able to target areas of concern and create models which are more amenable to financial statement inclusion.

Ultimately, contingent liabilities are an incredibly complex and diverse topic. While this review has not touched of every facet of every type of government contingent liability, it has provided a general overview of the most common sources, the issues which they cause, and the remedies proposed by academics and government funded groups. While it is perhaps unclear what the future relationship between contingent liabilities and financial statements will be, it is clear that government should evaluate their positions and take action to mitigate their risk. In line with thinking, academics conducting research in the field in the future should build off of the sound foundational understanding of government contingencies which has been built and focus on the improvement of measurement techniques and the inclusion of accounting theory in their future recommendations.

Appendix A

Table A.1:

List of all Search Terms Used

List of all Search Terms Used	
Contingent	Fiscal Risk
Contingencies	Government
Contingent Liabilities	Liabilities
Contingent Liability	Liability
Contingent Loss	Net Debt
Debt	Public Sector

Table A.2:

List of Countries Currently Using or Planning to Implement International Public Sector Accounting Standards (IPSAS)

List of Countries Currently Using or Planning to Implement IPSAS			
Country	Adoption Status	Country	Adoption Status
Abu Dhabi	In Progress	Lithuania	Adopted
Argentina	Not Started	Malaysia	Adopted
Bangladesh	In Progress	Malta	In Progress
Barbados	Completed	Mexico	Not Started
Brazil	In Progress	Nepal	Partial
Chile	In Progress	Nigeria	Partial
Colombia	In Progress	Pakistan	In Progress
Estonia	Adopted	Peru	In Progress
Ghana	Partial	South Africa	Partial
Guatemala	In Progress	Sri Lanka	In Progress
India	Not Started	Tanzania	Completed
Indonesia	Adopted	Vietnam	In Progress
Jamaica	In Progress	Zambia	In Progress
Jordan	Adopted	Zimbabwe	Not Started
Latvia	In Progress		

Note: Information for IPSAS use table retrieved from IPSAS Implementation: Current Status and Changes (2017)

Table A.3:*List Supreme Audit Offices were Searched*

List of Supreme Audit Offices Searched		
Country	Body Searched	Reports Found
Indonesia	Audit Board of the Public of Indonesia	0
Jordan	Audit Bureau of Jordan	0
Malaysia	National Audit Office	0
Sri Lanka	Auditor General of Sri Lanka	0
Ghana	Ghana Audit Service	0
Nigeria	Office of the Auditor General for the Federation	0
South Africa	Auditor General of South Africa	0
Tanzania	National Audit Office of Tanzania	0
Zambia	Office of the Auditor General of Zambia	0
Chile	Controller General of Chile	0
Colombia	Office of the Auditor General of Colombia	0
Peru	Controller General of Peru	0
Barbados	Office of the Auditor General of Barbados	0
Guatemala	Controller General of Guatemala	0
Estonia	National Audit Office of Estonia	0
Latvia	State Audit Office of Latvia	0
Lithuania	National Audit Office of Lithuania	0
Malta	National Audit Office of Malta	1
United Kingdom	National Audit Office	2
Canada	Office of the Auditor General of Canada	0
United States	U.S. Government Accountability Office	0
Australia	Australian National Audit Office	0

Table A.4:*List of Government Funded Organizations Searched*

List of Government Funded Organizations Searched	
Organization	Reports Found
Organization for Economic Co-Operation and Development	5
World Bank	2
Commonwealth Secretariat	1
International Monetary Fund	2

Table A.5:*Coded List of Articles Used for Literature Review*

Coded List of Articles Used for Literature Review							
#	Author(s) or Organization	A	B	C	Education Level	Subject Area	Source Type
1	Dykeman & Entwistle, 2004	x		x	PhD	Accounting	Journal
2	Bachmair, 2016	x		x	N/A	Economics	Report
3	Barnhill & Kopits, 2004	x			PhD	Business	Journal
4	Bloch & Fall, 2016	x	x	x	PhD	Business	Journal
5	Bourn, 1997	x			N/A	Accounting	Report
6	Bova, Arranz, Toscani, & Ture, 2019		x	x	N/A	Economics	Report
7	Bova, Arranz, Toscani, & Ture, 2016		x	x	N/A	Economics	Report
8	Brix, 1998	x	x	x	PhD	Economics	Journal
9	Brix, 2012	x	x	x	PhD	Economics	Journal
10	Burnside, 2002		x		PhD	Economics	Journal
11	Casey, 1998		x		PhD	Business	Journal
12	Cebotari, 2008			x	N/A	Economics	Report
13	Chang, Yang, & Huang, 2013		x		PhD	Economics	Journal
14	Commonwealth Secretariat, 2016	x		x	N/A	Economics	Report
15	Council on Principles for Public Governance of Public Private Partnerships, 2012			x	N/A	Business	Report
16	Currie, 2002			x	N/A	Economics	Report
17	Fernandez, Andrews, & Conrecode, 2012	x	x		PhD	Accounting	Journal
18	Galli & Padovano, 2002		x		PhD	Economics	Journal
19	Heald & Hodgers, 2019		x	x	PhD	Accounting	Journal
20	Hofmans & Covering, 2014			x	PhD	Business	Journal
21	Holder, 1993	x			PhD	Accounting	Journal
22	Kaplan – Appio, 2002		x		PhD	Economics	Journal
23	Ma, 2013	x			PhD	Business	Journal
24	Mifsud, 2010	x			N/A	Accounting	Report
25	Mora, 2018	x	x		PhD	Economics	Report
26	Morse, 2016	x		x	N/A	Accounting	Report

Table A.5 (Continued):

#	Author(s) or Organization	A	B	C	Education Level	Subject Area	Source Type
27	Mršnik, 2012	x			N/A	Business	Report
28	OECD, 2002			x	N/A	Business	Report
29	OECD, 2012			x	N/A	Economics	Report
30	Ozkaya, 2014	x	x		PhD	Economics	Journal
31	Bajo & Premorac, 2011	x	x	x	PhD	Business	Journal
32	Schich & Kim, 2011	x			PhD	Business	Journal
33	Schiff, Schiff, & Rozen, 2012			x	PhD	Accounting	Journal
34	Smith, 2009	x		x	PhD	Business	Journal
35	Towe, 1991	x	x	x	PhD	Economics	Journal
36	Ulgenturk, 2017	x		x	N/A	Economics	Report
37	Vergara, 2018	x			PhD	Accounting	Journal

Note 1: The column “A” represents that the articles with an associated “x” discuss the sources of government contingent liabilities.

Note 2: The column “B” represents that the articles with an associated “x” discuss the effects of government contingent liabilities.

Note 3: The column “C” represents that the articles with an associated “x” propose solutions for measuring government contingent liabilities.

Figure A.1:

Percentage of Reviewed Articles by Category

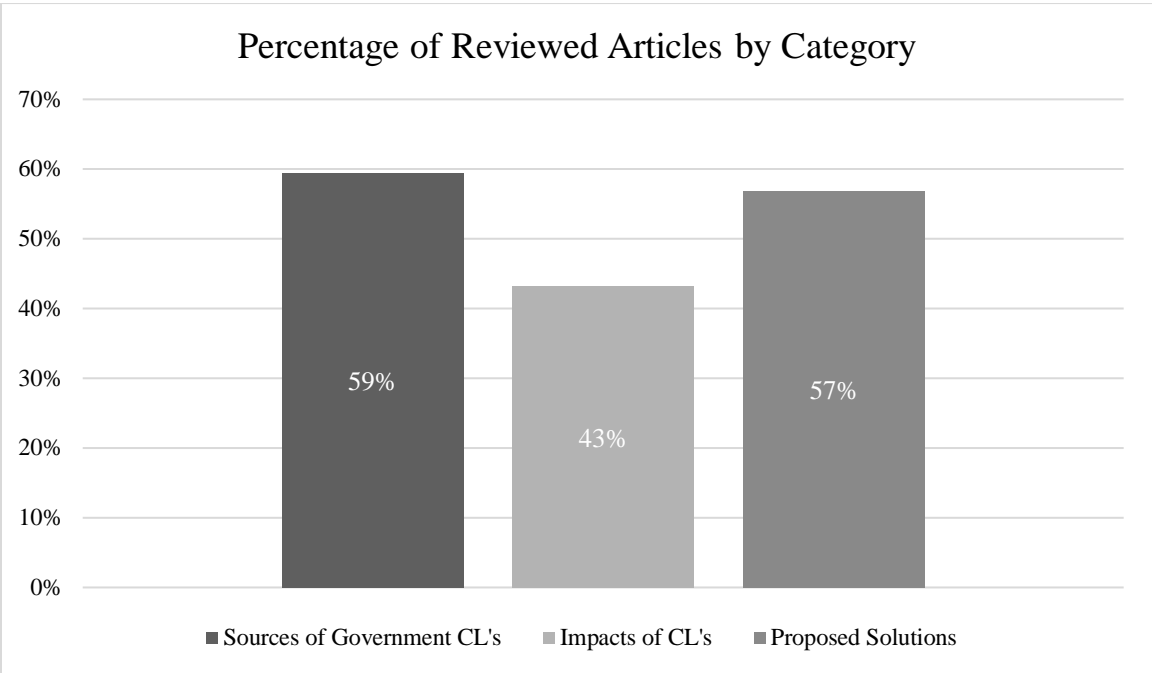


Figure A.2:

Distribution of Reviewed Articles by Field

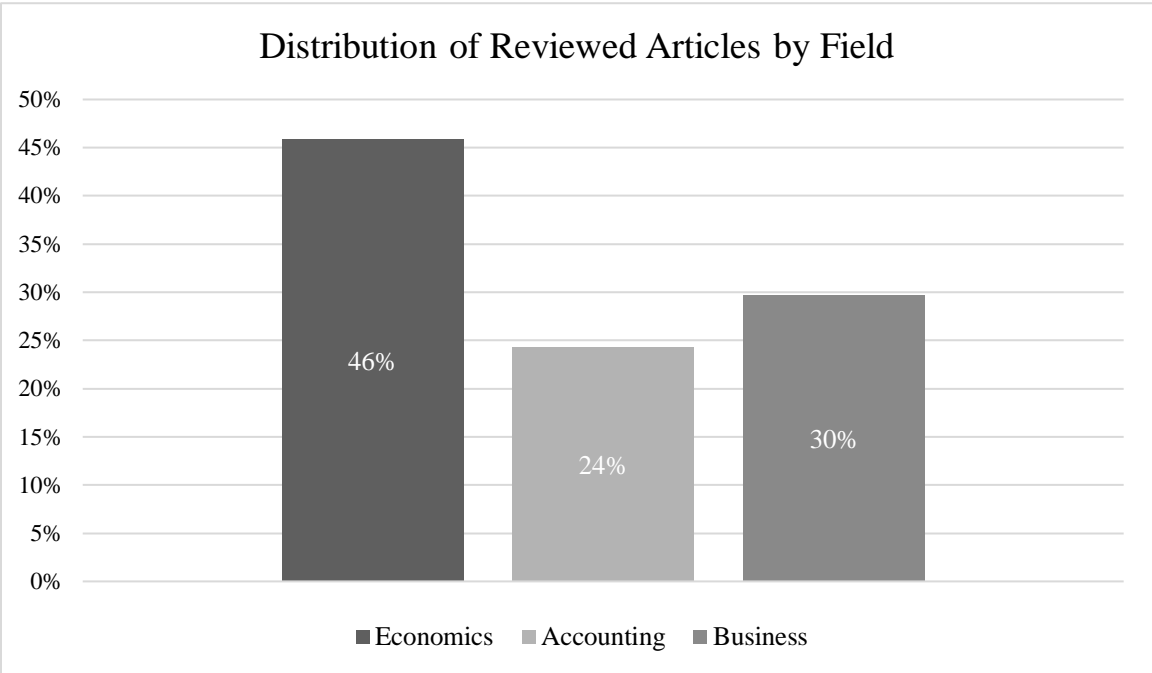


Figure A.3:

Percentage of Reviewed Articles by Source Type

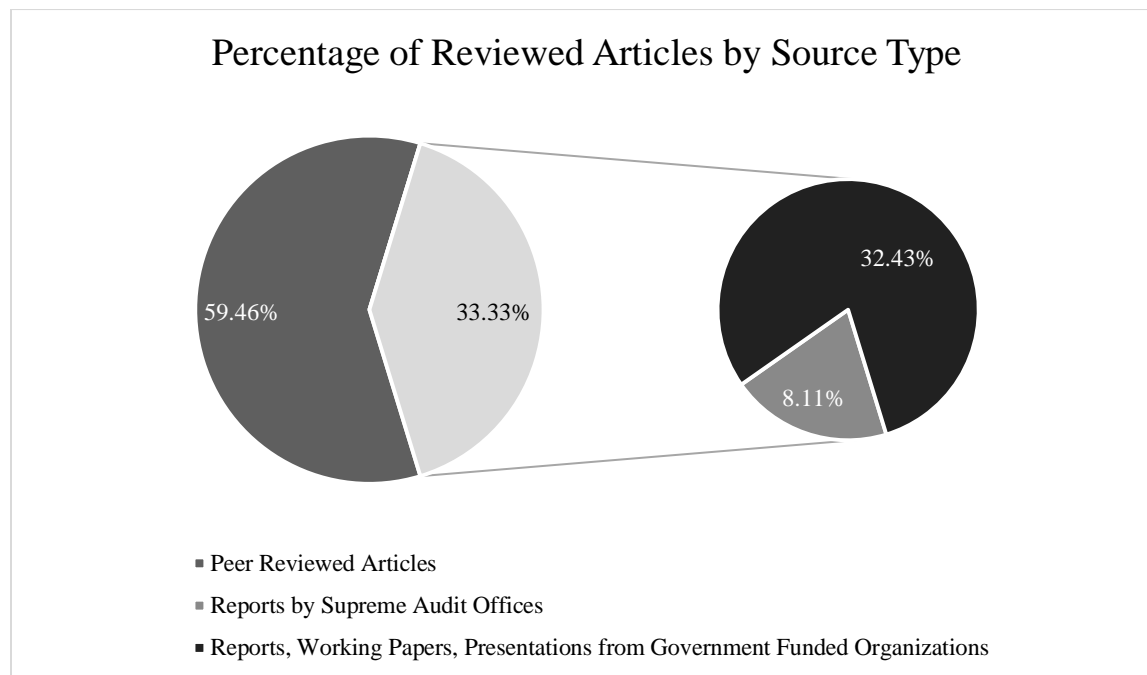


Table A.6:

Literature Review Typology

Literature Review Typology	
Fiscal Risk	The risk of deviations of fiscal outcomes from what was expected at the time of the budget or other forecast.
Fiscal Sustainability	The ability of a government to sustain its current spending, tax and other policies in the long run without threatening government solvency or defaulting on some of its liabilities or promised expenditures.
Moral Hazzard	A situation in which one party gets involved in a risky event knowing that it is protected against the risk and the other party will incur the cost. It arises when both the parties have incomplete information about each other.
Gross Debt	The sum of all booked liabilities on a balance sheet.
Contingent Liabilities	Possible future obligations that depend on events that may or may not occur.
Real Debt	The theoretical book value of all liabilities in a perfect information scenario where all future costs are known.

Appendix B

Table B.1:

Government Fiscal Risk Matrix

Obligations	Direct In any event	Contingent If a particular event occurs
<p>Explicit Government liability created by a law or contract</p>	<ul style="list-style-type: none"> -Sovereign debt (loans contracted, and securities issued by the central government) and debt service. -Budgetary expenditures. -Future non-discretionary budgetary spending such as civil service wages. -Obligations under service contracts. -Transition cost of ongoing reforms, such as public administration, pension, or healthcare reforms. -Revenue sharing with sub-national governments. -Spending commitments by international treaties. 	<ul style="list-style-type: none"> -Central government guarantees on debt repayment and other public, private-sector, and sub-national entities. -Statutory guarantees on liabilities and obligations of various entities including financial institutions and pension funds. -Government guarantees on service purchase contracts. -Other government guarantees issued to private investors and service providers. -Government-backed insurance programmes, such as deposit insurance, agricultural reinsurance, or disaster insurance. -Domestic and international legislation.
<p>Implicit A ‘political’ or moral obligation that reflects public and interest group pressures</p>	<ul style="list-style-type: none"> -Remaining capital and future recurrent costs of public investment projects. -Long-term policy commitments. 	<ul style="list-style-type: none"> -Claims by public-sector entities (such as railways, hospitals, or health insurance). -Claims by sub-national governments to assist in covering their own debt, guarantees, arrears, letters of comfort, and similar items. -Claims by financial institutions such as banks (beyond deposit insurance or statutory guarantees), social security, pensions funds, credit funds, and guarantee funds. -Other possible obligations such as environment commitments for still unknown damage.

Note: Table sourced from Brixi (2012).

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