

Ties that Bind:

The Geopolitics of Bilateral Currency Swap Agreements

Abstract

In multilateral lending, political ties between lenders and borrowers create perverse incentives for economic misbehavior by recipient states. These problems should be exacerbated in the context of bilateral currency swap agreements (BSAs), where borrowers and lenders engage in deep cooperation without explicit conditionality statements designed to reduce moral hazard. Despite these limitations, BSAs are rapidly proliferating and now match IMF agreements in both number and value. Why are lenders and borrowers shifting to an inherently risky financial instrument? I resolve this discrepancy by introducing and offering empirical support for a theory in which international political linkages allow providers to exert leverage rather than favoritism. In short, BSA providers can use existing linkages – such as alliances and strategic partnerships – to credibly threaten punishment against recipients that misbehave, thereby inducing those recipients to adopt more responsible economic policies. I support the mechanism using a newly-created data set of all currency swap agreements offered by the U.S. Federal Reserve, the People's Bank of China, and the Bank of Japan between 2000 and 2016. My results contrast with prevailing theories on the benefits of central bank independence and the relationship between international political ties and moral hazard in financial relations.

1 Introduction

Global financial stability is a public good that rests on the actions of individual countries. When states exercise sound economic policies and take calculated risks, they generate market confidence in cross-border exchange, thereby enabling the efficient allocation of resources and stimulating global economic growth. Likewise, by pursuing monetary restraint and stockpiling sufficient foreign exchange reserves, responsible countries can limit the risk of financial contagion and avoid contributing to global financial collapse. Today, as the world's financial markets grow increasingly connected, wise economic management by individual governments and central banks is more important than ever. Even responsible countries are now susceptible to volatile capital flows and virulent economic shocks that originate elsewhere.

Unfortunately, despite the collective benefits of global financial stability and the growing risks of contagion, individual countries frequently fail to hold sufficient reserves to overcome financing gaps or to weather external shocks. The risk that financial problems will spill over from one country to the next—coupled with the negative externalities of poor individual planning on global welfare—has reinforced the need for an international lender of last resort that can help avert or resolve financial crises by providing access to emergency financing that is otherwise unavailable.

In the 20th century, international actors sought to resolve this underinsurance problem by constructing a global financial safety net under U.S. leadership. At the center of this approach was the International Monetary Fund (IMF). By pooling reserves among multiple countries, the IMF lowered the cost of this “financial insurance” for any individual country. Over the last two decades, the global financial architecture has shifted away from this highly-institutionalized and multilateral system toward a more fragmented safety net. The most significant change during this period was the rise of bilateral arrangements—such as the bilateral currency swap agreement (BSA)—either in place of or in conjunction with multilateral lending. States have created over 140 BSAs since the Great Recession. Indeed, BSAs today are sufficiently widespread that they outmatch similar IMF lending “facilities” both in number of agreements and in value. The rise of BSAs has been driven in large part by China, which has itself extended over 70 agreements.

The proliferation of BSAs is surprising for three reasons. First, researchers consider the influence of national politics a primary shortcoming of multilateral lending, but bilateral arrangements should be even more vulnerable to political capture. Unencumbered by the constraints of joint decision-making, bilateral agreements are more likely to reflect a lender's strategic objectives, suggesting that the perverse political effects we observe in IMF lending should be exacerbated in the bilateral context. Second, unlike the IMF, where the costs of a borrower's risky behavior can be shared among all members, with BSAs the costs of moral hazard problems rest solely with the individual provider. This suggests that providers should be reluctant to extend BSAs broadly and should only offer agreements to a select few highly reliable partners. Surprisingly, while the Federal Reserve appears to match this assumption by extending agreements primarily to reliable developed countries, the People's Bank of China does not appear to use the same decision-making calculus. Overall, there is significant variation in whom providers select as BSA partners. Third, unlike the IMF, BSAs contain no explicit conditions to deter recipient misbehavior; mechanisms to resolve moral hazard are seemingly absent from BSAs. Why, in wake of the worst financial crisis since the Great Depression, when concerns about global financial stability are especially salient, have BSAs proliferated?

I argue that in the case of BSAs international political ties help *resolve* moral hazard problems, thereby enabling some providers to extend BSAs when they might otherwise be hesitant. In short, providers can use existing political ties to recipient states as a form of *leverage*. By threatening to sever alliance ties or downgrade strategic partnerships if the recipient state engages in economic misbehavior, the provider state can deter a recipient from pursuing risky activity that could further destabilize the recipient's economy. This mechanism motivates naturally unreliable recipients to instead exhibit monetary restraint. Providers, in turn, can feel more secure about providing BSAs to such recipients, thereby expanding the range of countries included within their financial safety net and reducing the overall risk of economic spillover.

Although providers may benefit from using political ties as leverage, I also recognize that not all providers have access to this accountability mechanism. Central banks designed to be

institutionally independent from their home governments are constrained from leveraging political ties and can only do so at significant cost to their institutional credibility. My theory therefore not only explains how some central banks can resolve the moral hazard problem, it may also help explain why the People's Bank of China has been more active in pursuing this strategy and extending BSAs than the Federal Reserve.

To test my argument, I collected an original data set of BSAs formed between 2000 to 2016. Over this period, around 170 distinct BSA agreements were formed with the majority originating from three providers—the Federal Reserve, the People's Bank of China, and the Bank of Japan. Using this data, I first test whether each provider is more willing to extend BSAs to unreliable recipients when (1) the providers maintain political ties to those recipients, and (2) the provider banks are able to leverage those political ties due to a lack of independence from the home government. I find evidence of a conditional effect in line with my expectations, whereby less independent providers appear more willing to extend BSAs to unreliable recipients to whom they are politically tied, whereas independent providers are less apt to engage in such behavior.

I provide more direct support for the political accountability mechanism using a difference-in-difference design that allows me to test whether politically tied recipients engage in riskier behavior after receiving BSAs compared to unaffiliated recipients. In contrast to IMF studies, I find that in both the short term and the long run, politically tied BSA recipients actually exhibit greater monetary restraint after receiving BSAs compared to unaffiliated recipients. Both sets of empirical findings lend further support to my theory that rather than a source of enhanced risk-taking, political ties can serve to hold recipients accountable and resolve the moral hazard problem in the absence of explicit conditionality.

This paper makes three important contributions. First, it brings attention to an understudied, but increasingly important form of monetary cooperation. BSAs are utilized by the world's largest economies as well as rising emerging market economies. The recent popularity of this policy instrument, especially from China, highlights the urgency to understand its selection process and subsequent effects on the global financial system. Moreover, the growing prominence of BSAs

marks a distinct departure from the traditional financial governance of the 20th century. Through BSAs and its own institutional structure, China is changing the structure of the global financial safety net in a unique way that challenges existing multilateral institutions tasked with managing global spillovers. In short, BSAs will have important implications for the overall efficacy of traditional financial governance.

Second, the findings suggest that central banks play a powerful role in international affairs and financial statecraft that remains under-explored. Importantly, I highlight that central banks face a critical tradeoff: while institutional independence enables states to credibly signal their monetary commitments, the same independence inhibits a central bank's ability to manage problems of moral hazard, suggesting that researchers should reconsider the overall benefits of a political central bank.

Finally, the results encourage a reevaluation of the role of politics in international financial governance. Political ties do not always imply or magnify moral hazard problems; rather, political ties may have differential effects in different contexts. Existing work suggests that in multilateral settings political ties enable borrowers to act more brazenly and delay crucial economic reforms. In the case of BSAs, however, bilateral political linkages enable recipients to commit to good behavior and allow providers to control moral hazard by penalizing recipients that misbehave. This finding provides insight on how to interpret these new forms of bilateral assistance. Importantly, I show that the value of political ties depends on a provider's institutional constraints and whether it can extend assistance bilaterally or multilaterally. Variation in these characteristics can help explain why BSAs are offered in some cases but not others.

2 Background

Over the last two decades, changes in the international financial system have heightened the importance of the global financial safety net as the potential for externalities imposed by financial spillovers are magnified.¹ The world economy has become increasingly financialized both in the

¹ The GFSN refers to a network of insurance encompassing multilateral institutions like the IMF, regional financing arrangements (RFAs), and bilateral creditors that countries can draw on to cope with financing shortfalls, volatility, and contagion from a crisis. See Miyoshi et al. 2013.

depth of financial flows as well as the breadth of countries who participate in global finance.² Countries can now access larger amounts of external finance from more varied international investors, greatly amplifying countries' external debt burdens.³ Moreover, capital flows have become more virulent in both speed and volatility. Over 60% of developing countries and 70% of advanced economies experience a large decline, surge, or reversal in foreign lending each year.⁴ Overall, a country's financial stability has become more dependent on global financial conditions than in previous periods because of financial integration.⁵

Effective global financial governance serves a vital role in promoting international financial stability. In the last thirty years, bilateral currency swap agreements (BSAs) have become an increasingly important feature of the 21st century global financial safety net. Figure 1 below shows the number of BSAs created each year compared to similar IMF loans. BSAs operate like a direct line of credit between participating central banks, temporarily boosting short-term liquidity.⁶ A BSA is formed when a central bank (*the provider*) accepts a commitment to provide funds on demand to a foreign central bank (*the recipient*).⁷ In practice, BSAs function like a temporary increase in the foreign currency reserves for the recipient.⁸ For instance, a swap line between the Federal Reserve and Banco de Mexico exchanging dollars for pesos would temporarily increase the dollar reserves for Banco de Mexico if the line was activated. The short-term boost in liquidity can provide immediate relief for the recipient by helping to forestall a costly depreciation of their

² In 1980, financial flows represented 4.1% of world GDP (\$0.5 trillion) whereas these flows grew to 20.7% of world GDP, roughly \$11.9 trillion, by 2007 (IMF 2018).

³ The IMF reports that external debt burdens equaled 225% of global GDP in 2016 (Ibid). These debt burdens are especially problematic for middle- and low-income countries where a large portion of debt is denominated in foreign currency, 1/3 and 2/3 respectively (Ibid).

⁴ Institute 2017

⁵ Truman 2013. See Rey 2015 for more work on global financial cycles.

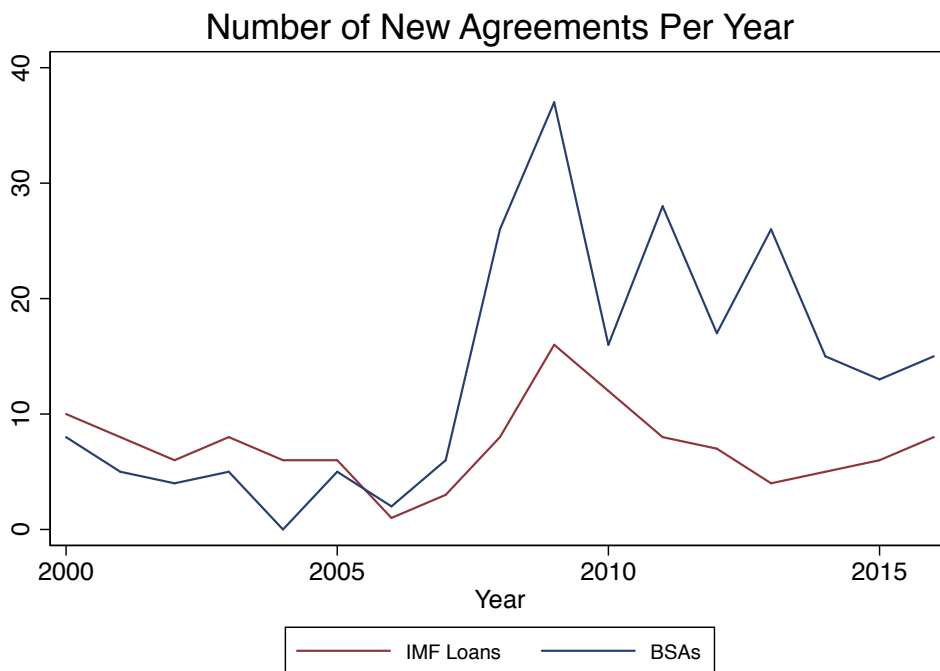
⁶ McDowell 2017.

⁷ Moessner and Allen (2010). A swap agreement operates as follows: a provider central bank loans a specified amount of currency A to a recipient central bank in exchange for currency B at an agreed upon exchange rate. The agreement obligates the recipient central bank to buy back its currency B at a future date at the same exchange rate of the initial exchange. In the meantime, the recipient country lends currency A to banks in its jurisdiction. On the specified future date, the recipient central bank returns currency A to the provider in exchange for its currency B and the recipient pays interest to the provider for the loan of currency. See Fleming and Klagge (2010) for a complete description.

⁸ Swap agreements originated in the early 1960s to finance foreign exchange intervention. See Bordo, Humpage, and Schwartz (2015) and McDowell (2017) for history of Federal Reserve swaps.

currency or avert a balance of payments crisis. BSAs tend to be large in size⁹ and offer quick dispersal of funds, avoiding the recent pitfalls of similar IMF loans.¹⁰

Figure 1: BSAs By Provider



BSAs derive their power from their ability to send a reassuring signal to wary investors that the recipient has a powerful backer, thus avoiding a costly capital flight. BSAs are effective policy tools in large part because of their symbolic weight. Because recipients can draw on a BSA line at any time, many consider BSAs to be a signal of deep cooperation whose existence has the effect of calming markets regardless of whether or not they are actually used.¹¹ BSAs have been described by pundits as a “meaningful sign of trust between governments.”¹² As Russia was experiencing a fall in the value of the ruble, news media in China characterized the BSA between the People’s Bank of China and the Bank of Russia as “tantamount to directly offering money to Russia.”¹³

⁹ By late 2008, the Federal Reserve’s BSA program totaled a staggering \$580 billion. Comparatively, the more publicized AIG bailout was only \$85 billion. See Irwin 2014.

¹⁰ McDowell 2017.

¹¹ Obstfeld 2009; Aizenman, Jinjarak, and Park 2011.

¹² Council on Foreign Relations. See <https://www.cfr.org/interactives/central-bank-currency-swaps-since-financial-crisis/>.

¹³ “Pouring scorn on China-Russia engagement foolish” 2014.

The presence of BSAs has been shown to restore financial stability even for countries with large stockpiles of foreign reserves.¹⁴ Aizenman and Pasricha (2010) found that on the day after a BSA announcement, BSA participants saw their exchange rates appreciate on average by 4% compared to other countries with similar reserve holdings. BSAs can also be used to help facilitate trade finance, and as a result liberate a country's actual foreign currency reserves to defend their exchange rate in times of financial stress. During times of stress, banks often have difficulty obtaining short-term dollar funding to finance their commercial deals.¹⁵ BSAs can ensure the continuation of trade finance even in times of financial stress, thus limiting the likelihood that economic stress in the recipient country spills over to its economic partners.

Because BSAs are a relatively new phenomenon, not much is known about the deliberations behind their formation. From the limited accounts available, it appears that recipients most often request a BSA from a provider. Although in some cases, a provider who has specific strategic objectives or recognizes their economic exposure to a recipient's economy may preempt the recipient's official request and offer a BSA. In either scenario, the decision to offer a BSA rests squarely with the provider. Therefore, any explanation of BSA occurrence must take into account the provider's decision-making calculus.

While BSAs have the benefit of generating tremendous resources very quickly, they seemingly lack any explicit tools to manage problems of moral hazard inherent in any insurance scheme. Moreover, unlike traditional forms of liquidity provision, the risk of default rests solely with the provider, suggesting that providers should be hesitant to extend BSAs in the first place. Why do providers give BSAs to some recipients but not others? Additionally, what are the consequences of a non-institutionalized lender of last resort for global financial stability?

Need-based arguments centered on currency-specific shortages do not fully explain the selective pattern of BSAs.¹⁶ Allen (2015) observed that a country's dollar liquidity needs during the

¹⁴ See Aizenman, Jinjark, and Park 2011.

¹⁵ McDowell 2017.

¹⁶ McDowell (forthcoming) argues that volatile capital flows and emerging market economies' recognition of the risk of dollar dependence in trade account for the rise in BSAs. See also Goldberg, Kennedy, and Miu 2010; Fleming and Klage 2010.

2008 crisis did not strictly determine the creation of a swap line. Russia, Turkey, India, Chile, Hungary, and Iceland all faced U.S. dollar shortages, but were unable to receive a Fed BSA. Despite not obtaining a BSA from the Fed, India was able to secure a BSA with the Bank of Japan and Iceland was able to secure a BSA with the People's Bank of China. In contrast, countries with a dollar abundance during the crisis still received a Federal Reserve BSA.¹⁷ This behavior extended to other providers beside the Federal Reserve. For instance, the United Kingdom faced a large Swiss franc shortage, but did not receive a BSA whereas Poland and Hungary who faced a similar shortage did succeed in securing a swap line with Switzerland. Similarly, Norway and Romania faced large Euro shortages yet failed to obtain a BSA from the ECB. One possible explanation for the discrepancy is that despite currency shortages, a strategic recipient may not request a BSA if it anticipates that the provider would deny its request. However, there is some evidence to the contrary. The Federal Reserve Open Committee meeting minutes mention several countries who requested BSAs from the Federal Reserve but were denied. Diplomatic cables released by WikiLeaks also reveal that Indonesia, Turkey, and the Dominican Republic requested BSAs from the Fed, but each of these requests was denied.¹⁸

In contrast to need-based arguments, several scholars have found that the provider's economic exposure to the recipient is a key determinant of BSA formation. The argument contends that providers consider the extent to which the provider's own economic or strategic interests will be negatively impacted if the recipient's economy should collapse. Analyzing BSAs from the People's Bank of China, Liao and McDowell (2015) find that economic interdependence increases the likelihood of a BSA.¹⁹ McDowell (2017) work on the Federal Reserve's swap lines also finds evidence that BSAs are directed to countries that serve the economic and financial interests of the U.S. Similarly, Aizenman, Jinjarak, and Park (2011) finds that recipients who are significant

¹⁷ Switzerland, Japan, Singapore, Mexico, and Denmark all received swap lines for the Federal Reserve (Allen 2013; see also Federal Reserve website).

¹⁸ Others country names were listed but remain redacted. Indonesia requested a swap line multiple times but was repeatedly denied. See Irwin 2014.

¹⁹ See also Garcia-Herrero and Xia 2015; Lin, Zhan, and Cheung 2016.

export markets for provider countries secure BSAs.²⁰ Focusing on financial linkages, Broz (2015) finds evidence that U.S. bank exposure to recipients is a significant determinant of the Fed's BSAs, consistent with the findings in Aizenman, Jinjarak, and Park (2011).

While earlier studies have correctly identified the costs a provider may face if it fails to act, those studies pay insufficient attention to how the provider weighs the costs of actually providing a swap. BSAs enable providers to contract with recipient central banks and provide sufficient resources to resolve the underlying risks to a provider's economic well-being or achieve strategic objectives. However, a provider who perceives the recipient as unreliable in carrying out the provider's policy objectives or susceptible to profligate risk-taking in the future may be hesitant to offer a BSA. Without some means to leverage control over unreliable partners, a provider may be unwilling to contract with the recipient despite high economic exposure. This is especially problematic for BSAs where recipients simultaneously have instant access to easy funds yet no explicit mechanism to manage the moral hazard problem. This dilemma is missing from prior analyses.

In the following section, I argue that a provider faces mixed incentives when it perceives the recipient to be unreliable and likely to engage in economic mismanagement. The provider, however, can manage the risk of offering a swap to an unreliable recipient by using its political ties to induce good behavior. Previous research has generally sidestepped the role of politics in the provider's decision-making. Liao and McDowell (2015) come closest when they note that members of the Shanghai Cooperation Organization are likely to receive BSAs from the People's Bank of China. They conclude that the findings provide suggestive evidence that geopolitical forces might be at play. Few, however, theorize how political ties might shape a provider's decision to offer a BSA.²¹ In this paper, I offer a theoretical pathway through which politics can shape the incentives of BSA providers.²²

²⁰ True for PBOC and the Federal Reserve.

²¹ Subsequent research has begun to analyze how BSAs may change political behavior, ex-post. Liao and McDowell (2016) provide evidence that BSAs from the People's Bank of China alter a recipient country's holdings of renminbi.

²² I make no claim that the proposed pathway is the only mechanism through which politics shape the incentives of BSA providers.

3 Model Setup and Structure

To analyze how providers' estimate and account for the risk of offering a BSA, I present a formal model that depicts an interaction between a provider central bank and a recipient central bank that has requested a currency swap. The traditional depiction of a provider's decision to offer a swap emphasizes the economic spillover costs a provider may face if it fails to offer a swap and the recipient's economy subsequently collapses. I embed this traditional logic into my game but expand the model to also include the costs a provider confronts when it does offer a swap. Finally, the model demonstrates how providers can leverage their political ties to extract good behavior from recipients.

At the beginning of the game, Nature determines whether the provider and recipient have political ties, which I label as alliance for brevity. This is common knowledge. The allied and unallied cases differ only insofar as allied providers can impose punishment on recipients via their alliance linkage. Figure 2 below illustrates the structure of the game. I provide a list of all of the payoffs associated with each outcome in Table 1.

Figure 2: Bilateral Swap Model

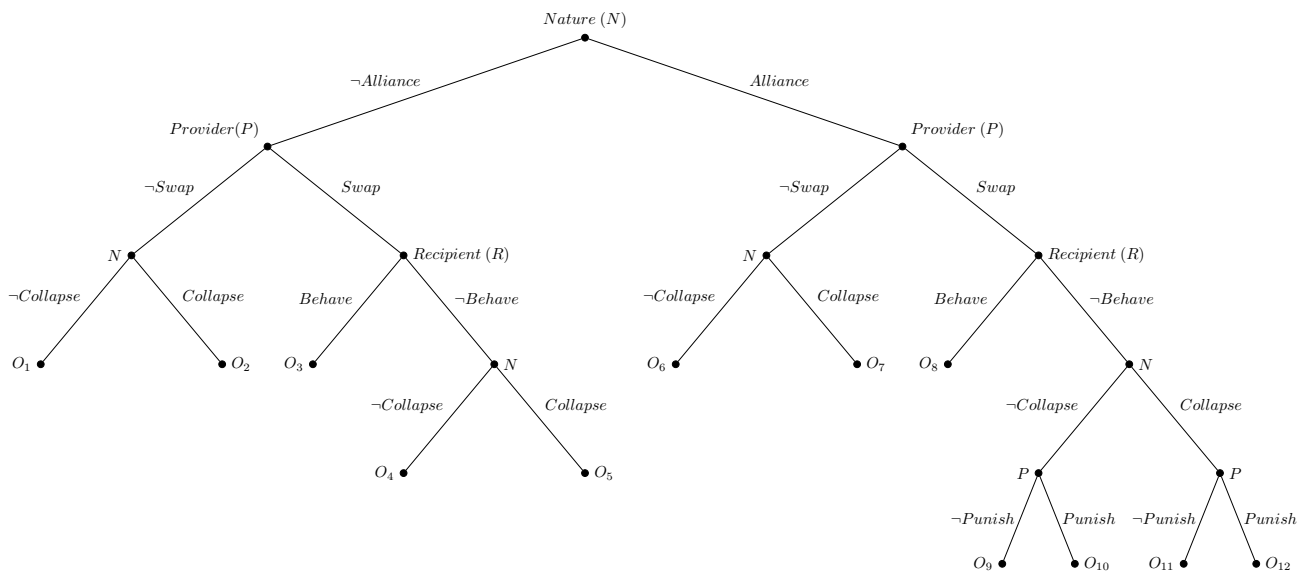


Table 1: Model Payoffs

<u>Outcome:</u>	<u>Provider's Payoff:</u>	<u>Recipient's Payoff:</u>
O_1 :	0	$-c$
O_2 :	$-\sigma$	$-\epsilon$
O_3 :	$-\varsigma$	0
O_4 :	$-\varsigma - \delta$	β
O_5 :	$-\varsigma - \delta - \sigma$	$\beta - \epsilon$
O_6 :	0	$-c$
O_7 :	$-\sigma$	$-\epsilon$
O_8 :	$-\varsigma$	0
O_9 :	$-\varsigma - \delta$	β
O_{10} :	$-\varsigma - \delta$	$\beta - \pi$
O_{11} :	$-\varsigma - \delta - \sigma$	$\beta - \epsilon$
O_{12} :	$-\varsigma - \delta - \sigma$	$\beta - \epsilon - \pi$

Outcomes and Payoffs When Providers Do Not Offer Swaps

The first choice facing a strategic actor is the provider's decision to offer a swap to the recipient or not. If the provider does not offer a swap to the recipient, Nature determines whether, with probability $\bar{\kappa}$, the recipient's economy *collapses* in a financial crisis or if instead the recipient's economy does *not collapse* with complementary probability $(1 - \bar{\kappa})$. Although it is possible to model this process more explicitly—for example, by including alternative strategic actors who could subsequently offer swaps or by accounting for the probability of IMF loan offers and the recipient's likelihood of implementing conditionality requirements—I choose to omit these complexities in the baseline model.²³

I further assume that the probability of collapse, $\bar{\kappa}$, is common knowledge. The results I discuss hereafter would hold even if I relaxed this assumption and allowed a provider only to estimate $\bar{\kappa}$. Nevertheless, the assumption that $\bar{\kappa}$ is common knowledge is both reasonable and commonplace within existing literature. Providers use publicly available data and market reactions to gauge the extent to which a recipient requires external assistance to alleviate its balance of

²³ Across all such extensions, the provider would continue to calculate its continuation payoff from not offering a swap. This payoff reduces to the probability and payoff if crisis is averted by another actor, plus the probability and payoff if a financial collapse eventually occurs. I use this reduced characterization in the model I discuss in the text.

payments problems. It is also well known that recipients with high external debt burdens and few reserves are more likely to suffer a financial crisis in the absence of provider support. Finally, providers can reasonably assess the likelihood that other lenders of last resort like the IMF will step in to prevent recipient collapse. Most providers' home governments are members of the IMF and have access to information regarding assistance requests.

If the provider declines to offer a swap and the recipient's economy collapses, the provider will suffer spillover costs (σ) based on the extent to which the provider is economically exposed to the recipient's economy. This parameter is designed to capture both the direct and indirect spillover costs on the provider. A provider may, for example, experience a direct economic contraction due to a disruption to its financial sector or trade flows with the recipient. If the recipient's economy collapses, its banks, lacking liquidity to rollover foreign currency denominated debt, may default and cause a fire sale of assets as banks attempt to deleverage, severely impairing banks in the provider's country who have counterparty relationships with banks in the recipient's country.²⁴ In addition, a financial crisis in the recipient's country results in weakened consumer demand for the provider's products both domestically and abroad. As the recipient's domestic economy contracts, its consumers will demand fewer imports from the provider's country. Diminished consumer demand may also cause a loss of profit for the provider's firms operating in the recipient's country, resulting in fewer profits repatriated to the provider's country. For the provider's export-oriented firms and its firms engaging in FDI, the loss of profits may force the firms to cut back production and reduce its own employment resulting in an economic contraction in the provider's country. Second, a provider may face economic exposure indirectly if recipient's economic collapse imposes negative externalities on the international financial system as a whole, effectively turning a local crisis into a global one. As a financial crisis unravels one economy, initial losses can spark a broader market panic, negatively impacting other countries as fearful investors quickly withdraw their capital to safety.²⁵ The risk of systemic contagion is especially probable when the recipient

²⁴ See Allen 2013; Broz 2015. The Tequila Crisis of 1994 and the Asian Financial Crisis are useful examples of the speed and spread of contagion-based capital flight.

²⁵ Financial crises are often characterized by contagion (Kaminsky, Reinhart, and Vegh 2003; Bordo and Murshid

has a relatively large economy or has a large financial center.²⁶ Any economic downturn in a large economy is likely to reverberate in other countries.²⁷ A downturn in a financial center country exacerbates funding difficulties internationally, increasing the likelihood countries experience a sudden stop. To summarize, if the provider country is economically exposed to the recipient, either directly or indirectly, it is likely to face its own economic contraction.

A recipient who collapses also suffers an *economic cost* (ϵ). The recipient incurs not only economic costs from the loss of output and prolonged economic contraction following a financial crisis, but it also incurs political costs. Incumbent politicians are often replaced following poor economic performance.²⁸

Finally, if a provider withholds a swap and the recipient's economy does not collapse, the provider avoids any spillover costs and likewise, the recipient avoids the cost of economic collapse. This outcome is equivalent to a scenario where a financial crisis is averted by either significant internal contractionary policies taken by the recipient or, alternatively, by third party action such as an IMF bailout offer. Each of these scenarios could impose costs on the recipient due to the domestic political backlash a recipient may face by imposing austerity or adapting to IMF conditionality requirements. I denote these *conditionality costs* as (c), but results from the model are robust to their inclusion or exclusion.

Outcomes and Payoffs When Providers Offer Swaps

My discussion thus far highlights the provider's decision as it is currently framed in existing literature. As the far-left branch of the game tree reflects, providers are concerned with the risk and consequences of economic spillover if they decline to offer a swap agreement to a potential recipient.

2000).

²⁶ Financial centers are defined by their position in the world economy and the extent to which they provide significant financial services internationally. See the Global Financial Centers Index.

²⁷ U.S.'s attempts to control inflation through economic contraction is widely attributed as the proximate cause of the Latin American debt crises in the 1980s.

²⁸ Schneider and Tobin 2019.

The model's first contribution is to acknowledge and depict that providers also encounter risks when offering a swap, a factor that is presently underappreciated in existing studies.²⁹ Whenever a provider offers a swap agreement, its recipient can choose whether to *behave* or *not behave*. In other words, a swap recipient is tasked with using the funds to inject liquidity into banks in its own jurisdiction and, more generally, with enacting policies that strengthen the recipient's economy. A recipient may misbehave by engaging in actions that deviate from the provider's preferences. A recipient who is likely to misbehave is considered an unreliable type. Misbehavior is primarily characterized in two ways, both of which impose a cost on the provider that I refer to as *default* (δ). First, the recipient may either fail to repay the swap or refuse to honor the terms of the agreement.³⁰ This is particularly likely when the recipient engages in loose monetary policies such as refusing to raise interest rates or address inflation, which results in failure to resolve the underlying balance of payments problems. Similarly, recipients may also engage in electioneering by extending short-term economic benefits through loose economic policy or patronage in hopes of shoring up domestic political support.³¹ When the recipient country fails to use the BSA to strengthen its economy, it necessitates at minimum temporary continued support from the provider and at worse, long-term support.³² Second, the recipient country's expectation of BSA support may ex-ante encourage moral hazard that eventually cause additional economic and financial problems for the provider.³³ For instance, recipient countries' banks may be tempted to engage in risk-taking and run larger currency and maturity mismatches, increasing the likelihood of future liquidity needs. The moral hazard risk associated with BSAs is likely to be greater than from IMF bailouts as BSAs do not explicitly attach costly conditions that disincentivize profligate external debt burdens.³⁴ Good recipient behavior is defined by the absence of recipient misbehavior.

²⁹ Broz (2015) observes that Federal Reserve swaps should go to countries who have displayed good economic management in the past. In contrast to work that uses past behavior as a proxy for a recipient's future behavior, I argue that a recipient's potential for economic mismanagement in the future is a better indicator of recipient type.

³⁰ Destais 2014.

³¹ For more on political business cycles, see Nordhaus 1975.

³² Several BSAs have been amended to augment the credit amount. South Korea requested and received multiple increases in the amount extended in its swap lines from the Federal Reserve and the Bank of Japan.

³³ Frankel and Roubini 2001.

³⁴ IMF loans that had fewer conditions encourage greater moral hazard among recipients (Lipsy and Lee 2019).

If the recipient does behave, I assume that it avoids the cost of economic collapse (ϵ). On the other hand, if the recipient does not behave, the recipient obtains *political benefits* from its mismanagement (β). In the case of misbehavior, however, the recipient has not resolved the underlying balance of payments problem and continues to risk economic collapse with probability $\underline{\kappa}$. I assume that $\underline{\kappa} < \bar{\kappa}$ because a recipient who obtains a swap should face a lower risk of economic collapse than one who does not secure a swap at all. Recall that part of the power of a swap agreement is the signal it provides to skittish investors who may forgo capital flight once they observe that a swap offer has been made. Even if the recipient misbehaves, the temporarily reduced capital flight from the swap's signal attenuates the recipient's likelihood of economic collapse.

In summary, the recipient's choice to behave or not depends on the recipient's preference for avoiding the costs of economic collapse or, alternatively, reaping the short-term political benefits of economic mismanagement. I assume the values of these parameters are known to the provider, who can determine based on these parameters whether a recipient will behave or not behave if offered a swap.³⁵ The results do not rely on this assumption. I can obtain consistent results if I instead assume that providers are uncertain about the relative value of these parameters, as might be the case if a provider could encounter multiple "types" of recipients who were naturally inclined toward either good or bad behavior at varying rates due to variation in their preference for β and ϵ . Henceforth, I refer to recipients who will misbehave in order to reap the political benefits of mismanagement as *unreliable* and recipients who will behave in order to reduce the likelihood of economic collapse as *reliable*.

A provider who offers a swap agreement automatically incurs a small cost, ς , which stems from two sources. The first is the opportunity cost of diverting swap resources from other domestic purposes. The second is political backlash a provider may face. Constituents may, for example, perceive the provider as incurring unnecessary levels of risk by extending the BSA rather than

³⁵ Providers may, for example, estimate the likelihood of good recipient behavior based on the extent to which a recipient central bank is institutionally independent from its home government. Research has shown that central bank independence is closely correlated with good economic management, measured by price stability. Therefore, a provider can form a reasonable estimate of the likelihood a recipient will behave and engage in good economic management from a recipient's institutional arrangement.

encouraging the recipient to seek alternative means like IMF lending programs where risk is pooled among many members. We see evidence of such backlash in the United States; when Congress learned of the Federal Reserve’s swap agreements, several members proposed a bill to “Audit the Fed.”³⁶ China also faced domestic backlash after the news media revealed it had signed a swap agreement with Russia shortly before the plunge in the value of the ruble in 2014.³⁷ Finally, if a recipient country obtains a swap but nevertheless collapses, the provider suffers the spillover cost (σ) from its economic exposure to the recipient.

By including the risks a provider faces when extending a swap, the model highlights the dilemma confronting a provider. If the provider is economically exposed to a potential recipient, it risks incurring high spillover costs (σ) if the provider fails to offer a swap and the recipient’s economy collapses. On the other hand, a provider who offers a swap, automatically incurs a small cost for this action (ς) and must also risk the cost of default (δ) if the recipient misbehaves. Finally, the act of offering a swap does not entirely remove the possibility of economic collapse and the resultant spillover cost (σ); instead, the probability of collapse merely drops from $\bar{\kappa}$ to $\underline{\kappa}$.

When a recipient is unreliable and inclined to misbehave, a provider who could reduce the risk of misbehavior would be more inclined to offer swaps and could therefore also avoid the high spillover costs of inaction. In a traditional lending arrangement, lenders would simply charge a higher premium to risky borrowers in the form of higher interest rates or, in the case of IMF loans, stricter conditionality requirements.³⁸ With swaps, however, providers are precluded from using traditional risk premiums because of how BSAs function: the efficacy of a BSA relies on the credibility of the market signal that the recipient has a “committed backer.” Any observable premium would nullify this signal and engender doubt about the provider’s commitment to come to the recipient’s aid.³⁹ The provider is therefore in a bind. It would like to offer a swap to mitigate the

³⁶ Irwin 2014, p. 154; See also Broz 2015.

³⁷ “Pouring scorn on China-Russia engagement foolish” 2014.

³⁸ Studies on the IMF identify limits on the size of loans and requiring policy reforms to minimize the risk of moral hazard in repayment (Dreher 2009; Dreher and Walter 2010; Schneider and Tobin 2019).

³⁹ This case is analogous to a start-up firm who gets an “Angel investment.” Any explicit limitations on the investment such as limiting disbursements until the start-up had achieved certain goals would deter other investors from confidently investing in the start-up as well. Any observable premium that causes doubt in the future profitability of the

likelihood it incurs a spillover cost, but it knows the recipient will misbehave and cannot manage risk through traditional interest-rate mechanisms.

Political Ties as an Accountability Mechanism

The second contribution of this model is to offer a simple depiction of how political ties offer a solution to the providers' dilemma. By using political linkages to discourage misbehavior, providers can manage the risk of offering swaps to otherwise unreliable recipients.

To understand the political linkage mechanism, first consider the use of economic sanctions, which are often depicted as a tool of coercion in international relations. Proponents of sanctions argue that the threat to reduce trade or financial flows can motivate targeted countries to desist from undesirable behavior. Unfortunately, economic threats issued by providers are likely to be incredible and self-defeating precisely in the circumstances where BSAs are most desirable. If the recipient is already in an economic downturn, punishment that would impose additional economic costs would further impair the recipient's economy and raise the likelihood that a provider would suffer spillover costs.⁴⁰ The same is true for threats to withdraw or suspend foreign aid, another traditional tool of economic coercion.

Rather than economic coercion, I argue that providers can use political ties to credibly threaten punishment and thereby induce good behavior from unreliable recipients.⁴¹ Political ties provide a credible means to exert leverage over the recipient by increasing the number of enforcement linkages available to the provider to punish recipients who misbehave.⁴² If the recipient and provider are politically linked, a provider can credibly threaten to punish recipient misbehavior in venues that would not impose the same degree of harm on the recipient's economy and will therefore

start-up would undermine the Angel investor's ultimate goal.

⁴⁰ It is not surprising that targets of US sanctions tend to be countries whom the US does not maintain a meaningful trade relationship (Iran, Cuba, North Korea, DRC, etc.).

⁴¹ Davis (2009) shows that alliances are used as leverage to extract economic concessions from its partnerships.

⁴² Alternatively, political ties might enable an unreliable recipient to buy a swap from an otherwise hesitant provider. Political ties increase the number of venues that a recipient can compensate the provider for the costs of the swap through side payments. The side payments essentially subsidize the costs of the swap for the provider making it more willing to offer a swap than before. Though easy to include in the model, this side payment mechanism is hard to distinguish empirically from the enforcement mechanism.

avoid raising the likelihood that a provider will suffer spillover costs. If the threats are credible, the recipient is induced to behave in order to avoid the costs incurred from these punishments, and punishment should not be observed in equilibrium.

For threats to be credible, the recipient must value the political relationship sufficiently such that if any aspect of the relationship is removed, the recipient incurs a cost. Recipients will differ on what aspect of a political relationship is most valuable depending on their own domestic and strategic needs. For example, a provider can threaten to punish a recipient by denying a supporting vote in the UN over an important territorial claim or support a political sanction against the recipient. When providing foreign counter-narcotics assistance, the United States has voted against recipient requests for World Bank loans or investment packages when the recipient's actions deviated from the United States' policy preferences.⁴³ A provider might also decline to publicly make a statement of support over a controversial foreign policy choice by the recipient. Alternatively, a provider can threaten removal of military cooperation including access to resources and weapons, ability to project power, joint military exercises and access to classified intelligence. Visible military cooperation often confers both domestic benefits as well as benefits of signaling to one's international rivals. Finally, the provider can threaten diplomatic sanctions that might include a restriction of foreign visas and limiting cultural exchanges.

One advantage of punishments that occur through political ties is that they are harder to observe by third-party market participants.⁴⁴ Although punishments ought not occur in equilibrium, if they did occur market observers may not directly attribute the actions to the economic misbehavior of the recipient. This differs from sanctions, which are often publicly announced and directly observable. As a result, political punishments are less likely than sanctions to cause international investors to doubt a provider's commitment to the recipient.

In the game, I label political linkages as the existence of an alliance between the provider's

⁴³ Vaughn 2019.

⁴⁴ The recipient is aware of the reasoning behind the political punishment. While market participants may lack direct access to government communications, it is reasonable to assume that the governments have the ability to conduct private communications. The Wikileaks reveal of diplomatic cables is evidence that private discussions between governments are common and they are not necessarily discovered by the press.

country and the recipient's country. An allied country may *punish* a recipient who does not behave. If the provider imposes punishment, the cost of this punishment (π) is included in the recipient's payoff. In this version of the game, I assume that the act of imposing punishment is costless to the provider. I include this assumption because provider central banks most often reside in powerful countries with potent international political tools relative to their recipients. For example, the People's Republic of China could downgrade its strategic partnership with Suriname to a simple partnership—or revoke its offer of roughly \$1.5 million in military equipment and advising—at no meaningful cost to China but at significant political and economic cost to Suriname. Nevertheless, the results that I discuss below would remain substantively consistent even if punishment was costly to the provider as long as providers could credibly commit to impose such punishment or, alternatively, if recipients believed that punishment could be imposed with positive probability Π .

Some might question the willingness of a provider to credibly threaten punishment. The concern seems to stem from the established observation that powerful shareholders in the IMF willingly rescue their friends and allies.⁴⁵ This concern is misplaced for several reasons.⁴⁶ First, the observation that countries bail out their allies does not mean that threats to punish if the recipient continues to misbehave are absent. Indeed, the theory asserts that providers are more willing to rescue their allies precisely because it enables them to manage risk through political ties. Second, even if we assume that punishment is costly because of the interdependencies between the provider and recipient, for punishment to be credible the cost to punish simply needs to be less than the cost the provider would face if the recipient misbehaves after receiving a BSA. Therefore, the possibility that punishment may be costly for the provider does not remove the provider's incentive to credibly threaten punishment given the counterfactual. Finally, while in equilibrium, punishment should never be observed, an examination of other foreign policy areas reveals that powerful states often

⁴⁵ See Stone 2002 and Copelovitch 2010.

⁴⁶ The observation that large IMF shareholders offer generous bail out terms to their allies still aligns with my theory. IMF conditionality is similar to other forms of economic punishment. A shareholder who is exposed to the borrower does not want to use economic punishment in the event it further harms the shareholder's economic interests in the borrower's country. Rather, it would prefer to use non-economic means of coercion such as political ties to manage risk while protecting its economic interests.

threaten to punish their allies to induce either foreign or domestic policy change.⁴⁷ In short, threats to punish are the norm rather than outliers.

One need to look no further than recent events to see evidence. For instance, the United States threatened to punish the EU for continuing to trade with Iran despite U.S. sanctions. The U.S. Treasury Department's undersecretary wrote a letter to EU officials threatening that "engaging in activities that run afoul of U.S. sanctions can result in severe consequences, including a loss of access to the U.S. financial system."⁴⁸ Likewise, the U.S. has drafted a sanctions package and is poised to punish Turkey for receiving parts of a Russian missile defense system despite the fact that Turkey is a member of NATO.⁴⁹ Beyond recent events, the US has frequently punished close allies Colombia and Mexico for failing to adequately respond to domestic drug production and trafficking.⁵⁰ There are countless examples of the use of coercion to get strategically important countries to change their behavior. It is precisely countries who maintain close linkages where the provider should have the greatest leverage. Threats to punish are most likely to be credible when the political ties are asymmetric between the provider and the recipient. As mentioned above, BSA providers are mainly the world's largest economies and it is reasonable to assume these countries can exert this leverage.⁵¹

Model Results

The model yields three main results. First, an unallied recipient will misbehave when $\beta > (\underline{\kappa} \times \epsilon)$. In other words, when the political benefits a recipient can reap from mismanagement exceed the probability and costs of economic collapse. If the likelihood and severity of a financial crisis is greater than the political benefits a recipient can obtain from engaging in loose monetary policy,

⁴⁷ For more work on the use of punishments to coerce policy change, see Berman and Lake 2019.

⁴⁸ See <https://www.bloomberg.com/news/articles/2019-05-29/u-s-warns-europe-that-its-iran-workaround-could-face-sanctions>

⁴⁹ See <https://www.bloomberg.com/news/articles/2019-07-13/trump-aides-pick-sanctions-to-punish-turkey-for-russian-missiles>

⁵⁰ The US has withdrawn previously committed aid and implemented diplomatic sanctions. See Vaughn 2019.

⁵¹ If the provider is unable to credibly threaten punishment, then the provider's decision-making process would remain on the left side of the game tree.

an unallied swap recipient will attempt to avert an economic collapse by behaving in ways that address its underlying balance of payments problem.

Second, unallied providers will offer swaps in the following two cases. If the provider knows the recipient will behave, the provider will offer a swap when $\varsigma < (\sigma \times \bar{\kappa})$. In other words, when the cost of offering a swap is less than the probability and cost of spillover if the provider does not offer a swap. On the other hand, a provider who knows its recipient will not behave will only offer a swap when $\varsigma + \delta < \sigma(\bar{\kappa} - \underline{\kappa})$, or when the cost of offering a swap and the costs of mismanagement are less than the reduction in the probability of spillover times the economic cost of spillover if it occurs. Notice that the second scenario is more restrictive than the first case.⁵² Thus, the cost of offering a swap must be lower in order for a provider to extend an offer to a recipient it knows will not behave compared to one it knows will behave. Consistent with the previous literature, the model shows that the probability that the recipient will collapse and impose spillover costs on the provider matters, but in a manner more complex than existing research depicts. In particular, the importance of the probability of collapse changes depending on whether the recipient will behave or misbehave.

The third result from the model is that allied recipients will misbehave when $\beta - (\pi \times \Pi) > (\underline{\kappa} \times \epsilon)$. In other words, when the political benefits of misbehavior, minus the probability and costs of punishment imposed by the provider, exceed the probability and costs of economic collapse. If we compare this to the condition in which an unallied recipient will misbehave, $\beta > (\underline{\kappa} \times \epsilon)$, we find that the range of circumstances that facilitate misbehavior is smaller as long as punishment is costly and has positive probability of being imposed.

As a result, allied provider who can and will impose punishment can deter some recipients from misbehaving. This, in turn, enables allied providers to extend swaps to a wider range of recipients and to avoid the high risks and costs of economic collapse that would occur if the provider withheld swap offers to these otherwise unreliable recipients. This leads to the following observable implication:

⁵² Rearranged, the first term equates to $\varsigma < \sigma(\bar{\kappa})$, while the second equates to $\varsigma < \sigma(\bar{\kappa} - \underline{\kappa}) - \delta$.

Hypothesis 1: When recipients are unreliable, political ties between the provider and recipient should increase the probability of a BSA.

Scope Conditions on Provider Behavior

Not all providers can effectively use political ties as leverage to induce recipient countries to pursue sound economic policies. Providers vary in how closely they guard their reputation for credible monetary policy. Governments typically face a credibility problem, which is especially pronounced in monetary policy. Governments want market actors to take their policy announcements seriously. Yet, these actors know politicians face short term incentives to inflate their economies. A solution around this credibility problem is to delegate monetary policy to an independent agency, like a central bank. Providers who are concerned about their reputation for credible monetary policy will not be willing to use political ties as an accountability lever. Any appearance of close political coordination in monetary decision-making undermines the credibility the delegation was supposed to achieve.

A second, but related concern is more functionally motivated. For political ties to be used effectively, central banks must be equipped to respond quickly to deviations in recipient behavior and apply pressure appropriately. Yet, providers who have set up an independent central bank have intentionally delinked monetary decision-making between the government and the central bank. Independent central banks often have the following features: a separate and clear mandate that carves specific authority over monetary policy, the ability to appoint the majority of its own staff, regularized term limits that prevent the executive branch from using threat of termination to guide policy outcomes, and specific safeguards that limit the involvement of the executive branch in central bank decision making. As a result, even if the provider was interested in using political ties as leverage, it would have to overcome several institutional hurdles to do so. Effective use of political ties as a form of leverage requires close coordination between central bankers and those in charge of foreign and security policy. Therefore, providers who are further removed from their home governments will face greater barriers to information and incur greater reputation costs

to implementing a strategy of political coercion. I, therefore, revise my main hypothesis to the following:

Hypothesis 2: H1 should be strongest when provider banks are institutionally close to their home governments.

4 Research Design

To test my theoretical expectations, I constructed a dataset of approximately 170 bilateral swap agreements created between 2000 to 2016. Every documented instance of a BSA is supported by at least two different sources of information.⁵³ For my empirical tests, I focus on BSAs originating from the U.S. Federal Reserve, the People's Bank of China, and the Bank of Japan for two reasons. First, over 85% of BSAs originate from these three central banks and second, they provide useful variation in the degree to which they value the appearance of monetary independence, enabling me to test my theory's scope conditions. To define the population of potential recipients, I include only countries that have an established central bank and are independent sovereign nations.⁵⁴ This condition is essential as the recipient needs to have agency to contract with the provider's central bank and distribute liquidity to banks in its domestic jurisdiction.⁵⁵ Of the possible recipients, forty-two received BSAs. The unit of analysis is provider-recipient-year. When running my analyses, I subset the data by the provider. The dependent variable (*BSA*) is coded as 1 if the recipient received a BSA from the provider for the majority of the year and 0 otherwise.⁵⁶ Because the dependent variable is dichotomous, I use a logistic model with robust standard errors unless otherwise noted.

Operationalizing Reliability

⁵³ Data sources come primarily from the central banks' websites and are cross-checked with newspaper sources such as the New York Times, Wall Street Journal, and Financial Times.

⁵⁴ As such, I exclude Taiwan and Hong Kong.

⁵⁵ The data on recipients comes from the Bank of International Settlements (BIS). See <https://www.bis.org/cbanks.htm>.

⁵⁶ I exclude BSAs that were created under the Chiang Mai Initiative Multilateralization (CMIM) because the recipients were selected as part of a broader network initiative rather than an independent choice by the provider to contract with a particular foreign central bank.

In the formal model, reliability captures the provider's estimate of how likely the recipient is to prioritize political benefits from outsized fiscal deficits, large external debt burdens, and loose monetary policies over reforming its economy to ensure its long-term economic health. Because reliability refers to the propensity of the recipient to misbehave in the future, a recipient's degree of central bank independence best approximates the theoretical construct as it captures the agency of governments to intervene in monetary policy. The more independent the central bank is from its home government, the more difficult it is for politicians to use monetary policy to achieve political gains and boost short-term economic growth. While current measures of monetary policy such as inflation rates or volatility may reflect a government's past behavior, they do not adequately capture a government's future intentions. This is especially problematic if the government's policy preferences change either in response to domestic pressures or it is replaced during the maturity of the BSA.⁵⁷

Moreover, central bank independence is highly correlated with outcomes associated with monetary discipline such as low inflation.⁵⁸ The more independent the central bank, the more likely the central bank will ensure price stability and conduct sound economic management that promotes long-term economic health over partisan political objectives. Danzman, Winecoff, and Oatley (2017) find that states with monetary independence are less likely to experience capital bonanzas and financial crises than states whose central banks lack independence from the home government. To measure the recipient's central bank independence (*CBI*), I use data from Bodea and Hicks (2015).⁵⁹ The CBI measure is an index that updates the weighted aggregate index from Cukierman, Web, and Neyapti (1992). The index is composed of sixteen characteristics including the allocation of authority over monetary policy, the importance of price stability objectives, and limits on central bank lending to the government. The variable is continuous and ranges from 0

⁵⁷ For example, while Brazilian President Lula campaigned on populist left-oriented monetary policy, once in office, Lula pursued monetary policy more reflective of right-leaning parties. See Brooks and Mosley 2007.

⁵⁸ Rogoff 1985; Alesina and Summers 1993; Broz 2002; Bodea and Hicks 2015. For a summary of central bank independence and its relation to price stability, see Fernández-Albertos 2015.

⁵⁹ The Bodea & Hicks measure is preferable to the Garriga 2016 CBI measure because it has broader coverage over time.

to 1, where a value of one represents a highly independent central bank. As a robustness check, I substitute inflation volatility for CBI and get consistent results.

Operationalizing Political Ties

For political ties to serve as a credible accountability mechanism, they must be of value to the recipient such that the removal of this political benefit would impose a cost on the recipient. The recipient must perceive the cost to be sufficiently significant to be induced to alter its behavior. Further, removal of this political benefit must not cause further harm to the recipient's economy. Strategic partnerships and defense cooperation agreements best fit this criteria. Despite variation in the specific form of these agreements, they all encompass broadly the same principles and function similarly. These agreements make explicit commitments to deeper forms of cooperation that encompass diplomatic, military, and economic issues, and in particular, they emphasize coordination in areas of defense policy through joint military exercises, training and education, research and development, sharing of classified information and encouraging cultural exchanges. For ease of interpretation across providers, I refer to all political ties as *Ally* in the results below.⁶⁰

To measure political ties for China, *Ally* takes the value of 1 if China has a strategic or comprehensive partnership with another country in a given year and 0 otherwise. While China maintains three levels of partnerships, I exclude the base level called cooperative partnership.⁶¹ At the base level, China forms partnerships that essentially signify an opening of diplomatic dialogue rather than an exchange of political benefits. It is the next two levels where China's partnerships signify deeper forms of cooperation. China forms strategic partnerships where more formalized mechanisms of cooperation exist. This entails building additional channels for intergovernmental communication for intelligence sharing, cultural exchanges, cooperation in research and development, and military-to-military exchanges. The final level is a comprehensive strategic partnership, which encompasses the cooperative efforts for a strategic partnership but also establishes formalized channels for regularized exchanges between top government officials. In this partnership top

⁶⁰ Unless specified otherwise, *Ally* refers to the variables described here.

⁶¹ Results are robust if I only use China's comprehensive strategic partnerships in the *Ally* variable.

leaders meet before larger multilateral events to exchange views and coordinate joint policy positions. The data is from Strüver (2017).

To measure political ties for Japan, *Ally* takes the value of 1 if Japan has a strategic and economic partnership with a country in a given year and 0 otherwise.⁶² To my knowledge, Japan's partnerships do not have observable and clearly defined levels. Japan's strategic partnerships operate similarly to China's and entail close cooperation over a range of security and economic issues. While Japan's partnerships do entail cooperation over economic issues, they are much more than simply a trade agreement. They heavily emphasize sharing of intelligence, joint military exercises, and cultural exchanges. The data are taken from Japan's Ministry of Foreign Affairs.

Unlike China and Japan, the United States does not maintain strategic partnerships but rather it forms defense cooperation agreements (DCA). To measure political ties for the United States, *Ally* takes the value of 1 if the United States has a DCA with a country in a given year and 0 otherwise.⁶³ DCAs are agreements that "establish broad defense-oriented legal frameworks, facilitating cooperation in fundamental areas as defense policy coordination, research and development, joint military exercises, education and training, arms procurement, and exchange of classified information" (Kinne 2018, p. 799). Functionally, they operate very similarly to strategic partnerships and therefore, are a comparable measure. The data is from Kinne (2019).

Provider Constraints

The final component of the theory asserts that providers vary in their willingness to use political ties as an accountability mechanism. A provider's institutional design is a useful proxy for a provider's willingness to use political ties to coerce an unreliable recipient. The Federal Reserve (Fed) is considered one of the most independent central banks in the world. The Federal Reserve Act of 1913 delegated monetary policy to the Fed with a mandate to maintain the stability of U.S. financial markets. In 1951, the Federal Reserve gained true independence from the executive branch

⁶² For robustness, I measured the *Ally* variable as 1 if Japan has a non-aggression treaty with the recipient in a given year. The data is from ATOP (Leeds et al. 2002). The results do not substantially change.

⁶³ The DCA data is limited and ends in 2010. For robustness, I use data from ATOP and measured the *Ally* variable as 1 if the US has an offensive or defensive treaty with the recipient in a given year. The results do not change.

and the Treasury.⁶⁴ Federal Reserve Chairmen serve four-year terms and are not easily removed prematurely. So ingrained was the practice of Fed independence that until recently, it was unconscionable for the executive to even publicly comment on the Federal Reserve's policy.⁶⁵ Given the Federal Reserve's institutional design and desire to maintain a reputation of independence, the Federal Reserve is the least likely case for the theory to hold.

The People's Bank of China (PBOC), however, exists on the opposite end of the spectrum. The bank was created intentionally as a state organ in 1983. The PBOC's mandate is to maintain the stability of the value of the currency and promote economic growth. While in recent years it has gained more functional independence, this independence is severely constrained by the need for important monetary decisions to first be approved by the State Council who has the discretion to determine what matters are "important."⁶⁶ China's State Council determines appointment and removal of PBOC's Monetary Policy Committee, the primary monetary policy decision-making body, in addition to being the primary source of funding for the committee. Given the heavy involvement of the State Council in PBOC's decision-making, PBOC is the most likely case to observe political ties used as an accountability mechanism.

The Bank of Japan presents an interesting case that lies in between the Federal Reserve and the People's Bank of China. While on paper it is institutionally independent, in recent years the executive has reasserted its control over monetary policy decision-making, functionally limiting the Bank of Japan's institutional independence. The Bank of Japan Act, revised in 1998, states "the Bank of Japan's autonomy regarding currency and monetary control shall be respected" but also that the bank shall "always maintain close contact with the government and exchange views sufficiently."⁶⁷ As such, the Minister of Finance and the Ministers of State for Economic and Fiscal Policy may attend monetary policy meetings, express opinions, submit proposals, and request that

⁶⁴ Irwin 2013.

⁶⁵ The Wall Street Journal comments "For much of the past quarter-century, the president and the White House economic advisers have refrained from commenting on Fed policy" (Nicholas and Timiraos 2018).

⁶⁶ Pißler 2015.

⁶⁷ Bank of Japan website. https://www.boj.or.jp/en/about/boj_law/index.htm/.

the Bank's Policy Board postpone a vote on proposals.⁶⁸ Recently, however, the Japanese government under Prime Minister Abe has used its formal involvement in the Bank of Japan to exert pressure over its monetary policy.⁶⁹ The Prime Minister regained control over monetary policy decisions and forced the Bank of Japan Governor Masaaki Shirakawa to resign prior to the end of his term. The successor was appointed with the knowledge that he would be “fully willing to support Abe's bold monetary policy.”⁷⁰ The Bank of Japan represents a mixed case. I expect Japan may be able to use political ties to exert some leverage. However, because the Japanese government is not as fully ingratiated in central bank policy making as is the case in China, the extent to which it can leverage its political ties is attenuated.

Control Variables

Following existing research, I include two categories of control variables. The first category accounts for the recipient's likelihood to request a BSA from a given provider. While I assume that all recipients desire a BSA because of its powerful market signal, there are several additional factors that further increase the probability that a recipient would seek a BSA.⁷¹ A country that is more open financially to world markets will be more likely to experience volatile capital flows and sudden stops that generate a financing gap, necessitating emergency liquidity from a BSA. To control for this, I include the Chinn-Ito index measuring a recipient's capital account openness (*Capital Openness*).⁷² The continuous variable ranges from 0 to 1, where higher values indicate greater openness to international financial markets, i.e. fewer capital controls.⁷³ Next, I control

⁶⁸ Bank of Japan Act, Article 19.

⁶⁹ Bank of Japan released a joint statement with the Japanese government pledging to “strengthen their policy coordination and work together” on a range of policies (Irwin 2013b).

⁷⁰ Rövekamp, Bälz, and Hilpert 2015. See also Waldenberger 2015.

⁷¹ Because BSAs can be formed well in advance of an actual crisis, I caution modeling the selection process itself as research on predicting financial crises demonstrates the poor success of such attempts. The only subset of countries where a BSA might not be desirable are countries who have completely closed economies. However, these countries already drop from the dataset as they do not report economic data to international financial institutions and therefore should not be a problem.

⁷² As a robustness check, I used the Bloomberg's VIX index as an alternative measure of capital volatility. VIX is a general of market fears. The results remain consistent.

⁷³ Aizenman, Chinn, and Ito 2016.

for a country's regime type. Lipsky (2018) finds that democracies are more likely to experience financial crises because executive constraints inhibit a leader's ability to curb speculative bubbles. Similarly, other scholars have noted that democracies tend to have larger external debt burdens.⁷⁴ I use a dichotomous measure to indicate whether a recipient is a *Democracy* using data from VDem.⁷⁵ I also control for a country's level of economic development (*Per Capita GDP*). On the one hand, a richer country is more likely to be able to repay or unwind the BSA. On the other hand, however, a richer country may be less likely to need to BSA. The data is from the World Bank's World Development Index.⁷⁶

Moreover, a recipient may be less likely to request a BSA if it already has access to other sources of emergency funding. A recipient may stockpile sufficient reserves on its own to smooth over any financing gaps in its balance of payments. A financing gap emerges when capital inflows are no longer sufficient to pay for a country's imports or external debt liabilities. The standard measure for whether reserve holdings are sufficient to weather volatility in capital inflows is the number of months of imports that could be covered by reserves if capital inflows suddenly stopped. A country is considered under-insured if its reserve holdings cover less than three months of imports. *Reserves* measures the number of months of imports covered by a country's reserves.⁷⁷ Data is from the World Bank's WDI.⁷⁸

Further, I control for potential alternative policy tools available to a recipient that might attenuate a provider's willingness to extend a BSA. Recognizing the provider's reluctance, a recipient might forgo seeking a swap from the provider if it believes it is likely to be denied. I include a dichotomous measure for whether the recipient participated in an IMF program the previous year (*IMF Program Past*).⁷⁹ A provider may also anticipate that a recipient will seek an IMF program

⁷⁴ Saiegh 2005

⁷⁵ Lindberg et al. 2019

⁷⁶ Group 1978

⁷⁷ As an alternative measure, I controlled for a country's reserve holdings as a proportion of its external debt burden. The results do not meaningfully change. Due to data availability concerns and theoretically, *Reserves* is a better measure.

⁷⁸ Group 1978

⁷⁹ I have also used a count of the IMF programs, but the results do not change.

in the near future and therefore, I control for whether the recipient is currently in an IMF program (*IMF Program Current*). Data are from the IMF's MONA database. Similarly, I control for whether the recipient has received a BSA from one of the four other major reserve currency providers in the previous year (*BSA Past*) as well as the current year (*BSA Other*).⁸⁰ The data is collected from the central banks' websites.⁸¹

The second category of controls captures the extent to which the provider is exposed to the recipient and therefore, motivated to extend a BSA to avert any spillover costs if the recipient's economy experienced a downturn. Indirectly, a provider is most likely to be economically exposed to the recipient through the risk of financial contagion. Spillover to the provider's economy is more likely to occur if the recipient's country is particularly large and holds a prominent position in the world economy. To account for a recipient's size in the world economy, I measure the recipient's GDP as a percentage of the world's GDP (*GDP % of World GDP*).⁸² Data are from Group 1978.

Directly, a provider is vulnerable to disruptions in its trade or financial linkages with the recipient as well as possible exposure from migrants. For instance, the more a provider's total cross-border trade is composed of bilateral trade with the recipient, the more sensitive the provider will be to a downturn in the recipient's economy, and therefore, more motivated to extend a BSA. If a recipient's economy contracts, this lowers demand for exports from the provider, negatively impacting a provider's wealth. Similarly, if the provider heavily relies on imports from the recipient, a recession in the recipient's economy may lead to higher priced imports or disruptions in flows. This is especially problematic for the provider if the recipient is the main source of its access to vital resources like fuel, ore, metals, or other commodities. I measure this trade dependency as the sum of the provider's bilateral imports and exports with the recipient divided by the provider's total trade (imports + exports) with the rest of the world (*Trade Dependence*). Dyadic data for exports

⁸⁰ Possible providers include the Federal Reserve, Bank of England, Bank of Japan, People's Bank of China, and the European Central Bank.

⁸¹ Possible providers include the Federal Reserve, Bank of England, Bank of Japan, People's Bank of China, and the European Central Bank.

⁸² As a robustness check, I substituted country size with a dichotomous variable that measures whether the recipient country is a global financial center. The global financial centers index includes Toronto, Frankfurt, Hong Kong, Tokyo, Singapore, Zurich, and London as the top financial centers. The results did not meaningfully change.

and imports are from UN Comtrade (Comtrade 2010).

Adhering to a similar logic, a provider can also be directly exposed to a recipient through its financial ties. If a recipient's economy contracted, providers who are home to banks that lent heavily to businesses or banks located in the recipient's country would suffer losses if these businesses default of their loans as a result of the recession. To measure the provider's financial linkages to the recipient country, I follow previous studies and measure the extent to which banks in the provider's country have claims exposed in the recipient's country. *Bank Exp* measures the natural log of the value of the providers' consolidated claims for banks in a foreign economy in a year. The data are from the Bank of International Settlements' Consolidated Banking Statistics. Unfortunately, China is a non-reporting country for the BIS's consolidated claims. To substitute, I proxy for financial ties by measuring China's foreign direct investment exposure to a recipient's economy. While not a perfect substitute, a Chinese firm that invests heavily in the recipient's economy will incur losses if the recipient's economy contracts. Weakened market demand and higher priced inputs will reduce the amount the Chinese firms' profits as well as the amount it remits home.⁸³ is measured as total FDI outflows to the recipient from China divided as a proportion of China's total FDI outflows for that year. The data comes from UNCTAD.

Finally, a provider may incur spillover costs if it exposed to an influx of migrants from the recipient's country. If the recipient's economy collapses, migrants looking for employment opportunities might relocate to the provider's country. If this relocation is rapid or large, it could impose a financial or political cost on the provider. This is most likely to occur when the recipient borders the provider. I measure whether the recipient and provider share a border (*Contiguous*) using data from CEPII (Mayer and Zignago 2011).⁸⁴

⁸³ FDI Exposure

⁸⁴ Japan is an island and therefore, does not share a border with another country. Further, Japan tightly controls its immigration system, severely limiting the likelihood it will incur any migrant spillover costs. For these reasons, *contig* is not used in the Bank of Japan model.

5 Analyzing BSA Formation

The central proposition I am testing is whether political ties between the recipient and provider increase the likelihood of a BSA when the recipient is perceived as unreliable. I only expect to find this relationship when the provider is unconcerned about the appearance of close coordination with its home government. Therefore, I should find no conditional effect for the Federal Reserve, a significant conditional effect for the People's Bank of China, and perhaps a weak effect for the Bank of Japan. I will discuss the results for each provider in turn.

5.1 United States Federal Reserve

Because the Federal Reserve places a high value on its reputation for monetary independence, I do not expect to find a conditional effect of political ties on the likelihood a recipient receives a BSA. Table 2 below shows the results of logistic regressions for BSAs originating from the Federal Reserve. The interaction is significant in the bivariate model (Model 1), but it quickly loses significance once I add the full set of controls (Model 2). Models 3 and 4 run the same regression, but cluster the errors at the country-level and add year fixed effects, respectively.

In line with previous research, I find that the more exposed the United States' trade is to the recipient's economy, the higher probability the recipient receives a BSA. Though I do not find a similar relationship for the United States' financial linkages, this is probably due to missingness in the data.⁸⁵ Moreover, I find that the Federal Reserve's decision to extend a BSA is informed by a recipient's access to alternative emergency financing. The Fed is less likely to offer a BSA if the recipient has sufficient reserve holdings. If a recipient was in an IMF program in the prior year, the Fed is also less likely to extend a BSA. However, a recipient is significantly more likely to receive a BSA if it also received a BSA from another provider in the same year. This finding may be driven by the severity of the Great Recession, prompting the need for inordinate access to emergency lending. The absence of a finding for BSAs from other providers in the previous year

⁸⁵ Unfortunately, there is not an easy correction for this problem. It would be inappropriate to use multiple imputation given that it is highly improbable the financial data is missing at random.

Table 2: Likelihood of a BSA from the US Federal Reserve

	(1)	(2)	(3)	(4)
	USA BSA	USA BSA	USA BSA	USA BSA
Ally	5.623*** (1.208)	2.179 (1.543)	2.179 (1.711)	5.038+ (2.611)
Central Bank Independence (CBI)	7.443*** (1.400)	3.743* (1.664)	3.743* (1.622)	7.507** (2.480)
Ally × CBI	-6.290*** (1.581)	-2.199 (2.094)	-2.199 (2.489)	-5.908 (3.630)
Capital Openness		-0.0106 (0.725)	-0.0106 (0.780)	2.967* (1.478)
Per Capita GDP		0.704*** (0.125)	0.704*** (0.160)	0.692*** (0.192)
Reserves		-0.430* (0.213)	-0.430 (0.287)	-0.585* (0.269)
IMF Program Current Year		-0.655 (0.542)	-0.655 (0.520)	-2.290+ (1.263)
IMF Program Prior Year		-0.594 (0.488)	-0.594+ (0.319)	-2.862* (1.158)
Non-USA BSA Current Year		2.635*** (0.495)	2.635*** (0.404)	2.293+ (1.315)
Non-USA BSA Prior Year		-0.698 (1.066)	-0.698 (1.158)	-2.689 (2.014)
GDP % of World GDP		-52.45*** (11.86)	-52.45** (17.22)	-38.23 (83.65)
Trade Exposure		68.73*** (9.463)	68.73*** (15.68)	192.6*** (55.62)
Bank Exposure		0.119 (0.128)	0.119 (0.193)	0.235 (0.176)
Democracy		1.174 (0.777)	1.174* (0.562)	1.002 (0.734)
Constant	-8.229*** (1.081)	-8.522*** (2.007)	-8.522** (2.655)	-25.56*** (7.456)
Standard Errors	Robust	Robust	Clustered	Robust
Year FEs	No	No	No	Yes
Observations	1449	1109	1109	1109

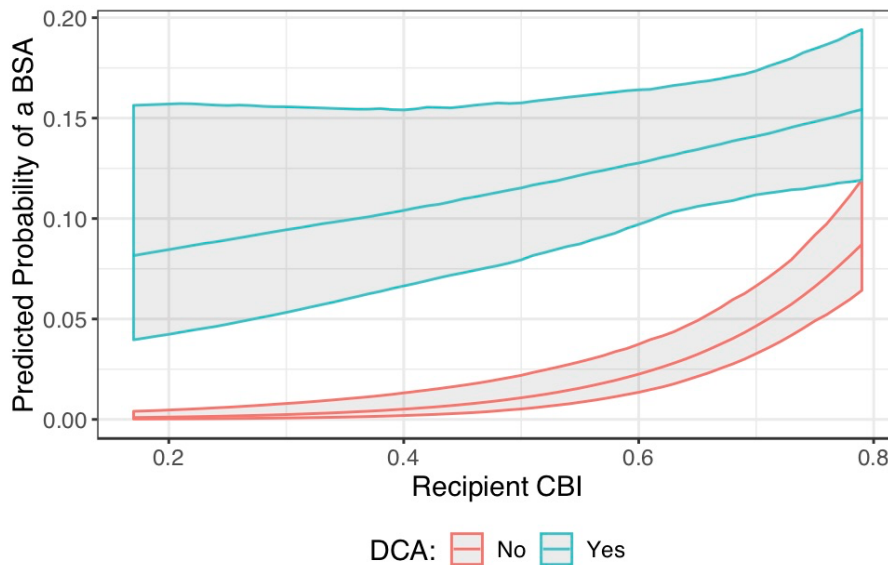
Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

lend support for this reasoning. Finally, the wealthier the recipient, the more likely it is to receive a BSA from the Federal Reserve. This finding aligns well with my theoretical expectations. Because the Federal Reserve is precluded from using political ties to induce sound economic policies, it is particularly sensitive to default risk. A consequence of this risk aversion is to offer BSAs to countries that have a high probability of unwinding the swap. Repayment is more likely the more developed the recipient's economy.

Because the bivariate model was significant, I further investigate my theoretical claims by plotting the predicted probability of receiving a BSA for allied and unallied recipients in Figure 3 below. The plot shows that at all levels of reliability, political ties to the Fed increase the probability of receiving a BSA. Importantly, if a recipient is not politically tied to the United States, only recipients who are highly reliable have a positive probability of receiving a BSA. This relationship is in line with my theoretical expectations. However, I am cautious to read too much into the relationship given that its significance disappears once full controls are included.

Figure 3: Probability of a U.S. Federal Reserve BSA Given Political Ties & Recipient CBI



5.2 People's Bank of China

Table 3 below shows the results of logistic regressions for BSAs originating from the People's Bank of China (PBOC). Consistent with my theoretical expectation, Model 1 shows there is a significant conditional relationship between a recipient's reliability (*CBI*) and whether they have a strategic partnership with the provider (*Ally*) on the likelihood they receive a BSA. Even after including the controls, the main interaction effect (*Ally* \times *CBI*) is still significant at the .01 level. Indeed, in all four models, the interaction is statistically significant at least at the 0.1 level and does not change signs. Because coefficients for interactions cannot be easily interpreted, I plot the predicted probability of BSA receipt for allies and non-allies across the range of reliability, holding the other variables at their means. The plot is illustrated in Figure 4 below.

Figure 4: Probability of a PBOC BSA Given Political Ties and Recipient CBI

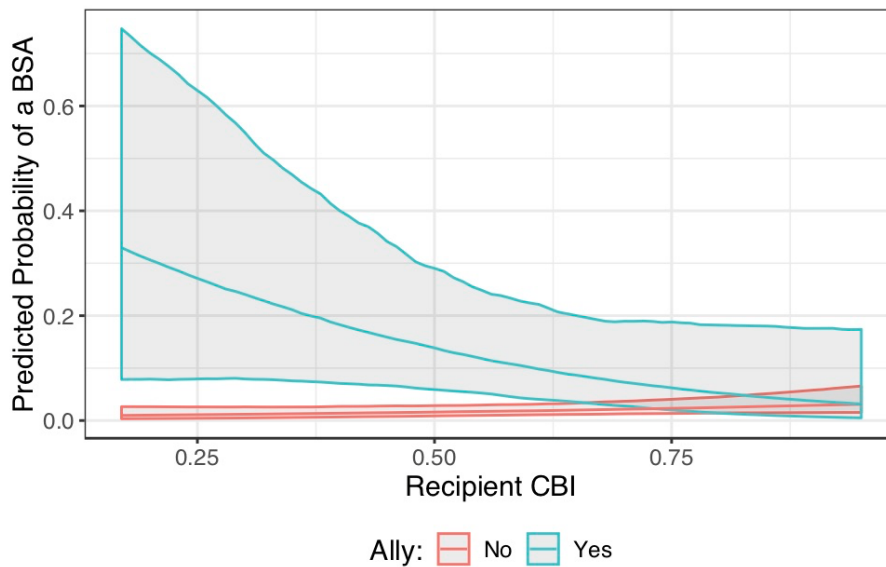


Table 3: Likelihood of a BSA from People's Bank of China

	(1)	(2)	(3)	(4)
	China BSA	China BSA	China BSA	China BSA
Ally	3.940*** (0.562)	4.862*** (1.169)	4.862** (1.505)	3.652** (1.244)
Central Bank Independence (CBI)	1.756*** (0.445)	1.519+ (0.911)	1.519 (1.406)	1.403 (0.981)
Ally × CBI	-2.720*** (0.815)	-5.171** (1.867)	-5.171+ (2.731)	-3.757+ (1.951)
Capital Openness		-1.943** (0.696)	-1.943+ (1.041)	-1.412* (0.645)
Per Capita GDP		-0.0513* (0.0201)	-0.0513+ (0.0301)	-0.0755** (0.0240)
Reserves		0.0328+ (0.0194)	0.0328 (0.0377)	0.0321 (0.0228)
IMF Program Current Year		-1.396 (1.059)	-1.396 (0.973)	-1.633 (1.092)
IMF Program Prior Year		-1.266 (1.070)	-1.266 (0.992)	-1.479 (1.101)
Non-China BSA Current Year		1.951* (0.912)	1.951+ (1.016)	2.516** (0.968)
Non-China BSA Prior Year		1.768* (0.777)	1.768** (0.573)	1.272 (0.913)
GDP % of World GDP		-104.0*** (26.78)	-104.0** (34.21)	-147.5*** (31.47)
Trade Exposure		36.26*** (8.680)	36.26** (11.60)	66.10*** (11.11)
FDI Exposure		59.82* (24.53)	59.82* (26.87)	76.08** (23.81)
Contiguous		-0.0675 (0.587)	-0.0675 (0.868)	0.0768 (0.612)
Democracy		0.00209 (0.434)	0.00209 (0.706)	-0.198 (0.422)
Constant	-3.394*** (0.304)	-3.455*** (0.616)	-3.455** (1.116)	-3.355*** (0.673)
Standard Errors	Robust	Robust	Clustered	Robust
Year FEs	No	No	No	Yes
Observations	2266	980	980	980

Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The figure demonstrates that political ties increase the likelihood of receiving a BSA, primarily when the recipient is unreliable (low CBI). When the recipient is highly reliable, political ties do not meaningfully increase the probability of receiving a BSA from China. Consistent with my theory, the plot shows that there is a conditional effect of political ties on the probability of receiving a BSA.

Moreover, in line with my theory, I find support that the more China is economically exposed to the recipient's economy, the more likely the recipient receives a BSA. When the recipient's trade with China composes a large proportion of China's total trade, the recipient is more likely to receive a BSA. I find a similar relationship for China's foreign direct investment exposure. While China's direct exposure is significant for its trade and financial linkages, I do not find that potential exposure to migrant inflows impacts the probability of receiving a BSA. Interestingly, China is less likely to extend a BSA to recipients who hold outsized roles in the world economy. This finding may be because large economies are more diversified and have deeper financial markets, enabling them to more easily access alternative sources of funding should they experience a financing gap. This reasoning appears to be confirmed as the more developed the recipient (*Per Capita GDP*), significantly decreases the likelihood of receiving a BSA. Overall, China's BSA program appears more responsive to direct bilateral exposure than indirect exposure to the global financial system.

In contrast to the Federal Reserve's selection process, I do not find evidence that China's BSA program is significantly influenced by a recipient's ability to self-insure through reserves or access to alternative funding from the IMF, though both sets of signs are in the right direction. However, I do find that a recipient is more likely to receive a BSA when it previously secured one from a different provider. There are two possible explanations for this finding. It might be the case that the Bank of Japan and the PBOC extend BSAs to a similar pool of recipients. Their similar geographic proximity might also mean they have similar trading relationships with the same recipients. Alternatively, countries that were severely impacted during the Great Recession may have secured multiple BSAs. This effect goes away in Model 4, when I include year fixed effects, indicating that it was likely the crisis driving the effect.

5.3 Bank of Japan

BSAs originating from the Bank of Japan represent an interesting case. While institutionally, there are several barriers between the executive branch and the central bank, Prime Minister Abe has recently intervened in monetary policy and has appointed a close supporter to head the bank. These events were sufficiently recent that I expect if there is a conditional effect of political ties on the likelihood a recipient receives a BSA, it should be small. Table 4 below shows the results of logistic regressions for BSAs originating from the Bank of Japan. Unlike the People's Bank of China or the Federal Reserve, the interaction effect is not significant even in the bivariate model though this may be driven by a power issue.

Similar to both PBOC and the Federal Reserve, the more Japan is economically exposed to the recipient, the greater the probability of a BSA. This is true for both trade and financial linkages. However, Japan is less responsive to indirect spillover exposure. Japan is less likely to offer a BSA to recipients with large economies relative to the world total. As mentioned above, this result may be driven by access to deeper and more diversified financial markets that mitigate the need for a BSA. Similar to China, the reasoning seems to be supported by the finding that richer countries are less likely to receive a BSA.

Compared to the other two providers, the Bank of Japan is most sensitive to alternative sources of emergency funding, albeit in conflicting directions. If a recipient was previously in or currently starting an IMF program, they are significantly less likely to receive a BSA. This makes sense as Japan may be unwilling to expose itself to potential political backlash from a potentially unreliable recipient if the recipient can obtain the necessary funds through the IMF. However, if a recipient secures a BSA from an alternative provider in the previous year, they are more likely to receive a BSA from the Bank of Japan. One probable explanation for this finding is that the Bank of Japan and the PBOC extend BSAs to a similar pool of recipients given their similar geographic proximity and similar trading relationships.

Table 4: Likelihood of a BSA from the Bank of Japan

	(1)	(2)	(3)	(4)
	BOJ BSA	BOJ BSA	BOJ BSA	BOJ BSA
Ally	3.448** (1.101)	1.793 (1.592)	1.793 (1.383)	2.063 (1.440)
Central Bank Independence (CBI)	1.870*** (0.432)	1.176+ (0.650)	1.176 (1.418)	1.572* (0.744)
Ally × CBI	-1.754 (1.455)	-0.882 (2.041)	-0.882 (1.835)	-1.545 (2.060)
Capital Openness		-0.329 (0.521)	-0.329 (1.149)	0.128 (0.543)
Per Capita GDP		-0.0258** (0.00963)	-0.0258 (0.0201)	-0.0394*** (0.0109)
Reserves		-0.0681 (0.0462)	-0.0681 (0.0996)	-0.111* (0.0559)
IMF Program Current Year		-2.133** (0.816)	-2.133** (0.782)	-2.433** (0.899)
IMF Program Prior Year		-1.035+ (0.578)	-1.035 (0.649)	-1.473* (0.615)
Non-BOJ BSA Current Year		1.064*** (0.317)	1.064** (0.369)	0.669 (0.460)
Non-BOJ BSA Prior Year		2.323*** (0.300)	2.323*** (0.297)	2.183*** (0.450)
GDP % of World GDP		-62.67*** (11.30)	-62.67** (20.11)	-75.92*** (12.69)
Trade Exposure		79.83*** (17.60)	79.83* (40.45)	127.4*** (26.38)
Bank Exposure		0.314** (0.113)	0.314 (0.212)	0.369** (0.120)
Democracy		-0.664* (0.331)	-0.664 (0.796)	-0.499 (0.392)
Constant	-3.320*** (0.296)	-5.391*** (0.839)	-5.391** (1.720)	-5.244*** (1.085)
Observations	2266	1287	1287	1220

Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

5.4 Robustness

I find support for my prediction that political ties increase the likelihood that a recipient receives a BSA when the recipient is perceived as unreliable. Importantly, the results show that the People's Bank of China is able to take advantage of its home government's strategic partnerships to hold recipients accountable whereas the Federal Reserve is precluded from utilizing this mechanism due to its desire to protect its reputation for monetary credibility.⁸⁶ To further investigate the strength of this finding, I run a series of robustness checks. First, one potential concern is that a recipient's CBI does not perfectly measure reliability. This might be true in countries where there is pervasive corruption. For instance, a country might have high levels of CBI but still attempt to inflate the economy to reap political benefits. As an alternative measure, I use a recipient's inflation volatility in place of CBI, where higher volatility is equivalent to low levels of CBI. Volatile inflation is an indication of a recipient's failure to maintain monetary discipline and engenders uncertainty about the credibility of future policy commitments.⁸⁷ Model 1 in Table 5 below shows that the main interaction effect for the People's Bank of China is still significant at the 0.1 level and is signed in the right direction.⁸⁸ The predicted probability plot for this model is available in the Appendix. Even using an alternative measure of reliability, I still find that recipients who have political ties with China are more likely to receive a BSA when they are unreliable (i.e. high inflation volatility).

Next, I further test my theory's assertion that threats to punish through political ties are credible because punishment does not further harm the recipient's economy. I run a placebo test using a traditional tool of economic coercion: foreign aid.⁸⁹ It is well documented that China uses foreign aid to leverage policy concessions from other countries.⁹⁰ If political ties were simply a proxy for

⁸⁶ The Federal Reserve's behavior might also reflect the United States' outsized ability to influence lending outcomes within the IMF. See Stone 2011.

⁸⁷ While both volatility and inflation level are standard measures of poor monetary policy, volatility is preferable because it better reflects uncertainty about a recipient's future behavior. Though, the results are robust to using inflation level rather than volatility.

⁸⁸ Across all three providers, the results mirror the findings from the main models in Table 4.

⁸⁹ Economic sanctions are also a common tool for economic coercion. However, data on sanctions use is not available for China. Most sanctions are implemented by the United States or through multilateral institutions.

⁹⁰ Strüver 2016

any form of leverage, the main interaction should also be significant when I substitute foreign aid in place of *Ally*. I measure foreign aid as China’s bilateral foreign aid flow to the recipient country as a percentage of the recipient’s GDP. The data is from Aid Data.⁹¹ Results are shown in Model 2 in Table 5 below. In line with my theoretical expectations, I do not find a significant conditional relationship between foreign aid and a recipient’s reliability. This gives me greater confidence that political ties serve as an accountability mechanism to credibly impose costs in non-economic settings on the recipient if it misbehaves.

Table 5: Alternative Models for People’s Bank of China

	(1)	(2)
	Inflation Volatility	Foreign Aid
Ally	-2.210* (0.934)	
Ally × Inflation Volatility	1.143*** (0.257)	
Inflation Volatility	0.0163+ (0.00880)	
Central Bank Independence (CBI)		0.510 (0.902)
AID × CBI		19.49 (42.39)
Foreign Aid as % of Recipient GDP (AID)		3.352 (25.13)
Constant	-3.391*** (0.532)	-2.989*** (0.609)
Standard Errors	Robust	Robust
Year FEs	No	No
Observations	968	917

Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: All models include controls consistent with Models 2-4 in Table 3.

Finally, while I have shown evidence consistent with my theory that political ties enable certain providers to extend BSAs in situations where they would otherwise be hesitant, I have not

⁹¹ Strange et al. 2017

tested the accountability mechanism directly. Because punishment by the provider is off the equilibrium path of behavior, it should never be observed in practice. This presents a challenge for causal inference. While I cannot directly observe the accountability mechanism, the next best approach is to investigate whether the recipients' behavior also reflects the logic proposed by my theory.

An implication of my theory is that the threat of political punishment deters politically-tied recipients from otherwise risky behavior.⁹² Yet, existing studies on IMF bailouts suggest that political ties actually exacerbate the moral hazard problem and have perverse effects on a borrower's subsequent financial behavior.⁹³ Leveraging the vast research on political ties and IMF loans as a counterfactual, I compare the financial behavior between politically-tied BSA recipients and unconnected BSA recipients prior to and following a BSA announcement. If receipt of a BSA encourages politically-tied recipients to engage in increased risk-taking, this should be evident in recipient's monetary policies in the short-term.

Following existing IMF studies (Stone 2002), I examine a recipient's level of inflation (*Inflation*).⁹⁴ Inflation is frequently used by market actors as an indicator of a recipient's overall credibility of macroeconomic policy and quality of economic policies.⁹⁵ Because of politicians' incentive to electioneer, high inflation is perceived as a signal of bad economic policies.⁹⁶ Moreover, inflation performance is often considered as a signal for a country's creditworthiness. Inflation erodes the value of local currency relative to foreign currency, which reduces the government's capacity to convert local currency to foreign currency in order to meet its external debt obligations. A government can repudiate its debt by inflating away its value. As a result, markets often charge a higher risk premium to countries with high inflation.⁹⁷ This results in the following observable

⁹² In short, political punishment imposes a cost on recipients similar to the costs of conditionality in IMF loans, thereby resolving the moral hazard problem.

⁹³ Thacker 1999; Stone 2002; Stone 2004; Barro and Lee 2005; Dreher and Jensen 2007; Copelovitch 2010; Lipsy and Lee 2019). See also Steinwand and Stone 2008.

⁹⁴ The data comes from the IMF's International Financial Statistics database.

⁹⁵ Stone 2002

⁹⁶ Grittersová 2017

⁹⁷ See Stone 2002, Brooks and Mosley 2007; Grittersová 2017.

implication:

Hypothesis 3: Politically-tied BSA recipients should not exhibit worse inflation levels than unaffiliated recipients.

To test my hypothesis, I conduct a differences-in-differences test on an original dataset of BSA announcements from 2000 to 2016. The unit of observation is recipient-month-year. I analyze the differences in the rates of inflation between allied and non-allied BSA recipients 24 months preceding and 12 months following the announcement of a swap agreement.⁹⁸ The advantage of a difference-in-difference design is that I account for any biases in the post-BSA period that could be the result of unobservable differences between groups.⁹⁹ From this data, I construct a time indicator that measures the months since a provider announced the formation of a BSA (*Post-Swap*). For a conservative estimate, a recipient only enters the dataset with its first BSA. While BSA announcements can also entail subsequent agreement renewals, increases in the swap amount, or extensions of the expiration date, I restrict my analysis to the first formation of a BSA. This enables me to avoid concerns that previous agreements might influence subsequent recipient behavior.

Following existing literature, I control for both country-specific conditions that might influence a recipient's monetary policies in the short-run. I account for a country's *growth* rate, measured as a percentage change. Higher growth rates mean that countries should be better able to service their debts and have better prospects for long term solvency.¹⁰⁰ Similarly, I control for a country's level of development, measured as the natural log of *GDP*. Larger, developed economies may be better able to withstand exogenous shocks and economic downturns. Further, developed economies are not subject to the "original sin" and can more easily borrow in their own curren-

⁹⁸ The longer time span preceding the announcement enables me to gain confidence that allied and unallied groups have similar trends prior to BSA receipt.

⁹⁹ To ensure internal validity of the differences-in-differences design, a key assumption is parallel trends in outcomes. To satisfy the assumption, prior to the announcement of a BSA, allied and unallied recipients should trend at a similar rates of inflation. While there is no statistical test to evaluate whether assumption is met, standard practice to use a visual inspection. When plotted, the figure shows that both groups change at similar rates prior to receiving a BSA and therefore, it is possible to rule out that allied recipients are distinctly different from unallied recipients.

¹⁰⁰Jensen 2008; Mosley and Singer 2008

cies.¹⁰¹ Both measures from the World Bank's World Development Indicators.¹⁰² I also control for a country's capital market openness, using the *Chinn-Ito* index. A country with greater capital market openness is more likely to be exposed to capital flight and volatility, which may increase the likelihood it experiences a financial crisis.¹⁰³ On the other hand, greater capital openness may enable a country to access a larger pool of resources, which lowers a country's risk premium.¹⁰⁴ Finally, I control a government's *external debt* burden, measured as a percentage of its GDP. The larger a country's debt burden as a proportion of its economy, the less capacity a country has to service its debt obligations. Data for external debt comes from the IMF's International Financial Statistics and the World Bank's World Development Indicators.¹⁰⁵

I also account for global capital market conditions. Several studies have found that monetary conditions in the US influence aggregate risk appetites and capital flows in the international financial system.¹⁰⁶ When US interest rates are low, international investors seeking yield are willing to invest in risky countries where they otherwise would not if US interest rates were higher. If the U.S. raises interest rates, capital flees to the safety of the United States and riskier countries are more likely to experience a sudden stop. Following existing studies, I measure international liquidity using a monthly indicator of the US Federal Funds Rate (*FFR*). Data is from the Federal Reserve Bank of St. Louis.

Finally, I control for key political factors that may impact a country's financial policies. Democracies are perceived as less risky and more willing to repay debt because they have greater property right protections and face greater political costs for defaulting.¹⁰⁷ Jensen (2008) finds that democracies are better able to attract long-term capital. To measure a recipient's regime type, I include a dichotomous measure of *Democracy* that takes the value of one when polity is greater than 6 and zero otherwise. The data is from the Polity IV.

¹⁰¹Eichengreen and Hausmann 2010

¹⁰²Group 1978

¹⁰³Chinn and Frieden 2011

¹⁰⁴Simmons et al. 1999; Brooks and Mosley 2007

¹⁰⁵Department 2006; Group 1978

¹⁰⁶Ballard-Rosa, Mosley, and Wellhausen 2018; Arias 2017

¹⁰⁷Beaulieu, Cox, and Saiegh 2012; Cox and Saiegh 2018

Because my dependent variable is continuous, I use an ordinary least squares model for my difference-in-difference test. I include a lagged dependent variable and cluster the standard errors to account for cross-sectional and temporal correlation. The key variable of interest is the interaction between time since BSA receipt (*Post-Swap*) and whether the recipient is allied with the provider (*Ally*). Table 6 below shows that there is a statistically significant difference in inflation rates between allied and non-allied recipients after receiving a BSA receipt. To investigate the direction of the relationship, I run an interaction between *Ally* and each time period in the 24 months preceding a BSA and the 12 months following a BSA. Figure 5 shows the predicted levels of a recipient's inflation rate for allied BSA recipients in red and unaffiliated BSA recipients in blue, holding the other variables at their mean.¹⁰⁸ The figure clearly illustrates that after receiving a BSA, allied recipients' predicted inflation rate decreases while unallied BSA recipients remain at a similar level. This downward shift following a BSA suggests that allied recipients exhibit greater willingness to correct economic imbalances through monetary discipline. Rather than encourage misbehavior, the evidence suggests that strong political ties can provide a credible accountability mechanism for BSA providers.

¹⁰⁸See Appendix for PBOC's inflation results.

Table 6: Short-Run Recipient Behavior

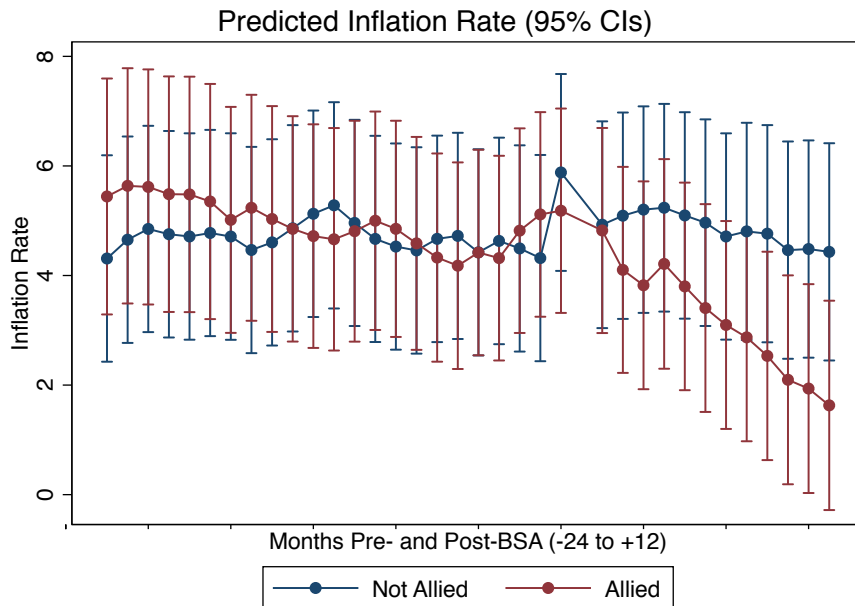
	(4) Inflation
Ally \times Post-Swap	-1.351** (0.584)
Ally	-0.280 (0.476)
Post-Swap	0.246 (0.319)
Constant	-2.132** (0.988)
Observations	728
Adjusted R^2	0.329

Standard errors in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Model uses OLS and includes controls for GDP (ln), GDP growth, short-term external debt, a dichotomous measure of democracy, capital account openness, US federal funds rate, and months of imports covered by reserves.

Figure 5: Predicted Inflation Rate



While the inflation rate results provide strong support that political ties serve as an accountability mechanism, I only examine the 12 months following a BSA. It is possible that the moral hazard problem takes longer to become apparent. Lipsy and Lee (2019) find that borrowers who receive IMF bailouts as a result of their bilateral political ties are more likely to experience a financial crisis in the future. To account for this alternative explanation, I investigate whether allied recipients are more likely to experience a financial crisis in the years following BSA receipt. Because BSAs were not prevalent until the 2000s, my ability to statistically analyze the long-run behavior following a BSA is limited. However, simple observational analysis reveals a striking relationship. Table 7 below shows the proportion of BSA recipients within each group who experience a financial crisis in the years following a BSA.¹⁰⁹ For instance, in the year a country receives a swap (*Years Since BSA* = 0), only two allied recipients out of 16 allied recipients were in the midst of financial crises whereas five non-allied recipients out of a total of 26 non-allied recipients were also in a financial crisis. The table clearly shows that politically-tied BSA recipients seem to experience fewer crises than non-allied BSA recipients.¹¹⁰ In culmination, both the short-run and long-run findings lend further support that political ties, at least in the bilateral setting, serve as an accountability mechanism to resolve the moral hazard problem rather than as a source of enhanced risk-taking.

Table 7: Proportion of Financial Crises By Group

Years Since BSA	0	1	2	3	4	5
Ally	2/16	1/16	0/16	0/16	0/16	0/14
Non-Ally	5/26	1/26	1/26	1/23	2/18	1/16

¹⁰⁹For more recent BSAs, the total population of recipients in the *Years Since BSA* becomes smaller as not enough time has passed yet.

¹¹⁰The only incidence of an allied recipient experiencing a financial crisis in the years following a BSA is Switzerland.

6 Conclusion

Since the Great Recession, the global financial safety net has been fundamentally transformed whereby traditional forms of external financing are increasingly supplanted by bilateral assistance in the form of bilateral currency swap agreements. In short, BSAs represent a new form of monetary cooperation and a distinct shift in the financial architecture, driven in large part by China's growing role as an economic superpower. Scholars and pundits have fiercely debated the role of the BSAs within the global financial safety net. Some have heralded the re-emergence of BSAs as a panacea for glaring weaknesses in international financial governance (Henning and Walter 2016), while others have been more critical of BSAs' continued efficacy or ability to provide financial stability (Truman 2013). Existing research on IMF lending suggests that because of their bilateral nature, BSAs are more likely to incentivize risk-taking, exacerbating global financial fragilities. To compound the problem, unlike traditional forms of liquidity provision, BSAs seemingly lack any explicit tools to manage problems of moral hazard, suggesting that providers should be hesitant to extend BSAs in the first place.

To resolve this puzzle, I analyzed a newly-created dataset of all swap agreements offered by major reserve-currency countries between 2000 and 2016. I find that political ties are particularly associated with increases in the likelihood that unreliable recipients will obtain BSAs. Whereas prevailing wisdom on multilateral lending suggests that the recipients of emergency financing should benefit from alliances to powerful IMF creditors, the evidence suggests that providers do not indiscriminately offer BSAs to their allies, nor do they favor allies who they perceive as reliable. Instead, political ties enable providers to better manage the behavior of unreliable recipients from whom they would otherwise withhold support. Further, I demonstrate that provider central banks that place a high value on the appearance of institutional independence from their home governments are unlikely to manage risk using political relationships, while providers who are institutionally close to their home governments are more likely to use governmental political ties to compensate for economic risk. As a whole, the findings show that international politics not only plays an important role in central bank decision-making, it actually enables central banks to benefit

by reducing their exposure to risk.

My findings imply that politics has a differential effect on international financial governance. In the case of the IMF, political-intervention in decision-making exacerbates the moral hazard problem. However, in the case of BSAs, political ties enable providers to hold recipients accountable and thereby offer BSAs in cases where they otherwise would be hesitant. As a result, geopolitics has significant implications for global financial stability and the future of China's role as a prominent global actor.

To truly understand the impact of this transformation on global financial stability, additional research is needed to investigate whether BSAs serve as complements or substitutes to the traditional financial safety net, helmed by the IMF. On the one hand, BSAs mean more liquidity in the financial system. The more liquidity, the less likely financial crises are to occur, limiting the potential for financial contagion. The provision of BSAs may also liberate resources at the IMF, thereby broadening the number of countries that can access the global financial safety net at any time. Moreover, because politics serves to deter risky behavior by BSA recipients, unreliable recipients are incentivized to exhibit monetary restraint they would not pursue if providers lacked this political leverage. By enabling providers to induce better economic governance among recipients, political ties may reduce the economic risks in the global financial system and enhance overall stability. On the other hand, if the presence of BSAs directs resources that would otherwise be used by the IMF, BSAs may weaken global financial stability. For instance, while countries with political ties to China may be protected, others will not be as well insured, leading to a fragmented safety net with gaping holes. The results from this paper suggest that how countries can access the global financial safety net can lead to different effects not only for the specific country, but for global financial stability as a whole.

References

- Aizenman, Joshua, Menzie D Chinn, and Hiro Ito (2016). “Monetary policy spillovers and the trilemma in the new normal: Periphery country sensitivity to core country conditions”. *Journal of International Money and Finance* 68, pp. 298–330.
- Aizenman, Joshua, Yothin Jinjarak, and Donghyun Park (2011). “Evaluating Asian swap arrangements”.
- Aizenman, Joshua and Gurnain Kaur Pasricha (2010). “Selective swap arrangements and the global financial crisis: Analysis and interpretation”. *International Review of Economics & Finance* 19.3, pp. 353–365.
- Alesina, Alberto and Lawrence H Summers (1993). “Central bank independence and macroeconomic performance: some comparative evidence”. *Journal of Money, credit and Banking* 25.2, pp. 151–162.
- Allen, William A (2013). *International liquidity and the financial crisis*. Cambridge University Press.
- Arias, Eric (2017). *Patronage by credit: International sources of patronage politics*. Tech. rep. Working Paper.
- Ballard-Rosa, Cameron, Layna Mosley, and W Wellhausen (2018). “Contingent Advantage? Sovereign Borrowing, Democratic Institutions, and Global Capital Cycles”. *British Journal of Political Science*.
- Barro, Robert J and Jong-Wha Lee (2005). “IMF programs: Who is chosen and what are the effects?” *Journal of monetary Economics* 52.7, pp. 1245–1269.
- Beaulieu, Emily, Gary W Cox, and Sebastian Saiegh (2012). “Sovereign debt and regime type: Reconsidering the democratic advantage”. *International Organization* 66.4, pp. 709–738.
- Berman, Eli and David A Lake (2019). *Proxy Wars: Suppressing Violence through Local Agents*. Cornell University Press.
- Bodea, Cristina and Raymond Hicks (2015). “Price stability and central bank independence: Discipline, credibility, and democratic institutions”. *International Organization* 69.1, pp. 35–61.
- Bordo, Michael D, Owen F Humpage, and Anna J Schwartz (2015). “The evolution of the Federal Reserve swap lines since 1962”. *IMF Economic Review* 63.2, pp. 353–372.
- Bordo, Michael D and Antu P Murshid (2000). “Are Financial Crises Becoming Increasingly More Contagious?” *International Financial Contagion*, pp. 367–403.
- Brooks, Sarah and Layna Mosley (2007). “Risk, uncertainty and autonomy: financial market constraints in developing nations”. In: *Symposium conducted at the meeting of the annual meeting of the American Political Science Association, Chicago, IL, August*.
- Broz, J Lawrence (2002). “Political system transparency and monetary commitment regimes”. *International Organization* 56.4, pp. 861–887.
- (2015). “The politics of rescuing the world’s financial system: The Federal Reserve as a global lender of last resort”. *Korean Journal of International Studies* 13.2, pp. 323–351.
- Chinn, Menzie D and Jeffrey A Frieden (2011). *Lost Decades: The Making of America’s Debt Crisis and the Long Recovery*. WW Norton & Company.
- Comtrade, UN (2010). “United Nations commodity trade statistics database”. URL: <http://comtrade.un.org>.
- Copelovitch, Mark S (2010). *The International Monetary Fund in the global economy: Banks, bonds, and bailouts*. Cambridge University Press.

- Cox, Gary W and Sebastian M Saiegh (2018). “Executive Constraint and Sovereign Debt: Quasi-Experimental Evidence From Argentina During the Baring Crisis”. *Comparative Political Studies* 51.11, pp. 1504–1525.
- Cukierman, Alex, Steven B Web, and Bilin Neyapti (1992). “Measuring the independence of central banks and its effect on policy outcomes”. *The world bank economic review* 6.3, pp. 353–398.
- Danzman, Sarah Bauerle, W Kindred Winecoff, and Thomas Oatley (2017). “All crises are global: Capital cycles in an imbalanced international political economy”. *International Studies Quarterly* 61.4, pp. 907–923.
- Davis, Christina L (2009). “Linkage diplomacy: economic and security bargaining in the Anglo-Japanese alliance, 1902–23”. *International Security* 33.3, pp. 143–179.
- Department, International Monetary Fund. Statistics (2006). *International financial statistics*. International Monetary Fund.
- Dreher, Axel (2009). “IMF conditionality: theory and evidence”. *Public choice* 141.1-2, pp. 233–267.
- Dreher, Axel and Nathan M Jensen (2007). “Independent actor or agent? An empirical analysis of the impact of US interests on International Monetary Fund conditions”. *The Journal of Law and Economics* 50.1, pp. 105–124.
- Dreher, Axel and Stefanie Walter (2010). “Does the IMF help or hurt? The effect of IMF programs on the likelihood and outcome of currency crises”. *World Development* 38.1, pp. 1–18.
- Eichengreen, Barry and Ricardo Hausmann (2010). *Other people’s money: debt denomination and financial instability in emerging market economies*. University of Chicago Press.
- Fernández-Albertos, José (2015). “The politics of central bank independence”. *Annual Review of Political Science* 18, pp. 217–237.
- Fleming, Michael J and Nicholas Klagge (2010). “The Federal Reserve’s foreign exchange swap lines”. *Current Issues in Economics and Finance* 16.4.
- Frankel, Jeffrey A and Nouriel Roubini (2001). *The role of industrial country policies in emerging market crises*. Tech. rep. National Bureau of Economic Research.
- Garcia-Herrero, Alicia and Le Xia (2015). “RMB Bilateral Swap Agreements: how China chooses its partners?” *Asia-Pacific Journal of Accounting & Economics* 22.4, pp. 368–383.
- Garriga, Ana Carolina (2016). “Central bank independence in the world: A new data set”. *International Interactions* 42.5, pp. 849–868.
- Goldberg, Linda S, Craig Kennedy, and Jason Miu (2010). *Central bank dollar swap lines and overseas dollar funding costs*. Tech. rep. National Bureau of Economic Research.
- Grittersová, Jana (2017). *Borrowing Credibility: Global Banks and Monetary Regimes*. University of Michigan Press.
- Group, World Bank. International Economics Dept. Development Data (1978). *World development indicators*. World Bank.
- Henning, C Randall and Andrew Walter (2016). *Global Financial Governance Confronts the Rising Powers: Emerging Perspectives on the New G20*. McGill-Queen’s Press-MQUP.
- IMF (2018). *Global Financial Stability Report: A Bumpy Road Ahead*. Tech. rep. World Economic and Financial Surveys.
- Institute, Mckinsey Global (2017). *The New Dynamics of Financial Globalization*. Tech. rep.
- Irwin, Neil (2013). *The alchemists: Three central bankers and a world on fire*. Penguin.

- Irwin, Neil (Feb. 2014). “Fed’s Aid in 2008 Crisis Stretched Worldwide”. *The New York Times*. URL: <https://www.nytimes.com/2014/02/24/business/feds-aid-in-2008-crisis-stretched-worldwide.html>.
- Jensen, Nathan M (2008). *Nation-states and the multinational corporation: A political economy of foreign direct investment*. Princeton University Press.
- Kaminsky, Graciela L, Carmen M Reinhart, and Carlos A Vegh (2003). “The unholy trinity of financial contagion”. *Journal of economic perspectives* 17.4, pp. 51–74.
- Kinne, Brandon J (2018). “Defense Cooperation Agreements and the Emergence of a Global Security Network”. *International Organization* 72.4, pp. 799–837.
- (2019). “The Defense Cooperation Agreement Dataset (DCAD)”. *Journal of Conflict Resolution*, p. 0022002719857796.
- Leeds, Brett Ashley, Jeffrey Ritter, Sara Mitchell, and Andrew Long (2002). “Alliance treaty obligations and provisions, 1815-1944”. *International Interactions* 28.3, pp. 237–260.
- Liao, Steven and Daniel McDowell (2015). “Redback rising: China’s bilateral swap agreements and renminbi internationalization”. *International Studies Quarterly* 59.3, pp. 401–422.
- Lin, Zhitao, Wenjie Zhan, and Yin-Wong Cheung (2016). “China’s Bilateral Currency Swap Lines”. *China & World Economy* 24.6, pp. 19–42.
- Lindberg, Laura Maxwell, Valeriya Mechkova, Richard Morgan, Natalia Stepanova, Shreeya Pillai, Kyle Marquardt Ilchenko, Juraj Medzihorsky, Daniel Pemstein, Josefine Pernes, and Johannes von Römer (2019). “V-Dem is a unique approach to measuring democracy—historical, multidimensional, nuanced, and disaggregated—employing state-of-the-art methodology.”
- Lipsy, Phillip Y (2018). “Democracy and Financial Crisis”. *International Organization* 72.4, pp. 937–968.
- Lipsy, Phillip Y and Haillie Na-Kyung Lee (2019). “The IMF as a biased global insurance mechanism: asymmetrical moral hazard, reserve accumulation, and financial crises”. *International Organization* 73.1, pp. 35–64.
- Mayer, Thierry and Soledad Zignago (2011). “Notes on CEPII’s distances measures: The GeoDist database”.
- McDowell, Daniel (2017). *Brother, Can You Spare a Billion?: The United States, the IMF, and the International Lender of Last Resort*. Oxford University Press.
- Miyoshi, Toshiyuki, Stephanie Segal, Preya Sharma, and Anish Tailor (2013). “Stocktaking the fund’s engagement with Regional financing arrangements”. *Washington, DC: IMF*. Accessed August 20, p. 2015.
- Moessner, Richhild and William A Allen (2010). “Central bank co-operation and international liquidity in the financial crisis of 2008-2009”. *Bank for International Settlements Working Papers* 310.
- Mosley, Layna and David Andrew Singer (2008). “Taking stock seriously: Equity-market performance, government policy, and financial globalization”. *International Studies Quarterly* 52.2, pp. 405–425.
- Nicholas, Peter and Nick Timiraos (Aug. 2018). “Donald Trump Complained about Fed Interest-Rate Increases at Fundraiser”. *Wall Street Journal*. URL: https://www.wsj.com/articles/trump-complained-about-fed-interest-rate-increases-at-fundraiser-1534782859?mod=hp%5C_major%5C_pos10.
- Nordhaus, William D (1975). “The political business cycle”. *The review of economic studies* 42.2, pp. 169–190.

- Obstfeld, Maurice (2009). “Lender of Last Resort and Global Liquidity: Rethinking the system”. *Development Outreach, World Bank Institute* 11.3, pp. 43–46.
- Piñler, Knut Benjamin (2015). “History and Legal Framework of the People’s Bank of China”. In: *Central Banking and Financial Stability in East Asia*. Springer, pp. 11–24.
- “Pouring scorn on China-Russia engagement foolish” (Dec. 2014). *Global Times*. URL: <http://www.globaltimes.cn/content/897603.shtml>.
- Rey, H el ene (2015). *Dilemma not trilemma: the global financial cycle and monetary policy independence*. Tech. rep. National Bureau of Economic Research.
- Rogoff, Kenneth (1985). “The optimal degree of commitment to an intermediate monetary target”. *The quarterly journal of economics* 100.4, pp. 1169–1189.
- R ovekamp, Frank, Moritz B alz, and Hanns G unther Hilpert (2015). *Central banking and financial stability in East Asia*. Vol. 40. Springer.
- Saiegh, Sebastian M (2005). “Do countries have a ‘democratic advantage’? Political institutions, multilateral agencies, and sovereign borrowing”. *Comparative Political Studies* 38.4, pp. 366–387.
- Schneider, Christina J and Jennifer L Tobin (2019). *Bilateral Financial Bailouts*. Tech. rep. Working paper.
- Simmons, Beth A, John Stephens, Herbert Kitschelt, Peter Lange, and Gary Marks (1999). “The internationalization of capital”. *Change and Continuity in Contemporary Capitalism*.
- Steinwand, Martin C and Randall W Stone (2008). “The International Monetary Fund: A review of the recent evidence”. *The Review of International Organizations* 3.2, pp. 123–149.
- Stone, Randall W (2002). *Lending credibility: The International Monetary Fund and the post-communist transition*. Princeton University Press.
- (2004). “The political economy of IMF lending in Africa”. *American Political Science Review* 98.4, pp. 577–591.
- (2011). *Controlling institutions: International organizations and the global economy*. Cambridge University Press.
- Strange, Austin M, Axel Dreher, Andreas Fuchs, Bradley Parks, and Michael J Tierney (2017). “Tracking underreported financial flows: China’s development finance and the aid–conflict nexus revisited”. *Journal of Conflict Resolution* 61.5, pp. 935–963.
- Str uver, Georg (2016). “What friends are made of: Bilateral linkages and domestic drivers of foreign policy alignment with China”. *Foreign Policy Analysis* 12.2, pp. 170–191.
- (2017). “China’s Partnership Diplomacy: International Alignment Based on Interests or Ideology”. *The Chinese Journal of International Politics* 10.1, pp. 31–65.
- Thacker, Strom C (1999). “The high politics of IMF lending”. *World politics* 52.1, pp. 38–75.
- Truman, Edwin M (2013). “Enhancing the global financial safety net through central-bank cooperation”. *Vox-EU Column*.
- Vaughn, Abigail L (2019). “Colombia, 1990-2010: Cooperation in the War on Drugs”. In: *Proxy Wars: Suppressing Violence Through Local Agents*. Ed. by David Lake and Eli Berman. Cornell, NY: Cornell University Press. Chap. 3, pp. 80–109.
- Waldenberger, Franz (2015). “Central bank independence in times of high fiscal risk: the case of Japan”. In: *Central Banking and Financial Stability in East Asia*. Ed. by Frank Rovekamp and Hanns Hilpert. Springer International Publishing, pp. 87–100.

Appendix

Figure 6: Probability of a PBOC BSA Given Political Ties and Recipient Inflation Volatility

