International Financial Regulation and Disruptions to International Trade

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Abstract

Financial ties between countries provide the foundation for international trade, yet international cooperation on trade and finance remain largely separate from each other. This paper examines a key consequence of the failure of international institutions to keep pace with globalization: the impact of international financial regulation on trade flows. In the aftermath of the 2008 global financial crisis, international institutions imposed new rules on the international banking sector. But the institutions issuing these standards aimed to reduce financial risk without considering the potential implications of such measures for international trade. As financial rules have tightened, it has become more difficult and costly for banks to do business with low-yield customers in developing countries. Banks have terminated thousands of correspondent banking relationships with banks worldwide, and without these network ties, many exporters cannot obtain the letters of credit necessary for participating in global supply chains. I provide empirical evidence for this relationship, showing that the countries where banks are most likely to terminate banking relationships experience on average a 40.9 percent decrease in exports. Additional analyses probe the causal mechanism for this relationship, showing that this effect is strongest in countries with a high risk of expropriation or other contractual violations. These findings have implications for how scholars analyze trade flows and suggest that the politics of financial regulation may affect trade.

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1 Introduction

Global economic governance has expanded significantly over the last three decades, yet cooperation on individual issues remains largely siloed. In the trade realm, the World Trade Organization and an ever-expanding array of preferential trade agreements coordinate the reduction of trade barriers. In the financial realm, an even larger network of institutions focuses on issues like monetary policy, banking supervision, and the prevention of illicit financing. While overlapping and differentiated institutions are a common feature of international politics today, the economic governance regime complex is notable for the degree to which gaps between institutional mandates persist, even as the issues themselves increasingly overlap.

What is the effect of the failure of international institutions to keep pace with globalization? This segmented approach to economic governance has produced unintended consequences that have damaged the abilities of developing countries to participate in the global economy. Following the financial crisis, G-20 countries called for an increase in financial regulation, particularly as it pertained to banking supervision and the management of financial risk. In response to this call to action, two organizations – the Basel Committee on Banking Supervision and the Financial Action Task Force (FATF) – undertook substantial regulatory reforms. The Basel Committee adopted the Basel III standards, which strengthen the regulation of the banking sector in part by requiring large banks to hold minimum amounts of high-quality, liquid assets at all times. Around the same time, the FATF strengthened its rules for dealing with states that fail to comply with FATF standards on anti-money laundering and combating terrorist financing. While the Basel Committee and the FATF intended their policies to combat different types of banking risk, both sets of rules have created similar unintended consequences for international trade by tightening the supply of trade financing, damaging export-led growth in developing countries.

Global banking relationships underpin much of international trade. While standard trade models assume an exchange of goods that is impeded by trade barriers and geography rather than financing, in reality, shipping goods between countries is risky and takes time. Trade partners must agree not only on the quantity and price of goods, but also on the timing of payments. Compared to domestic exchanges, international trade creates longer lags between production and payment – Amiti and Weinstein (2011) estimate a median delay of approximately two months.[1] These lengthy gaps in time can create financial difficulties in particular for smaller and newer firms, as well as for more established firms in countries that do not have import-export banks.

To address such challenges, importers and exporters may rely on bank financing, which is often provided in the form of a letter of credit. Typically, the bank of the buyer (importer) issues this letter, stipulating a written commitment to pay the bank of the seller (exporter) under certain conditions. This system facilitates trade because it "substitutes the creditworthiness of a bank for the creditworthiness of the buyer" (WTO, 2016, 11). With a letter of credit, exporters are able to obtain working capital from a local bank to cover production costs, and to be paid upon receipt at a future time. When the goods are delivered, the importer either pays the issuing bank immediately or at an agreed upon maturity date in the future. Although letters of credit are used across all countries and types of firms, they are particularly important for facilitating trade in times of higher default risk and uncertainty (Niepmann and Schmidt-Eisenlohr, 2017*a*). Letters of credit are also essential for firms doing business with firms in countries with poor contract enforcement (Caballero, Candelaria and Hale, 2016) – by issuing a letter of credit, banks assume the financial risk of lack of payment or failure to deliver goods.

A bank's ability and willingness to engage in global transactions like trade financing

[1]See Hummel (2001) or Djankov, Freund and Pham (2010) for detailed analyses of time lags in international trade.

depends on financial regulation. In the aftermath of the 2008 global financial crisis, international institutions imposed a wide array of new rules on the international banking sector. But the institutions issuing these new standards were focused on reducing financial risk with limited consideration to the potential implications of their actions for international trade. As financial rules have tightened, it has become more difficult and costly for banks to do business with low-yield customers in developing countries. Banks have terminated thousands of correspondent banking relationships with banks in the poorest countries (International Financial Corporation, 2016), and without these network ties, many exporters in such countries cannot obtain letters of credit or easily access US dollars or Euros.

This paper explores how and why international cooperation on financial regulation has disrupted trade financing. I begin by providing a brief background on the relationship between banking regulation, trade financing, and trade flows. I then discuss the evolution of international financial regulation in the post-financial crisis era. I focus specifically on two informal institutions – the Basel Committee on Banking Supervision and the FATF – which have significant authority in their respective issue areas. While both the Basel Committee and the FATF adopted new regulations that affected trade financing, the Basel Committee's iterative rule-making process and delayed implementation of standards have made it more responsive to input from the trade community to lessen the impact of standards on trade financing. The FATF, in contrast, revises its rules only once per decade and has struggled to anticipate and respond to the adverse effects of its policies on trade financing.

Data availability poses significant challenges for analyzing the link between financial regulation, trade financing, and trade. Cross-national data on trade financing is not available at the country level; indeed, empirical economics scholarship on banking, trade financing, and exports examines this relationship by focusing on a single country (Amiti and Weinstein, 2011) or industry (Antras and Foley, 2015), or by proxy (Chor and Kalina, 2012; Schmidt-Eisenlohr, 2013; Caballero, Candelaria and Hale, 2016). I follow this latter approach to test

the relationship between international financial regulation and global trade in the post-crisis era. If international financial regulation has made banks more selective about engaging in trade financing and this has affected export flows, then countries have have been publicly identified by the FATF as being high-risk for money laundering or terrorist financing should be most likely to suffer declines in exports. I find that being listed by the FATF is associated with a 53 percent decline in exports a year after listing, compared to non-listed countries in the same region. I provide evidence that the causal mechanism for this decline is trade financing. Specifically, only listed countries where contract risk is high – i.e. those countries where banks are most likely to close correspondent banking accounts – experience a decline in exports.

This research has several important implications for the study of international relations in a globalized era. For scholars of international political economy, it suggests that common approaches to analyzing trade flows between countries may be missing a key variable. Bank-to-bank trade financing underpins much of global trade – the Bank for International Settlements estimates that about one third of global trade is supported by some type of bank-intermediated trade finance product (Bank for International Settlements, 2014) – yet few theoretical or empirical models take into consideration how access to such financing may affect global trade flows. Moreover, because banking regulations directly impact trade financing, the political dynamics that affect the formulation and implementation of such policies have implications not just for global finance, but for trade as well.

This paper also contributes to the broader debate about the effects of regime complexes (Raustiala and Victor, 2004) on cooperative outcomes. Literature on international regime complexity, defined as "the presence of nested, partially overlapping, and parallel international regimes that are not hierarchically ordered" (Alter and Meunier, 2009, 13) typically analyses the effects of regime complexity within single issue areas such as trade (Busch, 2007; Davis, 2009) or climate change (Keohane and Victor, 2011). But the boundaries of a regime

complex are not so easily drawn, as international rules in one arena may created unintended consequences for other types of cooperation.

2 Trade Financing: A Hidden Constraint

Common explanations for trade between countries highlight a mix of economic and political factors. Standard trade models focus on relative differences in factor endowment, distance, and levels of economic development. Domestic factors such as regime type have been shown to affect trade between countries (Morrow, Siverson and Tabares, 1998; Mansfield, Milner and Rosendorff, 2000), as have international factors like membership in international organizations (Goldstein, Rivers and Tomz, 2007; Mansfield and Reinhardt, 2008) and interstate war.[2] Although trade financing is a well-known facilitator of trade, few trade models explicitly account for this variable or theorize about how it might impact trade flows.

Trade financing is often called the "lifeline" of international trade.[3] Because trade is inherently risky and involves long delays between shipment and payment, about 90 percent of international trade transactions rely on some type of intermediate financing or credit (International Trade Centre, 2009). Typically, trade financing is either provided by banks, which issue credits or short-term loans, or by firms themselves through some type of contractual arrangement (Auboin and Meier-Ewert, 2003). In the former case, banks facilitate trade in two ways – by providing access to capital for companies to expand business relationships and by helping mitigate the risk of nonpayment. In the latter case, firms often draw on long-established business relationships to create predictable production and payment schedules.

Because trade finance is often facilitated by banks, international and domestic banking

[2]See, for example, Long (2008), Simmons (2005), or Glick and Taylor (2010).

[3]The policy community has viewed trade financing in this way since at least the early 2000s. A 2003 publication by the WTO, for example, writes "The expansion of trade depends on reliable, adequate, and cost-effective sources of financing, both long term...and short term, in particular trade finance. The latter is the basis on which the large majority of world trade operates..." (WTO 2003)

regulations can have indirect effects on international trade. The 2008 financial crisis led to severe trade financing shortages as crises spread across banks (WTO, 2016). A March 2009 survey of major banks by the International Monetary Fund (IMF) and the Bankers' Association for Finance and Trade - International Financial Services Association found that 70 percent of banks reported that the price of letters of credit had risen in the past year. Banks in both advanced economies and emerging markets also began to tighten their lending guidelines with respect to counter-party banks (Dorsey, 2009). Although such disruptions to trade finance were widespread, they largely affected firms in developing economies – a trend that has continued to 2017.[4] Within countries, small and medium-size enterprises (SMEs) have been disproportionately hurt by the contraction of trade financing, with 58 percent of SMEs reporting that their trade finance requests were rejected (WTO Working Group on Trade, Debt and Finance, 2017).

The remainder of this section expands upon the relationship between banking regulation, trade finance, and trade flows. It begins by describing exactly how trade finance facilitates trade, with particular attention to exports. Exporters are sensitive to financial shocks due both to the relatively higher working capital requirements associated with international trade and the risk of default (Amiti and Weinstein, 2011). After describing how banks facilitate trading relationships, I then discuss how banking relationships themselves facilitate access to capital.

2.1 How Trade Financing Faciliates Exports

Transporting goods across borders requires time and money, and is inherently risky. Trading partners must agree not just on the quantity and price of a good, but also on a payment schedule. Exporters must find the capital to produce the goods in advance of shipment, and

[4]There are also differences in trade financing gaps across regions, where the Asia/Pacific region is the larger source of requests for trade financing and rejections by banks (Di Caprio, Kim and Beck, 2017).

face the risk that an importing company will delay payment or fail to pay entirely. Importers run the risk that goods will fail to arrive on schedule or at all. Although all domestic and international transactions are subject to similar contractual problems regarding payment, financing is a particular problem for companies engaged in international trade. Regulatory and border procedures often create delays in transport (Djankov, Freund and Pham, 2010); indeed, Amiti and Weinstein (2011) estimate such procedures result in a median delay of about two months. As a result, firms that engage in international trade are likely to have higher working capital requirements than domestic firms.

To finance the time gap between production and payment, and to counterbalance such risks, companies use a range of different forms of trade financing. If the transaction takes place solely between the importer and the exporter, there are two general types of trade financing: exporter finance (open account) and importer finance (cash in advance). In an open account arrangement, an exporter produces the goods in advance of payment and an importer pays after receiving the goods. The exporter is thus responsible for pre-financing production (either through a bank loan or through cash on hand). Alternatively, firms may agree on a cash-in-advance arrangement, where the importer pays the exporter in advance of production. Both exporter and importer finance create obvious commitment problems. For an open account arrangement, if the importer fails to pay the agreed price for the goods after receiving and selling them, the exporter will suffer a significant loss (Schmidt-Eisenlohr, 2013). For cash-in-advance, the importer is absorbing the risk that the exporter will receive payment but fail to deliver the goods.

Banks offer a variety of products to mitigate such risks. An exporter may purchase export credit insurance to protect against the risk of non-payment by a third party, or may request trade lending (also known as export working capital lending) to cover the cost of producing the goods. An exporter may use a bank product called "documentary collection" to instruct the bank to speed up the collection process of securing payment from

the importer (Dorsey, 2009). Finally, the importer may request its bank issue a letter of credit – a contractual guarantee that the issuing bank will pay the contract value to the exporter if certain conditions are fulfilled. The letter of credit will be sent to the exporting company, and in most cases, to a local bank (in the exporting country), which will confirm the obligation. The local bank acts as a second-line risk mitigator – if the importing country's bank defaults, the exporter's bank agrees to still pay the exporter.[5]

Bank-intermediated trade finance (henceforth referred to as simply "trade finance") supports about one-third of global trade (Bank for International Settlements, 2014). Although firms in many countries rely on trade finance to varying degrees, firms in emerging market economies are particularly dependent on bank financing to support trade (Bank for International Settlements, 2014). While most high-income countries have government-run or associated export-credit agencies to facilitate export financing and help companies manage risk, such institutions are rare among developing economies.[6] Moreover, trade partners tend to view contractual relationships with firms in developing countries as riskier than with firms in wealthier countries, and are often only willing to engage in such transactions with some kind of bank guarantee of payment. The willingness of global banks to do business with banks in low-income countries thus becomes a key determinant of export-led growth.

2.2 The Determinants of Bank-to-Bank Relationships

Banks facilitate trade finance transnationally through bank-to-bank relationships. In many cases, banks do not have branches or subsidiaries with a physical presence in the exporting country. Instead, banks rely on *correspondent banking relationships*, whereby a bank in one country will open an account with another bank located in a different country. The

[5]For a more detailed discussion of trade financing and letters of credit, see Niepmann and Schmidt-Eisenlohr (2017*b*).

[6]For a helpful discussion of the role that export-credit agencies play in facilitating international trade, see Blackmon (2017).

system of correspondent banking is "as old as international finance itself, dating back to the earliest promissory notes and letters of credit written by banks in classical times" (*Poor correspondents*, 2014, 65).

Historically, banks have maintained broad networks of correspondent banking relationships, but this tendency has changed in recent years. In a 2015 World Bank survey, 75 percent of large global banks reported that they had withdrawn from correspondent banking relationships, and 60 percent of local banks reported such a decline (Erbenova et al., 2016). Account closures have particularly affected smaller jurisdictions in regions like Africa, the Caribbean, and Asia-Pacific. In a small country, account closures can be particularly serious because often only a small number of banks operate within the country, and therefore the termination of correspondent banking relationships is likely to raise the already-high cost of financial services, including remittances (Alwazir et al., 2017).

Why have banks suddenly begun to withdraw from these relationships? As governments have adopted new regulations that require banks to verify the identities of their customers (and increasingly their customers' customers), the costs of doing business overseas have increased. Government regulators in a number of countries have also begun to levy large fines against banks that fail to comply with such policies.[7] To avoid such penalties and the possibility of reputational damage, banks have increasingly cut back on correspondent banking services. A recent report by the Bank for International Settlements found that banks sever ties in part because countries are perceived as too risky or because foreign banks have products or customers that are viewed as posing a higher risk of money laundering or terrorist financing (Bank for International Settlements, 2016, 1). Bank relationships that facilitate trade financing are thus tied to an entirely separate cooperation problem: combating illicit financing.

[7] In 2012, for example, the US government fined HSBC 1.9 billion US dollars. Other countries that have levied large fines against banks include the UK, Australia, Singapore, Ireland, and Panama.

3 International Financial Regulation in the Post-Crisis Era

Two international institutions have had a significant impact on how states regulate their banking sectors in the post-crisis era: the Basel Committee and the FATF. In a series of statements in late 2008 and early 2009, the G-20 announced a coordinated effort to build a stronger supervisory and regulatory framework for the financial sector (G-20, 2008, 2009). As part of this project, the Basel Committee issued guidelines in 2009 and 2010 to strengthen capital and liquidity requirements for internationally active banks. The FATF also responded to the G-20's call-to-action by strengthening standards on combating illicit financing, intensifying procedures for dealing with non-compliant jurisdictions, and enhancing domestic enforcement actions against non-compliant banks. Both sets of actions have significant implications for trade financing.

3.1 The Basel Committee and Bank Liquidity Challenges

The Basel Committee on Banking Supervision was established by the central bank governors of G-10 countries at the end of 1974, following several international currency and banking crises.[8] The Committee's two primary goals are to enhance financial stability through improvements in banking supervision, and to provide a forum for coordination among its members. Since its inception, the Basel Committee has adopted three sets of major reforms. The first, known as Basel I, was adopted in 1988 and focused on ensuring that international banks maintained adequate capital ratios to appropriately balance potential profits and risks. Although the Basel Committee is not a legally-binding body, Basel I standards were ultimately adopted by almost all countries with active international banks.

Since the early 2000s, the Basel Committee has twice modified its earlier standards. In

[8]The Committee has since expanded its membership to include 45 institutions in 28 jurisdictions.

June 2004, the Committee replaced Basel I with Basel II, which was designed to improve the ability of regulatory capital requirements to reflect underlying risks and to encourage continued improvements in risk management.[9] Finally, in the aftermath of the financial crisis, the Basel Committee adopted a new set of reforms, collectively dubbed "Basel III.' Even before the collapse of Lehman Brothers in 2008, governments were aware that the banking sector had too much leverage and inadequate liquidity buffers (*History of the Basel Committee*, 2018). Between 2008 and 2010, the Committee adopted a series of new measures that were collectively set out in a December 2010 document, which has subsequently been revised several times. Basel III sets out stricter requirements for the quality and quantity of regulatory capital, creates additional capital buffers, sets forth minimum liquidity requirements and a minimum leverage ratio, and stipulates additional requirements for systemically important banks.

While a full discussion of Basel III reforms is beyond the scope of this manuscript, two aspects of the agreement have direct implications for trade financing. First, by establishing minimum liquidity requirements, Basel III requires banks to maintain more cash-on-hand, which means banks have fewer loans to give out. When considering how to change their lending portfolio, banks are most likely to terminate relationships with higher risk, lower yield customers, such as banks and companies in less developed economies. By reducing the supply of available money and increasing competition, Basel III makes it more likely that smaller and newer firms will have trouble finding financing for trade.

Second, Basel III introduces a minimum leverage ratio, whereby banks must calculate their risk exposure by taking into consideration both outstanding loans and "off-balance sheet" items. Off-balance sheet items or contingent liabilities are instances where a bank is acting as a guarantor, promising to provide money at a future date. In the case of trade

[9]For a more detailed summary of the Basel Committee's activities and reforms, see `https://www.bis.org/bcbs/history.htm`.

financing, such promises rarely require financial payments; a bank is simply serving as an intermediary between the buyer and the seller, and helping to mitigate risk. A bank would only pay under conditions of default, a rarity in international trade.[10] Despite the low risks of default, banks are required under Basel III to count trade financing items like letters of credit as a source of leverage.

The Basel Committee has revised its standards several times since 2010 and has planned a gradual phase-in of implementation; as a result, the ultimate effect of Basel III on trade financing is unclear. Since 2010, international bodies like the World Trade Organization and the International Chamber of Commerce and systemically-important international banks have lobbied the Basel Committee to modify the standards so that they cause less disruption to international trade. In 2014, the Committee reformed the standards to take into account the low risk of default of letters of credit. But even with minor reforms, the Basel III standards still reduce the incentives for banks to engage in trade financing, creating significant gaps in available funding with the most vulnerable populations. The International Chamber of Commerce notes this trend, writing that "the global economic system has largely recuperated pre-crisis levels of liquidity; however, it is disproportionately available to multinationals and large corporates - the top end of the market - and consistently absent in the micro, small, and medium-sized enterprise segment" (International Chamber of Commerce, 2017, 17).

3.2 The FATF and the Decline of Correspondent Banking Relationships

The FATF was established in 1989 as part of an intergovernmental effort to formulate standards on the criminalization of money laundering. Following the 9/11 terrorist attacks, the

[10]Data collected by the International Chamber of Commerce suggests the default rate for import letters of credit is 0.08 and the default rate for export letters of credit is 0.04 (ICC Banking Commission, 2016).

FATF expanded its mandate to include combating terrorist financing.[11] Although the FATF was founded by G-7 countries, the European Commission, and eight other states,[12] the Task Force has since expanded its membership to 35 member states, including all major global economies. It has also broadened its influence through a network of regional affiliate bodies that today include more than 190 countries worldwide.

The FATF is both an international standard setter and compliance monitor. Since 1990, it has maintained a list of 40 recommendations[13] that are designed to help countries identify illicit financing risks, develop appropriate domestic policies, apply preventive measures for the financial sector, empower appropriate domestic authorities, and facilitate international cooperation.[14] While many FATF recommendations directly or indirectly affect financial institutions, none has had as profound an impact on banks as the requirement to verify customer identities. Under this recommendation, often referred to as "know-your-customer" requirements or "customer due diligence," financial institutions should take steps to identify customers and verify their identities, and understand and obtain information about the intended purpose of business.[15] Financial institutions are also expected to monitor the business relationship and scrutinize transactions over time, giving additional scrutiny to customers who pose a higher risk of money laundering or terrorist financing.[16]

Know-your-customer rules impose high costs on banks, which directly affect correspondent banking relationships. The International Chamber of Commerce estimates that the costs of maintaining a basic correspondent relationship have risen from approximately 15,000 Euros to 75,000 Euros due primarily to increased compliance costs (International Chamber

[11] It subsequently expanded its mandate once more in 2012 to include combating the financial of nuclear proliferation. See Nance and Cottrell (2014) for a discussion of this mandate expansion.

[12] Australia, Austria, Belgium, Italy, Luxembourg, Netherlands, Spain, and Switzerland.

[13] When the FATF expanded its mandate in 2001 to include terrorist financing, it adopted additional Special Recommendations on this issue. In 2012, the FATF consolidated its recommendations back to 40.

[14] This description is based on the lengthier set of goals set out in FATF-GAFI (2012, 7).

[15] Financial institutions are also required to take steps to identify the beneficial owner of accounts where the legal title belongs to one person while property rights belong to someone different.

[16] For more on this recommendation and its specific requirements, see FATF (2016).

of Commerce, 2017, 19). Banks also worry about the reputational risk of being associated with a high risk customer or non-compliant bank (Author interview of compliance executive of top-five US bank, 28 August 2015; Author interview of Jeff Soloman, Thomson Reuters' World Check, 28 September 2015). Such considerations have led to an unprecedented numbers of closures of correspondent bank accounts. Between 2011 and 2015, more than 100 countries experienced a decline in the number of active correspondent relationships (Committee on Payments and Market Infrastructures, 2016). A 2014 British Banking Association survey of 11 international banks found that since 2011, these banks had closed thousands of correspondent relationships (International Financial Corporation, 2016).

The termination of banking relationships has disproportionately affected the most vulnerable countries and populations. In some cases, banks have mitigated risk through "de-risking," whereby they cease engaging in entire categories of higher risk activities, rather than judging the risks of clients on a case-by-case basis. Banks, firms, and customers in less developed economies are particularly likely to be affected by such decisions, regardless of the actual risk that they pose of illicit financing. A recent report from the WTO Working Group on Trade, Debt, and Finance indicates that the implementation of know-your-customer requirements "had forced out small African banks, despite their impeccable due diligence records" and had made parts of Eastern Europe "virtually 'un-bankable' "(WTO Working Group on Trade, Debt and Finance, 2017, 2).

The end result of such practices is that younger and smaller firms in developing and emerging economies have found it increasingly difficult to access the international financial system. As banks close correspondent accounts, the costs of doing business abroad rise concomitantly. Not surprisingly, the contraction of finance is likely to affect trade. While large companies may be able to find alternative sources of financing, SMEs usually rely on bank financing to build export relationships. Yet for banks, the relative cost of conducting due diligence on such firms in developing countries – and the possibility of exposing themselves to

regulatory risk – is high compared to the small expected financial gains. As a result, banks may close correspondent accounts or refuse financing requests from such companies. Indeed, nearly 60 percent of SMEs firms surveyed by the Asian Development Bank reported being rejected by banks when requesting trade finance (Auboin and DiCaprio, 2017, 11). The most common reason that banks rejected requests for trade financing was know-your-customer obligations (Di Caprio, Kim and Beck, 2017).

4 Empirical Approach and Hypotheses

As previously discussed, data availability poses significant challenges for analyzing the relationship between financial regulation, trade financing, and trade flows. Perhaps the most direct test of this causal relationship would be to examine how the closure of correspondent bank accounts in a country affects trade financing options for firms, and whether changes in the availability of financing for firms affect a country's overall exports. Unfortunately, firms do not make public data about trade financing, nor do banks provide data about correspondent banking relationships. Given these data challenges, economists examine trade financing through micro-level empirical tests or macro-level indirect analyses. Amiti and Weinstein (2011), for example, rely on country-level data that is available only for Japan, while Antras and Foley (2015) draw on a dataset for one specific industry. In contrast, Chor and Kalina (2012), Schmidt-Eisenlohr (2013), and Caballero, Candelaria and Hale (2016) probe the relationship indirectly by examining how interbank lending affects trade flows.

In this paper, I follow the latter approach to test indirectly the relationship between intergovernmental financial regulation and trade. Specifically, I analyze how being publicly labeled by the FATF as a non-compliant (and therefore high risk) jurisdiction affects bilateral exports from the listed country. For this approach to be an adequate test of the theory, I make two assumptions, both of which are grounded in survey evidence from the policy community.

The first assumption is that the increased costs of complying with know-your-customer obligations are partly to explain for why firms are struggling to access trade financing. In a 2016 Asian Development Bank (ADB) survey, 90 percent of banks indicated that anti-money laundering policies and know-your-customer requirements were a factor impeding their ability to extend additional trade finance (Di Caprio, Kim and Beck, 2017). A 2017 Financial Stability Board survey of over 300 banks revealed that the costs associated with opening and maintaining a correspondent banking relationship, and in particular, the application of know-your-customer requirements, is a key driver behind the decline in correspondent banking (Financial Stability Board, 2017).

The second assumption is that reduced access to trade financing affects trade flows and in particular, exports. The ADB survey indicates that about 60 percent of surveyed firms failed to execute a trade transaction after a bank rejected their application for trade financing (Di Caprio, Kim and Beck, 2017, 2). Many of these rejected requests were potentially viable. In the ADB survey, banks reported that at least 36 percent of rejections occurred due to low profitability or the need for collateral. And while banks reported rejecting 29 percent of requests for know-your-customer reasons, in many cases, these rejections had less to do with the actual risk of illicit financing and more to do with the cost and effort of implementing know-your-customer requirements (Di Caprio, Kim and Beck, 2017, 3). Since trade financing is particularly important in shaping export opportunities (Auboin and DiCaprio, 2017), factors that reduce a country's overall access to trade financing are likely to lead to a decline in exports.

4.1 The FATF Non-Complier List

In November 2008, G-20 leaders committed to protecting "the integrity of the world's financial markets by....protecting against illicit finance risks arising from noncooperative jurisdictions" (G-20, 2008, 3). In response to this call-to-action, the FATF established procedures

for a new non-complier list whereby it would publicly identify countries that failed to implement the most important FATF recommendations. The FATF determines which countries are eligible for possible listing by considering the results of a country's monitoring report. Over a ten year cycle, the FATF and its affiliates evaluate all 190 countries in the FATF global network and assess their levels of compliance with the FATF's 40 recommendations. The FATF evaluation process is highly technical and relatively apolitical; in the words of the former US Assistant Secretary for Terrorist Financing and Financial Crimes, "politics might sometimes creep in on the margins but every decision is justified on a technical level" (Author interview with Daniel Glaser, 12 February 2018).

Countries that receive failing scores on at least 10 of the FATF's 16 most important recommendations are eligible for inclusion on the non-complier list.[17] Based on the pool of eligible countries, the FATF then evaluates each country more closely. Countries are given up to a year to change their policies and demonstrate significant improvements – a timeline that, in practice, is difficult for most governments to achieve (Author interview with FSRB Executive Director, 30 June 2016). The FATF makes final listing determinations based on a number of different factors, including the size and integration of the country's financial sector,[18] the risk of money laundering and terrorist financing, and failure to take substantial actions to criminalize money laundering or terrorist financing (FATF-GAFI, 2009, 11).[19]

Since February 2010, the FATF has listed 61 countries under the non-complier list process. Table C in the Appendix shows all listed countries, along with the date of listing and the date of graduation from listing (where relevant). To be removed from the list, countries must address all identified deficiencies and the FATF must conduct an on-site visit to verify

[17]This description of the FATF non-complier list procedures is based on the FATF's written procedures for its third round of evaluations. For the fourth round of evaluations, which began in 2015, the FATF modified its procedures to correspond with the updated FATF recommendations and compliance methodology.

[18]Relative to both its region and to the world

[19]Other factors include not responding to requests for international assistance, the existent to which a government has sought and implemented technical assistance, and the degree to which a government has demonstrated a willingness to address its deficiencies.

policy changes have taken place. To-date, the FATF has removed 47 countries from the list following significant policy change,[20] which suggests the list has been an effective tool at driving legislative action. Removal from the list, however, does not preclude the possibility of re-listing.[21]

4.2 Hypotheses

Banks have closed correspondent accounts and denied requests for trade financing in large part due to the cost of implementing know-your-customer obligations. Banks maintain complex risk management systems to assess the risk profile of customers, spending billions of dollars each year on such measures.[22] While each bank makes its own decisions about which countries and customers constitute "high risk" relationships, banks should be more likely to view countries that are on the non-complier list as higher risk, compared to non-listed countries. Banking officials find the FATF list useful for managing country risk "because it's a quantitative measure that you can put in a risk model" (Author interview with compliance executive of top-five bank, 28 August 2015). For US-based banks, the list may also be valuable because of how it is perceived by the United States and its regulators (Author interview with MSCI official, 25 September 2015). Because of the FATF's authority and credibility in this issue area, US regulators expect that banks will adjust their risk models to account for the FATF non-complier list.

If banks close correspondent accounts with banks in listed countries, or charge higher premiums for capital, this process is likely to reduce access to trade financing and in the long-term, to reduce exports.

[20]The FATF removed Sao Tome and Principe after deciding it was a low threat and no longer needed monitoring.

[21]For example, Ethiopia was listed from 2010 to 2014 based on the results of its third round mutual evaluation report. In 2017, the FATF re-listed Ethiopia based on the results of its *fourth* round mutual evaluation report (FATF-GAFI, 2017).

[22]In 2017, banks and other financial actors are expected to spend more than 8 billion US dollars on anti-money laundering and combating terrorist financing compliance software and programs (Pelaez, 2016).

- *Hypothesis 1: Countries that are listed by the FATF will be more likely to experience a decline in exports.*

Banks are likely to view some listed countries as higher risk than others, depending on the level of political institutions within each country. Banks are especially like to "de-risk" from countries with poor regulatory implementation and enforcement, because correspondent banks in such countries cannot be counted on to fulfill their know-your-customer obligations. A lack of correspondent bank compliance raises compliance challenges for the initiating bank, because the initiating bank is expected to know its respondent bank customer's customers (Lowery and Ramachandran, 2015). Countries that fail to implement or enforce such obligations are likely to be countries with relatively weak political institutions, particularly with respect to business. More specifically, countries with poor levels of contract enforcement should be less likely to comply with FATF standards, and thus more vulnerable to de-risking by banks.[23]

- *Hypothesis 2: The FATF list will have the strongest impact on exports in countries with poor contract enforcement.*

5 Empirical Analysis

I examine the relationship between banks, trade finance, and trade flows by probing how the FATF non-complier list has affected dyad-level exports from listed countries. I begin the analysis in 2010 because that is the start of the current non-complier list, and my data goes through 2016. Data on country listing status is collected from FATF non-complier list announcements, which are published online in February, June, and October every year. I

[23]Economic literature on trade finance also suggests that the effect of bank linkages on exports is likely to depend on a country's level of contract enforcement (Caballero, Candelaria and Hale, 2016).

test my hypotheses using an ordinary least squares model with standard errors clustered at the exporting country level and regional fixed effects.

5.1 Data and Measurement

My data focuses on bilateral export flows during the period of 2010 to 2016. The full sample has 122,837 observations, of which 17 percent of dyads contain an exporter that is listed by the FATF in a given year. The sample shrinks significantly with the inclusion of additional variables and data on contract enforcement.[24] The smallest sample has 81,042 observations, where 16 percent of dyads contain an exporter that is listed by the FATF in a given year. The unit of observation is the directed-dyad year in order to capture how listing affects bilateral exports out of the listed country.

The dependent variable, *Exports* captures the bilateral exports to a partner country in a given year. This variable is drawn from the IMF Direction of Trade Statistics, and reflects the value of exported goods, as reported by the exporting country. I standardize values across years by divided all values by a GDP deflator. Because the variable is highly skewed, I transform it using a log and use the logged form as the dependent variable in the analysis.

There are two main explanatory variables of interest. To test hypothesis 1, I include the variable *FATF High Risk Designation*, which indicates whether the exporting country is listed by the FATF in a given year. Data on the FATF list is collected from announcements from the FATF's International Cooperation Review Group.[25] Because the FATF list is updated three times a year but my data is annual, I code a country as listed if it appears on the FATF list at any time in a given year.

Hypothesis 2 suggests that countries with poor contract enforcement should be more

[24]This variable is only available for a subset of 123 countries.

[25]The FATF actually issues two sets of lists: "Improving Global AML/CFT Compliance: On-going Process" and the "FATF Public Statement." For this project, I code a country as listed if it appears on any of the FATF lists in a given year.

likely to suffer declines in exports as a result of the FATF list. To test this hypothesis, I include the variable *Contract Risk*, which is drawn from the International Country Risk Guide. Contract risk reflects "the risk of unilateral contract modification or cancellation and, at worst, outright expropriation of foreign owned assets" (The PRS Group, 2017). It ranges from 0 to 4, where 0 indicates very low risk and 4 indicates high risk.[26]

I include a number of other variables that have been shown to affect trading relationships. The standard gravity model of trade assumes that economic size is a key determinant of trade flows (Tinbergen 1962). I include the variables *GDP per capita (Exporter)* and *GDP per capita (Importer)* to account for the level of economic development in both countries. I control for differences in market size by including *Population (Exporter)* and *Population (Importer)*. All four variables are drawn from the IMF Direction of Trade Statistics and are logged to account for the skewed distribution of the data.

Geography is a potential impediment to trade. Transporting goods over long distances raises the cost of trade. Countries that are centrally located with many neighbors should have an easier time shipping goods across borders than island nations that are surrounded by water. To account for these factors, I include the variables *Distance* and *Contiguity*, both drawn from the Correlates of War project. Distance is a continuous variable that measures the distance between the two countries' capital. Contiguity is a dichotomous variable that is coded 1 if the two countries share a border and 0 otherwise.

Political institutions in the exporting and importing countries may also impact the trading relationship. Mansfield, Milner and Rosendorff (2000) show that democratic dyads have more open trade relations than dyads composed of a democracy and an autocracy, while Mansfield, Milner and Rosendorff (2002) show that democracies are also more likely to form preferential trade agreements. Democratic institutions may increase trade because they

[26]The original data uses an inverse range, where 4 indicates a low risk of contract violation and 0 indicates a high risk. For ease of interpretability, I rescale this variable so that 4 indicates high risk and 0 indicates low risk.

reduce the ability of governments to use trade barriers for political purposes (Milner and Kubota, 2005). Within the global finance literature, scholars have also argued that investors are more favorably inclined toward democratic countries because such governments can more credibly commit to repayment (North and Weingast, 1989; Beaulieu, Cox and Saiegh, 2012) – a pattern that is likely to hold for trade finance, where companies are also seeking re-assurance about the fulfillment of contractual obligations. To account for these factors, I include *Democracy (Exporter)* and *Democracy (Importer)*, which are drawn from the Polity IV project. I also include the variable *Democratic Dyad*, which is a dichotomous variable coded 1 if both countries in a dyad are democracies in a given year.

I analyze the impact of the FATF non-complier list on exports by pooling observations and estimating an ordinary least squares (OLS) regression model with standard errors clustered at the exporting-country level and regional fixed effects. This allows me to examine how listing affects countries compared to their regional peers. Controlling for regional differences is important primarily because regions differ significantly in the degree to which they depend on trade financing. Regional fixed effect also control for differences in bank networks and in geography that might otherwise impact trade flows.

In all regressions, I include a time cubic polynomial to model time dependence, as recommended by Carter and Signorino (2010). I also lag all explanatory variables by one year to account for the possibility of simultaneity, which would make it difficult to observe the relationship between FATF listing and exports.

5.2 Results

The results provide strong support for both hypotheses. Table 1 shows the results of the analysis examining the direct effect of the FATF non-complier list on exports in a basic model and several fuller specifications that include more covariates. Across all specifications, the FATF non-complier list has a negative and statistically significant effect on exports. In

	Dependent variable: Exports (log)		
	(1)	(2)	(3)
FATF High Risk Designation - Exporter	−0.293*	−0.347**	−0.409**
	(0.152)	(0.160)	(0.160)
GDP Per Capita - Exporter (Log)	1.296***	1.393***	1.389***
	(0.078)	(0.079)	(0.079)
GDP Per Capita - Importer (Log)	0.862***	0.888***	0.883***
	(0.036)	(0.027)	(0.027)
Population - Exporter (Log)	1.135***	1.128***	1.154***
	(0.038)	(0.040)	(0.047)
Population - Importer (Log)	0.824***	0.850***	0.955***
	(0.027)	(0.022)	(0.018)
Distance		−0.0002***	−0.0002***
		(0.00001)	(0.00001)
Contiguity		2.933***	2.899***
		(0.167)	(0.170)
Democracy - Exporter			0.011
			(0.017)
Democracy - Importer			0.002
			(0.008)
Democratic Dyad			0.355***
			(0.127)
Time	−0.060***	−0.058***	−0.064***
	(0.007)	(0.008)	(0.009)
Observations	122,837	121,936	108,355
Adjusted R-squared	0.3998	0.4754	0.4927
Note:			*p<0.1; **p<0.05; ***p<0.01

Table 1: *The FATF Non-Complier List and Trade Flows* - All models show the results of an OLS regression with regional fixed effects and standard errors clustered at the exporter level.

model 3, the FATF non-complier list is associated with a 40.9 percent decrease in exports, compared to other countries in the region. In line with expectations, economic size, population, contiguity, and shared democracy all have strong positive and significant effects on exports, while distance has a negative and significant effect. The time trend variable suggests there has been a significant decline in exports over this period, as has been noted by many economists.

Table 2 shows the results of an analysis examining whether the FATF non-complier list's effect on exports is moderated by a country's level of contract enforcement. The results suggest that the FATF list impact on exports is centered on countries with poor contract enforcement. More specifically, listing has a negative and statistically significant effect only on those countries with some level of contract risk. As contract risk increases, listing is likely

	Dependent variable: Exports (log)		
	(1)	(2)	(3)
FATF High Risk Designation * Contract Risk	−0.580***	−0.619***	−0.597***
	(0.223)	(0.228)	(0.231)
FATF High Risk Designation - Exporter	0.409	0.428	0.378
	(0.379)	(0.386)	(0.391)
Contract Risk - Exporter	−0.027	−0.040	−0.031
	(0.119)	(0.118)	(0.124)
GDP Per Capita - Exporter (Log)	1.164***	1.248***	1.265***
	(0.105)	(0.108)	(0.107)
GDP Per Capita - Importer (Log)	0.913***	0.925***	0.904***
	(0.038)	(0.028)	(0.028)
Population - Exporter (Log)	1.101***	1.087***	1.110***
	(0.046)	(0.048)	(0.049)
Population - Importer (Log)	0.882***	0.902***	0.968***
	(0.024)	(0.020)	(0.019)
Distance		−0.0002***	−0.0002***
		(0.00001)	(0.00001)
Contiguity		2.889***	2.818***
		(0.181)	(0.182)
Democracy - Exporter			−0.010
			(0.021)
Democracy - Importer			0.002
			(0.008)
Democratic Dyad			0.392***
			(0.131)
Time	−0.098***	−0.095***	−0.097***
	(0.011)	(0.012)	(0.012)
Observations	89,625	89,246	81,996
Adjusted R-squared	0.5259	0.6109	0.6191
Note:			*p<0.1; **p<0.05; ***p<0.01

Table 2: *The FATF Non-Complier List, Contract Risk, and Trade Flows* - All models show the results of an OLS regression with regional fixed effects and standard errors clustered at the exporter level.

to lead to larger declines in exports. These results support the argument that the FATF non-complier list is affecting exports through trade finance. International banks are more likely to terminate relationships with banks in countries with poor contract enforcement, and firms in such countries will have difficulty gaining access to alternative, non-bank-intermediated forms of financing due to contract risk.

To put these numbers into context, consider a country like the Philippines, which was listed by the FATF from 2010 to 2013. The Philippines' contract risk rating during this period ranged from 1.0 in 2010 to 1.49 in 2012. Based the estimates in model 3, the FATF list would have resulted in a 22 percent decrease in exports in 2010, compared to a non-listed

country with a similar level of contract risk. In 2012, however, the FATF list would have resulted in a 51 percent decrease in exports compared to a similar non-listed country, due to the increase in contract risk.

6 Conclusion

In the years since the 2008 financial crisis, governments and international organizations have celebrated the international community's success in avoiding substantial increases in protectionism. But while tariffs remain low, international financial standards may have unwittingly created new barriers to trade by reducing access to trade financing. Trade financing is the 'lifeline' of trade because it enables firms to take on the risk and time-delays of cross-border transactions. The availability of many types of trade financing, however, depends on bank-to-bank relationships.

This paper highlights how international changes in financial regulation – in particular, the adoption of Basel III and the increased emphasis on know-your-customer requirements – has affected trade flows. It establishes a substantive relationship between banking regulation, trade financing, and international trade, and then provides empirical evidence for a relationship between the high costs of know-your-customer requirements and declines in bilateral exports. A second empirical analysis suggests the trade financing is the most likely mechanism for this relationship, showing that being labeled as "high risk" has the strongest effect on exports in countries with poor contract enforcement.

The relationship between international financial regulation and trade flows has severe implications for the long-term growth of poor countries. When banks drop correspondent relationships or begin to charge higher premiums for capital, firms in such countries find it increasingly difficult to gain access to financing. The worldwide gap in trade financing is estimated to be about 1.5 trillion US dollars annually, with emerging economies facing the

biggest shortfalls. More troubling, banks report that 74 percent of rejections are toward micro, small, and medium-sized enterprises (Di Caprio, Kim and Beck, 2017). Given that such firms "contribute 80 percent of total employment and almost 40 percent of total exports" (International Financial Corporation, 2016) in developing countries, the inability of such firms to access trade financing is likely to have long-term negative effects on economic growth in these countries.

Appendix A FATF Members and Associate Members

Members	**Associate Members: FATF-Style Regional Bodies**
Argentina	Asia/Pacific Group on Money Laundering (APG)
Australia	Caribbean Financial Action Task Force (CFATF)
Austria	MONEYVAL (Council of Europe)
Belgium	Eurasian Group (EAG)
Canada	Eastern and Southern Africa Anti-Money Laundering Group (ESAAMLG)
China	Financial Action Task Force of Latin America (GAFILAT)
Denmark	Inter Governmental Action Group against Money Laundering in West Africa (GIABA)
European Commission	Middle East and North Africa Financial Action Task Force (MENAFATF)
Finland	Task Force on Money Laundering in Central Africa (GABAC)
France	
Germany	
Greece	
Gulf Cooperation Council	
Hong Kong, China	
Iceland	
India	
Ireland	
Italy	
Japan	
Korea	
Luxembourg	
Malaysia	
Mexico	
Netherlands	
New Zealand	
Norway	
Portugal	
Russia	
Singapore	
South Africa	
Spain	
Sweden	
Switzerland	
Turkey	
United Kingdom	
United States	

Table A1: The table shows FATF members and associate members. Italicized members are regional organizations. Most member states belonging to FATF-style regional bodies are not FATF members.

Appendix B FATF 16 Key & Core Recommendations

The FATF has identified 16 of its "40+9" recommendations on combating money laundering and terrorist financing as being the highest priority recommendations for states. In an interview, a FATF regional body official described the core recommendations as the "building blocks of the AML/CFT regime, without which anything else would be pointless," while the key recommendations are "extremely important, but to a lesser extent" (Interview, 27 January 2015). The general topics covered by these 16 key and core recommendations are given below.

Core Recommendations

- Criminalization of money laundering and terrorist financing (Recommendation 1, Special Recommendation II)
- Customer identification/record-keeping requirements (Recommendations 5 and 10)
- Suspicious transaction reports reporting (Recommendation 13, Special Recommendation IV)

Key Recommendations

- International cooperation and mutual legal assistance (Recommendations 35, 36, 40, Special Recommendations I and V)
- Freezing and confiscation (Recommendation 3, Special Recommendation III)
- Financial secrecy (Recommendation 4)
- Adequate regulation and supervision (Recommendation 23)
- Functional financial intelligence unit (Recommendation 26)

Appendix C FATF Non-Complier List Countries

Country	Listed	Graduated
Afghanistan	2012	–
Albania	2012	2015
Algeria	2011	2016
Angola	2010	2016
Antigua and Barbuda	2010	2014
Argentina	2011	2014
Azerbaijan	2010	2010
Bangladesh	2010	2014
Bolivia	2010	2013
Bosnia-Herzegovina	2015	–
Brunei Darussalam	2011	2013
Cambodia	2011	2015
Cuba	2011	2014
DPRK	2007	–
Ecuador	2010	2015
Ethiopia	2010	2014
Ghana	2010	2013
Greece	2010	2011
Guyana	2014	–
Honduras	2010	2012
Indonesia	2010	2015
Iran	2007	–
Iraq	2013	–
Kenya	2010	2014
Kuwait	2012	2015
Kyrgyzstan	2011	2014
Lao PDR	2013	–
Mongolia	2011	2014
Morocco	2010	2013
Myanmar	2010	2016
Namibia	2011	2015
Nepal	2010	2014
Nicaragua	2011	2015
Nigeria	2010	2013
Pakistan	2010	2015
Panama	2014	2016
Papua New Guinea	2014	2016
Paraguay	2010	2012
Philippines	2010	2013
Qatar	2010	2010
Sao Tome and Principe	2010	2013
Sri Lanka	2010	2013
Sudan	2010	2015
Syria	2010	–
Tajikistan	2011	2014
Tanzania	2010	2014
Thailand	2010	2013
Trinidad and Tobago	2010	2012
Turkey	2010	2014
Turkmenistan	2010	2012
Uganda	2014	–
Ukraine	2010	2011
Vanuatu	2016	–
Venezuela	2010	2013
Vietnam	2010	2014
Yemen	2010	–
Zimbabwe	2011	2015
Total	57	46

Table C2: *Countries listed by the FATF (Feb 2010 - June 2016)* - Table shows the countries included on the non-complier list, the year of listing, and the year of graduation (where relevant). Countries that graduate are removed from FATF monitoring due to significant policy change (with the exception of Sao Tome and Principe, which the FATF decided was a low threat and no longer needed monitoring).

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