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Variations in Suspicious Activity Reports

An exploration into the factors that may explain why reporting levels differs from country to country

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Preface

I have been working in the field of anti-money laundering in some capacity as a junior analyst and later as a consultant. A common theme in organizations that I have worked for was always the difficulty in getting stakeholders on board with putting in place measures and controls that can have a real impact. Going through the literature and research by scholars in this field broadened my view on this topic and I now realise the many difficulties that organizations face when trying to implement these rules. This is not to suggest that they should be given a pass when their organization becomes a conduit for money laundering activity, but rather it is to suggest that there is a shared responsibility of those who set the rules, those who interpret them and those who execute them.

Writing a thesis can be and is a long and arduous process. I would not have completed it without the help of my supervisor Tina Søreide who was always patient enough to sift through mostly fragmented thoughts and ideas and consolidate them with me in our meetings for this thesis. Her expertise and wide-reaching knowledge around law and economics, corruption and money laundering (I'm sure it's not limited to these areas) proved to be a source of invaluable input. It is not an overstatement to say that without her supervision, I would not have stayed on track and completed this thesis on time, which were thoughts plaguing me at the start of the semester. With that I would like to extend my heartfelt thanks and gratitude to her in providing guidance and support.

Further, writing a thesis in such unprecedented times when a pandemic still ominously looms over one's shoulder, where conflict is rife in many parts of the world, where the advent of technology not only brings convenience and accessibility but also brings distractions and unwanted stimuli, I would like to thank friends and family who have made themselves available in whatever capacity that they could. I appreciate and thank those who have extended their help in any way shape or form, be it helping me with translating documents, with troubleshooting STATA, or just simply lending a listening ear to a grumpy individual and his incessant rants.

Finally, I hope you, the reader, will enjoy going through the thesis as much as I have writing it.

List of Abbreviations

1MDB	1Malaysia Development Berhad
6AMLD	6th Anti-Money Laundering Directive
AML	Anti-Money Laundering
AML/CFT	Anti-Money Laundering/Combating the financing of Terrorism
BSA	Bank Secrecy Act
C	Compliant
CFT	Combating the Financing of Terrorism
CIA	Central Intelligence Agency
CMIR	Currency and Monetary Instrument Reports
CTR	Currency Transaction Report
DOJ	Department of Justice
EDD	Enhanced Due Diligence
EU	European Union
FATCA	Foreign Account Tax Compliance Act
FATF	Financial Action Task Force
FE	Fixed Effects
FIU	Financial Intelligence Unit
FUR	Follow-up Reports
GDP	Gross Domestic Product
IMF	International Monetary Fund
KYC	Know Your Customer
LC	Largely Compliant
MER	Mutual Evaluation Report
MLRO	Money Laundering Reporting Officer
NC	Non-compliant
OLS	Ordinary Least Squares
PC	Partially compliant
PEP	Politically Exposed Person
RBA	Risk-based Approach
RE	Random Effects
SAR	Suspicious Activity Report
SDD	Simplified Due Diligence
SPE	Special Purpose Entity
SPV	Special Purpose Vehicle
STR	Suspicious Transaction Report
UN	United Nations
UNODC	United Nations Office on Drugs and Crime
WGI	World Governance Indicators

List of country abbreviations

AUS	Australia
AUT	Austria
BEL	Belgium
BRL	Brazil
BGR	Bulgaria
CAN	Canada
HRV	Croatia
CYP	Cyprus
CZE	Czech Republic
DNK	Denmark
FIN	Finland
FRA	France
DEU	Germany
GRC	Greece
HKG	Hong Kong S.A.R, China
HUN	Hungary
ISL	Iceland
IND	India
IDN	Indonesia
IRL	Ireland
ITA	Italy
JPN	Japan
KOR	South Korea
LVA	Latvia
LTU	Lithuania
LUX	Luxembourg
MLT	Malta
MEX	Mexico
NLD	Netherlands
NOR	Norway
PAN	Panama
POL	Poland
PRT	Portugal
ROU	Romania
RUS	Russian Federation
SGP	Singapore
SVK	Slovak Republic
SVN	Slovenia
ESP	Spain
SWE	Sweden
CHE	Switzerland
TUR	Turkey
GBR	United Kingdom
USA	United States
BHS	Bahamas
BGD	Bangladesh

BTN	Bhutan
BWA	Botswana
HTI	Haiti
ZMB	Zambia
FJI	Fiji
ZWE	Zimbabwe
WSM	Samoa
EST	Estonia
CYM	The Cayman Islands
MDG	Madagascar
AND	Andorra
BMU	Bermuda
COK	The Cook Islands
IMN	Isle of Man
MNG	Mongolia
UKR	Ukraine

Contents

Abstract

The risk-based approach (RBA) was initially introduced in 2013 by the Financial Action Task Force (FATF) as a solution to the increasing volumes of suspicious activity reports (SARs) filed by regulated entities and the subsequent workload on enforcement authorities. However, since then, suspicious reports have not shown a dramatic decrease in volume but has in fact been increasing, suggesting a potential relationship between the two. One of the main reasons surround the uncertainty and ambiguity that both regulators and regulated entities face when interpreting what constitutes low, medium or high risk when it comes to assessing risk in their own context. This is highlighted from AML activities such as identification of politically exposed persons and beneficial owners as well as the risk categorization of countries. To investigate this potential relationship, a regression analysis is performed using SAR data on compliance scores from the 4th round of Mutual Evaluation Reports (MERs). Mutual evaluations are a process for FATF to understand how well a country is performing on each of their 40 recommendations (FATF, 2021) thus the scores from these reports act as an indicator for how closely a country follows the RBA recommendation from FATF. The results indicate that there is a significant and positive relationship between the two variables. Countries that achieve higher scores, which indicate that they follow the RBA closely (in large part due to potential fines and exclusion from the global financial system), file more SARs. Because some institutions may choose not to follow this approach so closely, variations across countries occur. This suggests that the description of the RBA is too broad and ambiguous, leaving each country's regulators and regulated entities uncertain as to what constitutes low or high-risk activity. To hedge against this uncertainty and err on the side of caution, regulated entities rather choose to report transactions on the border of being suspicious, contributing to a problem known as defensive reporting, leading to a further increase in SAR volumes. When SAR volumes are too high, each subsequent report loses credibility thus diminishing the value that the SAR regime can provide, what is termed the phenomenon of the 'Crying Wolf'. The outcome of this analysis provides a starting point towards the conversation that indeed, the risk-based approach does contribute to increased SAR levels and variation across countries. Consequently, the risk-based approach can be further refined to reduce uncertainty that governments, regulators and regulated entities face. Hopefully, by doing so, the value of reporting suspicious activity is preserved and allows SAR levels to be used as a meaningful indicator of the effectiveness of AML regimes.

1. Introduction

In July 1989, the Heads of State or Government of seven leading industrialised countries (G7-USA, Japan, Germany, France, UK, Italy and Canada), together with the President of the European Commission, convened, from summit participants and eight other countries (Sweden, The Netherlands, Belgium, Luxembourg, Switzerland, Austria, Spain and Australia), the Financial Action Task Force (FATF). The FATF was mandated as an inter-governmental policy making body to combat money laundering, especially drug-related money laundering. The responsibilities of the FATF were facilitated through a series of meetings of experts and three working groups, which resulted in a 1990 report containing 40 Recommendations to deal with money laundering. One of the main requirements was the duty of reporting suspicious activities by certain types of entities of member states to contribute to its ongoing efforts, proportional to its GDP (Van Duyne et al, 2018). The FATF represents more of an informal transnational, multi-level network rather than a formal hierarchical international organization (Nance, 2018). It should be noted that what the FATF proposes are in essence soft laws as they do not have jurisdictional authority. The FATF is unable to enforce any regulation. Individual member states must interpret and write on their own, regulations (hard laws) that fit the 40 recommendations proposed by the FATF. When it comes to enforcement, it is the individual states that act on it, through the hard laws that are passed in the state, not FATF. But because of its extensive influence over member countries and ability to exert pressure over non-members through its membership structure, its recommendations and guidelines have acted as the ‘de-facto’ regulation, adopted by most nations.

The use of suspicious activity reports (SARs) as a tool for enforcement agencies to detect money laundering activity has been ongoing for some time. Regulated entities were required to file Currency Transaction Reports (CTRs) as part of the Bank Secrecy Act (BSA) in 1970 enacted by the United States, when processing transactions reaching more than USD 10,000.

It was later added as an additional requirement in 1992, to also have regulated entities file Currency and Monetary Instrument Reports (CMIRs) for customers intending to transfer currency and monetary instruments for a minimum USD 5,000 in and out of the country. This evolved as part of efforts to prevent financial institutions from being used as conduits for illegal activity. However, the idea of money laundering was hardly known to the layperson until the terrorist attacks of September 11 in 2001. This put financial institutions and terrorism

financing at the forefront of mainstream media, and for the first time, presented a link between money laundering and terrorism financing. No less because of the devastating nature of the crime and amount of harm that was inflicted; it was reported that the amount of casualties amounted to 2,977 (CNN, 2020), it was also equally appalling that financial institutions were found to have been used as mediums to channel funds to Al-Qaeda, which enabled the organization to eventually carry out such an organized attack on humanity. A 'war on terror' ensued, which kickstarted part of several significant policy developments both in the United States (USA Patriot Act) and globally around the world. The international community, such as the United Nations (UN), European Union (EU) and the FATF introduced several sets of regulations targeted to fight terrorism in what it became known as Combating the Financing of Terrorism (CFT) measures alongside its Anti-Money Laundering (AML) measures, guidelines and directives. A key element of FATF's efforts is its detailed list of appropriate standards for countries to implement. These measures are set out in the 40 Recommendations, first issued in 1990 and later revised several times until 2012 (ACAMS, 2016). In addition to the those, FATF adopted nine special recommendations on terrorist financing. These recommendations by the FATF have become the de facto practice that serves as starting points for countries in their effort to implement an effective national AML and CFT regime. Based on these recommendations, the SAR requirement also covers terrorist activities.

From this, it seems that the filing of SARs is seen as a central and key tool in the ambition of policy makers to identify and prevent suspicious/terrorist activity within regulated entities, and to discourage the use of these entities as mediums to disguise the origin of funds gained through illegal means. As a result, the number of SARs filed by institutions in the United States and globally around the world have increased significantly (Ryder and Turksen, 2013). The introduction of the RBA by the FATF was seen as a solution to rising SAR levels stemming from traditional 'check the box' mechanisms like the CTR. However, SAR levels continued to rise. Research has shown that a large part may be attributed to 'defensive reporting' (Ross and Hannan, 2007) where financial institutions file SARs without gathering all facts of the case and understanding the true nature of the transaction, possibly due to an overwhelmed AML system. Regulated entities do this because the RBA approach is now too broad as compared to traditional 'check the box' approaches, thus they would rather err on the side of caution, choosing to file SARs when uncertain. On this note, Gelemerova (2011) suggests that it could be due the inclination to pass on risk to enforcement authorities, disregarding the level of suspicion and this is also echoed by Levi and Reuter (2006), but also add that it is one of the ways regulated entities may reduce internal review staff costs. By

simply filing a report without investigation, more cases within the monitoring system can be cleared per analyst, thus less analysts are required to be hired and trained, reducing human resource costs. Whichever the case, the overwhelming number of 'empty' reports contributes to the 'Crying Wolf Effect' where in extreme cases, the information value of reporting is completely diluted, eroding its use case (Takáts, 2011).

1.1 Specific Aims

It would seem then, with so much international pressure and resources dedicated towards enacting policies and regulations as well as perceived societal significance and attention drawn to the need to prevent a second coming of the September 11 attacks, that SAR levels would be more or less similar across countries after consideration of the size of the country, its phase of development, gross domestic product and amount of capital inflows and so on. However, this has not been the case. Indeed, we have seen varying levels of SARs even across similar countries. What could be the cause of this variation and is there is significant relationship between SAR levels and certain factors? If countries' SAR levels are so vastly different, it is difficult to make any meaningful judgement as to what a high or low level of SAR count in a country can imply. This impedes the evaluation of each country's AML/CFT regime, in particular, whether existing controls are sufficient to deter and detect money laundering activity. It impedes the overall goal of deterring, preventing and reducing money laundering activity. Thus, it is important to find relationships between SAR levels and variables that may affect it allowing for adjustments in existing policies or new policy interventions. Such adjustments and interventions will hopefully lead to the ability to draw meaningful conclusions from SAR levels which would serve as a first step towards a methodological and robust assessment of AML/CFT regimes. Indeed, current assessments of countries progress in their AML efforts have come under criticism for lack of a standard approach to evaluation (Van Duyne et al, 2018). There is a need to search and understand the determinants of SARs.

The research on the determinants of SARs have mainly focused on three broad categories; the individual, organizational and institutional levels. At the individual level, Coombs-Goodfellow and Lokanan (2018) made an attempt to predict the decision whether to report a suspicious transaction or not through the use of Jones' issue contingent model (Jones, 1991) and provides evidence that suggest reporting officers will report suspicious transactions that

have high probability of effect, great temporal immediacy, great social consensus, and high concentration effect. At the organization level, there is much literature on how organizational factors can affect individual decision making. For example, Jones and Kavanagh (1996) found support through experimental design for the impact of managerial influences on individuals' decision whether to act in an ethical manner or not. Managers may influence individuals to act in an unethical manner due to differing goals of the organization and regulators. In this respect, Takáts (2011) introduces the problem from a principal-agent perspective, noting the differing incentives and goals for the regulated entities and enforcement authorities. Regulated entities require client transactions and information to sustain operations, while enforcement requires the same entities to give up information of their clients and report suspicious clients, potentially freezing their activity thus forgoing revenue. In cases where entities have to decide between collecting fees from very large but highly risky and suspicious transactions, most entities will be more than willing to participate in these deals. This can be seen from typical high-profile money laundering cases such as the Estonian branch of Danske bank scandal (Bjerregaard and Kirchmaier, 2019). At the institutional level, Braun et al (2016) suggest several institutional features such as the states' stability and capacity to fight corruption to name a few, and that among the most important features that drive numbers of STRs is the scope of predicate offenses in national criminal law. Moreover, sanctions for non-compliance with national AML/CFT legislation affect reporting levels. AML literature as well as the literature in other fields are brought together, to present a model where these broad categories (individual, organizational and institutional) can be viewed together, rather than considering them in silo. Further, the initiative by Braun et al (2016) to examine institutional factors presents an opportunity to go deeper into specific policy introductions that drive these reporting levels. In particular, this thesis will also investigate the uncertainty and ambiguity regulators face that results from the recommendation of the FATF for countries to adopt a 'risk-based approach' towards anti-money laundering efforts as well as suspicious activity reporting. This uncertainty is driven by three main activities which concern identification of politically exposed persons (PEPs) and beneficial owners as well as classification of high-risk countries. Large fines for false negatives force the uncertain regulated entity to err on the safe side to report transactions even though they may seem less suspicious. In some extreme cases, the financial institution reports all transactions, thereby fully diluting the information value of reports (Takáts, 2011) and reducing the effectiveness of the SAR regime.

The following research questions will therefore guide this thesis:

1. What could a model that considers the individual, organizational and institutional determinants of SARs look like?

2. Is there a relationship between the introduction of the risk-based approach and increase in SAR levels?

1.2 Thesis Structure

The thesis will be structured accordingly:

Section 1 describes the motivation, research question, as well as the scope of the research.

Section 2 focuses and provides a general view of key terms and concepts surrounding money laundering and why money laundering prevention is important. The section will highlight the current use of SARs as a tool for the prevention and detection of money laundering activity as well as important aspects considered when reporting suspicious activity.

The last part of this section will introduce the concept of the risk-based approach and mutual evaluations conducted by FATF and its partner institutions.

Section 3 will commence with the literature review of the determinants of SARs and introduction of a proposed model. This section will also dive deeper into the risk-based approach and subsequently provide explanations for the varying levels of SARs including the hypothesis that will be investigated.

Section 4 contains the methodological approach of this thesis.

Section 5 contains a presentation of the data obtained.

Section 6 presents the analysis of the data as well as presenting results from the analysis and also present limitations and issues identified in the thesis and methodology.

Section 7 contains concluding points.

Section 8 will be reserved for references and the appendix.

2. Background

This section will provide some context on what money laundering is, how illicit funds are typically laundered, and why it is important to identify money laundering in which there should be consideration for the consequences associated with money laundering. How entities can identify money laundering brings into the forefront the importance of suspicious activity reporting and hence, the concept of suspicious activity reporting will also be explored followed by an introduction of the risk-based approach.

2.1 Money Laundering

The act of committing a crime has an extended history. It comes in many forms and consists of a wide range of activities ranging from petty theft, to drugs and murder, with wide ranging harms to society. For example, robbery is perceived as less harmful than a murder. However, in general, the act of committing a crime is considered harmful, thus regulated by law, regardless of the scale and scope. Money laundering facilitates crime. In this sense, the crime may be a predicate offense that leads to money laundering. According to the United Nations Office on Drugs and Crime (UNODC), a "predicate offence is an offence whose proceeds may become the subject of any of the money-laundering offences established under the Convention". The 6th Anti-Money Laundering Directive (6AMLD) includes 22 predicate offenses for money laundering in European Union (EU) member states, for example, insider trading and manipulation of the market and corruption. An example of this can be the case of the Bernie Madoff Ponzi scheme, where the crime primarily involved fraud but in addition, he was also sentenced with eleven felony charges, three of which were related to money laundering (DOJ, 2009). Further, as mentioned in the previous section, the need to report suspicious activity stems from the need to identify transactions that involve money laundering which at the same time involves identifying these predicate crimes. Thus, background of money laundering will be provided as well.

2.1.1 Money Laundering – Definition

The act of money laundering can be traced as far back to 2000 years ago when Chinese merchants used these techniques to channel their earnings through various businesses and complex financial transactions as a means to hide their income from government officials who sought to seize it albeit like a modern day tax (Gelemerova, 2009). Pirates have been utilizing laundering techniques, colluding with reputable American merchants to exchange Spanish pieces of eight with a currency or merchandise of choice (Madinger, 2011). What these examples in history show is that so long as something of value has been obtained or is being kept in possession illegally, there is incentive to disguise its origin. Since then, these techniques have been used across the globe, quite notably by American gangsters (Sullivan, 2015) such as 'Al Capone' who is said to have bought laundromats to funnel dirty money from activities like prostitution and comingle them with legitimate income from the business. However, it was only during the Watergate scandal that the first sighting of the term money laundering appeared and was used (Gelemerova, 2009; 2011). It was used in a judicial context in 1982 in the case US v $4,255, 625.39 (1982) 551 F Supp 314, and it subsequently spread worldwide. The Watergate scandal is a significant event in history as it brought to light the concept of money laundering and the fact that even politicians and government agencies can be involved. It exposed high-level political corruption which implicated even the CIA.

Since then, many researchers, government organizations such as the UN, International Monetary Fund (IMF), EU, FATF just to name a few, and private institutions have attempted at formal definitions of money laundering. Sullivan (2015) defines money laundering as "the practice of integrating the proceeds of criminal enterprises into the legitimate mainstream of the financial community". Madinger (2011) describes it as "the use of money derived from illegal activity by concealing the identity of the individuals who obtained the money and converting it to assets that appear to have come from a legitimate source". Chong and Lopez (2015) describe money laundering as an attempt by launderers to legitimize the proceeds of illegal activities while maintaining the value of acquired assets. They go on to suggest that the process requires the intervention of some financial institution. The FATF describes money laundering as the process of disguising the illegal origin of criminal proceeds by individuals or groups who seek to enjoy the gains from these illegal activities without exposing the source.

What can be concluded is that the function of money laundering is to ultimately present a false appearance of legitimacy of money or property obtained illegally or through illegal means.

2.1.2 Stages of Money Laundering

Money laundering can be thought of as a complex puzzle. One may fit two or three pieces together and yet the picture remains unclear. The picture slowly starts to reveal itself only as more pieces are put together. However, like the puzzle pieces, it is often difficult to link separate transactions together to uncover the underlying money laundering scheme due to the many complex transactions that the launderer can make to conceal his or her trace. This allows the launderer to hide behind the complexity, in essence, becoming a needle in a haystack. Given this complexity, one would be led to think that the process of money laundering is a dynamic and ever-changing one. However, most literature and even the FATF describe the process as occurring in three stages. The first stage, known as 'placement', is the introduction of assets or wealth obtained from illegal activity into some financial system either physically or through electronic means. For example, the launderer might deposit a sum of money just under the reporting threshold in a financial institution. Others might hire several individuals (money mules) to deposit a large sum of money in smaller amounts. This process could also be accomplished by buying foreign currency using the illegally obtained money.

The second stage is known as the 'layering' stage and it describes the process of separating the illicit proceeds from their source by adding complexity through layers of financial transactions to ultimately conceal the origin of illicit funds. Examples of layering include using shell companies, special purpose vehicles (SPV), special purpose entities (SPE), trusts to name a few, all of which can be used to hide the identity of the ultimate beneficial owner. Techniques can even be used in combination, where funds are wired through multiple accounts and eventually end up in a shell company or SPV with no connection to any natural person.

When illegally obtained money reaches a point where it cycles back and integrates with the legitimate economy through seemingly legitimate business or personal transactions, the money laundering process is completed. The illegal origin of funds has successfully been concealed or disguised. This stage of the money laundering process is known as the integration stage. The launderer, for instance, might choose to integrate these funds through investment in real estate, art, high-value products or even mom and pop stores. By this stage, it is exceedingly difficult to distinguish between legal and illegal wealth. Thus, it is increasingly important that suspicious activity is identified and reported before completion of this stage.

It should be noted that these three stages only provide a basic view in which money may be laundered, but there are many ways that criminals can choose to launder their money

(Gelemerova, 2011), some of it may be quite complex. However, the three-stage model provides a basic understanding of the money laundering process and certainly useful for building more complex models.

2.1.3 Consequences of money laundering

The use of suspicious activity reports and the amount of resources dedicated to it cannot really be justified unless the consequences of undetected money laundering can be identified. The FATF and many others believe that undetected money laundering leads to increased exposure of the society to organized crime and corruption, the undermining of the legitimate private sector, dampening effects on foreign investment, distortions in policies, disruption to economic growth and stability and thus presents a cost to society. Success in money laundering means that detection of the predicate offence, and the identification of the offender, become more difficult (Mackrell, 1996) and reduces the probability of being caught. Indeed, when crime goes unpunished, criminals are incentivised to continue their schemes or even expand the scale and scope of the crime. This may permeate the cycle of crime as there may be an increased need to bribe public officials or lawyers to continue hiding the crime. Ferwerda (2009) provides empirical evidence to suggest that anti-money laundering policy can be used to reduce crime levels in line with the idea that the marginal utility of crime can be reduced through money laundering controls.

Money launderers may use front companies, that is, companies that engage in legitimate business but are potentially controlled by criminals. These criminals aim to hide the source of illegal funds by combining it with legitimate funds obtained through the legal operations of the front company. These front companies have a competitive advantage over legitimate firms (Unger et al., 2006) as their access to illegal funds allows them to subsidize products and services that completely undercuts the market, distorting competition. The extent of money laundering in a country may affect foreign investments as countries' reputation as well as those of its financial institutions and businesses are integral for foreign investors to feel that their investment can remain intact and safe in a stable environment. This reputation could be tarnished by criminal infiltration thus affecting the overall performance and safety of the economy (Mackrell, 1996; Boorman and Ingves, 2001). Extensive money laundering may also lead to misleading economic data resulting in policies enacted with the best of intentions but failing to achieve its intended effect. In some cases, such mis-directed policies can even have

harmful effects, hurting those it aimed to help. Not to mention, the overall political stability and integrity of a state can be affected and ultimately destabilised by the introduction of criminal assets (Mackrell, 1996). Further, this may be more of a possibility for smaller economies. It may also lead to economic instability as the sudden influx of cross-border fund transfers could introduce erratic movements in exchange and interest rates (McDowell and Novis, 2001).

Finally, and probably most importantly are the impacts to society. Van Duyne and Soudjin (2010) concluded that the most important influence of undetected money laundering is rather of a social nature which could involve showing off wealth obtained by unfair means thus eroding citizens faith in fair outcomes, inducing them to crime for profit. Indeed, with the case of 1MDB, one of the suspects in question, Jho Low allegedly lived a life of luxury through siphoning billions of taxpayer dollars from the national fund into his own personal accounts and till this day has not been apprehended. This furthers eroding the notion that "Crime does not pay". When crime does pay, it creates incentives and opportunities for others to engage in unlawful activity, adding fuel to the problems mentioned above. Thus, we see why it is so important to be able to first identify these activities and secondly have avenues to report them. When the effectiveness of the reporting regime is in question, we should investigate why.

2.2 Suspicious Activity Reports

In order to capture money laundering activity within the three-stage process and to aid reduction of harm to the economy and society, a SAR regime has been imposed by governments on regulated entities. As pointed out in Section 1, of the 40 + 9 recommendations (9 related to terrorist financing) provided by the FATF, recommendation 20 involves suspicious transaction/activity reporting which requires regulated entities report to the appropriate Financial Intelligence Unit (FIU) when they suspect or have reasonable grounds to suspect that funds are the proceeds of a criminal activity. There two forms of reporting, the first is the objective form where a report is mandated when a transaction exceeds a certain amount. This is the CTR requirement that has been mentioned in Section 1. The second is the subjective form where individuals are supposed to exercise judgement as to which transactions may be constituted as suspicious. To incentivise reporting such suspicious activity, the entities and the employees reporting such suspicions are protected from liability and should be

prohibited from disclosing that they have reported such activity. According to Morrison (1995) such regulations are the most important weapon in the fight against money laundering. The objective of the regime from identification of the customer to monitoring the transactions is to obtain information and eventually deduce any incidences of money laundering and terrorist financing and to finally report them to the FIU. The filing of such information supplies more help to the process of investigation by those entrusted with such duties (Truman and Reuter, 2004).

Through suspicious activity reporting and mandating the industry to report them (FATF 2003; 2012) policy makers believed that this would allow for those closest to potential suspicious activity involving money laundering or terrorist financing to promptly report and provide material information in the hopes law enforcement may respond to potential threats as soon as possible (Stalcup, 2015). By filing a SAR, enforcement authorities and investigators either have the judiciary power to demand an institution to freeze the assets or contact relevant authorities who have such judiciary capacity.

2.2.1 A typical SAR process

A SAR can typically occur in two ways. The first is when the transaction monitoring system deployed by the regulated entity triggers an alert based on a transaction or a set of transactions which meet certain criteria as designed by the administrators of the system. An example of such criteria that could pick up large cash transactions, which is a money laundering red flag, could be "a wire transfer that is equal or above $10,000". To pick up structuring, a criterion could be set up such that an alert is triggered in the system when "Three wire transfers amounting to or exceeds $10,000" or "10 wire transfers under 1000 and aggregates to $10,000". These alerts would then stay in the system until a trained specialist employed by the institution starts investigating the alert. The specialist will consider factors such as the account transaction history, purpose of the account, who the owner of the account is and so on. If the specialist deems the transaction suspicious, he/she can move the alert to the second level investigator who most often is more senior and has more experience to draw knowledge from. This senior investigator should have a better understanding of the nuances and subtleties concerning suspicious activities. It is the hope that at this level, the information gathered will be enough to dismiss the alert as a negative. However, if suspicions are unable to be quelled by the available information, the investigator should start to compile the necessary documents

and prepare to file a SAR. The process may vary and, in some organizations, the duty to file SARs falls under the purview of the Money Laundering Reporting Officer (MLRO). In such setups, the second level investigator will compile all documents and escalate the case to the MLRO for further review and action (Kloostra et al., 2009).

In the second instance, the suspicious activity might be picked up by a front-line employee who interacts with a client, either through name screening or picking up suspicious behaviour as part of the KYC process. The process to begin preliminary investigations varies across organizations however, in general, a case should be created in the AML system manually by the client-facing employee. This is because it is not possible that the system may pick up suspicious activity since the transaction was in person. Once the alert is manually created in the system, the junior specialist will pick up on the alert and work with the employee to understand and gather the facts of the case.

2.2.2 Defensive reporting and theory of Crying Wolf

As described, the SAR process seems rather systematic, but SARs are of variable quality. Sometimes regulated entities file reports primarily to protect themselves against fines from potentially violating reporting requirements, with little focus on assisting enforcement authorities or stopping crime. This is what is known as defensive reporting, where financial institutions file SARs without understanding the true nature of the transaction and gathering the facts of the case, disregarding the level of suspicion. These actions form a defensive gesture or ‘de-risking’ strategy to shift the risk to enforcement, in an attempt to avoid potential fines and possibly reduce costs, rather than commit to proper investigation (Levi and Reuter, 2006). As a result, law enforcement, in particular, financial intelligence units (FIUs) are overloaded with an excessive number of filings that they have to go through, leading to inefficient outcomes if the reports will ultimately be dismissed as false positives.

This leads to what Takáts (2011) terms as the ‘Crying Wolf’ phenomenon. The term borrows much of the intuition from the children’s fable ‘The Boy Who Cried Wolf”. Like the shepherd boy in the story who lied about wolf sightings and tired out villagers to the point where his subsequent call for help lost credibility and was ignored, eventually losing his flock to a real wolf, ‘Crying Wolf’ can arise because excessively high fines for false negatives force the uncertain bank to err on the safe side and report transactions which are not really suspicious.

In some extreme cases the financial institution reports all transactions, thereby fully diluting the information value of reports (ibid). The factors highlighted in the above sections point to evidence of the many facets of the SAR process. If banks and other regulated firms feel a greater need to protect themselves against government sanctions by filing reports, the increase in numbers may not indicate improved diligence or effectiveness of the greater AML regime. Indeed, many researchers such as Chaikin (2009) call into question the effectiveness of SAR regimes.

Demetis and Angell (2007) also highlight the effect of this self-defensive action as passing the risk to the regulator. In various annual reports the FATF condemns defensive reporting. As added by Johnston and Carrington (2006), defensive reporting hampers the effectiveness of the analysis and investigation of cases that deserve the most attention.

2.3 Politically exposed persons and beneficial owners

Politically Exposed Persons (PEPs) are individuals who hold a significant position in government or public office. They present a higher risk of money laundering because of their position and authority within their jurisdiction. Some are also directly responsible for and have access to state funds. As a result, regulated entities typically categorise these individuals and their close associates as high risk. In addition, companies owned by PEPs are also considered risky and placed in a high-risk bucket. Formally, the third EU directive defined PEPs as “natural persons who are or have been entrusted with prominent public functions and immediate family members, or persons known to be close associates, of such persons”. This definition is central to the problems and challenges associated with suspicious activity reporting and the effectiveness of the SAR regime which will be elaborated in the further sections.

Beneficial owners are natural persons who have ultimate control over a legal person or arrangement such as an insurance policy or a company, investment vehicle or SPV. It is important to understand who the ultimate beneficial owners are as it is known that launderers use several front or shell companies to hide ownership and use these companies to channel funds for personal gain.

2.4 High/Low Risk Countries

The FATF classifies high risk countries as those that display "significant strategic deficiencies in their regimes to counter money laundering, terrorist financing, and financing of proliferation" (FATF, 2007). It further calls on all jurisdictions who are members of the FATF (nearly all countries) to apply enhanced due diligence (EDD) for these countries and highlights the increased risk that countries may face when dealing with them. However, these countries are not sanctioned, in the sense that dealing with these countries is not prohibited but subject to the need for more extensive checks. This has implications for how the risk-based approach is handled which will be discussed in greater detail in the later sections.

2.5 Risk-based approach

The risk-based approach was introduced in 2003 by the FATF and primarily was aimed at addressing the problem of increasing SAR levels (Ross and Hannan, 2007). One of the main pain points identified in the initial rule-based approach was that it did not allow regulated entities flexibility to utilize strategies to curb money laundering that best fits existing resources and capabilities (Ai et al., 2010). This increases the cost of implementing AML controls due to the need to search for and hire qualified individuals as well as change existing organizational and system infrastructure. In some cases, it could be inefficient as the rule-based approach was based on checking off boxes without consideration of the specific risks that the institutions face. Indeed, the FATF mentions, a risk-based approach "encompasses recognising the existence of the risk(s), undertaking an assessment of the risk(s) and developing strategies to manage and mitigate the identified risks" (FATF, 2007). This was further echoed by the Third EU Directive which stated that "*Countries should identify, assess, and understand the money laundering and terrorist financing risks for the country*" and requires enhanced due diligence (EDD) of customers in situations where regulated entities find themselves interacting with clients or handling transactions with a higher risk of money laundering and/or terrorist financing. It was the belief and hope of policy makers that applying a risk-based approach will result in a reduction of poor-quality reports (and total volume) by reporting institutions thus improving the quality of intelligence provided to FIUs.

3. Literature and Theory

The risk-based approach although proposed as a solution to the rising SAR levels and subsequent pressure on enforcement authorities, brings with it a set of challenges. For example, what does it mean to identify a politically exposed person or a beneficial owner? How far down the relationship hierarchy does an investigator need to uncover? What does it mean to be a high-risk country? A country like the United States which has a high-risk of money laundering is not treated in the same way as an island nation like Malta. Certainly, there is much ambiguity and uncertainty with regards to how these activities are carried out vis a vis a risk-based approach. And thus, I investigate if there is a relationship between the risk-based approach and SAR levels. However, in the first part of this section, concepts from other fields of study as well as those within the AML context are brought together. A model where these concepts can be viewed together is proposed.

3.1 Individual determinants

Individuals face infinite stimuli from the external environment. To be able to process huge amounts of information, the human cognition contains a set of filters of which information passes through. According to March and Herbert (1958), each decision maker brings his or her own set of "givens" to a situation requiring assessment and decision. These givens reflect the decision maker's cognitive base: knowledge or assumptions about future events, knowledge of alternatives, knowledge of consequences attached to alternatives. They also reflect his or her values: principles for ordering consequences or alternatives. The individual's eventual perception of the situation combines with his/her values to provide the basis for choice. A simple model is presented figure 1a below:

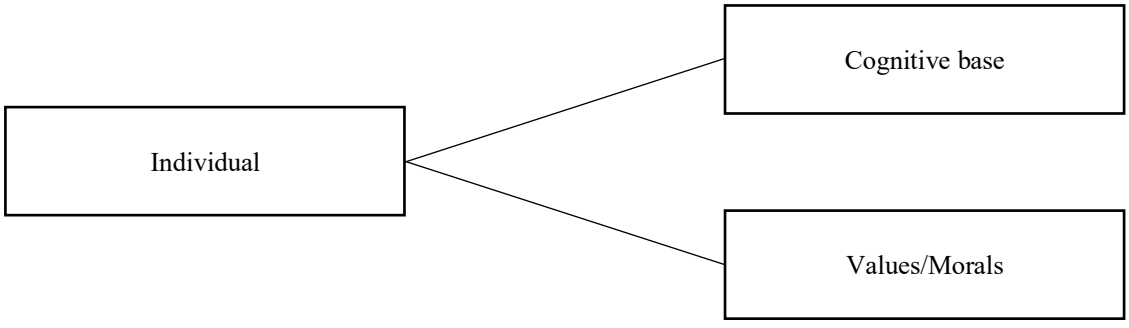


Figure 1a: Baseline conceptual model

Further, Kahneman and Tversky (2013) posit that individuals make decisions based on a vision of utility that is distorted based on risk aversion and fear of loss. Also, they further suggest that how a situation is presented can affect the ultimate decision taken for the decision maker (ibid). This forms the cognitive base. This is not to suggest that individuals do not actively try to make the best decision as with utility theory, but rather, the vision of what is best is constrained by the information available and how it is presented and interpreted. The various determinants that may affect a cognitive base of an individual can be many, including contextual factors such as age, experience, education, financial position, socioeconomic roots (Hambrick and Mason, 1984).

Where values and morals are concerned, Jones (1991) proposed a model which conceptualized moral intensity as a multi-dimensional construct comprised of six characteristics of an ethical issue that decision makers incorporate into their ethical decision-making process. The six dimensions include, magnitude of consequences, social consensus, probability of effect, temporal immediacy, proximity and concentration of effect (ibid). Indeed, Coombs-Goodfellow and Lokanan (2018) tested these components from an AML standpoint and found evidence that supports these dimensions through interviews with compliance officers in Jersey, except for magnitude of consequences and proximity. In particular, they found large support for social consensus through their interviews with compliance officers who were part of their study. For the officers to act and make a decision of whether to submit a SAR on a potential but unclear suspicious activity, they needed to have consensus among their peers, supervisors, management and relevant stakeholders that this was the right course of action to take (Barnett and Valentine, 2004). In fact, the lack of social consensus on this issue can create difficulties between the officers and their interaction with key stakeholders in the AML compliance landscape. Thus the following model captures what is suggested for the individual determinants.

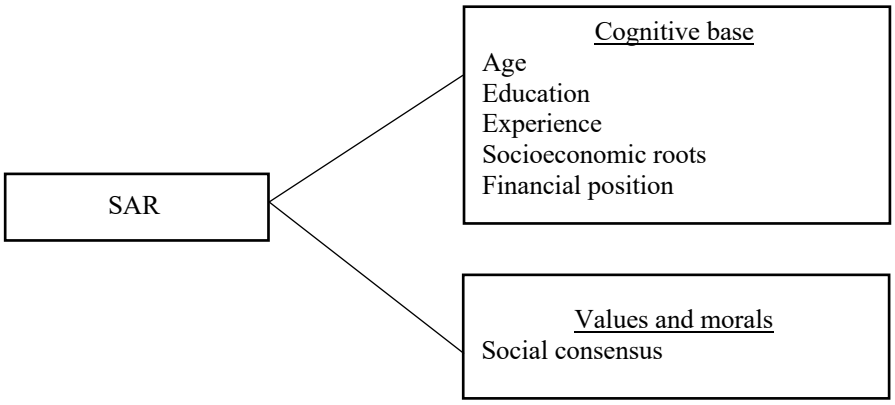


Figure 1b: Individual conceptual model

3.2 Organizational determinants

Economic conditions, scarcity of resources (Stead et al., 1990), competition (Hegarty and Sims, 1978), managerial influences (Jones and Kavanagh, 1996), organizational orientation and corporate policies (Hegarty and Sims, 1979), responsibility for consequences (Trevino, 1986), and stakeholders (Hunt and Vitell, 1986) are the proposed organizational influences from the literature and this may be applied towards SAR filing by individuals.

These organizational factors can be used as a starting point and can be linked to one another. From a SAR perspective, the economic and financial situation of a company as well as the level of competition makes sense intuitively. As investors who provide capital to the company view the role of an organization as a conduit to maximise their profits (Friedman, 2007), the orientation and corporate policy of an organization may be steered into the direction of profits at any cost. Resources dedicated to money laundering and compliance in general may be very limited. Araujo (2010) shows that compliance costs are dependent on the probability of getting caught and the size of the fine should this eventualise. Firms which seek to maximise profits will commit to AML systems and controls up until the costs of their implementation equals the costs arising from fines due to non-compliance. This can affect the quality and quantity of the investigators hired. Investigators may be burdened with huge backlogs due to shortage in staffing and those hired may have varied qualifications. As a result, investigators may gloss over transactions quickly, only looking for obvious red flags without going deeper. In this sense, the organization shapes the cognitive base of the individual. Additionally, in the presence of competition, it might be advantageous to have measures that simply 'window-dress' without the true intention of deterring and detecting such suspicious activity. This may further affect the corporate culture and group ideals, leading employees to condone suspicious transactions that they are supposed to investigate. If investigators are rewarded for bypassing certain questionable transactions and are not themselves subject to punishment, a certain culture within the organization will develop. A willing and honest investigator may be influenced to follow the 'status quo' because of the need for social consensus.

Further, financial struggles will affect the amount of training and infrastructure in place that can aid investigators with their duties. Any form of capital inflow will feel like a godsend. Management may try to influence or exert pressure on the employee to overlook questionable but highly profitable transactions which indicates that managerial influences play role especially when it comes to cases that are in the greyzone. Some may even promise a

promotion for a 'job well done'. Stakeholders within the organization play a role as well. The compliance officers interviewed by Coombs-Goodfellow and Lokanan (2018) alluded that "various stakeholders can get irritated when activities such as transactions or deals are delayed because of AML requirements such as customer due diligence (CDD) etc." These will lead to inefficiencies in decision making for the individual (Loretsyan, 2020).

Figure 2: Organizational determinants

3.3 Institutional determinants

Institutional theory has risen to prominence as a popular and powerful explanation for both individual and organizational action (Dacin et al., 2002). As Meyer and Rowan (1977) put "Institutionalization involves the processes by which social processes, obligations, or actualities come to take on a rule-like status in social thought and action". In this regard, individuals who want to take part in society have to fall under the organizations' rules and social processes, in which these organizations then follow the rules that institutions set. Certainly, as explained in the previous sections, there may be micro differences within categories be it at the individual or organization level, however, the decision making is ultimately confined by the boundaries or 'playing field' set at the institution level. This is not to suggest that individuals or organizations take the reality of the institutions as real or for granted, but because both are most of the time rewarded for doing so, it creates an incentive for conformation. The FATF is an institution, and in this regard, sets the rules, and rewards/punishes those that do not follow. However, the ambiguity and uncertainty regarding these rules, in particular the RBA, have led to much variation within SAR levels across organizations as these organizations try to interpret and follow the rules of the game.

3.3.1 Policy

Ultimately the organization that decides not to comply with the rules of the game within the institution will eventually be kicked out. In the context of AML, the FATF have established the rules of the game through their 40 recommendations (supported by hard laws enacted by member states) and developed a membership structure, where if a country is not found to comply, they are 'blacklisted'. Which was what they did in 1998 through the Non-Cooperative Countries and Territories (NCCT) initiative. Even though it was shorty abolished after much criticism, the FATF still maintains a membership structure and the 'blacklist' is still used externally. Unfortunately, the rules governing the game can sometimes be too broad. This is understandable because having too narrow rules and regulations mean that certain negative behaviour may go unpunished. However, this also leads to much uncertainty and ambiguity. Perhaps the most obvious indication of how a policy or change in policy may influence organizational behaviour is one of the deregulation of the banking sector in the United States. Commercial banks started to engage in dangerous investment activities such as securities trading after the repeal of the Glass Steagall Act. Even though it was not a rule that mandated banks to engage in investment activities but because it was profitable to do so, and there no longer was a rule preventing them from doing it, the banks started to engage in such activities. The same can be applied to the organizations with regards to SAR rules and regulations. As long as these are too broad or too narrow, it sets the tone for what organizations ultimately can do, which is to work in a way that maximizes shareholder value.

3.3.2 Economic performance

The financial sector is integral in any form of economy. Financial institutions offer capital to individuals and business owners for them to grow their businesses and increase economic activity. The cycle continues when businesses start to expand and grow, and foreign investors start injecting capital into the financial system. Economic activity also includes fraudulent activity and therefore as the economy grows, one would expect that there will be more financial transactions which increases the probability of illicit activity. This potentially increases the amount of suspicious transactions reported. As Braun et al (2016) suggests, the larger size of the financial sector may trigger more SARs.

Another determinant that is closely linked to financial sector size is the size of the GDP. As income levels rise, more money is spent. As more money is spent by individuals on goods and services provided by businesses, this creates the need to grow business activity to support consumer demand and a subsequent need to increase financial activity for businesses, either to support activity in overseas expansions or to build infrastructure locally. Increasing financial activity increases the probability of suspicious transactions which contributes to SAR levels.

3.3.3 Government effectiveness

A state's stability and efficiency of its public institutions in particular that of anti-corruption enforcement and the size of the shadow economy are likely determinants of suspicious activity levels though whether or not the effect of each leads to more or less SARs is unclear. A state with high levels of corruption within its public officials for example may increase the need to for them to launder the money to hide its illicit origins. For instance, Rottig et al., (2016) argue that institution building in emerging economies is vital in fighting corruption, and Vaithilingam & Nair (2007) find less money laundering activity in countries with strong institutional capacity, effective legal and regulatory frameworks, and efficient governance structures. However, officials may be so corrupt that there is no actual need to launder the money. In crony capitalistic states, financial institutions may be colluding with corrupt officials (Enderwick, 2005) or politically connected firms (Diwan and Schiffbauer, 2018) for private gain. As such, one can see why a state which allows its citizens to hold governments accountable through the process of elections is important to maintaining a corrupt free government and society, thus improving government effectiveness.

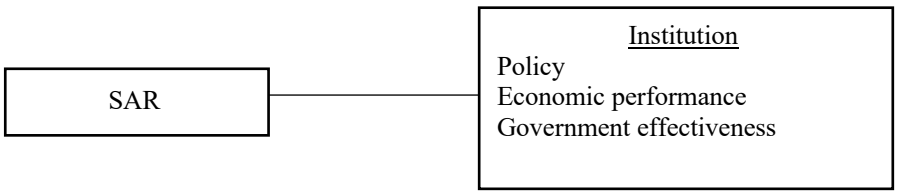


Figure 3: Institutional determinants

3.4 Conceptual Model

As part of the first research question: What could a model that considers the individual, organizational and institutional determinants of SARs look like, a conceptual model captured in figure 4 is proposed below based on the individual, organizational and institutional determinants reviewed.

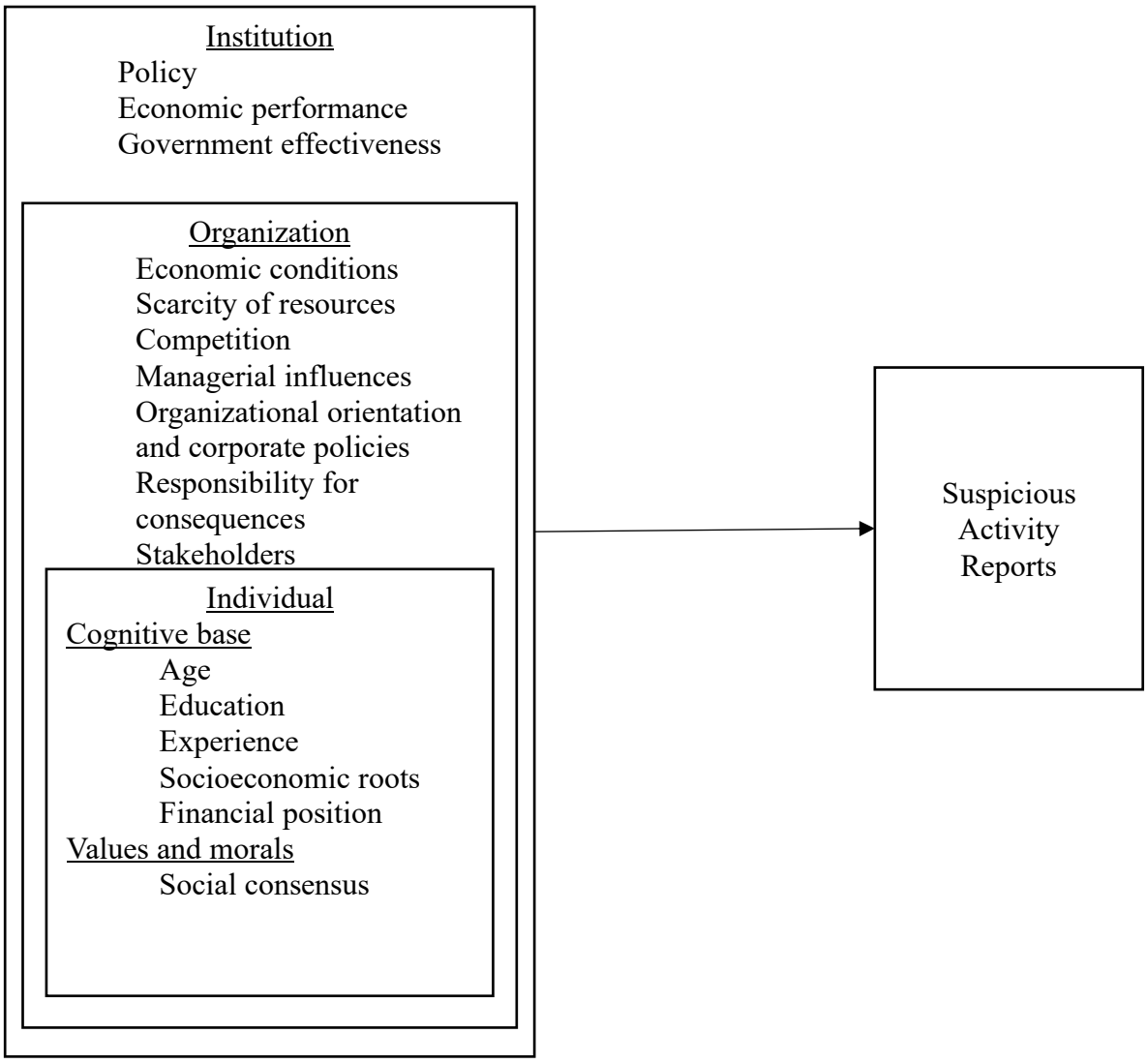


Figure 4: Conceptual Model

3.5 Hypothesis development – Risk-based approach

Building on what was presented above, in this second part, a hypothesis will be presented regarding a specific policy recommendation, in particular, the risk-based approach recommended by the FATF. In essence, the challenges surrounding identification of PEPs, beneficial owners as well as risk categorization of countries lead to much ambiguity and uncertainty regarding the interpretation and implementation of this particular recommendation. Thus, one might question whether there is a relationship between how closely countries follow the risk-based approach and SAR levels.

Under the risk-based approach, those responsible for a firms' AML controls, oftentimes compliance managers, should assess the business and identify the riskiest activities and allocate the appropriate number of resources towards monitoring these risks, commensurate to the risk level. However, in order to determine this understanding, there is an assumption that the assessor possesses superior knowledge of the country on one hand but also an understanding of the evaluators' (FATF) point of view of what is 'correct'. A manager entrusted with this task may think that he/she has covered all the risks only to find that his/her understanding of the risk was different than that of the evaluators and gets penalized for 'inadequate controls'. Even worse, a transaction may have passed that should have been flagged but was not, due to this sort of 'risk tiering', leading to heavy fines. This approach, which starts from the government level, down to non-financial sectors and professions, with so many unresolved questions, leaves the door open to subjectivity and arbitrariness. Indeed, (de Koker, 2009; Ross & Hannan, 2007) point out that AML risk is not well defined and allows discretion for each country, from the top at the institutional level to the organization and the individual to decide what those risks are.

3.5.1 Challenges regarding the RBA

The introduction of the risk-based approach was well intentioned. Certainly, there will be present some risks that are specific only to certain countries and these can be based on the size, geolocation and natural resources available to the country just to name a few indicators. However, this approach faces three challenges. The first concerns the identification of PEPs.

The second concerns the classification of high/low risk countries and thirdly, the identification of beneficial owners.

Identification of PEPs

The identification of PEPs requires going in-depth into the personal details of the PEP as well as his/her family members and close associates. However, the question regarding how deep of an enquiry is required of a PEP's family and close relationships remains. The recommendation simply defines PEPs as "individuals who are, or have been, entrusted with prominent public functions and their family members and close associates", and includes both domestic and foreign PEPs. This suggests that the extent of probing and acquiring information is completely up to the discretion of financial institutions. Person A could be the distant cousin of Person B who is the daughter of Person C whose uncle is a known PEP. Astute entities will flag Person A as high risk. Some will stop investigation at person C, flag them as high risk, and in essence will still be in line with the recommendations of FATF. Some might only consider immediate family members of the PEP and will not even flag Person C. When a transaction originates from Person A, if it was flagged as high risk, investigators might take a closer look and subsequently report a suspicious activity, however, if Person A was not initially flagged as high risk, investigators most certainly will not take a second look. As can be seen, in these scenarios, institutions follow the same recommendations but have very different outcomes. Further, some individuals can continue to be regarded as PEPs even after they have stepped away from their role for a period of time (Gelemerova et al, 2018). It could be one or two years, but this practice varies across entities. Indeed, some former politicians may have businesses and the risk is that former politicians often maintain relationships with current politicians as a way of guaranteeing support for their own interests. However, this creates further confusion for entities when deciding which of their clients should be or continue to be categorized as PEPs.

High risk countries

High risk countries are typically described as countries which pose great money laundering concern. However, as highlighted by Gelemerova et al. (2018), regulated entities face tremendous difficulty with how to handle clients or transactions from high risk countries due

to the focus of regulators on the country itself rather than the case associated with a particular client or transaction. This means that clients are handled according to the risk classification of their country and its reputation rather than an assessment based on their conduct. Indeed, Ryder and Turksen (2013) raised a similar issue about the ethics of such an approach when one might look at a client from a 'high risk' country and allocate more time to investigation as compared to a client from a low risk country when the transaction details may be the identical. None is really riskier or more suspicious than the other. The difficulty increases when reporting suspicious transactions expanded to include financing to terrorists after the events of September 11. Not only are reporting institutions required to identify potentially suspicious activity in a transaction or within a set of transactions, they now also need to identify clean money used for terrorist financing. In addition, regulated entities also search local and international lists to find out whether names of customers or potential partners appear on these lists as a form of due diligence. However, it is not clear what appearing on these lists mean for regulated entities and their clients or partners. They are left wondering what they should do and how they may proceed (Gelemerova et al., 2018). Should regulated entities simply just highlight the transaction as suspicious when it comes from these countries, what is known as de-risking, or should they continue, and risk punishment if it should indeed be part of a money laundering scheme? This represents a dilemma for most reporting entities and different entities will take different approaches.

Also, these classifications of countries may also be arbitrary (Sharman, 2008). Other than sanctioned countries which is quite clear that one cannot have any relationship with, the criteria for designating a country as high risk of money laundering is not clear. In contrast, countries with fewer incidents of money laundering, might be considered high risk due to negativity surrounding its institutional controls. An example that is worth mentioning is Estonia, which is ranked on the Basel AML index as one of the lowest countries in terms of ML risk but is embroiled in one of the largest money laundering scandals concerning Danske bank and its Estonian branch (Bjerregaard and Kirchmaier, 2019).

The guidance from FATF does not suggest prohibiting institutions from getting involved in high-risk situations. They may do so only as long as they have the right risk-mitigating strategies in place. However, how many shades of grey are between low and high risk and how to determine what is a 'commensurate' action to mitigate risks?

Beneficial owners

The first two challenges lead into the challenge of identifying beneficial owners. In this regard, the Third EU Directive provides more guidance regarding ownership, specifying that a bank may not need to consider ownership if no shareholder owns over 25% regardless of their jurisdiction (some banks have decreased this to 10% due to the FATCA requirement to identify US persons holding an interest of 10% or greater). However, as an example to describe the problem, if five individuals each own a 20% stake, this may be overlooked unless, in legislation and organization policies, it is explicitly stated that ownership has to be established, regardless of jurisdiction, industry, product or percentage share. 20% is a large stake to possess; sometimes a stake as low as 10% or even 5% can determine and influence considerable financial benefits. This lends into the issue of simplified (SDD) and enhanced due diligence (EDD). EDD is required when a client falls into the high-risk category which has been reviewed quite extensively and a reporting entity is required investigate in more detail certain aspects. However, the problem is that neither the EU nor domestic legislators have made clear exactly what: (i) identifying the owner, (ii) documenting one's understanding of ownership, (iii) obtaining documentary evidence of identity (e.g. copies of passports, proof of address of owners, directors), (iv) conducting searches for adverse news, (v) or all in combination, actually mean.

How does it compare with SDD? Does SDD mean that there is no need to perform the above? However, even if an entity is viewed as low risk, these basic information should be obtained. Not obtaining such basic identifiable information would simply be negligent.

Overall interpretations of risk

The interpretations of risk revolve around different activities such as identification of PEPs, beneficial owners and risk categorization of countries, but the questions that assessors have to ask themselves are more or less similar. There may be clients on the border of high, medium or low risk and thus what are the objectifiable criteria to classify a PEP as high risk instead of medium risk? Managers are left on their own with regards to this dilemma. For example, if a client is on the border between high and medium risk, and eventually rated medium, an appointed evaluator can argue that the client should have been placed in the high-risk category and that the regulated firm's process is lacking. The manager may present facts to the evaluator that support their decision such as the client's clean record but, because the client came from

a high-risk country or was a distant relative of a PEP, and was not highlighted, the manager and the organization will be faulted. The evaluator is looking for the 'right level of controls'. As there are no clear definitions and objective criteria of what a right process or right level of controls are, managers are left to interpret and go through a process of guesswork. Indeed, firms as a result go through a process of trial and error through the evaluation process in the absence of clear guidance and benchmarks as to what represents a sufficient and efficient AML/CFT programme (Gelemerova et al., 2018).

This presents a problem not only across countries and sectors but also within specific entities as risks may be viewed differently by the various departments of that entity. Even where reporting entities are always on the alert and are highly committed and able to spot risks, they face problems when trying to decide whether these risks necessarily require EDD and/or filing a report. Institutions need to know exactly what high risk is. This implies that a risk-threshold has to be operationalised. However, financial services offered in the modern era involves parties from different sectors, industries and jurisdictions and each has a different interpretation of risk. Thus, just elaborating on the risk definition is unlikely to alleviate the burden of the regulated entities without any further effort in standardising compliance practices and the necessary resources across countries.

This is not to advocate for a one size fits all approach, indeed, different situations call for different remedies. However, rules should be made clearer and the attitude towards compliance, and more importantly, towards the execution of compliance measures, requires a higher level of consistency across countries and sector.

Thus, with the above review in place, and the understanding of the risk-based approach as increasing the ambiguity and uncertainty of those who are required to report suspicious activity, the hypothesis that this paper will investigate follows in the below section.

3.6 Hypothesis

As it stands, the RBA is not achieving the intended effect on SAR levels. SAR levels have continued to rise since 2013 when the RBA was first introduced. This begs the question whether there is relationship between how closely countries adopt the RBA and SAR levels?

If there is, what is the extent of its impact? If there is not, would it be better if the RBA was abolished? With that in mind, the hypothesis is presented below:

H0: There is no relationship between how closely countries adopt a risk-based approach and suspicious activity reporting levels.

It is the expectation, that this hypothesis will be rejected due to the fact that:

- The risk-based approach was introduced in 2013 to reduce the rising SAR levels and pressure on enforcement authorities and related resources but SAR levels continued to rise.

- The ambiguity and uncertainty regarding the application of the risk-based approach around 3 activities; (i) identification of PEPs (ii) identification of beneficial owners (iii) risk categorization of countries.

- Occurrence of defensive reporting due to the inclination to rather err on the side of caution when faced with ambiguous scenarios with regards to what exactly is suspicious as well as what evaluators deem as suspicious.

4. Methodology

So far, what was done in this thesis has been to consolidate from the AML literature and relevant research areas, the possible determinants of suspicious activity reports. Then, a conceptual model, where it is proposed that decisions at the institutional level shape the boundaries of what organizations and subsequently individuals can make at their own levels, was provided. The risk-based approach and its potential impact on suspicious activity reporting was further explored. Specifically, a null hypothesis that there is no relationship between how closely countries adopt a risk-based approach and suspicious activity reporting levels was suggested. Based on the evaluation of the literature, the expectation is to reject the hypothesis, however this needs to be supported empirically which is the focus of this section. A regression analysis (OLS/RE) is applied to see if the hypothesis will be rejected or not. To understand if countries follow a risk-based approach more or less closely, the mutual evaluation reports (MER) conducted by the FATF and the countries of which are its members, were made use of. These reports provide a rating for compliance with the 40 recommendations. It is also recognized that there may be variables not included in the model that have relationships with the explanatory variable and impact the level of SARs thus the model includes these variables as a form of control.

4.1 Dependent Variable

Firstly, the main variable of interest is the suspicious reporting levels of individual countries. There is no publicly accessible central database that contains SAR data for different countries. Therefore, annual reports of each country's designated FIU for a minimum of 5 years from the year 2015 to 2019 were used to find the required data. Further, where the report was not available in English, google translate was used to identify the terms "suspicious", "suspicious activity", "suspicious transaction", "performance", "statistics" in the native language in order to locate where the relevant statistic was in the report. Where the report was not available, the relevant FIU was contacted. In cases where there were both no updated/accessible annual reports and no response from the FIU, the country was not selected for this research. Further, it was made sure that countries from different regions and sizes were represented so as to ensure that the end result was not biased to a distinct type of country characteristic.

4.2 Mutual Evaluation Ratings - Independent Variable

The ratings provided by the FATF during the mutual evaluations is used as an independent variable. Such reports provide the inputs for a dataset on how countries perform with respect to their commitments to the FATF recommendations. It contains an assessment from FATF appointed evaluators (experts from member countries) on other members' adherence to the 40 + 9 recommendations. In essence, it is similar to a peer review. Countries are measured on the basis of effectiveness and technical compliance to the recommendations. For the technical review, of which the analysis is based on, countries are evaluated according to relevant laws and regulations with regards to prevention of abuse by criminals of the financial system (FATF, 2013). Based on the evaluation, countries are then provided with an initial rating, (Non-compliant [NC], Partially compliant [PC], Largely compliant [LC], Compliant [C]) that measures compliance on each of the 40 recommendations of the FATF. Of particular interest for this study, recommendation 1 (R.1) which involves the use of the risk-based approach is of relevance. In order to further quantify and properly measure the effect of ratings from the MER, a number is provided to represent each category of rating and this is similar to Unger and Ferwerda (2008).

1) Non-compliant (NC) = 1
2) Partially compliant (PC) = 2
3) Largely compliant (LC) = 3
4) Compliant (C) = 4

By doing so, it allows for all data to be represented. It aids the analysis to differentiate which countries follow more closely a risk-based approach and those that do not. The report further consists of follow-up reports (FUR) in which the evaluators provide an updated rating in either of the 4 categories mentioned. However, it is not clear why some countries have only the initial MER and no FUR, the initial MER followed by one FUR, while others can have the initial MER and several FURs. Based on the initial MER and FUR (can be one or several), a final rating is given. Because of this ambiguity, for this thesis, the rating from the initial MER was used as this provides a common baseline for all countries and at the same time gives a closer understanding and reflection of the status quo before the FUR interventions.

4.3 Selection of countries

The countries selected was not a random process but followed a systematic approach. It is largely based on the selection of countries used by Gelemerova (2011), where the original members of the FATF; USA, Japan, Germany, France, UK, Italy, Canada, Sweden, the Netherlands, Belgium, Luxembourg, Switzerland, Austria, Spain and Australia were selected as a start. Secondly, developing countries (former socialist block and third world countries) and some offshore centres or well-known tax havens were also chosen. Of all the countries in consideration, a second criteria was whether the SAR data was available. An equally important consideration was given to whether countries have completed the 4th round of mutual evaluations because the evaluation of adherence to the RBA only started from the 4th round. Unfortunately, some of the countries have yet to complete the 4th mutual evaluation, and conversely those that have completed mutual evaluations did not have easily accessible SAR data, and hence have been excluded. However, for those of which SAR data was available, it is still interesting to have a view of the SAR trends for some of these countries but with regards to the regression analysis, only countries that both SAR data was obtained and have initial MER ratings were selected.

Table 1: Total number of countries with available SAR data

Country	Country	Country
Australia	Lithuania	Fiji
Austria	Luxembourg	Zimbabwe
Belgium	Malta	Samoa
Brazil	Netherlands	Estonia
Bulgaria	Norway	The Cayman Islands
Canada	Panama	Madagascar
Croatia	Poland	Andorra
Cyprus	Romania	Bermuda
Czech Republic	Singapore	The Cook Islands
Denmark	Slovak Republic	Isle of Man
Finland	Slovenia	Mongolia
France	Spain	Ukraine
Germany	Sweden	
Greece	Switzerland	
Hong Kong S.A.R, China	Turkey	
Hungary	United Kingdom	
Iceland	United States	
Ireland	Bahamas	
Italy	Bahamas	
Japan	Bhutan	
South Korea	Botswana	
Latvia	Zambia	

Table 2: Countries that have completed 4th round of MER

Country	Country	Country
Australia	Lithuania	Bahamas
Austria	Malta	Bhutan
Belgium	Mexico	Botswana
Canada	Norway	Haiti
Cyprus	Panama	Zambia
Czech Republic	Portugal	Fiji
Denmark	Russian Federation	Zimbabwe
Finland	Singapore	Samoa
Greece	Slovak Republic	The Cayman Islands
Hong Kong S.A.R, China	Slovenia	Madagascar
Hungary	Spain	Andorra
Iceland	Sweden	Bermuda
Indonesia	Switzerland	The Cook Islands
Ireland	Turkey	Isle of Man
Italy	United Kingdom	Mongolia
South Korea	United States	Ukraine
Latvia		

Table 3: Countries with both SAR and MER data

Country	Country	Country
1. Australia	17. Lithuania	33. Bhutan
2. Austria	18. Malta	34. Botswana
3. Belgium	19. Norway	35. Zambia
4. Canada	20. Panama	36. Fiji
5. Cyprus	21. Portugal	37. Zimbabwe
6. Czech Republic	22. Singapore	38. Samoa
7. Denmark	23. Slovak Republic	39. The Cayman Islands
8. Finland	24. Slovenia	40. Madagascar
9. Greece	25. Spain	41. Andorra
10. Hong Kong S.A.R, China	26. Sweden	42. Bermuda
11. Hungary	27. Switzerland	43. The Cook Islands
12. Iceland	28. Turkey	44. Isle of Man
13. Ireland	29. United Kingdom	45. Mongolia
14. Italy	30. United States	46. Ukraine
15. South Korea	31. Bahamas	
16. Latvia	32. Bangladesh	

Table 4: Country by region

Africa	Asia Pacific	Central Europe
Botswana*	Australia*	Austria*
Zambia*	Hong Kong S.A.R, China*	Czech Republic*
Zimbabwe*	India	Germany
	Indonesia	Hungary*
	Japan	Luxembourg
	South Korea*	Slovak Republic*
	Singapore*	Slovenia*
	Bahamas*	Switzerland*
	Bhutan*	
	Fiji*	
	Samoa*	
	Mongolia*	
Eastern Europe	**Northern Europe**	**Southern Europe**
Latvia*	Denmark*	Bulgaria
Lithuania*	Finland*	Croatia
Poland	Iceland*	Greece*
Romania	Norway*	Italy*
Russian Federation	Sweden*	Portugal
Ukraine*	Estonia	Spain*
		Turkey*
		Andorra*
Western Europe	**Latin America**	**Offshore**
Belgium*	Brazil	Cyprus*
France	Mexico	Malta*
Ireland*	North America	Panama*
Netherlands	Canada*	Bahamas*
United Kingdom*	United States*	The Cayman Islands*
		Madagascar*
		Bermuda*
		The Cook Islands*
		Isle of Man*

* Countries with both SAR and MER

4.4 Control Variables

There could be other factors not included that may correlate with the explanatory variables as well as have an impact on SAR levels (Wooldridge, 2015) and hence these variables were included as a form of control. Further, in consideration of the proposed model, the control variables also reflect the determinants of SARs and are included where data is available.

4.4.1 Gross Domestic Product

The gross domestic product (GDP) of a country is used as one of the control variables. Specifically, the log GDP per capita will be used. Intuitively, one can expect the amount of financial activity to correlate with the economic progress of society. As income levels increase, this results in more financial activity and would increase the probability that a SAR is filed hence providing a reason why the GDP is included as a control. Also, (Beck et al., 2000) suggests that measures of the size of the banking sector, which is also another control variable in consideration, have shown to be highly correlated with subsequent growth of GDP per capita.

4.4.2 Bureaucratic effectiveness and efficiency

The effectiveness of the state can correlate strongly with MER compliance ratings as well as have an impact on SAR levels. The world governance indicators (WGI) in particular government effectiveness, control of corruption and voice and accountability is taken into consideration. These indicators reflect perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Similarly, Hauner and Kyobe (2010) also used the WGI indicators in their study. They argue that institutions can be considered determinants of economic growth and financial development and in this sense reflects the effectiveness and efficiency of government. Control of corruption is a very intuitive determinant of efficiency, given that corruption propagates waste. Moreover, it is well-established that corruption is bad for growth (Mauro, 1995). In the earlier sections, it was presented that individuals' decision making is

bounded by the information presented to them and how they perceive it. Since control of corruption is a perception based index, it could well be that the perception of how corrupt a society is will affect AML concerns as it pertains to SAR filing. Perhaps a more activity that is corrupt in the sense of the word may not be perceived as such in highly corrupt societies.

Voice and accountability reflects citizen perceptions whether they are able to participate in selecting their government and to what extent, as well as how freely they are able to express their views to demand change and hold governments accountable (WGI, 2021). This index could indicate how citizens or workers feel they can effect change which could affect SAR levels.

Government effectiveness, as the term suggests, represents the perceptions of how effective government has been. It reflects the perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies (ibid). It could affect SAR levels similar to how it is for voice and accountability where individuals may feel that their actions can have impact on eventual deterrence in the greater scheme of things, by their actions to file a SAR.

4.4.3 Size of the financial sector

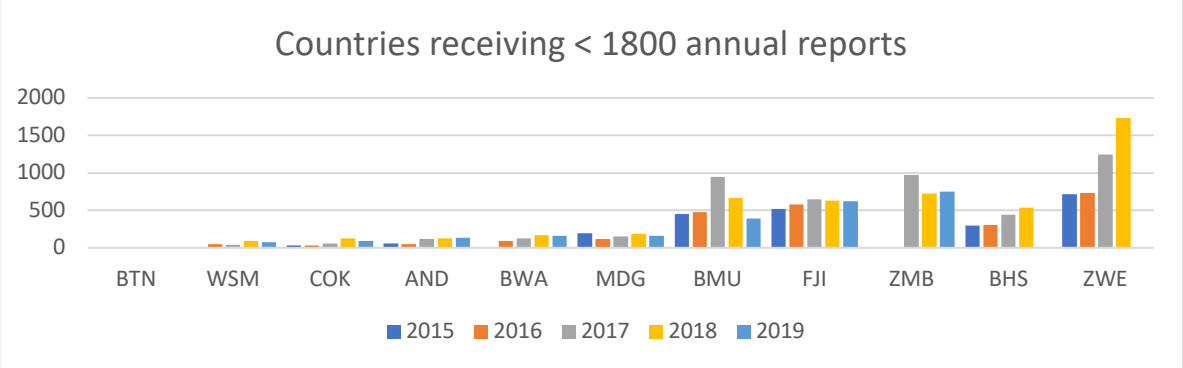
As financial activity is correlated to the size of the financial sector, measures and indicators of financial sector size and depth were taken into consideration. The financial size can be measured by indicators like broad money to GDP, private sector credit to GDP (%) (domestic credit to private sector) and ratio of bank deposits to GDP (%) (Podpiera, 2005). Broad money to GDP was dropped due to lack of data for the concerned countries in this study. The central bank assets as a percentage to GDP is also included as these activities can form a large part of financial activity within a country (Beck et al., 2000).

Financial depth can be measured by using the ratio of liquid liabilities to GDP (Rousseau and Wachtel, 2000). Further, Beck et al (2000) also indicates that this metric can capture the overall size of the financial sector as a percentage of gross domestic product. Another variable that can be used as a good substitute for financial depth is the amount of private credit relative to gross domestic product (GDP). More specifically, the variable is defined as domestic private

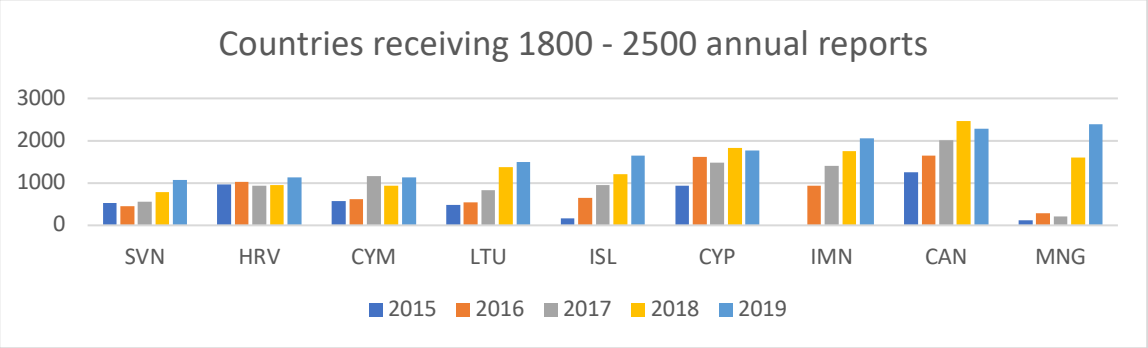
credit to the real sector by deposit money banks as a percentage of local currency GDP (World Bank, 2019).

5. Data

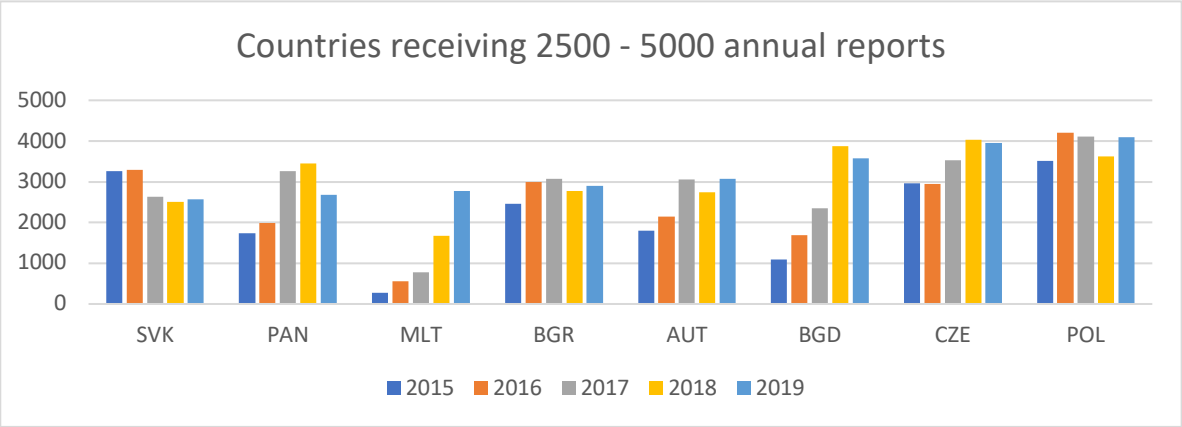
Here, SAR trends for the countries which have available SAR data is provided so that it can be seen that SAR levels have been rising. The data representation is segmented into countries that (i) receive less than 1800 reports, (ii) between 1800 to 2500 reports, (iii) between 2500 to 5000, (iv) between 5000 to 15000 reports, (v) between15000 to 70000 reports, (vi) between 70000 and 250000 and (vii) more than 250000. This provides better viewing of the graphs. The results from the regression will also be presented.



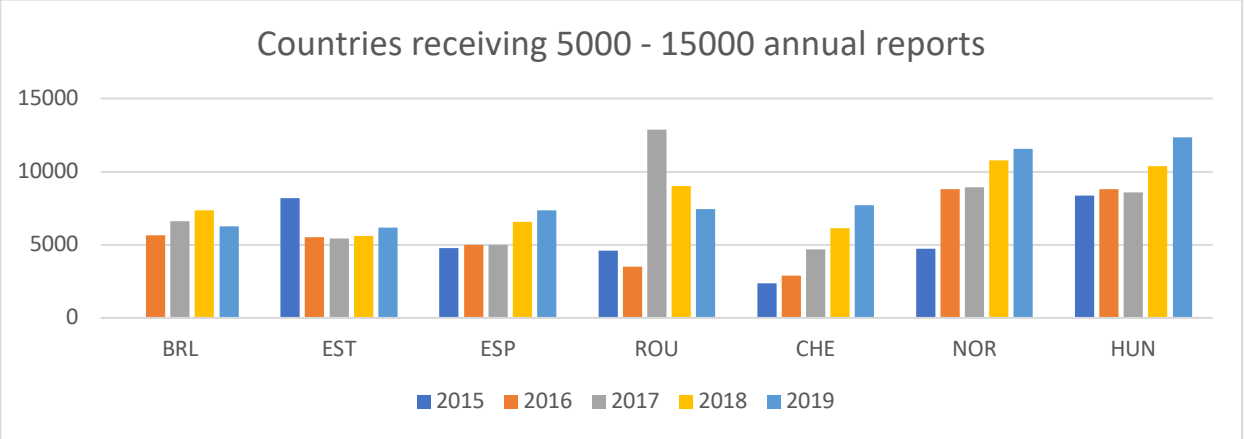
		2015	2016	2017	2018	2019
Bhutan	BTN	1	3	2	6	7
Samoa	WSM	10	46	43	90	76
The Cook Islands	COK	35	31	58	126	92
Andorra	AND	60	53	116	124	138
Botswana	BWA	NA	89	128	168	157
Madagascar	MDG	197	115	151	187	164
Bermuda	BMU	447	478	942	667	391
Fiji	FJI	516	579	650	632	622
Zambia	ZMB	NA	NA	969	724	748
Bahamas	BHS	297	306	446	540	NA
Zimbabwe	ZWE	712	732	1245	1733	NA



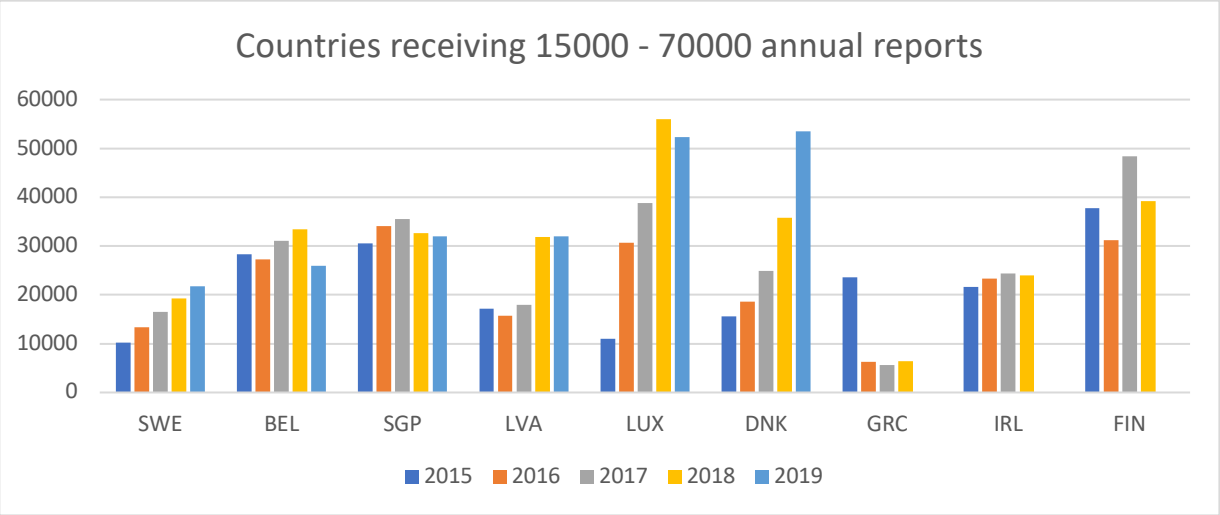
		2015	2016	2017	2018	2019
Slovenia	SVN	521	449	558	787	1069
Croatia	HRV	972	1030	940	948	1129
The Cayman Islands	CYM	568	620	1164	935	1138
Lithuania	LTU	480	541	835	1368	1501
Iceland	ISL	158	655	952	1203	1646
Cyprus	CYP	938	1623	1480	1836	1763
Isle of Man	IMN	NA	932	1410	1757	2056
Canada	CAN	1260	1655	2015	2466	2276
Mongolia	MNG	113	282	203	1596	2385



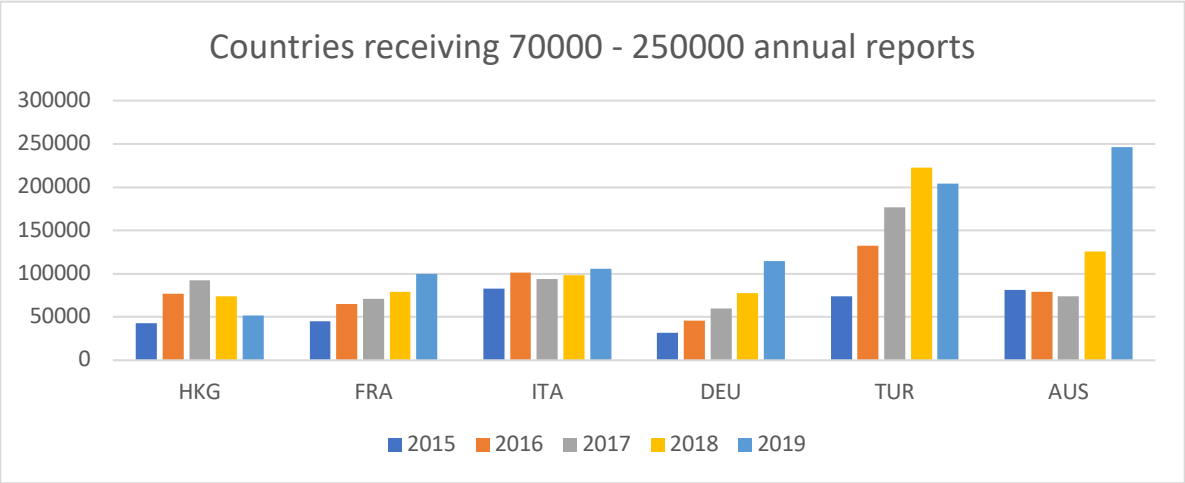
		2015	2016	2017	2018	2019
Slovak Republic	SVK	3264	3297	2636	2509	2576
Panama	PAN	1734	1995	3260	3450	2678
Malta	MLT	281	565	778	1679	2778
Bulgaria	BGR	2461	2987	3066	2777	2894
Austria	AUT	1793	2150	3058	2744	3073
Bangladesh	BGD	1094	1687	2357	3878	3573
Czech Republic	CZE	2963	2948	3524	4028	3954
Poland	POL	3520	4198	4115	3622	4100



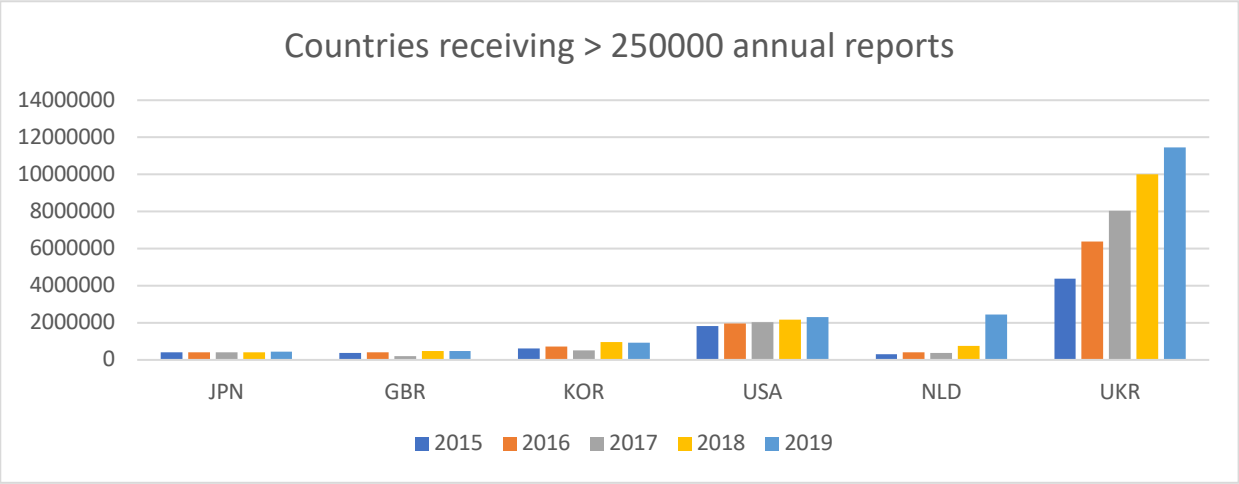
		2015	2016	2017	2018	2019
Brazil	BRL	NA	5661	6608	7345	6272
Estonia	EST	8204	5525	5418	5614	6164
Spain	ESP	4757	4990	4999	6563	7354
Romania	ROU	4610	3516	12863	9040	7460
Switzerland	CHE	2367	2909	4684	6126	7705
Norway	NOR	4714	8780	8953	10763	11564
Hungary	HUN	8369	8786	8585	10397	12342



		2015	2016	2017	2018	2019
Sweden	SWE	10170	13322	16551	19306	21709
Belgium	BEL	28272	27264	31080	33445	25991
Singapore	SGP	30511	34129	35471	32660	32022
Latvia	LVA	17113	15768	17934	31815	32028
Luxembourg	LUX	11023	30710	38744	55948	52374
Denmark	DNK	15619	18669	24911	35768	53454
Greece	GRC	23559	6295	5597	6450	NA
Ireland	IRL	21682	23308	24398	23939	NA
Finland	FIN	37703	31195	48318	39220	NA



		2015	2016	2017	2018	2019
Hong Kong S.A.R, China	HKG	42555	76590	92115	73889	51588
France	FRA	45266	64815	71070	79367	99527
Italy	ITA	82428	101065	93820	98030	105789
Germany	DEU	32008	45597	59845	77252	114914
Turkey	TUR	74221	132570	176411	222743	203786
Australia	AUS	81074	78846	74120	125900	246458



		2015	2016	2017	2018	2019
Japan	JPN	399508	401091	400043	417465	440492
United Kingdom	GBR	381882	419451	214662	463938	487437
South Korea	KOR	624076	703356	519908	972320	926947
United States	USA	1812665	1975638	2034406	2171173	2301163
Netherlands	NLD	312160	417067	361015	753352	2462973
Ukraine	UKR	4391834	6381728	8044703	10006093	11462494

Based on the majority of the annual reports, SAR levels have been increasing since the introduction of the risk-based approach in 2013 which it sought to decrease.

Table 5: Mutual Evaluation Scores

	Compliance Score	Converted Score
Australia	PC	2
Austria	PC	2
Belgium	LC	3
Canada	LC	3
Cyprus	LC	3
Czech Republic	LC	3
Denmark	PC	2
Finland	LC	3
Greece	LC	3
Hong Kong S.A.R, China	LC	3
Hungary	PC	2
Iceland	PC	2
Ireland	LC	3
Italy	LC	3
South Korea	LC	3
Latvia	C	4
Lithuania	PC	2
Malta	LC	3
Norway	PC	2
Panama	LC	3
Portugal	LC	3
Singapore	LC	3
Slovak Republic	PC	2
Slovenia	PC	2
Spain	C	4
Sweden	LC	3
Switzerland	LC	3
Turkey	LC	3
United Kingdom	LC	3
United States	PC	2
Bahamas	PC	2
Bangladesh	PC	2
Bhutan	NC	1
Botswana	NC	1
Zambia	LC	3
Fiji	PC	2
Zimbabwe	PC	2
Samoa	PC	2

The Cayman Islands	PC	2
Madagascar	NC	1
Andorra	LC	3
Bermuda	C	4
The Cook Islands	LC	3
Isle of Man	LC	3
Mongolia	PC	2
Ukraine	LC	3

*C – Compliant, LC – Largely Compliant, PC – Partially Compliant, NC – Non-compliant

5.1 Regression analysis

The main model specification is as follows:

$$TotalSAR_{it} = \beta_0 + \beta_1 ComplianceScore_{it} + \beta_3 logGDPpercapita_{it} + \beta_4 LiquidLiabilitiesToGDP_{it} + \beta_5 DomesticCreditToPrivateSector_{it} + \beta_6 BankDepositsToGDP_{it} + \beta_7 CentralBankAssetsToGDP_{it} + \beta_8 GovtEffectiveness_{it} + \beta_9 VoiceAccountability_{it} + \beta_{10} ControlofCorruption_{it} + \delta_0 d2016 + \delta_1 d2017 + \delta_2 d2018 + \delta_3 d2019 + \mu_1 Country_1 + \ldots + \mu_k Country_k + u$$

Fixed/Random effects estimation methods are preferred when estimating longitudinal or panel data. In this specific case, a random effect (RE) estimation method was chosen as the random effect estimator gives us a chance to estimate the effect of non-time-varying explanatory variables and still take account of unobserved country specific effects. The RE is preferred over fixed effects (FE) as it is more efficient (smaller standard deviations) than the FE estimator (Wooldridge, 2015). In addition, a fixed effect estimator was not used as FE estimators allow for correlation between the explanatory variable of concern and unobserved effects. In this case it will be the variable 'ComplianceScore' and its coefficient, and the unobserved country specific effect (ibid). However, because there is no variation over time for the initial compliance score, which is fixed, the effect of this non-time varying explanatory variable on the dependent variable (SAR level) cannot be identified. Thus, in this analysis the FE estimation will not be undertaken because it is known that there will be no result for the variable of concern.

An ordinary least squares (OLS) estimation was also employed to include an additional level of comparison. The country dummies were included for OLS due to this method's inability to pick up country specific differences. However, due to problems of serial correlation within the variables not included in the model (residuals) this may lead to estimators that are not reliable (ibid). Further, the sample size available is not at a large enough level that can overcome these inefficiencies. Indeed, Wooldridge (2015) concludes that the sign of the OLS estimator may be affected in small samples. RE is taking into account this dependency between the residuals for country *i*, (all countries), and thus, RE is preferred over OLS for panel data sets which is the type of dataset used for the analysis.

The results are presented below in Table 6:

Table 6: OLS and RE results

	OLS	RE
Variables	TotalSAR	TotalSAR
ComplianceScore	4.58e+06	5.38e+05*
	(3.31e+06)	(3.17e+05)
d2016	1.57e+05**	1.20e+05
	(68175.991)	(74302.681)
d2017	2.34e+05**	2.07e+05**
	(1.15e+05)	(86885.941)
d2018	0.000	0.000
	(.)	(.)
d2019	0.000	0.000
	(.)	(.)
lGDPperCap	-1.16e+05	-5.39e+04
	(8.64e+05)	(3.02e+05)
LiquidLiabilities	-5449.236	-196e+04
	(25997.764)	(18554.579)
DomesticCreditToPrivate	-3.40e+04***	-2004.558
Sector	(10031.168)	(5122.527)
BankDepositsToGDP	-1.85e+04	11529.861
	(24289.101)	(21368.885)

CentralBankAssetsToGDP	-4.86e+04***	-2.90e+04*
GovtEffectiveness	-2696.277	-2.55e+05
VoiceAndAccountability	5.81e+05	3.63e+05
	(7.85e+05)	(4.41e+05)
ControlofCorruption	7.34e+05*	1.39e+05
	(4.02e+05)	(3.39e+05)
Constant	-2.82e+06	2.18e+05
	(1.64e+07)	(2.43e+06)
Australia	0.000	0.000
	(.)	(.)
Austria	-1.95e+06***	
	(6.00e+05)	
Belgium	-6.51e+06**	
	(3.13e+06)	
Cyprus	1.56e+06	
	(3.79e+06)	
Czech Republic	-7.46e+06***	
	(2.13+e06)	
Denmark	-6.84e+05	
	(1.08e+06)	
Finland	-7.17e+06**	
	(2.93e+06)	
Greece	-4.37e+06*	
	(2.22e+06)	
Hungary	-3.38e+06*	
	(1.92e+06)	
Iceland	-2.66e+06***	
	(7.13e+05)	
Ireland	-7.38e+06**	
	(3.21e+06)	
Italy	-4.83e+06*	
	(2.62e+06)	
South Korea	-2.32e+06	
	(3.01e+06)	

Latvia	-1.25e+07**
	(5.02e+06)
Lithuania	-3.73e+06**
	(1.72e+06)
Malta	-4.46e+06
	(3.21e+06)
Norway	-1.43e+06
	(9.77e+05)
Panama	-4.95e+06**
	(1.83e+06)
Portugal	-4.98e+06**
	(2.39e+06)
Singapore	-4.06e+06
	(3.53e+06)
Slovak Republic	-2.50e+06
	(1.55e+06)
Slovenia	-3.10e+06**
	(1.39e+06)
Spain	-8.67e+06
	(5.98e+06)
Sweden	-6.08e+06*
	(3.14e+06)
Switzerland	-2.03e+06
	(4.36e+06)
Turkey	-5.93e+06***
	(1.54e+06)
United States	4.37e+06***
	(1.22e+06)
Bahamas	-3.22e+06***
	(1.20e+06)
Bangladesh	-1.95e+06
	(3.73e+06)
Bhutan	1.22e+06
	(6.28e+06)

Botswana	2.43e+05
	(5.69e+06)
Zambia	-8.51e+06***
	(7.74e+05)
Fiji	-1.21e+06
	(2.39e+06)
Zimbabwe	-2.27e+06
	(4.00e+06)
Samoa	-2.51e+06
	(2.67e+06)
Madagascar	7.75e+05
	(8.05e+06)
Mongolia	-2.21e+06
	(2.81e+06)
Ukraine	0.000
	(.)
R-squared	0.949

* p<0.10, ** p<0.05, *** p<0.01

As can be seen from the results, the OLS has a very high R square and indeed there may be some issues with serial correlation as with panel data and so OLS does not provide enough evidence to reject the null hypothesis. On the other hand, as expected, for RE, the coefficient is positive and significant at the 10% level ($p<0.10$), thus providing evidence to reject the null hypothesis. As mentioned, the RE estimator is more suitable in this situation where panel data is used compared to the simple OLS method.

The initial impressions from the results show what has been the intuition throughout this thesis; that there is a relationship between SAR levels and the risk-based approach. There is sufficient evidence to reject the null hypothesis that there is no relationship between how closely countries adopt a risk-based approach and suspicious activity reporting levels.

6. Discussion

The absolute SAR levels have been rising year on year overall with only some exceptions. This is intriguing as the introduction of the risk-based approach was seen as a solution to the increasing number of SARs. As pointed out in the previous sections, the risk-based approach allowed and compelled regulated entities to have to determine by themselves what was risky and what was not. This resulted in regulators and regulated entities making their own interpretations especially when it came to identifying PEPs, beneficial owners and categorizing high-risk countries. In reality, only the evaluators who assess the countries during the mutual evaluations have an idea of the criteria but even so the evaluation process can be arbitrary at times (Van Duyne et al., 2018). One of the major incentives to comply with regulations is the potential of a fine if and when a true suspicious activity goes undetected and is captured by enforcement. Thus, to avoid those fines, regulated entities would rather shift the risk to enforcement authorities, contributing to the problem of what is known as defensive reporting. This essentially dilutes the effect of reporting itself, what Takáts (2011) termed as the 'crying wolf' phenomenon. This led to the question of the actual effect that the risk-based approach had on SAR levels and whether it was performing its role as intended. Certainly, SAR levels were already rising before it was introduced, and one wonders if there truly is a relationship between continued rising levels and the RBA. Thus, introducing the hypothesis: There is no relationship between how closely countries adopt a risk-based approach and suspicious activity reporting levels.

After running a regression using a random effect estimator, the results indicate that there is sufficient evidence to reject the null hypothesis and conclude that a relationship between the two does exist. Specifically, there is significant and positive relationship between SAR levels and the compliance score that was provided from the MER process. What this means is that as compliance rating rises, that is, as countries are more compliant with the RBA and do well in the evaluation thus receiving a higher score, they in turn also file more SARs. This is not in line what the RBA is expected to do at all. The RBA was seen as a way for regulated entities to reduce the filing of 'empty' reports, the ones that meet rudimentary criteria. An example can be a large bank which receives large transactions daily compared with a small bank which only has one or two large transactions per week. It is not efficient for the large bank to report all transactions that meet a threshold amount. For a long time, this was the case as with the CTR. Hence the introduction of the RBA sought to reduce the volume of such SARs. Thus, if

regulated entities follow the RBA, they should in essence file less SARs. But this is not the case as the results have shown. The literature points to the fact that this could be due to the ambiguity and uncertainty with regards to the FATF's broad definition which leads to 'defensive reporting' thus increasing SAR levels. The empirical evaluation lends support to this view.

6.1 Implications

The push by industry for the risk-based approach had good intentions in theory but falls short when implemented in reality. Guidance by the FATF remains ambiguous even with many handbooks and methodologies released for countries to follow. Criteria for evaluation remains arbitrary as well. The questions asked in the evaluation process about the countries and their economies, the nature and development of money laundering, law enforcement actions, the state of law to name a few, requires a level of sophistication and deep insight across industries and sectors to address these questions in a valid manner. This process is further impeded without any valid statistics that both assessors and those evaluated can agree that best indicates AML/CFT regime performance. SAR levels remain to be one statistic that can have potential to reveal insights however, without understanding the drivers of SARs this can be difficult. The results of this analysis bring forward two implications. The first being that we understand the possible causes for variations in SAR levels and can account for it and hopefully be able to assess the performance of a country's AML/CFT framework through SAR numbers. The second highlights a need to provide more detailed guidance regarding how countries can cope with the risk-based approach which means there is a great need for policy makers to revisit this particular recommendation. SARs remain to be one of the only tools to report money laundering as it is occurring. If the RBA can be adjusted to actually perform as is intended, we can avoid the eroding value of suspicious activity reporting and SAR regimes. By slowly uncovering certain features that have an impact on SAR levels, we can account for it and ultimately be able to use SAR statistics as an input to how effective a country's AML regime is. As it is now, the mutual evaluation serves that purpose but lacks objective criteria as has been criticized. Certainly the ability to be able to use SAR statistics can help validate their assessment of whether a country is doing well or poorly on the AML/CFT front.

6.2 Limitations

A distinct limitation would be the selection of countries which were constrained by several factors and thus the selection process was not a random one. Firstly, some countries had to be dropped from the analysis because the MER was yet to be conducted for them at the time of the study thus limiting our sample size. Secondly, for those that had the MER conducted, there were no SAR data that were accessible. Thirdly, an attempt to analyse all countries who had the MER conducted already at the time of the analysis was not feasible due to the duration of the thesis. Which bring us to the main limitation, that SAR data is not readily available in a central database. Certain FIUs such as Singapore's Suspicious Transaction Reporting Office (STRO), FinCEN in the US, Joint Financial Intelligence Unit (JFIU) Hong Kong publish the latest data on their website, but majority have little to zero information. Further, when one digs deep enough and finally finds the annual report of the FIU, the differences in reporting standards and different terms used makes it difficult to use the statistic. Certainly, it would be a benefit if the reporting followed a certain framework or standard (similar to accounting) to allow greater comparability and more in-depth analysis of SAR across countries. This would also benefit researchers who would like to investigate more clearly the extent of money laundering and would thus require the amount of money laundered, which a standard reporting framework would help rather than the estimations most researchers work with.

Specifically, other than the ambiguity surrounding what a suspicious transaction is, several countries have different ways of documenting suspicious transactions. For example, the Netherlands and a few others separate the reported transactions into Unusual and Suspicious. This was done primarily because their countries have a large volume of suspicious transactions and this allows enforcement to really focus on those transactions that have a high potential of money laundering. The downside to this is because countries have the freedom to report in however way that they choose, it makes analysis difficult. Thus, there may be a problem with reliability and validity. However, extensive effort was undertaken to make sure the data came from legitimate sources such as annual reports as well as databases from the World Bank.

Some countries also have missing data for certain years for each variable in this analysis. However, the use of panel data smooths out these missing data as it is not expected that the data is very different from year to year within countries. Further, the selection process followed a systematic approach, ensuring countries from different regions as well as small

island nations were selected, avoiding bias. In additions, effort was made to ensure the annual reports were retrieved from the correct FIU websites.

7. Avenues for further research

Certainly, when the 4th round of mutual evaluations have reached their conclusion, a more extensive analysis including all countries involved in the evaluations would be able to add to the validity of the current research. In terms of extending on this area of research, what would be interesting is to observe for two very similar countries in terms of history, size, money flows, economy and so on and to compare their SAR trends after the introduction of the RBA in 2013 using a diff-in-diff method. This can lend to the argument of causality. As it stands now, there is a positive and significant relationship, but if the RBA is not a causal factor of SAR levels, what could be driving these SAR levels up? Could it really then be that money laundering is increasing? This is interesting to investigate.

This research also attempted to consolidate the literature surrounding various determinants of SAR. It would certainly be interesting to see what the results would be if these were tested empirically.

An outstanding question remains and another area that would be useful to explore would be what SARs can actually measure. It would be ideal if each country can determine a range of SAR that indicates a low/medium/high performance of their AML/CFT efforts. There is certainly much work to be done in this respect but highlighting and providing empirical support that countries which follow the RBA more closely experience higher SAR levels is the first step towards such a reality and the ability to draw conclusions for SAR statistics.

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9. Appendix

Dataset SAR, region

Year	Country _Num	Country	Country Abbreviation	Total SAR	Region
2015	1	Australia	AUS	81,074	Asia Pacific
2016	1	Australia	AUS	78,846	Asia Pacific
2017	1	Australia	AUS	74,120	Asia Pacific
2018	1	Australia	AUS	125,900	Asia Pacific
2019	1	Australia	AUS	246,458	Asia Pacific
2015	2	Austria	AUT	1793	Central Europe
2016	2	Austria	AUT	2150	Central Europe
2017	2	Austria	AUT	3058	Central Europe
2018	2	Austria	AUT	2744	Central Europe
2019	2	Austria	AUT	3073	Central Europe
2015	3	Belgium	BEL	28,272	Western Europe
2016	3	Belgium	BEL	27,264	Western Europe
2017	3	Belgium	BEL	31,080	Western Europe
2018	3	Belgium	BEL	33,445	Western Europe
2019	3	Belgium	BEL	25,991	Western Europe
2015	4	Brazil	BRL	4304	Latin America
2016	4	Brazil	BRL	5661	Latin America
2017	4	Brazil	BRL	6608	Latin America
2018	4	Brazil	BRL	7345	Latin America
2019	4	Brazil	BRL	6272	Latin America
2015	5	Bulgaria	BGR	2461	Southern Europe
2016	5	Bulgaria	BGR	2987	Southern Europe
2017	5	Bulgaria	BGR	3066	Southern Europe
2018	5	Bulgaria	BGR	2777	Southern Europe
2019	5	Bulgaria	BGR	2894	Southern Europe
2015	6	Canada	CAN	1260	North America
2016	6	Canada	CAN	1655	North America
2017	6	Canada	CAN	2015	North America
2018	6	Canada	CAN	2466	North America
2019	6	Canada	CAN	2276	North America
2015	7	Croatia	HRV	972	Southern Europe
2016	7	Croatia	HRV	1030	Southern Europe
2017	7	Croatia	HRV	940	Southern Europe
2018	7	Croatia	HRV	948	Southern Europe
2019	7	Croatia	HRV	1129	Southern Europe
2015	8	Cyprus	CYP	938	Offshore
2016	8	Cyprus	CYP	1623	Offshore
2017	8	Cyprus	CYP	1480	Offshore
2018	8	Cyprus	CYP	1836	Offshore

2019	8	Cyprus	CYP	1763	Offshore
2015	9	Czech Republic	CZE	2963	Central Europe
2016	9	Czech Republic	CZE	2948	Central Europe
2017	9	Czech Republic	CZE	3524	Central Europe
2018	9	Czech Republic	CZE	4028	Central Europe
2019	9	Czech Republic	CZE	3954	Central Europe
2015	10	Denmark	DNK	15619	Northern Europe
2016	10	Denmark	DNK	18669	Northern Europe
2017	10	Denmark	DNK	24911	Northern Europe
2018	10	Denmark	DNK	35768	Northern Europe
2019	10	Denmark	DNK	53454	Northern Europe
2015	11	Finland	FIN	37703	Northern Europe
2016	11	Finland	FIN	31195	Northern Europe
2017	11	Finland	FIN	48318	Northern Europe
2018	11	Finland	FIN	39220	Northern Europe
2019	11	Finland	FIN	.	Northern Europe
2015	12	France	FRA	45266	Western Europe
2016	12	France	FRA	64815	Western Europe
2017	12	France	FRA	71070	Western Europe
2018	12	France	FRA	79367	Western Europe
2019	12	France	FRA	99527	Western Europe
2015	13	Germany	DEU	32008	Central Europe
2016	13	Germany	DEU	45597	Central Europe
2017	13	Germany	DEU	59845	Central Europe
2018	13	Germany	DEU	77252	Central Europe
2019	13	Germany	DEU	114914	Central Europe
2015	14	Greece	GRC	23559	Southern Europe
2016	14	Greece	GRC	6295	Southern Europe
2017	14	Greece	GRC	5597	Southern Europe
2018	14	Greece	GRC	6450	Southern Europe
2019	14	Greece	GRC	.	Southern Europe
2015	15	Hong Kong S.A.R, CHINA	HKG	42555	Asia Pacific
2016	15	Hong Kong S.A.R, CHINA	HKG	76590	Asia Pacific
2017	15	Hong Kong S.A.R, CHINA	HKG	92115	Asia Pacific
2018	15	Hong Kong S.A.R, CHINA	HKG	73889	Asia Pacific
2019	15	Hong Kong S.A.R, CHINA	HKG	51588	Asia Pacific
2015	16	Hungary	HUN	8369	Central Europe
2016	16	Hungary	HUN	8786	Central Europe
2017	16	Hungary	HUN	8585	Central Europe
2018	16	Hungary	HUN	10397	Central Europe
2019	16	Hungary	HUN	12342	Central Europe
2015	17	Iceland	ISL	158	Northern Europe
2016	17	Iceland	ISL	655	Northern Europe
2017	17	Iceland	ISL	952	Northern Europe

2018	17	Iceland	ISL	1203	Northern Europe
2019	17	Iceland	ISL	1646	Northern Europe
2015	18	Ireland	IRL	21682	Western Europe
2016	18	Ireland	IRL	23308	Western Europe
2017	18	Ireland	IRL	24398	Western Europe
2018	18	Ireland	IRL	23939	Western Europe
2019	18	Ireland	IRL	.	Western Europe
2015	19	Italy	ITA	82428	Southern Europe
2016	19	Italy	ITA	101065	Southern Europe
2017	19	Italy	ITA	93820	Southern Europe
2018	19	Italy	ITA	98030	Southern Europe
2019	19	Italy	ITA	105789	Southern Europe
2015	20	Japan	JPN	399508	Asia Pacific
2016	20	Japan	JPN	401091	Asia Pacific
2017	20	Japan	JPN	400043	Asia Pacific
2018	20	Japan	JPN	417465	Asia Pacific
2019	20	Japan	JPN	440492	Asia Pacific
2015	21	South Korea	KOR	624076	Asia Pacific
2016	21	South Korea	KOR	703356	Asia Pacific
2017	21	South Korea	KOR	519908	Asia Pacific
2018	21	South Korea	KOR	972320	Asia Pacific
2019	21	South Korea	KOR	926947	Asia Pacific
2015	22	Latvia	LVA	17113	Eastern Europe
2016	22	Latvia	LVA	15768	Eastern Europe
2017	22	Latvia	LVA	17934	Eastern Europe
2018	22	Latvia	LVA	31815	Eastern Europe
2019	22	Latvia	LVA	32028	Eastern Europe
2015	23	Lithuania	LTU	480	Eastern Europe
2016	23	Lithuania	LTU	541	Eastern Europe
2017	23	Lithuania	LTU	835	Eastern Europe
2018	23	Lithuania	LTU	1368	Eastern Europe
2019	23	Lithuania	LTU	1501	Eastern Europe
2015	24	Luxembourg	LUX	11023	Central Europe
2016	24	Luxembourg	LUX	30710	Central Europe
2017	24	Luxembourg	LUX	38744	Central Europe
2018	24	Luxembourg	LUX	55948	Central Europe
2019	24	Luxembourg	LUX	52374	Central Europe
2015	25	Malta	MLT	281	Offshore
2016	25	Malta	MLT	565	Offshore
2017	25	Malta	MLT	778	Offshore
2018	25	Malta	MLT	1679	Offshore
2019	25	Malta	MLT	2778	Offshore
2015	26	Netherlands	NLD	312160	Western Europe
2016	26	Netherlands	NLD	417067	Western Europe

2017	26	Netherlands	NLD	361015	Western Europe
2018	26	Netherlands	NLD	753352	Western Europe
2019	26	Netherlands	NLD	2462973	Western Europe
2015	27	Norway	NOR	4714	Northern Europe
2016	27	Norway	NOR	8780	Northern Europe
2017	27	Norway	NOR	8953	Northern Europe
2018	27	Norway	NOR	10763	Northern Europe
2019	27	Norway	NOR	11564	Northern Europe
2015	28	Panama	PAN	1734	Offshore
2016	28	Panama	PAN	1995	Offshore
2017	28	Panama	PAN	3260	Offshore
2018	28	Panama	PAN	3450	Offshore
2019	28	Panama	PAN	2678	Offshore
2015	29	Poland	POL	3520	Eastern Europe
2016	29	Poland	POL	4198	Eastern Europe
2017	29	Poland	POL	4115	Eastern Europe
2018	29	Poland	POL	3622	Eastern Europe
2019	29	Poland	POL	4100	Eastern Europe
2015	30	Portugal	PRT	5047	Southern Europe
2016	30	Portugal	PRT	5368	Southern Europe
2017	30	Portugal	PRT	5799	Southern Europe
2018	30	Portugal	PRT	.	Southern Europe
2019	30	Portugal	PRT	.	Southern Europe
2015	31	Romania	ROU	4610	Eastern Europe
2016	31	Romania	ROU	3516	Eastern Europe
2017	31	Romania	ROU	12863	Eastern Europe
2018	31	Romania	ROU	9040	Eastern Europe
2019	31	Romania	ROU	7460	Eastern Europe
2015	32	Singapore	SGP	30511	Asia Pacific
2016	32	Singapore	SGP	34129	Asia Pacific
2017	32	Singapore	SGP	35471	Asia Pacific
2018	32	Singapore	SGP	32660	Asia Pacific
2019	32	Singapore	SGP	32022	Asia Pacific
2015	33	Slovak Republic	SVK	3264	Central Europe
2016	33	Slovak Republic	SVK	3297	Central Europe
2017	33	Slovak Republic	SVK	2636	Central Europe
2018	33	Slovak Republic	SVK	2509	Central Europe
2019	33	Slovak Republic	SVK	2576	Central Europe
2015	34	Slovenia	SVN	521	Central Europe
2016	34	Slovenia	SVN	449	Central Europe
2017	34	Slovenia	SVN	558	Central Europe
2018	34	Slovenia	SVN	787	Central Europe
2019	34	Slovenia	SVN	1069	Central Europe
2015	35	Spain	ESP	4757	Southern Europe

2016	35	Spain	ESP	4990	Southern Europe
2017	35	Spain	ESP	4999	Southern Europe
2018	35	Spain	ESP	6563	Southern Europe
2019	35	Spain	ESP	7354	Southern Europe
2015	36	Sweden	SWE	10170	Northern Europe
2016	36	Sweden	SWE	13322	Northern Europe
2017	36	Sweden	SWE	16551	Northern Europe
2018	36	Sweden	SWE	19306	Northern Europe
2019	36	Sweden	SWE	21709	Northern Europe
2015	37	Switzerland	CHE	2367	Central Europe
2016	37	Switzerland	CHE	2909	Central Europe
2017	37	Switzerland	CHE	4684	Central Europe
2018	37	Switzerland	CHE	6126	Central Europe
2019	37	Switzerland	CHE	7705	Central Europe
2015	38	Turkey	TUR	74221	Southern Europe
2016	38	Turkey	TUR	132570	Southern Europe
2017	38	Turkey	TUR	176411	Southern Europe
2018	38	Turkey	TUR	222743	Southern Europe
2019	38	Turkey	TUR	203786	Southern Europe
2015	39	United Kingdom	GBR	381882	Western Europe
2016	39	United Kingdom	GBR	419451	Western Europe
2017	39	United Kingdom	GBR	214662	Western Europe
2018	39	United Kingdom	GBR	463938	Western Europe
2019	39	United Kingdom	GBR	487437	Western Europe
2015	40	United States	USA	1812665	North America
2016	40	United States	USA	1975638	North America
2017	40	United States	USA	2034406	North America
2018	40	United States	USA	2171173	North America
2019	40	United States	USA	2301163	North America
2015	41	Bahamas	BHS	297	Offshore
2016	41	Bahamas	BHS	306	Offshore
2017	41	Bahamas	BHS	446	Offshore
2018	41	Bahamas	BHS	540	Offshore
2019	41	Bahamas	BHS	.	Asia Pacific
2015	42	Bangladesh	BGD	1094	Asia Pacific
2016	42	Bangladesh	BGD	1687	Asia Pacific
2017	42	Bangladesh	BGD	2357	Asia Pacific
2018	42	Bangladesh	BGD	3878	Asia Pacific
2019	42	Bangladesh	BGD	3573	Asia Pacific
2015	43	Bhutan	BTN	1	Asia Pacific
2016	43	Bhutan	BTN	3	Asia Pacific
2017	43	Bhutan	BTN	2	Asia Pacific
2018	43	Bhutan	BTN	6	Asia Pacific
2019	43	Bhutan	BTN	7	Asia Pacific

2015	44	Botswana	BWA	.	Africa
2016	44	Botswana	BWA	89	Africa
2017	44	Botswana	BWA	128	Africa
2018	44	Botswana	BWA	168	Africa
2019	44	Botswana	BWA	157	Africa
2015	45	Zambia	ZMB	.	Africa
2016	45	Zambia	ZMB	.	Africa
2017	45	Zambia	ZMB	969	Africa
2018	45	Zambia	ZMB	724	Africa
2019	45	Zambia	ZMB	748	Africa
2015	46	Fiji	FJI	516	Asia Pacific
2016	46	Fiji	FJI	579	Asia Pacific
2017	46	Fiji	FJI	650	Asia Pacific
2018	46	Fiji	FJI	632	Asia Pacific
2019	46	Fiji	FJI	622	Asia Pacific
2015	47	Zimbabwe	ZWE	712	Africa
2016	47	Zimbabwe	ZWE	732	Africa
2017	47	Zimbabwe	ZWE	1245	Africa
2018	47	Zimbabwe	ZWE	1733	Africa
2019	47	Zimbabwe	ZWE	.	Africa
2015	48	Samoa	WSM	10	Asia Pacific
2016	48	Samoa	WSM	46	Asia Pacific
2017	48	Samoa	WSM	43	Asia Pacific
2018	48	Samoa	WSM	90	Asia Pacific
2019	48	Samoa	WSM	76	Asia Pacific
2015	49	Estonia	EST	8204	Northern Europe
2016	49	Estonia	EST	5525	Northern Europe
2017	49	Estonia	EST	5418	Northern Europe
2018	49	Estonia	EST	5614	Northern Europe
2019	49	Estonia	EST	6164	Northern Europe
2015	50	The Cayman Islands	CYM	568	Offshore
2016	50	The Cayman Islands	CYM	620	Offshore
2017	50	The Cayman Islands	CYM	1164	Offshore
2018	50	The Cayman Islands	CYM	935	Offshore
2019	50	The Cayman Islands	CYM	1138	Offshore
2015	51	Madagascar	MDG	197	Offshore
2016	51	Madagascar	MDG	115	Offshore
2017	51	Madagascar	MDG	151	Offshore
2018	51	Madagascar	MDG	187	Offshore
2019	51	Madagascar	MDG	164	Offshore
2015	52	Andorra	AND	60	Southern Europe
2016	52	Andorra	AND	53	Southern Europe
2017	52	Andorra	AND	116	Southern Europe
2018	52	Andorra	AND	124	Southern Europe
2019	52	Andorra	AND	138	Southern Europe

2015	53	Bermuda	BMU	447	Offshore
2016	53	Bermuda	BMU	478	Offshore
2017	53	Bermuda	BMU	942	Offshore
2018	53	Bermuda	BMU	667	Offshore
2019	53	Bermuda	BMU	391	Offshore
2015	54	The Cook Islands	COK	35	Offshore
2016	54	The Cook Islands	COK	31	Offshore
2017	54	The Cook Islands	COK	58	Offshore
2018	54	The Cook Islands	COK	126	Offshore
2019	54	The Cook Islands	COK	92	Offshore
2015	55	Isle of Man	IMN	.	Offshore
2016	55	Isle of Man	IMN	932	Offshore
2017	55	Isle of Man	IMN	1410	Offshore
2018	55	Isle of Man	IMN	1757	Offshore
2019	55	Isle of Man	IMN	2056	Offshore
2015	56	Mongolia	MNG	113	Asia Pacific
2016	56	Mongolia	MNG	282	Asia Pacific
2017	56	Mongolia	MNG	203	Asia Pacific
2018	56	Mongolia	MNG	1596	Asia Pacific
2019	56	Mongolia	MNG	2385	Asia Pacific
2015	57	Ukraine	UKR	4391834	Eastern Europe
2016	57	Ukraine	UKR	6381728	Eastern Europe
2017	57	Ukraine	UKR	8044703	Eastern Europe
2018	57	Ukraine	UKR	10006093	Eastern Europe
2019	57	Ukraine	UKR	11462494	Eastern Europe

Dataset, MER rating and score, gdp, gdp/capita

Year	Country_ Num	Country Abbreviation	Total SAR	Initial MER	Rating	GDP	GDP/capita
2015	1	AUS	81,074	PC	2	1.35169E+12	56755.72171
2016	1	AUS	78,846	PC	2	1.20885E+12	49971.13146
2017	1	AUS	74,120	PC	2	1.32919E+12	54027.96682
2018	1	AUS	125,900	PC	2	1.43288E+12	57354.96405
2019	1	AUS	246,458	PC	2	1.39657E+12	55060.3261
2015	2	AUT	1793	PC	2	3.81818E+11	44178.04738
2016	2	AUT	2150	PC	2	3.95569E+11	45276.83144
2017	2	AUT	3058	PC	2	4.17238E+11	47426.51196
2018	2	AUT	2744	PC	2	4.55095E+11	51478.28526
2019	2	AUT	3073	PC	2	4.45075E+11	50137.66278

2015	3	BEL	28,272	LC	3	4.6215E+11	40991.80814
2016	3	BEL	27,264	LC	3	4.7574E+11	41984.10303
2017	3	BEL	31,080	LC	3	5.02698E+11	44192.62303
2018	3	BEL	33,445	LC	3	5.43734E+11	47583.07494
2019	3	BEL	25,991	LC	3	5.33097E+11	46420.66377
2015	4	BRL	4304	.	.	1.80221E+12	8814.000987
2016	4	BRL	5661	.	.	1.7957E+12	8710.09669
2017	4	BRL	6608	.	.	2.06283E+12	9925.386238
2018	4	BRL	7345	.	.	1.88548E+12	9001.234249
2019	4	BRL	6272	.	.	1.83976E+12	8717.186278
2015	5	BGR	2461	.	.	50647442757	7055.935673
2016	5	BGR	2987	.	.	53806894796	7548.855007
2017	5	BGR	3066	.	.	58971520599	8334.081728
2018	5	BGR	2777	.	.	66230155100	9427.73043
2019	5	BGR	2894	.	.	68558815112	9828.148515
2015	6	CAN	1260	LC	3	1.55613E+12	43585.51198
2016	6	CAN	1655	LC	3	1.52824E+12	42322.48478
2017	6	CAN	2015	LC	3	1.64988E+12	45148.55271
2018	6	CAN	2466	LC	3	1.71626E+12	46313.17137
2019	6	CAN	2276	LC	3	1.73643E+12	46194.72523
2015	7	HRV	972	.	.	49525747504	11781.73479
2016	7	HRV	1030	.	.	51601147666	12361.48383
2017	7	HRV	940	.	.	55481644098	13451.62495
2018	7	HRV	948	.	.	61375222347	15014.08502
2019	7	HRV	1129	.	.	60752588976	14936.10055
2015	8	CYP	938	LC	3	4708336756	23333.71491
2016	8	CYP	1623	LC	3	4909498943	24532.51906
2017	8	CYP	1480	LC	3	5153091158	26338.69434
2018	8	CYP	1836	LC	3	5517361238	28689.70672
2019	8	CYP	1763	LC	3	.	27858.371
2015	9	CZE	2963	LC	3	1.88033E+11	17829.69832
2016	9	CZE	2948	LC	3	1.96272E+11	18575.23203
2017	9	CZE	3524	LC	3	2.18629E+11	20636.19995
2018	9	CZE	4028	LC	3	2.48909E+11	23415.84363
2019	9	CZE	3954	LC	3	2.50681E+11	23494.5962
2015	10	DNK	15619	PC	2	3.02673E+11	53254.85637
2016	10	DNK	18669	PC	2	3.13116E+11	54663.99837
2017	10	DNK	24911	PC	2	3.32121E+11	57610.09818
2018	10	DNK	35768	PC	2	3.56879E+11	61598.5367
2019	10	DNK	53454	PC	2	3.50104E+11	60170.34264
2015	11	FIN	37703	LC	3	2.3444E+11	42784.69836
2016	11	FIN	31195	LC	3	2.40608E+11	43784.28396

2017	11	FIN	48318	LC	3	2.55232E+11	46336.66325
2018	11	FIN	39220	LC	3	2.75947E+11	50030.87731
2019	11	FIN	.	LC	3	2.69296E+11	48782.78848
2015	12	FRA	45266	.	.	2.43821E+12	36638.18493
2016	12	FRA	64815	.	.	2.47129E+12	37037.37419
2017	12	FRA	71070	.	.	2.59515E+12	38812.16103
2018	12	FRA	79367	.	.	2.78786E+12	41631.09074
2019	12	FRA	99527	.	.	2.71552E+12	40493.92857
2015	13	DEU	32008	.	.	3.35624E+12	41086.72967
2016	13	DEU	45597	.	.	3.4675E+12	42107.51727
2017	13	DEU	59845	.	.	3.6826E+12	44552.81937
2018	13	DEU	77252	.	.	3.96377E+12	47810.50767
2019	13	DEU	114914	.	.	3.86112E+12	46445.2491
2015	14	GRC	23559	LC	3	1.96591E+11	18167.77373
2016	14	GRC	6295	LC	3	1.95222E+11	18116.45965
2017	14	GRC	5597	LC	3	2.03588E+11	18930.21863
2018	14	GRC	6450	LC	3	2.18138E+11	20324.30499
2019	14	GRC	.	LC	3	2.09853E+11	19582.53598
2015	15	HKG	42555	LC	3	3.09384E+11	42431.88828
2016	15	HKG	76590	LC	3	3.20838E+11	43731.10682
2017	15	HKG	92115	LC	3	3.41244E+11	46165.85651
2018	15	HKG	73889	LC	3	3.61697E+11	48543.40099
2019	15	HKG	51588	LC	3	3.65712E+11	48713.47375
2015	16	HUN	8369	PC	2	1.25074E+11	12706.89121
2016	16	HUN	8786	PC	2	1.28471E+11	13090.50673
2017	16	HUN	8585	PC	2	1.42962E+11	14605.85435
2018	16	HUN	10397	PC	2	1.60419E+11	16410.18726
2019	16	HUN	12342	PC	2	1.63469E+11	16731.82151
2015	17	ISL	158	PC	2	1.77499E+11	52564.42918
2016	17	ISL	655	PC	2	1.74896E+11	61466.80395
2017	17	ISL	952	PC	2	1.95473E+11	71310.93926
2018	17	ISL	1203	PC	2	2.24228E+11	72968.70423
2019	17	ISL	1646	PC	2	2.34094E+11	66944.83308
2015	18	IRL	21682	LC	3	2.915E+11	61995.4228
2016	18	IRL	23308	LC	3	3.00523E+11	63197.0824
2017	18	IRL	24398	LC	3	3.35663E+11	69822.34708
2018	18	IRL	23939	LC	3	3.82674E+11	78621.22793
2019	18	IRL	.	LC	3	3.88699E+11	78660.95646
2015	19	ITA	82428	LC	3	1.8359E+12	30230.2263
2016	19	ITA	101065	LC	3	1.8758E+12	30939.71425
2017	19	ITA	93820	LC	3	1.9618E+12	32406.72032
2018	19	ITA	98030	LC	3	2.09154E+12	34615.75689
2019	19	ITA	105789	LC	3	2.00358E+12	33228.23668
2015	20	JPN	399508	.	.	4.38948E+12	34524.46986

2016	20	JPN	401091	.	.	4.92254E+12	38761.81815
2017	20	JPN	400043	.	.	4.86686E+12	38386.51115
2018	20	JPN	417465	.	.	4.95481E+12	39159.42356
2019	20	JPN	440492	.	.	5.08177E+12	40246.88013
2015	21	KOR	624076	LC	3	1.46577E+12	28732.23108
2016	21	KOR	703356	LC	3	1.50011E+12	29288.87044
2017	21	KOR	519908	LC	3	1.6239E+12	31616.8434
2018	21	KOR	972320	LC	3	1.72485E+12	33422.94421
2019	21	KOR	926947	LC	3	1.64674E+12	31846.21823
2015	22	LVA	17113	C	4	27239653844	13774.60527
2016	22	LVA	15768	C	4	28052325862	14315.79289
2017	22	LVA	17934	C	4	30458763246	15682.22145
2018	22	LVA	31815	C	4	34416012859	17858.27998
2019	22	LVA	32028	C	4	34102913582	17828.89466
2015	23	LTU	480	PC	2	41418872976	14258.22933
2016	23	LTU	541	PC	2	43018087238	14998.12506
2017	23	LTU	835	PC	2	47758736932	16885.40739
2018	23	LTU	1368	PC	2	53722883091	19176.17652
2019	23	LTU	1501	PC	2	54627411860	19601.89083
2015	24	LUX	11023	.	.	57744457955	101376.4966
2016	24	LUX	30710	.	.	60691483443	104278.391
2017	24	LUX	38744	.	.	64181944723	107627.151
2018	24	LUX	55948	.	.	70919958016	116654.2611
2019	24	LUX	52374	.	.	71104919108	114704.5942
2015	25	MLT	281	LC	3	11091434435	24921.60357
2016	25	MLT	565	LC	3	11665231192	25617.82691
2017	25	MLT	778	LC	3	13146963159	28091.86165
2018	25	MLT	1679	LC	3	14750790658	30437.22151
2019	25	MLT	2778	LC	3	14989415684	29820.60325
2015	26	NLD	312160	.	.	7.65265E+11	45175.23189
2016	26	NLD	417067	.	.	7.83528E+11	46007.85292
2017	26	NLD	361015	.	.	8.3387E+11	48675.22234
2018	26	NLD	753352	.	.	9.14043E+11	53044.53244
2019	26	NLD	2462973	.	.	9.07051E+11	52331.31673
2015	27	NOR	4714	PC	2	3.85802E+11	74355.51586
2016	27	NOR	8780	PC	2	3.6882E+11	70459.1825
2017	27	NOR	8953	PC	2	3.98394E+11	75496.75406
2018	27	NOR	10763	PC	2	4.34167E+11	81734.46557
2019	27	NOR	11564	PC	2	4.03336E+11	75419.63487
2015	28	PAN	1734	LC	3	54091700000	13630.30797
2016	28	PAN	1995	LC	3	57907700000	14343.96363
2017	28	PAN	3260	LC	3	62219000000	15150.34561
2018	28	PAN	3450	LC	3	65128200000	15592.57368
2019	28	PAN	2678	LC	3	66800800000	15731.01603

2015	29	POL	3520	.	.	4.77812E+11	12578.49547
2016	29	POL	4198	.	.	4.7263E+11	12447.43959
2017	29	POL	4115	.	.	5.26509E+11	13864.68176
2018	29	POL	3622	.	.	5.87412E+11	15468.48222
2019	29	POL	4100	.	.	5.95858E+11	15692.50703
2015	30	PRT	5047	LC	3	1.99314E+11	19242.36647
2016	30	PRT	5368	LC	3	2.06286E+11	19978.40121
2017	30	PRT	5799	LC	3	2.21358E+11	21490.42986
2018	30	PRT	.	LC	3	2.42313E+11	23562.55452
2019	30	PRT	.	LC	3	2.38785E+11	23252.05852
2015	31	ROU	4610	.	.	1.77729E+11	8969.148921
2016	31	ROU	3516	.	.	1.88129E+11	9548.587403
2017	31	ROU	12863	.	.	2.11695E+11	10807.79539
2018	31	ROU	9040	.	.	2.41457E+11	12399.88934
2019	31	ROU	7460	.	.	2.50077E+11	12919.52964
2015	32	SGP	30511	LC	3	3.08004E+11	55646.61875
2016	32	SGP	34129	LC	3	3.18652E+11	56828.29535
2017	32	SGP	35471	LC	3	3.41863E+11	60913.74533
2018	32	SGP	32660	LC	3	3.73217E+11	66188.7794
2019	32	SGP	32022	LC	3	3.72063E+11	65233.28244
2015	33	SVK	3264	PC	2	88467555244	16310.98841
2016	33	SVK	3297	PC	2	89655253976	16508.67036
2017	33	SVK	2636	PC	2	95494424979	17556.60082
2018	33	SVK	2509	PC	2	1.05702E+11	19406.34753
2019	33	SVK	2576	PC	2	1.0508E+11	19266.2755
2015	34	SVN	521	PC	2	43090173395	20881.76693
2016	34	SVN	449	PC	2	44736333522	21663.64341
2017	34	SVN	558	PC	2	48586603448	23512.81727
2018	34	SVN	787	PC	2	54161636035	26115.91337
2019	34	SVN	1069	PC	2	54174227309	25946.18219
2015	35	ESP	4757	C	4	1.19512E+12	25732.01836
2016	35	ESP	4990	C	4	1.23208E+12	26505.34322
2017	35	ESP	4999	C	4	1.31254E+12	28170.16786
2018	35	ESP	6563	C	4	1.42215E+12	30389.36099
2019	35	ESP	7354	C	4	1.39349E+12	29600.37825
2015	36	SWE	10170	LC	3	5.05104E+11	51545.48361
2016	36	SWE	13322	LC	3	5.15655E+11	51965.15715
2017	36	SWE	16551	LC	3	5.41019E+11	53791.50873
2018	36	SWE	19306	LC	3	5.55455E+11	54589.06039
2019	36	SWE	21709	LC	3	5.30884E+11	51615.02065
2015	37	CHE	2367	LC	3	6.79832E+11	82081.59716
2016	37	CHE	2909	LC	3	6.71309E+11	80172.23209
2017	37	CHE	4684	LC	3	6.7995E+11	80449.99451
2018	37	CHE	6126	LC	3	7.05141E+11	82818.10816

2019	37	CHE	7705	LC	3	7.03082E+11	81993.72713
2015	38	TUR	74221	LC	3	8.64314E+11	11006.24974
2016	38	TUR	132570	LC	3	8.69683E+11	10895.31869
2017	38	TUR	176411	LC	3	8.58989E+11	10591.47437
2018	38	TUR	222743	LC	3	7.78382E+11	9455.593654
2019	38	TUR	203786	LC	3	7.61425E+11	9126.561346
2015	39	GBR	381882	LC	3	2.92859E+12	44974.83188
2016	39	GBR	419451	LC	3	2.69428E+12	41064.13343
2017	39	GBR	214662	LC	3	2.66623E+12	40361.41738
2018	39	GBR	463938	LC	3	2.86067E+12	43043.22782
2019	39	GBR	487437	LC	3	2.82911E+12	42330.11754
2015	40	USA	1812665	PC	2	1.82247E+13	56839.38177
2016	40	USA	1975638	PC	2	1.8715E+13	57951.58408
2017	40	USA	2034406	PC	2	1.95194E+13	60062.22231
2018	40	USA	2171173	PC	2	2.05802E+13	62996.47129
2019	40	USA	2301163	PC	2	2.14332E+13	65297.51751
2015	41	BHS	297	PC	2	11710800000	31295.06208
2016	41	BHS	306	PC	2	11928500000	31562.63974
2017	41	BHS	446	PC	2	12490700000	32718.6381
2018	41	BHS	540	PC	2	13022100000	33767.50337
2019	41	BHS	.	PC	2	13578800000	34863.7421
2015	42	BGD	1094	PC	2	1.95079E+11	1248.453398
2016	42	BGD	1687	PC	2	2.21415E+11	1401.620628
2017	42	BGD	2357	PC	2	2.49711E+11	1563.913699
2018	42	BGD	3878	PC	2	2.74039E+11	1698.350394
2019	42	BGD	3573	PC	2	3.02571E+11	1855.739824
2015	43	BTN	1	NC	1	2003598213	2752.664208
2016	43	BTN	3	NC	1	2158972129	2930.562989
2017	43	BTN	2	NC	1	2450364928	3286.574703
2018	43	BTN	6	NC	1	2446866405	3243.486036
2019	43	BTN	7	NC	1	2530547158	3316.175714
2015	44	BWA	.	NC	1	14420593484	6799.870178
2016	44	BWA	89	NC	1	15646354089	7243.870253
2017	44	BWA	128	NC	1	17405588070	7893.232534
2018	44	BWA	168	NC	1	18663265549	8279.601739
2019	44	BWA	157	NC	1	18340480936	7961.325181
2015	45	ZMB	.	LC	3	21243339048	1337.795586
2016	45	ZMB	.	LC	3	20954754378	1280.578447
2017	45	ZMB	969	LC	3	25868165345	1534.866751
2018	45	ZMB	724	LC	3	26312140829	1516.390661
2019	45	ZMB	748	LC	3	23309773923	1305.063254
2015	46	FJI	516	PC	2	4682546881	5390.745258
2016	46	FJI	579	PC	2	4930204220	5651.318055
2017	46	FJI	650	PC	2	5353404419	6101.030839
2018	46	FJI	632	PC	2	5581393121	6317.487853

2019	46	FJI	622	PC	2	5496250694	6175.88872
2015	47	ZWE	712	PC	2	19963120600	1445.071062
2016	47	ZWE	732	PC	2	20548678100	1464.583529
2017	47	ZWE	1245	PC	2	22040902300	1548.170056
2018	47	ZWE	1733	PC	2	24311560500	1683.740577
2019	47	ZWE	.	PC	2	21440758800	1463.98591
2015	48	WSM	10	PC	2	788307330.6	4073.66601
2016	48	WSM	46	PC	2	799376439.5	4109.165135
2017	48	WSM	43	PC	2	832153612.6	4259.765001
2018	48	WSM	90	PC	2	821496064.5	4188.528346
2019	48	WSM	76	PC	2	852250191	4324.014018
2015	49	EST	8204	.	.	23048864243	17522.23019
2016	49	EST	5525	.	.	24259552889	18437.25282
2017	49	EST	5418	.	.	26951648829	20458.46073
2018	49	EST	5614	.	.	30631142227	23170.70738
2019	49	EST	6164	.	.	31471100656	23723.30611
2015	50	CYM	568	PC	2	4708336756	76280.48662
2016	50	CYM	620	PC	2	4909498943	78465.35733
2017	50	CYM	1164	PC	2	5153091158	81302.12297
2018	50	CYM	935	PC	2	5517361238	85975.02474
2019	50	CYM	1138	PC	2	.	.
2015	51	MDG	197	NC	1	11323023787	467.2353994
2016	51	MDG	115	NC	1	11848615018	475.9554172
2017	51	MDG	151	NC	1	13176313233	515.2927249
2018	51	MDG	187	NC	1	13853433948	527.5013261
2019	51	MDG	164	NC	1	14114631281	523.3590645
2015	52	AND	60	LC	3	2789870188	35762.52307
2016	52	AND	53	LC	3	2896679212	37474.66541
2017	52	AND	116	LC	3	3000180750	38962.88035
2018	52	AND	124	LC	3	3218316013	41793.05526
2019	52	AND	138	LC	3	3154057987	40886.39116
2015	53	BMU	447	C	4	6654541000	102005.6256
2016	53	BMU	478	C	4	6899911000	106885.8785
2017	53	BMU	942	C	4	7142316000	111820.5815
2018	53	BMU	667	C	4	7224329000	113021.4174
2019	53	BMU	391	C	4	7484113000	117089.2863
2015	54	COK	35	LC	3	.	.
2016	54	COK	31	LC	3	.	.
2017	54	COK	58	LC	3	.	.
2018	54	COK	126	LC	3	.	.
2019	54	COK	92	LC	3	.	.
2015	55	IMN	.	LC	3	7085288006	85124.92498
2016	55	IMN	932	LC	3	6846691871	82206.009
2017	55	IMN	1410	LC	3	6979581725	83489.81704
2018	55	IMN	1757	LC	3	7491969313	89108.42814

2019	55	IMN	2056	LC	3	.	.
2015	56	MNG	113	PC	2	11749620620	3918.579174
2016	56	MNG	282	PC	2	11186734674	3660.150746
2017	56	MNG	203	PC	2	11425755280	3669.41754
2018	56	MNG	1596	PC	2	13108769496	4134.987198
2019	56	MNG	2385	PC	2	13996719329	4339.843279
2015	57	UKR	4391834	LC	3	91030959455	2124.662319
2016	57	UKR	6381728	LC	3	93355993629	2187.73051
2017	57	UKR	8044703	LC	3	1.1219E+11	2640.675677
2018	57	UKR	10006093	LC	3	1.30902E+11	3096.817402
2019	57	UKR	11462494	LC	3	1.53781E+11	3659.031312

Control Variables part 1

Year	Country Abbreviation	Bank capital to assets ratio (%)	Liquid liabilities to GDP (%)	Domestic CR to prvt sector (% of GDP)	Prvt cr by deposit money banks and other FI to GDP (%)	Bank deposits to GDP (%)	Central bank assets to GDP (%)
2015	AUS	6.175417973	109.43	136.31738	137.536	102.579	0.533403
2016	AUS	6.704061782	111.691	142.4231683	141.369	104.85	0.717191
2017	AUS	7.136161695	111.087	140.2926654	140.433	96.1906	0.539303
2018	AUS	7.105988486	.	139.5259087	.	.	.
2019	AUS	7.5262285	.	135.8407547	.	.	.
2015	AUT	7.446891279	90.3446	85.89120788	84.7514	78.4534	2.61299
2016	AUT	7.334234175	91.5824	83.1743254	82.4659	79.9319	6.48676
2017	AUT	7.541992275	93.1049	84.15090153	81.69	81.3851	10.7219
2018	AUT	7.707002394	.	84.3347535	.	.	.
2019	AUT	7.949258695	.	85.83456195	.	.	.
2015	BEL	6.783034374	123.537	60.63286564	59.1908	108.189	2.86505
2016	BEL	7.053282196	124.777	63.37673015	61.7663	110.146	7.38124
2017	BEL	7.549625197	123.134	65.10467288	63.2854	109.614	12.6298
2018	BEL	7.614146331	.	68.03123413	.	.	.
2019	BEL	7.446390627	.	70.14903089	.	.	.
2015	BRL	8.460618166	77.5074	66.82970064	70.1774	55.346	20.0886
2016	BRL	9.272248305	82.6837	62.16956213	67.8268	59.2595	22.5593
2017	BRL	10.04718606	84.5793	59.50382094	63.7813	62.2984	24.2408
2018	BRL	10.06443595	.	61.22325727	.	.	.
2019	BRL	10.21089379	.	63.93441157	.	.	.
2015	BGR	12.01590157	80.2208	54.92277352	55.8082	67.2062	0.079325
2016	BGR	11.62960744	81.103	52.13942224	52.0446	67.5696	0.074153
2017	BGR	11.3934048	81.8124	49.96831601	49.8052	67.72	0.069519
2018	BGR	10.82327218	.	50.44045168	.	.	.

2019	BGR	11.59431785	.	49.79655137	.	.	.
2015	CAN	5.067827011	.	.	.	.	4.6652
2016	CAN	5.160559391	.	.	.	.	4.71937
2017	CAN	5.223244745	.	.	.	.	4.62464
2018	CAN	5.202677391	.	.	.	.	.
2019	CAN	5.218075498	.	.	.	.	.
2015	HRV	12.6826346	69.5461	64.4233387	65.7553	63.778	0.006067
2016	HRV	14.04336544	69.6771	60.20155583	60.961	63.5154	0.006093
2017	HRV	14.82323773	70.0513	57.08092782	57.5896	63.3391	0.006017
2018	HRV	13.90303792	.	55.40840211	.	.	.
2019	HRV	13.85279694	.	54.42082835	.	.	.
2015	CYP	10.11403421	200.879	244.1908976	247.982	175.044	0.116737
2016	CYP	10.31351607	205.679	217.6409743	.	.	0.108255
2017	CYP	9.036913979	207.285	193.6195028	.	.	0.100167
2018	CYP	8.225598417	.	137.703026	.	.	.
2019	CYP	9.01047899	.	112.0210434	.	.	.
2015	CZE	7.524656077	75.7131	49.54198338	48.5406	65.8606	0.003695
2016	CZE	7.257311629	77.976	51.05880435	49.7776	67.6313	0.003345
2017	CZE	6.480188718	80.1115	50.90670769	50.2297	69.5008	0.002884
2018	CZE	6.543840312	.	51.34685065	.	.	.
2019	CZE	6.835157503	.	50.64587136	.	.	.
2015	DNK	7.790802433	64.7989	169.9677082	169.976	53.243	0.007027
2016	DNK	7.386260854	63.3095	166.5609788	166.31	54.5099	0.004536
2017	DNK	6.896164929	60.5075	161.8070096	163.015	56.2718	0.002473
2018	DNK	6.979375706	.	161.2404034	.	.	.
2019	DNK	7.374379355	.	159.7239387	.	.	.
2015	FIN	5.601509764	75.1502	94.44851811	93.1553	64.9835	1.9507
2016	FIN	6.457187183	76.6398	93.99957705	93.2908	66.5871	6.20142
2017	FIN	9.025842138	76.5288	93.52108811	92.5026	66.9206	9.86498
2018	FIN	9.303519062	.	94.16726582	.	.	.
2019	FIN	6.845244092	.	95.12047091	.	.	.
2015	FRA	5.79380342	91.2062	95.090046	93.5799	76.7879	3.93389
2016	FRA	6.24897238	93.8062	97.37432351	94.952	78.8187	9.10781
2017	FRA	6.594008456	97.6455	101.3718189	96.8093	81.437	14.8686
2018	FRA	6.525498551	.	104.3838086	.	.	.
2019	FRA	6.610560832	.	107.6418101	.	.	.
2015	DEU	5.94	90.5693	78.12139397	77.123	79.7663	1.54116
2016	DEU	5.98	92.9247	77.45452573	75.7677	81.0994	5.22441
2017	DEU	6.33	93.9221	77.76815569	75.4829	82.1452	9.23157
2018	DEU	6.47	.	78.39072104	.	.	.
2019	DEU	6.31	.	80.17668633	.	.	.
2015	GRC	9.994418654	98.843	112.2203796	114.236	82.3459	6.81318
2016	GRC	10.70009327	88.6556	107.3716382	108.795	70.9954	6.85191
2017	GRC	11.99737325	89.7151	99.06191457	101.738	70.8158	6.99667

2018	GRC	10.71579985	.	89.18346768	.	.	.
2019	GRC	10.97830461	.	79.18424206	.	.	.
2015	HKG	9.47	348.58	207.8993282	212.082	334.551	.
2016	HKG	9.784437604	362.219	214.3139467	201.608	347.41	.
2017	HKG	9.833592331	368.922	223.390933	214.125	353.393	.
2018	HKG	9.491409282	.	219.9289106	.	.	.
2019	HKG	9.936605644	.	235.7217552	.	.	.
2015	HUN	.	56.5443	35.14533101	38.4193	45.0126	0.303932
2016	HUN	.	57.8185	33.45220909	34.2699	45.6685	0.149874
2017	HUN	.	57.7188	32.47548277	32.4091	45.508	0.144079
2018	HUN	.	.	32.41901494	.	.	.
2019	HUN	.	.	33.46992729	.	.	.
2015	ISL	21.05682283	73.3545	87.87636203	87.0834	71.3229	5.51892
2016	ISL	20.08117648	67.6386	84.90283848	82.9748	65.5502	2.8082
2017	ISL	19.33499915	64.3333	87.67602972	84.186	62.1299	1.83755
2018	ISL	17.03455278	.	92.76085162	.	.	.
2019	ISL	16.65787159	.	90.60401729	.	.	.
2015	IRL	13.97379448	97.9966	53.10892392	56.7524	68.185	15.0535
2016	IRL	13.52653797	99.3796	48.12803987	49.6353	71.8195	16.5534
2017	IRL	14.3478431	97.9057	44.23438554	44.7847	71.0654	16.3596
2018	IRL	14.85966214	.	41.07818292	.	.	.
2019	IRL	13.47394531	.	36.96668577	.	.	.
2015	ITA	6.185530291	88.7702	87.34519182	87.4438	78.0547	9.83485
2016	ITA	5.493010154	90.4453	84.94363796	84.9696	79.2351	15.2365
2017	ITA	6.635084795	92.9073	80.78255305	81.9551	81.2633	21.3868
2018	ITA	6.333320109	.	76.73080649	.	.	.
2019	ITA	6.712811712	.	74.33978099	.	.	.
2015	JPN	.	214.297	162.7281536	159.35	215.043	52.4851
2016	JPN	.	217.853	164.7706266	161.19	218.631	65.3124
2017	JPN	.	220.209	169.8143277	163.642	221.003	73.4169
2018	JPN	.	.	169.9592324	.	.	.
2019	JPN	.	.	176.2396879	.	.	.
2015	KOR	8.028209415	130.835	132.1407127	128.494	119.949	1.28859
2016	KOR	7.87319981	133.782	134.8257914	130.423	122.709	1.0678
2017	KOR	7.993132725	135.344	136.4924733	133.001	123.835	0.975497
2018	KOR	7.955582859	.	141.1550144	.	.	.
2019	KOR	.	.	151.6882658	.	.	.
2015	LVA	10.06332947	61.4512	48.32889117	49.7213	40.5622	1.07754
2016	LVA	10.07565007	63.0363	46.72265552	47.2088	42.3239	2.53659
2017	LVA	11.13043539	61.7035	42.15521211	43.1244	41.8144	3.31338
2018	LVA	12.80228965	.	36.62000761	.	.	.
2019	LVA	9.704633034	.	34.57272209	.	.	.
2015	LTU	11.05792505	51.0548	41.55766482	40.5109	41.6567	1.22446
2016	LTU	8.627718702	58.4381	42.68978892	41.2074	43.1569	3.06356

2017	LTU	9.386035351	57.868	40.97804498	40.4345	43.1183	3.8719
2018	LTU	9.605509749	.	40.3947421	.	.	.
2019	LTU	6.884604165	.	38.88734167	.	.	.
2015	LUX	7.010517614	622.696	95.43691322	92.16	385.754	0.980936
2016	LUX	7.355653733	652.929	99.08646204	97.3554	397.226	2.26199
2017	LUX	8.350982405	655.247	103.3473826	102.419	399.724	2.89249
2018	LUX	7.978708957	.	106.3242683	.	.	.
2019	LUX	7.44086666	.	107.2936575	.	.	.
2015	MLT	7.187747405	159.032	85.26605376	87.1546	140.928	5.9019
2016	MLT	7.398098465	162.729	81.77545593	81.997	143.685	8.90969
2017	MLT	8.520001727	160.511	76.357066	76.7676	140.757	10.304
2018	MLT	8.402025239	.	75.99658279	.	.	.
2019	MLT	8.888460997	.	75.16031482	.	.	.
2015	NLD	5.555060361	121.915	111.6036336	113.148	100.408	2.08536
2016	NLD	5.689785743	118.975	114.5655246	111.735	98.2081	5.99899
2017	NLD	6.077995787	116.311	111.1438658	110.936	96.9775	9.72073
2018	NLD	6.162503131	.	105.4856219	.	.	.
2019	NLD	6.212310141	.	100.029744	.	.	.
2015	NOR	.	59.1403	138.6784963	134.49	58.3657	0.021635
2016	NOR	.	62.672	145.8085927	142.78	60.3416	0.015664
2017	NOR	.	62.2743	146.4868716	141.68	61.6311	0.011429
2018	NOR	.	.	144.3367621	.	.	.
2019	NOR	.	.	151.3905887	.	.	.
2015	PAN	10.16602664	67.8544	85.31330866	78.4952	66.412	10.2789
2016	PAN	11.44967953	64.1639	86.74549596	77.7589	62.6607	9.71258
2017	PAN	12.48097873	63.0628	87.14141015	78.6015	61.485	9.30182
2018	PAN	12.48736664	.	86.5838255	.	.	.
2019	PAN	.	.	86.83744047	.	.	.
2015	POL	9.369575568	61.6271	53.56507535	51.9022	53.5721	0.00128
2016	POL	9.514343125	64.6357	54.41781993	52.8463	55.7538	0.001175
2017	POL	10.01778182	65.042	52.4582189	51.6862	55.6892	0.00108
2018	POL	9.770492632	.	52.53377829	.	.	.
2019	POL	9.563012313	.	50.80275801	.	.	.
2015	PRT	7.206073883	95.1823	119.8348531	122.345	80.1822	3.48221
2016	PRT	6.532966822	97.3506	111.2430748	113.353	82.1243	9.13039
2017	PRT	7.656912471	99.9617	102.606207	105.146	84.8384	12.8384
2018	PRT	7.039359602	.	96.9928843	.	.	.
2019	PRT	7.66166516	.	90.71544782	.	.	.
2015	ROU	8.178320995	38.5057	29.92980237	35.7018	32.4191	.
2016	ROU	8.924362057	38.9727	28.12767901	33.4169	32.3907	.
2017	ROU	8.888647238	38.454	26.47339333	31.0008	31.614	.
2018	ROU	9.342160174	.	25.72739123	.	.	.
2019	ROU	10.19908107	.	24.71600388	.	.	.
2015	SGP	9.000746071	123.449	122.4213538	126.138	115.612	1.78335

2016	SGP	9.229952907	126.023	123.8724342	126.856	117.574	1.95559
2017	SGP	9.177550102	127.628	121.4777354	127.846	118.592	2.01873
2018	SGP	9.025732078	.	118.9411619	.	.	.
2019	SGP	9.323883966	.	120.7801442	.	.	.
2015	SVK	11.12241104	63.2096	52.73321372	50.6234	49.8074	2.64395
2016	SVK	10.97713003	66.2086	57.07118384	54.2697	52.1789	6.65956
2017	SVK	10.7723217	67.2862	60.18141657	57.286	53.105	8.89895
2018	SVK	10.57699455	.	61.97090266	.	.	.
2019	SVK	10.43667218	.	62.89592359	.	.	.
2015	SVN	.	65.5713	49.88664735	51.3306	53.3926	3.27855
2016	SVN	.	67.0104	46.64183861	47.353	54.6755	8.42732
2017	SVN	.	67.1681	45.06457222	44.5703	55.0942	12.4276
2018	SVN	10.68824839	.	43.32055538	.	.	.
2019	SVN	10.61128698	.	42.45886934	.	.	.
2015	ESP	7.443005041	108.246	119.2608506	121.449	95.5009	5.6111
2016	ESP	7.788720614	109.728	111.8075307	111.554	96.826	11.1507
2017	ESP	7.615906488	109.74	105.8952531	104.946	96.8128	17.3351
2018	ESP	7.552418118	.	99.4891388	.	.	.
2019	ESP	7.592382727	.	104.1851038	.	.	.
2015	SWE	.	64.6267	126.6334465	125.353	62.6981	2.11027
2016	SWE	6.122644188	66.7741	128.5219741	125.976	65.1938	5.32031
2017	SWE	6.128294357	70.0173	131.2817426	128.164	68.3736	7.19686
2018	SWE	6.184781181	.	131.8716958	.	.	.
2019	SWE	6.328285226	.	132.6795034	.	.	.
2015	CHE	7.290805951	188.336	170.2815923	169.068	168.956	0.285709
2016	CHE	7.120629094	189.897	174.5953238	172.103	171.254	0.282623
2017	CHE	8.017107046	.	.	.	.	.
2018	CHE	8.300509843	.	.	.	.	.
2019	CHE	8.59195491	.	.	.	.	.
2015	TUR	11.00131461	42.8183	66.47789735	61.635	44.4709	0.541655
2016	TUR	10.72799293	44.341	69.37306617	64.7434	46.335	0.589562
2017	TUR	10.71991578	43.756	70.33290578	65.1126	45.9642	0.618009
2018	TUR	10.79392098	.	67.41352606	.	.	.
2019	TUR	11.74870387	.	65.35258427	.	.	.
2015	GBR	6.838229264	134.022	130.8373537	132.478	.	0.024727
2016	GBR	7.025170524	135.721	132.0912924	130.067	.	0.11454
2017	GBR	6.78469169	141.888	133.9656422	131.704	.	0.25659
2018	GBR	6.816460065	.	134.4710918	.	.	.
2019	GBR	.	.	133.6082323	.	.	.
2015	USA	11.71105298	73.4958	179.7718011	178.884	80.6066	23.2626
2016	USA	11.58548941	74.972	182.7852235	178.89	80.9675	22.6159
2017	USA	11.65000958	75.2735	190.76544	183.134	80.8253	21.7465
2018	USA	11.68621915	.	179.5079791	.	.	.
2019	USA	11.77650334	.	191.1649538	.	.	.

2015	BHS	.	54.9985	54.66919425	55.5347	52.3382	4.79753
2016	BHS	.	56.1162	51.73492057	53.0835	53.277	5.3562
2017	BHS	.	57.1725	.	50.0022	54.4462	4.81756
2018	BHS	.	.	.	.	.	.
2019	BHS	.	.	.	.	.	.
2015	BGD	5.546805146	56.127	44.40697181	38.5423	44.8963	0.863638
2016	BGD	5.631425062	56.9249	45.27950522	39.0383	44.3797	0.834905
2017	BGD	5.175476795	57.7717	47.58329625	40.721	43.6314	0.797724
2018	BGD	4.74201086	.	46.93898318	.	.	.
2019	BGD	5.168285407	.	45.31297481	.	.	.
2015	BTN	17.6113939	61.0014	46.43944705	53.1765	56.1128	0.023378
2016	BTN	15.44890886	62.5204	48.18792134	57.0257	57.1679	0.033886
2017	BTN	12.97109772	65.6274	51.29828135	58.7815	60.2593	0.042613
2018	BTN	13.73652938	.	58.09305413	.	.	.
2019	BTN	12.17622989	.	64.39133044	.	.	.
2015	BWA	8.524321018	42.2143	33.77325412	32.505	40.8385	0.051668
2016	BWA	8.440349226	40.4209	31.5127238	30.2643	39.3467	0.046603
2017	BWA	8.766129725	39.9119	31.415584	30.7481	38.8259	0.047454
2018	BWA	9.445044144	.	31.70305433	.	.	.
2019	BWA	11.93477228	.	32.77338855	.	.	.
2015	ZMB	11.16038541	18.3851	19.76483406	16.9988	19.2042	3.67875
2016	ZMB	12.08671141	18.2512	15.44212051	16.1533	19.1483	4.73024
2017	ZMB	11.234619	18.596	14.90601054	12.4731	18.0015	5.09134
2018	ZMB	11.15824046	.	14.97369229	.	.	.
2019	ZMB	11.09037391	.	15.62617575	.	.	.
2015	FJI	8.484491747	50.35	78.76592863	78.5497	66.7572	1.07118
2016	FJI	9.170700194	54.6964	84.42514511	86.6614	70.3497	0.987749
2017	FJI	8.864193639	56.4113	86.20668127	91.4575	71.2914	0.887531
2018	FJI	9.937814995	.	92.7959711	.	.	.
2019	FJI	10.95989152	.	100.6734744	.	.	.
2015	ZWE	.	22.7646	18.31568566	18.3289	22.3373	6.63157
2016	ZWE	.	25.2076	17.09856236	17.2416	24.7551	9.81362
2017	ZWE	.	30.2901	16.8751082	16.2244	29.0104	15.6259
2018	ZWE	.	.	16.69432406	.	.	.
2019	ZWE	.	.	51.83152205	.	.	.
2015	WSM	16.2	33.8598	75.40348535	70.0117	39.6684	2.14948
2016	WSM	16.345366	35.1536	78.73821108	75.0508	41.0522	1.74247
2017	WSM	15.77	37.4558	82.56487047	79.0269	43.8296	0.836038
2018	WSM	16.616114	.	87.20137244	.	.	.
2019	WSM	16.24512706	.	89.18437279	.	.	.
2015	EST	10.75402971	71.2828	68.46719659	67.5523	56.9173	0.147055
2016	EST	10.82605197	73.9156	69.21554981	67.7501	59.6426	0.288862
2017	EST	12.77038406	72.9985	64.06723719	64.8151	59.1892	0.30143
2018	EST	12.71387377	.	61.93707717	.	.	.

2019	EST	12.07431823	.	58.97400317	.	.	.
2015	CYM	.	.	.	.	.	.
2016	CYM	.	.	.	.	.	.
2017	CYM	.	.	.	.	.	.
2018	CYM	.	.	.	.	.	.
2019	CYM	.	.	.	.	.	.
2015	MDG	11.5928709	23.5359	12.31058917	12.5164	16.6155	3.87739
2016	MDG	10.73195445	20.8128	11.88781274	12.5327	17.3678	4.13521
2017	MDG	10.3017242	22.8318	12.70612297	13.0303	18.5873	3.73254
2018	MDG	10.60891157	.	12.88203606	.	.	.
2019	MDG	10.06591274	.	14.20165625	.	.	.
2015	AND	.	.	.	.	.	.
2016	AND	.	.	.	.	.	.
2017	AND	.	.	.	.	.	.
2018	AND	.	.	.	.	.	.
2019	AND	.	.	.	.	.	.
2015	BMU	.	.	.	.	.	.
2016	BMU	.	.	.	.	.	.
2017	BMU	.	.	.	.	.	.
2018	BMU	.	.	.	.	.	.
2019	BMU	.	.	.	.	.	.
2015	COK	.	.	.	.	.	.
2016	COK	.	.	.	.	.	.
2017	COK	.	.	.	.	.	.
2018	COK	.	.	.	.	.	.
2019	COK	.	.	.	.	.	.
2015	IMN	.	.	.	.	.	.
2016	IMN	.	.	.	.	.	.
2017	IMN	.	.	.	.	.	.
2018	IMN	.	.	.	.	.	.
2019	IMN	.	.	.	.	.	.
2015	MNG	.	45.3114	53.85912013	54.6246	42.4317	2.46388
2016	MNG	.	46.7898	56.91575245	52.8172	44.0222	3.99944
2017	MNG	.	50.6255	53.07239832	49.0532	47.9875	4.49403
2018	MNG	.	.	55.69985587	.	.	.
2019	MNG	.	.	49.63345053	.	.	.
2015	UKR	8.01647621	37.4259	56.65775413	66.1193	38.9909	20.9579
2016	UKR	9.781221922	30.1439	47.30713009	47.1415	31.2373	17.1038
2017	UKR	11.9029128	27.1971	38.27106413	38.4239	28.0747	13.2715
2018	UKR	10.7659697	.	34.50900898	.	.	.
2019	UKR	13.50503019	.	30.04696795	.	.	.

Control Variables part 2

Year	Country Abbreviation	Govt Effectiveness	Voice and Accountability	Control of Corruption
2015	AUS	1.56	1.36	1.88
2016	AUS	1.57	1.35	1.82
2017	AUS	1.54	1.39	1.80
2018	AUS	1.60	1.43	1.81
2019	AUS	1.57	1.32	1.81
2015	AUT	1.48	1.38	1.52
2016	AUT	1.51	1.34	1.55
2017	AUT	1.46	1.34	1.53
2018	AUT	1.45	1.38	1.60
2019	AUT	1.49	1.33	1.55
2015	BEL	1.44	1.39	1.57
2016	BEL	1.33	1.38	1.64
2017	BEL	1.18	1.38	1.50
2018	BEL	1.17	1.40	1.51
2019	BEL	1.03	1.37	1.55
2015	BRL	-0.18	0.46	-0.40
2016	BRL	-0.17	0.45	-0.38
2017	BRL	-0.29	0.45	-0.53
2018	BRL	-0.45	0.40	-0.40
2019	BRL	-0.19	0.34	-0.33
2015	BGR	0.21	0.43	-0.26
2016	BGR	0.30	0.40	-0.17
2017	BGR	0.26	0.38	-0.16
2018	BGR	0.27	0.32	-0.15
2019	BGR	0.34	0.38	-0.16
2015	CAN	1.76	1.47	1.89
2016	CAN	1.78	1.45	1.99
2017	CAN	1.85	1.48	1.92
2018	CAN	1.72	1.53	1.83
2019	CAN	1.73	1.46	1.77
2015	HRV	0.51	0.56	0.25
2016	HRV	0.49	0.53	0.20
2017	HRV	0.57	0.51	0.19
2018	HRV	0.46	0.50	0.13
2019	HRV	0.41	0.53	0.13
2015	CYP	1.05	1.03	1.01
2016	CYP	0.96	1.05	0.83
2017	CYP	0.92	1.06	0.78
2018	CYP	0.92	1.04	0.64
2019	CYP	0.99	1.08	0.60
2015	CZE	1.05	1.04	0.43

2016	CZE	1.04	1.03	0.54
2017	CZE	1.01	0.97	0.57
2018	CZE	0.92	0.93	0.50
2019	CZE	0.89	0.94	0.51
2015	DNK	1.85	1.55	2.21
2016	DNK	1.88	1.54	2.23
2017	DNK	1.80	1.52	2.19
2018	DNK	1.87	1.61	2.15
2019	DNK	1.94	1.58	2.11
2015	FIN	1.81	1.54	2.28
2016	FIN	1.83	1.53	2.24
2017	FIN	1.94	1.55	2.22
2018	FIN	1.98	1.61	2.21
2019	FIN	1.93	1.59	2.15
2015	FRA	1.44	1.21	1.31
2016	FRA	1.41	1.14	1.40
2017	FRA	1.35	1.15	1.26
2018	FRA	1.48	1.18	1.32
2019	FRA	1.38	1.14	1.30
2015	DEU	1.74	1.42	1.84
2016	DEU	1.73	1.36	1.84
2017	DEU	1.72	1.39	1.84
2018	DEU	1.62	1.42	1.95
2019	DEU	1.59	1.34	1.90
2015	GRC	0.26	0.65	-0.08
2016	GRC	0.23	0.67	-0.09
2017	GRC	0.31	0.71	-0.14
2018	GRC	0.34	0.86	-0.07
2019	GRC	0.41	0.94	-0.01
2015	HKG	1.91	0.51	1.65
2016	HKG	1.84	0.38	1.56
2017	HKG	1.90	0.43	1.61
2018	HKG	1.90	0.47	1.68
2019	HKG	1.74	0.21	1.67
2015	HUN	0.50	0.56	0.15
2016	HUN	0.46	0.40	0.10
2017	HUN	0.52	0.37	0.09
2018	HUN	0.49	0.32	0.05
2019	HUN	0.50	0.22	0.00
2015	ISL	1.49	1.38	1.94
2016	ISL	1.39	1.36	1.95
2017	ISL	1.45	1.38	1.84
2018	ISL	1.47	1.41	1.84
2019	ISL	1.52	1.33	1.71

2015	IRL	1.53	1.33	1.62
2016	IRL	1.33	1.29	1.58
2017	IRL	1.29	1.29	1.55
2018	IRL	1.42	1.32	1.55
2019	IRL	1.28	1.34	1.46
2015	ITA	0.45	1.03	0.02
2016	ITA	0.53	1.03	0.08
2017	ITA	0.50	1.05	0.19
2018	ITA	0.41	1.05	0.24
2019	ITA	0.46	0.97	0.24
2015	JPN	1.78	0.99	1.57
2016	JPN	1.82	0.98	1.52
2017	JPN	1.62	1.00	1.52
2018	JPN	1.68	1.02	1.42
2019	JPN	1.59	0.96	1.48
2015	KOR	1.01	0.63	0.37
2016	KOR	1.06	0.64	0.46
2017	KOR	1.07	0.74	0.48
2018	KOR	1.18	0.80	0.60
2019	KOR	1.38	0.77	0.76
2015	LVA	1.09	0.85	0.47
2016	LVA	1.01	0.84	0.43
2017	LVA	0.90	0.80	0.54
2018	LVA	1.04	0.81	0.33
2019	LVA	1.11	0.88	0.48
2015	LTU	1.18	0.97	0.62
2016	LTU	1.07	1.00	0.71
2017	LTU	0.97	0.99	0.55
2018	LTU	1.07	0.92	0.50
2019	LTU	1.04	1.02	0.68
2015	LUX	1.72	1.55	2.10
2016	LUX	1.69	1.50	2.10
2017	LUX	1.68	1.52	1.99
2018	LUX	1.78	1.57	2.09
2019	LUX	1.73	1.52	2.11
2015	MLT	0.85	1.20	0.90
2016	MLT	0.96	1.20	0.72
2017	MLT	1.00	1.17	0.74
2018	MLT	0.97	1.12	0.58
2019	MLT	0.86	1.11	0.24
2015	NLD	1.83	1.56	1.88
2016	NLD	1.83	1.54	1.91
2017	NLD	1.85	1.57	1.87
2018	NLD	1.85	1.60	2.01

2019	NLD	1.80	1.56	2.00
2015	NOR	1.86	1.69	2.24
2016	NOR	1.87	1.66	2.20
2017	NOR	1.98	1.69	2.24
2018	NOR	1.89	1.73	2.09
2019	NOR	1.86	1.69	2.07
2015	PAN	0.29	0.56	-0.37
2016	PAN	0.19	0.52	-0.49
2017	PAN	0.02	0.52	-0.54
2018	PAN	-0.02	0.57	-0.55
2019	PAN	0.07	0.62	-0.58
2015	POL	0.80	1.04	0.67
2016	POL	0.71	0.84	0.74
2017	POL	0.64	0.78	0.72
2018	POL	0.66	0.72	0.64
2019	POL	0.60	0.70	0.60
2015	PRT	1.22	1.13	0.96
2016	PRT	1.21	1.16	0.93
2017	PRT	1.33	1.21	0.87
2018	PRT	1.21	1.21	0.85
2019	PRT	1.15	1.24	0.76
2015	ROU	-0.06	0.49	-0.02
2016	ROU	-0.17	0.54	-0.02
2017	ROU	-0.17	0.52	-0.03
2018	ROU	-0.25	0.46	-0.12
2019	ROU	-0.28	0.49	-0.13
2015	SGP	2.24	-0.16	2.09
2016	SGP	2.21	-0.15	2.09
2017	SGP	2.22	-0.17	2.13
2018	SGP	2.23	-0.06	2.17
2019	SGP	2.22	-0.18	2.16
2015	SVK	0.84	0.97	0.18
2016	SVK	0.89	0.96	0.23
2017	SVK	0.80	0.94	0.22
2018	SVK	0.71	0.88	0.36
2019	SVK	0.67	0.91	0.33
2015	SVN	0.97	0.99	0.77
2016	SVN	1.13	1.01	0.82
2017	SVN	1.17	1.01	0.81
2018	SVN	1.13	0.99	0.87
2019	SVN	1.08	1.01	0.91
2015	ESP	1.17	1.04	0.58
2016	ESP	1.12	1.04	0.52
2017	ESP	1.03	1.03	0.49

2018	ESP	1.00	1.07	0.61
2019	ESP	1.00	1.09	0.65
2015	SWE	1.82	1.57	2.24
2016	SWE	1.77	1.56	2.19
2017	SWE	1.84	1.58	2.14
2018	SWE	1.83	1.61	2.14
2019	SWE	1.83	1.59	2.12
2015	CHE	2.00	1.56	2.14
2016	CHE	2.01	1.53	1.99
2017	CHE	2.06	1.56	1.99
2018	CHE	2.04	1.62	2.01
2019	CHE	1.95	1.53	1.98
2015	TUR	0.22	-0.37	-0.15
2016	TUR	0.05	-0.61	-0.19
2017	TUR	0.08	-0.71	-0.19
2018	TUR	0.01	-0.83	-0.34
2019	TUR	0.05	-0.81	-0.29
2015	GBR	1.74	1.30	1.88
2016	GBR	1.60	1.30	1.90
2017	GBR	1.41	1.33	1.84
2018	GBR	1.34	1.39	1.83
2019	GBR	1.44	1.26	1.77
2015	USA	1.46	1.11	1.40
2016	USA	1.48	1.11	1.37
2017	USA	1.55	1.05	1.38
2018	USA	1.58	1.05	1.33
2019	USA	1.49	0.97	1.22
2015	BHS	0.71	0.95	1.14
2016	BHS	0.72	0.85	1.11
2017	BHS	0.58	0.85	1.17
2018	BHS	0.54	0.80	1.13
2019	BHS	0.49	0.93	1.18
2015	BGD	-0.72	-0.51	-0.81
2016	BGD	-0.68	-0.58	-0.86
2017	BGD	-0.73	-0.61	-0.83
2018	BGD	-0.75	-0.73	-0.91
2019	BGD	-0.74	-0.72	-0.99
2015	BTN	0.41	-0.03	1.02
2016	BTN	0.50	-0.03	1.13
2017	BTN	0.57	0.01	1.57
2018	BTN	0.36	0.06	1.65
2019	BTN	0.31	0.10	1.62
2015	BWA	0.50	0.44	0.85
2016	BWA	0.53	0.40	0.93

2017	BWA	0.44	0.39	0.79
2018	BWA	0.33	0.48	0.75
2019	BWA	0.43	0.53	0.71
2015	ZMB	-0.56	-0.07	-0.34
2016	ZMB	-0.66	-0.30	-0.40
2017	ZMB	-0.63	-0.33	-0.54
2018	ZMB	-0.56	-0.32	-0.66
2019	ZMB	-0.68	-0.29	-0.64
2015	FJI	-0.29	0.03	0.17
2016	FJI	-0.25	0.03	0.13
2017	FJI	0.09	0.18	0.36
2018	FJI	0.26	0.22	0.38
2019	FJI	0.20	0.09	0.56
2015	ZWE	-1.16	-1.17	-1.31
2016	ZWE	-1.16	-1.18	-1.26
2017	ZWE	-1.19	-1.19	-1.27
2018	ZWE	-1.20	-1.12	-1.23
2019	ZWE	-1.21	-1.14	-1.24
2015	WSM	0.51	0.74	0.29
2016	WSM	0.54	0.77	0.28
2017	WSM	0.62	0.78	0.66
2018	WSM	0.59	0.76	0.64
2019	WSM	0.44	0.75	0.64
2015	EST	1.07	1.19	1.29
2016	EST	1.09	1.21	1.27
2017	EST	1.11	1.21	1.24
2018	EST	1.19	1.21	1.51
2019	EST	1.17	1.21	1.54
2015	CYM	1.17	0.47	1.02
2016	CYM	1.18	0.47	0.53
2017	CYM	1.23	0.48	0.53
2018	CYM	1.20	0.49	0.50
2019	CYM	1.17	0.50	0.47
2015	MDG	-1.29	-0.38	-0.85
2016	MDG	-1.17	-0.32	-0.91
2017	MDG	-1.14	-0.34	-1.05
2018	MDG	-1.15	-0.30	-1.00
2019	MDG	-1.14	-0.22	-1.01
2015	AND	1.79	1.19	1.22
2016	AND	1.86	1.18	1.23
2017	AND	1.94	1.16	1.24
2018	AND	1.94	1.07	1.24
2019	AND	1.91	1.14	1.23
2015	BMU	1.01	.	1.22

2016	BMU	1.33	.	1.23
2017	BMU	1.39	.	1.24
2018	BMU	1.39	.	1.24
2019	BMU	1.36	.	1.23
2015	COK	.	.	.
2016	COK	.	.	.
2017	COK	.	.	.
2018	COK	.	.	.
2019	COK	.	.	.
2015	IMN	.	.	.
2016	IMN	.	.	.
2017	IMN	.	.	.
2018	IMN	.	.	.
2019	IMN	.	.	.
2015	MNG	-0.42	0.27	-0.49
2016	MNG	-0.10	0.33	-0.49
2017	MNG	-0.26	0.29	-0.45
2018	MNG	-0.23	0.26	-0.43
2019	MNG	-0.19	0.35	-0.44
2015	UKR	-0.52	-0.09	-0.98
2016	UKR	-0.57	0.00	-0.81
2017	UKR	-0.46	0.01	-0.78
2018	UKR	-0.42	-0.01	-0.87
2019	UKR	-0.30	0.06	-0.71

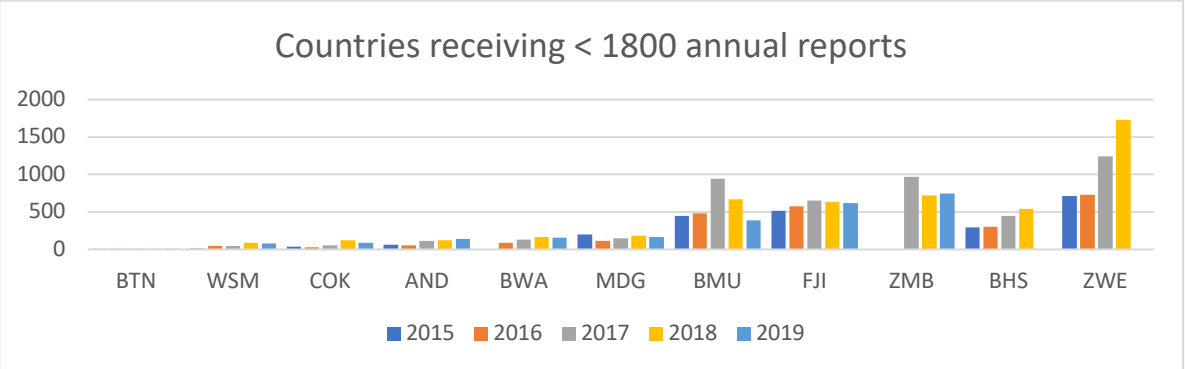
Regression table

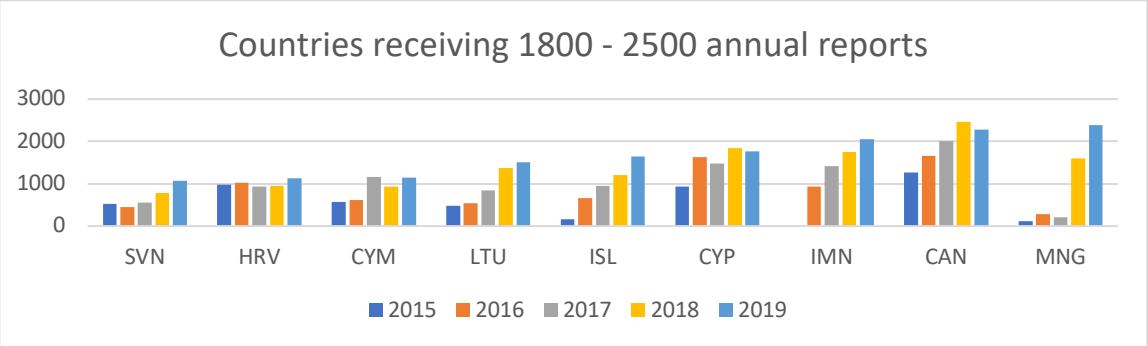
Estimates

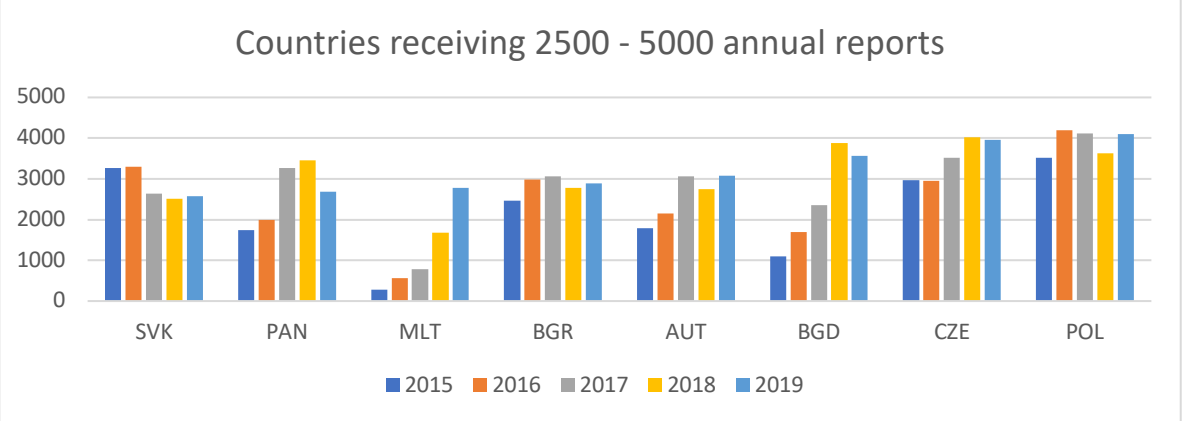
	(1) OLS	(2) RE
Rating	4.58e+06	5.38e+05*
	(3.31e+06)	(3.17e+05)
d16	1.57e+05**	1.20e+05
	(68175.991)	(74302.681)
d17	2.34e+05**	2.07e+05**
	(1.15e+05)	(86885.941)
d18	0.000	0.000
	(.)	(.)
d19	0.000	0.000
	(.)	(.)
Label=1	0.000	
	(.)	
Label=2	-1.95e+06***	
	(6.00e+05)	
Label=3	-6.51e+06**	
	(3.13e+06)	
Label=5	1.56e+06	
	(3.79e+06)	
Label=6	-7.46e+06***	
	(2.13e+06)	
Label=7	-6.84e+05	
	(1.08e+06)	
Label=8	-7.17e+06**	
	(2.93e+06)	
Label=9	-4.37e+06*	
	(2.22e+06)	
Label=11	-3.38e+06*	
	(1.92e+06)	

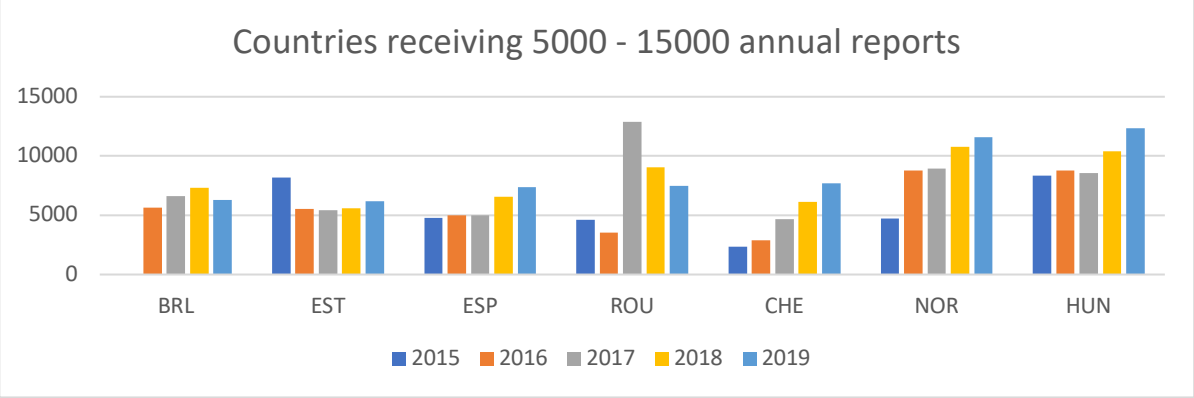
Label=12	-2.66e+06***	
	(7.13e+05)	
Label=13	-7.38e+06**	
	(3.21e+06)	
Label=14	-4.83e+06*	
	(2.62e+06)	
Label=15	-2.32e+06	
	(3.01e+06)	
Label=16	-1.25e+07**	
	(5.02e+06)	
Label=17	-3.73e+06**	
	(1.72e+06)	
Label=18	-4.46e+06	
	(3.21e+06)	
Label=19	-1.43e+06	
	(9.77e+05)	
Label=20	-4.95e+06***	
	(1.83e+06)	
Label=21	-4.98e+06**	
	(2.39e+06)	
Label=22	-4.06e+06	
	(3.53e+06)	
Label=23	-2.50e+06	
	(1.55e+06)	
Label=24	-3.10e+06**	
	(1.39e+06)	
Label=25	-8.67e+06	
	(5.98e+06)	
Label=26	-6.08e+06*	
	(3.14e+06)	
Label=27	-2.03e+06	
	(4.36e+06)	
Label=28	-5.93e+06***	
	(1.54e+06)	
Label=30	4.37e+06***	
	(1.22e+06)	
Label=31	-3.22e+06***	
	(1.20e+06)	
Label=32	-1.95e+06	
	(3.73e+06)	
Label=33	1.22e+06	
	(6.28e+06)	
Label=34	2.43e+05	
	(5.69e+06)	
Label=35	-8.51e+06***	
	(7.74e+05)	
Label=36	-1.21e+06	
	(2.39e+06)	
Label=37	-2.27e+06	
	(4.00e+06)	
Label=38	-2.51e+06	
	(2.67e+06)	
Label=40	7.75e+05	
	(8.05e+06)	
Label=45	-2.21e+06	
	(2.81e+06)	
Label=46	0.000	
	(.)	
lGDPperCap	-1.16e+05	-5.39e+04
	(8.64e+05)	(3.02e+05)
Liquid liabilities~)	-5449.236	-1.96e+04
	(25997.764)	(18554.579)
Domestic credit to~o	-3.40e+04***	-2004.558
	(10031.168)	(5122.527)
Bank deposits to G~)	-1.85e+04	11529.861
	(24289.101)	(21368.885)
Central bank asset~)	-4.86e+04***	-2.90e+04*
	(17114.698)	(14999.189)
GovtEffectiveness	-2696.277	-2.55e+05
	(4.43e+05)	(4.18e+05)
VA	5.81e+05	3.63e+05
	(7.85e+05)	(4.41e+05)
CoC	7.34e+05*	1.39e+05
	(4.02e+05)	(3.39e+05)
Constant	-2.82e+06	2.18e+05
	(1.64e+07)	(2.43e+06)
R-squared	0.949	
N	107.000	107.000

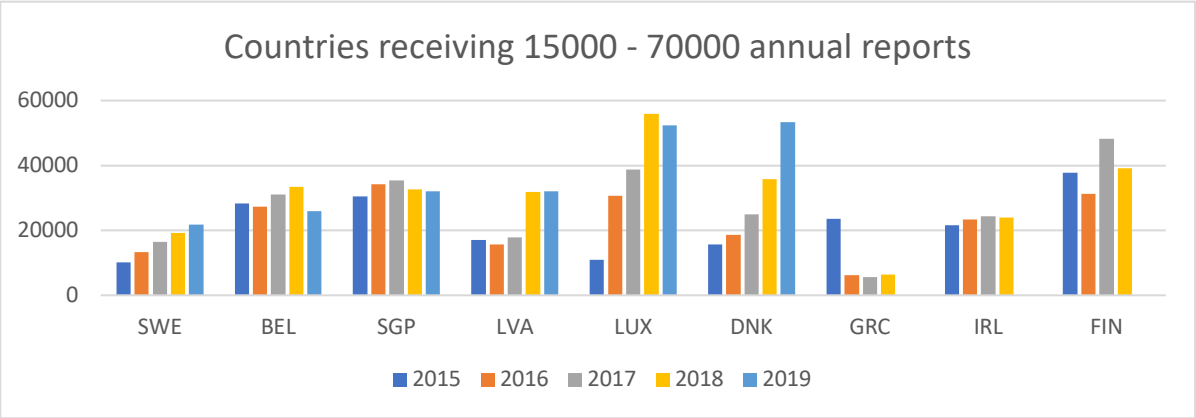
* p<0.10, ** p<0.05, *** p<0.01

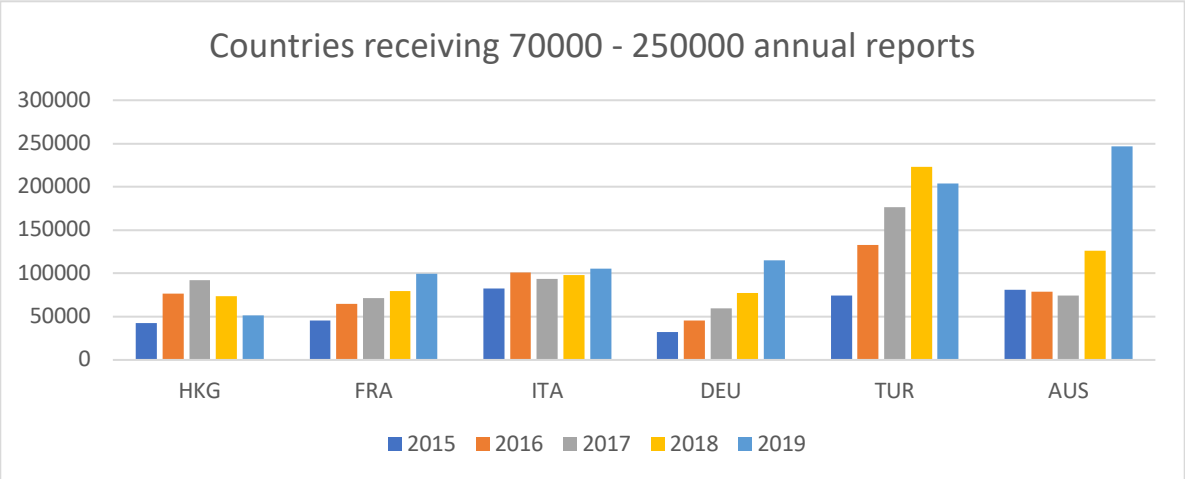

Countries receiving < 1800 annual reports
2000
1500
1000
500
0
BTN
WSM
COK
AND
BWA
MDG
BMU
FJI
ZMB
BHS
ZWE
2015
2016
2017
2018
2019

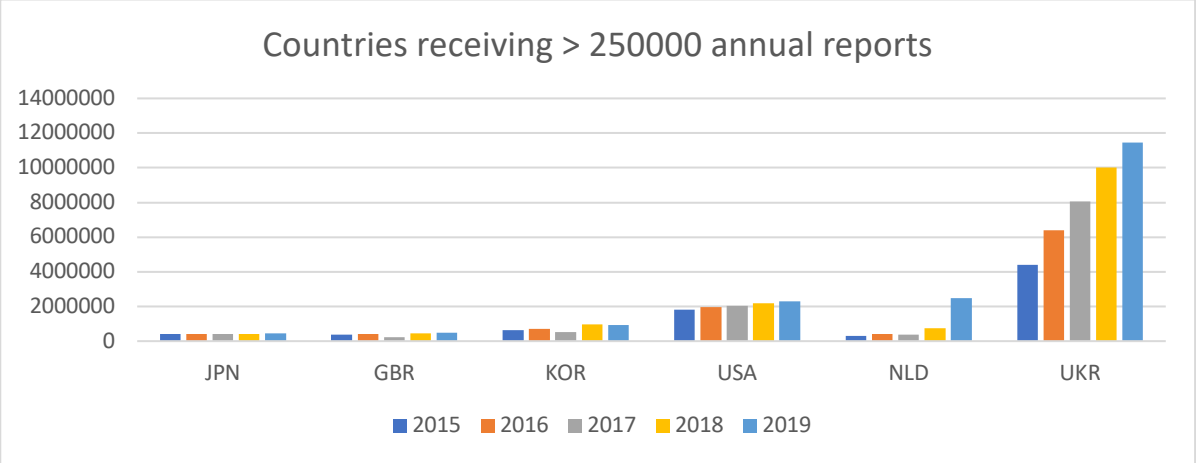

Countries receiving 1800 - 2500 annual reports
3000
2000
1000
0
SVN
HRV
CYM
LTU
ISL
CYP
IMN
CAN
MNG
2015
2016
2017
2018
2019


Countries receiving 2500 - 5000 annual reports
5000
4000
3000
2000
1000
0
SVK
PAN
MLT
BGR
AUT
BGD
CZE
POL
2015
2016
2017
2018
2019


Countries receiving 5000 - 15000 annual reports
15000
10000
5000
0
BRL
EST
ESP
ROU
CHE
NOR
HUN
2015
2016
2017
2018
2019







Location of SAR annual reports

Australia
https://www.austrac.gov.au/about-us/corporate-information-and-governance/reports-and-accountability/annual-reports

Austria
https://bundeskriminalamt.at/502/start.aspx

Belgium
https://www.ctif-cfi.be/website/index.php?option=com_content&view=article&id=240&Itemid=76&lang=en

Bulgaria
https://www.dans.bg/en/msip-091209-menu-en?__cf_chl_jschl_tk__=2a3df8babc7fef0b9044ad9a23b250ed64b8d9fe-1622446725-0-Ac36YjdQvyaAkWDhqmTRApwiGevBXEHVIdgjAXXDXe9pMWNzkEsHuLHBd4bTzA1eC5_HEO1eFyDQYDO-AllztICANlP_5mrZXE1awnWES5n9O1g7ULf5d5J7ev1FSJf9dsEZ0sTntA0dNPqusCl41j5XAQcK7ZQNhfK-PdWs1cQngBZs0ifKDSZEeE3hNo74csAs9q5Xx4068PnhBcdV_S6r9a6clyeOIE1Js46qBnOMTmlnlQqpYFok0N5yd4m7Kgfj4sKAuefpyv-z0FlU4wYGiVwCvu1zWMgBqq7aEvTYNkunos5TOBOt1fOaP2oFihb5y8r4Zrw7-FAjw2QQmSPxmhrnOsXX03_vrUuXxZvdWRHOnzkLhmgAASySkTeyUHwCyTAGPXIrxbsDDm7HY-jr2NLKuLPnxdiW48ZFGkouqOGHNd2i71oDp7l4dVkyEoTJUnK2qCgZbudMBHYa5_Fa1UtMbnaISm6UNDIbivPh

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Czech Republic
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Denmark
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https://poliisi.fi/en/financial-statements-and-reports-on-operations

France
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Hong Kong S.A.R, China
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Hungary
https://www.nav.gov.hu/nav/penzmosas/eves_jelentesek_feleves_tajekoztatok

Iceland
Email

Ireland
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Italy
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South Korea
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https://polisen.se/en/the-swedish-police/the-swedish-police-authority/

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https://www.fedpol.admin.ch/fedpol/en/home/kriminalitaet/geldwaescherei/jb.html

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https://www.nationalcrimeagency.gov.uk/who-we-are/publications

United States
https://www.fincen.gov/reports/sar-stats

The Bahamas
Link

Bangladesh
https://www.bb.org.bd/bfiu/bfiu_publictn.php

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https://www.rma.org.bt/fid/publication/annualReport;jsessionid=58C5A7F1D49348EF64BA5D9D27470F39

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https://www.finance.gov.bw/index.php?option=com_content&view=article&id=39&catid=20&Itemid=159

Zambia
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http://www.parliament.gov.fj/wp-content/uploads/2017/02/2015.pdf
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Zimbabwe
https://www.fiu.co.zw/wp-content/uploads/2020/11/Consol-NRA-2020.pdf

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