

**National Assessments of Money Laundering Risks:  
Do Governments Understand Risk Well Enough to Implement a Risk Based Approach?\***

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**ABSTRACT**

The Financial Action Task Force (FATF) requires national governments to demonstrate an understanding of the distribution of money laundering risks across different sectors of the financial system. This is the foundation for effective control of money laundering under the risk-based approach called for by the FATF. We analyzed the National Risk Assessments (NRAs) published by eight systemically important countries to test whether these did indeed demonstrate that basic understanding. The eight show very different conceptualizations, analytic approaches, and products. None showed more than minimal competence at risk assessment. For example, most relied largely on expert opinion, which they solicited in ways that violated the well-developed methodology for making use of expert opinion. They consistently misinterpreted data from Suspicious Activity Reports and failed to provide risk assessments relevant for policymakers. Only one described the methodology employed. While the challenge of conducting strong risk assessments is great, given the difficulty of estimating the extent of such laundering in any sector, it is possible to improve substantially on existing practices. After providing a shortlist of potential improvements, we offer a series of potential explanations for the failure of governments to take this task seriously. The glaring weaknesses of the NRAs provide evidence for skepticism that the AML regime is effective.

*Keywords: money laundering, risk assessment, Financial Action Task Force*

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## **I. Introduction**

Making it more risky and expensive to launder criminal money or to finance terrorism are now seen as routine functions of government. To achieve those goals, a far-reaching set of controls, which we shall refer to as the Anti Money Laundering (AML) regime, has been developed. This has occurred largely under the aegis of the Financial Action Task Force, created in 1989 by the G7 and now a permanent body.<sup>1</sup> FATF has a membership of 35 mostly rich nations (Nance, 2018) but almost all other countries are members of the FSRBs, FATF Regional Style Bodies, that are themselves members of FATF. FATF's power lies in its threat of financial sanctions administered by national authorities (e.g. loss of access to dollar transactions internationally) against any nation that does not enact laws and create institutions that conform to FATF's 40 Recommendations (FATF, 2012). The AML system imposes a set of obligations on financial institutions, including banks but extending much more broadly to other financial institutions, businesses, and professions (DNFBPs: Designated Non-Financial Businesses and Professions), to prevent criminals or terrorists from establishing accounts or conducting transactions through existing accounts. Among other things, these institutions, businesses, and professions are required to identify and report suspicious transactions and undertake Customer Due Diligence checks. Failures to do so can lead to criminal and civil fines issued by national authorities against the Financial Institution or DNFBP; fines occasionally have been in the billions.<sup>2</sup>

Even after 30 years, the international AML regime remains unevaluated. That is to say, there are no studies to assess to what extent, if any, the system has managed to reduce money laundering or to reduce the number of what are called "predicate crimes" i.e. the offenses that generate the money to be laundered<sup>3</sup>. Nor is there any study of how AML controls have influenced the extent

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<sup>1</sup> The 2019 Ministerial declaration declared that FATF was no longer a temporary body. <https://www.fatf-gafi.org/media/fatf/content/images/FATF-Ministerial-Declaration-Mandate.pdf>

<sup>2</sup> The list of major banks receiving large fines includes HSBC, ING, Wachovia, Credit Suisse, DanskBank and Wells Fargo. All of the ten largest European banks have been fined for money laundering violations.

<sup>3</sup> Unger et al. (2014) analyze the effectiveness of AML policies in EU Member States, but they are not able to conclude whether money laundering has been reduced. Levi et al. (2018) argue that the current AML framework cannot be evaluated without improved data.

of terrorist activity. A gross evaluation is daunting (what is the counterfactual?) but one might hope for an examination of the effects of specific components of the system (for example, whether lawyers are included amongst DNFBPs subject to AML), perhaps taking advantage of differences across countries in implementation<sup>4</sup>; such studies are also lacking.

However, a relatively recent requirement, introduced by FATF in 2012, that nations carry out a National Risk Assessment (NRA), can provide some evaluative insight. The requirement is motivated by the shift from a rule-based AML system, where financial institutions (FIs) had to follow procedures specified by law and regulation, to a risk-based approach under which each FI simply had to keep risk below a certain level, by whichever methods it chose. The risk-based approach is not just a challenge to the Financial Institutions subject to AML requirements. It also imposes new obligations on the government, since regulators must determine whether the FIs are in fact achieving the level of risk required.<sup>5</sup>

In effect, the question that the NRAs set out to answer is whether the nation's government<sup>6</sup> understands how money laundering risks are distributed. If a government is unable to provide evidence that it understands the distribution of risk across the many different channels for money laundering (financial institutions, DNFBPs, and even channels that are not yet included in its AML coverage), then it is unlikely to be competent in implementing the regime. If, for example, it cannot assess whether retail banks are more or less risky than private wealth funds as institutions through which to launder criminal earnings, then the government will be unable to determine how it should allocate supervisory and investigative resources amongst the different classes of banks. At a minimum, AML will be less effective than it should be, perhaps even highly ineffective.

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<sup>4</sup> Though the FATF Recommendations require coverage of the legal profession, some important countries, including the United States, do not subject lawyers to AML supervision.

<sup>5</sup> The Interpretive Note to Recommendation 26 states: "Risk-based approach to supervision refers to: (a) the general process by which a supervisor, according to its understanding of risks, allocates its resources to AML/CFT supervision; and (b) the specific process of supervising institutions that apply an AML/CFT risk-based approach." (FATF, 2012; p.94)

<sup>6</sup> We use the vague term "government" because so many agencies are involved in AML regulation, notably supervisory and investigative agencies; that may amount to tens of agencies. For example, in Singapore, the smallest jurisdiction in our sample, the NRA listed 15 agencies involved in its preparation (p.2).

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This may be seen as a one-sided test of government competence; passing does not establish that the government is competent but failure raises a serious doubt. In the qualitative methodology literature this is classified as a “hoop test”; failure to pass the test throws strong doubt on the maintained hypothesis (“the government effectively implements a Risk-Based Approach”) while passing it provides only weak support (Gerring, 2006)

This paper examines the published NRAs of eight countries identified by the IMF as systemically important<sup>7</sup>. It assesses whether these NRAs demonstrate adequate knowledge of money laundering risk and identifies ways in which NRAs, and thus the international AML regime, could be implemented more effectively.

The FATF regime deals with the fight against terrorist financing as well; indeed it usually referred to as the AML/CTF (Anti Money Laundering and Counter Terrorism Finance) regime. In this paper we focus on money laundering only. Although the fight against money laundering and terrorist financing is combined on the regulatory and policy level, the underlying concepts are vastly different. While the goal of money laundering is generally to make large sums of illegally earned money appear legal, the goal of terrorist financing is generally to use relatively small sums of often legally earned money for an illegal act. (Ferwerda, 2012) So while some of the observations and conclusions in this paper also apply to the fight against terrorist financing and the related risk assessments, the analysis focuses on money laundering and uses only money laundering examples in the argumentation. The risk assessment of terrorism finance in the NRAs is always much briefer than that for money laundering. That surely reflects the highly classified nature of much that is relevant to risk assessment. Thus outside observers can do less to evaluate the adequacy of terrorism finance risk assessments .

### *Contributions of the paper*

This paper attempts to make three broad contributions. First, in Section III, it provides a critique of the conceptual base of the FATF methodology for conducting a National Risk Assessment. The use of threat and vulnerability as the foundations for the assessment is misleading, in part

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<sup>7</sup> The IMF identifies 29 systemically important jurisdictions in its Financial Security Assessment Program: <https://www.imf.org/en/About/Factsheets/Sheets/2016/08/01/16/14/Financial-Sector-Assessment-Program>.

because they are jointly determined, not exogenous to each other. The paper also shows that a critical component in its formulation (threats) is poorly defined and hard to operationalize.

Second, in Sections V and VI it offers the first systematic review of multiple NRAs. A lengthy search for published critiques of specific NRAs turned up only one (Hopkins and Shelton, 2018 on the UK). Only our earlier article comparing the NRAs of Italy and Switzerland has attempted anything more ambitious (Ferwerda and Reuter, 2019). This paper shows the great variety of methods and outputs of just these eight NRAs; there is less variety in the nature of the data used. We also suggest that current practice neither conforms to what is called “risk assessment” in other fields nor provides much useful information for policymakers (whether regulators or law enforcement agencies). Conceptual confusions reduce the potential for these NRAs to help inform a risk-based approach to AML. Following questionable guidance from FATF, the NRAs present a great deal of information on “threats” that is eventually not used to determine the risks. Some countries present no actionable findings. The empirical analysis of Suspicious Activity Reports is often misleading and incorrectly interpreted. The outputs of the NRAs vary greatly in their utility. Overall, our findings are distinctly critical.

Third, it offers some possible explanations for the weaknesses of the NRAs (Section VII) and suggests a path forward (Section VIII). We note that except for the Dutch NRA, the publications fail badly at describing how data were collected and analyzed, even though the NRA exercise is intended to be regularly conducted. The NRAs examined here are generally first efforts at risk assessment, in a field which does not have much of a scholarly research base. We identify the appropriate risk concepts, how expert opinion (the bedrock source of data) can be utilized more systematically, what databases on transactions need to be created and how “mystery shopping” could advance understanding. The paper shows relatively simple ways in which the field could develop more rapidly.

## **II. NRAs and the risk-based approach to fighting money laundering**

The FATF formally introduced the risk-based approach to the fight against money laundering in their *Forty Recommendations* of 2003 by specifying that “Financial Institutions ... may determine

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the extent of such measures on a risk sensitive basis.” (FATF, 2003) The Risk Based Approach (RBA) only became mandatory in 2012. RBA means that banks and other reporting institutions could no longer follow the specified rules blindly (as under the rule-based approach), but had to actively assess the risk of money laundering associated with a specific customer/transaction to match the rigor of their AML measures. For example, transactions involving complex and opaque corporate vehicles might be identified as high risk, so that any transaction involving such an entity would be subject to more intense scrutiny or a product (small retail bank deposits) might be identified as very low risk and receive less than average scrutiny.

The risk-based approach has been applied not only to the reporting entities. This point is so central to our analysis that we quote the FATF (2012, p.9) Recommendation 1 in full:

Countries should identify, assess, and understand the money laundering and terrorist financing risks for the country, and should take action, including designating an authority or mechanism to coordinate actions to assess risks, and apply resources, aimed at ensuring the risks are mitigated effectively. Based on that assessment, countries should apply a risk-based approach (RBA) to ensure that measures to prevent or mitigate money laundering and terrorist financing are commensurate with the risks identified. This approach should be an essential foundation to efficient allocation of resources across the anti-money laundering and countering the financing of terrorism (AML/CFT) regime and the implementation of risk-based measures throughout the FATF Recommendations. Where countries identify higher risks, they should ensure that their AML/CFT regime adequately addresses such risks. Where countries identify lower risks, they may decide to allow simplified measures for some of the FATF Recommendations under certain conditions.

Countries should require financial institutions and designated non-financial businesses and professions (DNFBPs) to identify, assess and take effective action to mitigate their money laundering and terrorist financing risks.

This makes clear that supervisors of AML regulations (e.g. bank regulators, insurance regulators, sometimes professional associations<sup>8</sup>) should apply their supervision on a risk-basis as well. Those reporting institutions/sectors that are deemed more risky should receive more monitoring.

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<sup>8</sup> In some countries, the government may place regulation of a particular profession in the hands of a professional body, not itself governmental. For example, the British NRA identifies 15 separate professional associations with AML responsibilities.

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Recommendation 1 implies, less clearly, that enforcement agencies should also allocate their resources to reflect the distribution of risk across potential channels.<sup>9</sup> Thus the importance of risk assessment by the government.

Although the risk-based approach in the field of money laundering was promulgated in 2003, there appears to be no published focused risk assessment on the national level until about 10 years later.<sup>10</sup> The FATF revised its *Forty Recommendations* in 2012 and declared that countries must demonstrate knowledge of the distribution of risks within their jurisdiction though without explicit mention of a National Risk Assessment. The next year, the FATF published general guidance for performing these national risk assessments. (FATF, 2013) The published NRAs only came after the requirement to perform one, when Serbia, Singapore, and Sweden published so-called National Risk Assessments in 2013. Countries trying to inform their policy decision making in the ten years in between (2003 till 2013) did not feel the need to prepare such risk assessments (see Appendix 1).<sup>11</sup> As Rausand (2013), an authority in the field of risk assessments, warns: “A risk assessment should never be performed simply to satisfy some regulatory requirement. Rather, it should be performed with the intention of providing information for decision making about risk.” That warning suggests pessimism about the initial NRAs of these eight countries, almost all of which were done in the looming shadow of a 4<sup>th</sup> round Mutual Evaluation Report<sup>12</sup>.

So what is the exact policy issue (or issues) that NRAs are trying to inform? As noted, the FATF guidance states that an NRA “assists in the prioritization and efficient allocation of resources by authorities.” (FATF, 2013, 4) Indeed, it is desirable to spend the resources efficiently, in line with the risk-based approach, but what should be the dimensions for allocation? Different regions?

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<sup>9</sup> FATF’s 2013 NRA Methodology refers to the Interpretive Notes for Recommendation 26 and 28. These are both explicitly addressed to Supervisors and Regulators. There is no comparable text explicitly for enforcement agencies.

<sup>10</sup> This raises the question of whether risk assessments were prepared but not published. Some such assessments for specific threats were prepared in the United States but we have found no evidence of similar efforts in the other seven countries. Certainly none are referred to.

<sup>11</sup> The most notable exception here is New Zealand, which published a national risk assessment in 2010.

<sup>12</sup> Some form of evaluation has been part of the FATF system since its founding. The fourth round of evaluations, which began in 2014 and will extend over 8 years, is the first requiring that governments demonstrate a knowledge about risks.

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Different sets of financial institutions? Different kinds of crimes? The FATF guidance is vague on this, except that assessments “may also form the basis for determining whether to apply enhanced or specific measures, simplified measures or exemptions from AML/CTF requirements.” (FATF, 2013, p. 4) This clarifies that the policy decision the NRA should inform is indeed how FIs and regulatory agencies allocate resources and indicates that the concern is how the risks are spread across sectors which we take to mean classes of regulated institutions. So we conclude that an NRA should at least provide information about the relative risks of each sector. Obviously, an NRA can provide much more information about money laundering risks, such as the most important forms of ML, but insights on the relative risks across sectors should be considered the bare minimum.

### **III. The FATF Approach to Risk Assessment**

The FATF did not give its members an exact prescription of how a risk assessment ought to be conducted. The FATF merely published a guidance document in which the goal and some concepts are explained. We focus our attention here on the concepts that the FATF guidance (2013) put forward.

According to the FATF, money laundering risk for a sector is a function of threat, vulnerability, and consequences. With this, the FATF applies the terminology commonly used in risk assessments of terrorism (see eg. Willis et al., 2005; National Research Council, 2010; Willis, 2007) to money laundering. While these labels have intuitive appeal as a means of structuring the NRA exercise, they are in fact confusing when applied to money laundering (see also Ferwerda and Reuter, 2019).

- (a) “A threat is a person or group of people, object or activity with the potential to cause harm to, for example, the state, society, the economy, etc. In the ML/TF context this includes criminals, terrorist groups and their facilitators, their funds, as well as past, present and future ML or TF activities.” (FATF, 2013, p.7) In the more standard risk assessment terminology it is the hazard to which the entity is being exposed.

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The above definition of threat is so heterogeneous as to defy measurement or even coherent description. It is impossible to put together people, money, and activities to form one variable to work with. What might be meant by “object” that constitutes a threat? The Annex 1 of the Methodology provides a list of over 150 Threat Factors (pp.32-39). Most are simply predicate crimes and the implication is that threat should be measured by revenues but it also includes such items as “Sources, location, and concentration of criminal activity, including within illegal underground areas in the economy.” And if one could combine such different threat factors, what is the unit of measurement of such a variable? A simple and intuitive version of the level of money laundering threat faced by a nation is the amount of money that seeks laundering, perhaps proxied by the estimated proceeds of predicate crimes in the country. In a standard economic frame that would be described as the demand for money laundering services; Dawe (2013) argues for such an approach. The FATF methodology does not invite that operationalization.

- (b) “The concept of vulnerabilities as used in risk assessment comprises those things that can be exploited by the threat or that may support or facilitate its activities....In the ML/TF risk assessment context, looking at vulnerabilities as distinct from threat means focusing on, for example, the factors that represent weaknesses in AML/CFT systems or controls or certain features of a country. They may also include the features of a particular sector, a financial product or type of service that make them attractive for ML or TF purposes.”

Again, how can one add up a legal loophole and the features of a financial product? Perhaps the FATF just aimed to identify which factors to take into account when assessing money laundering risk without suggesting there is a natural way of aggregating it. That is reasonable as far as it goes but the failure to be more explicit might explain why so many money laundering risk assessments are struggling with their conceptual focus and thus fail to inform relevant policies.

The Methodology document provides an extraordinarily lengthy list of examples, occupying seven pages with about 15 items described on each page. The risk factors are in six broad categories, most of which are national (e.g. political stability, demographics) and only a few of which are specific to a particular component of the financial sector (e.g. types and ranges of

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customers and nature of business relationships). This is not how “vulnerabilities” were generally interpreted by the individual countries. In their analyses vulnerability refers to characteristics of a sector that make it attractive (eg. the speed of bank transactions) or weaknesses in the prevention, detection, and enforcement against money laundering events, which get distinctly second billing in the FATF Methodology.

- (c) Consequences are the adverse effects of money laundering. The guidance, as noted, states that measuring consequences of money laundering can be challenging and that therefore a focus on only threats and vulnerabilities is acceptable. (FATF, 2013, p.8)

Our analysis of the NRAs of eight developed countries shows that no country made an explicit effort to assess consequences, except the Netherlands where experts were asked about the potential impact of ten specific “risks”. A focus on only threat and vulnerability means that the harms inflicted per Euro are implicitly assumed to be the same for all types of money laundering, all predicate offenses, and all sectors.

Even acknowledging that such an assumption is unrealistic, the question then is how to measure consequences and which consequences to focus on. A fundamental issue here is whether the consequences of a predicate crime like selling drugs are part of the consequences of the drug proceeds being laundered. Yes, money laundering helps dealers to freely spend the proceeds from selling drugs, but technically selling drugs is not part of the money laundering process itself. The FATF guidance (p7) states that the underlying criminal activity is part of the consequence of money laundering. This means it matters for a risk assessment whether a laundered dollar initially came from selling drugs, fraud, or corruption since different predicate crimes have different effects for society (see eg. Cohen, 2004 and McCollister, French and Fang, 2010).

With the term consequences dropping out of the equation in practice, money laundering risk, in the FATF approach, is determined by threat and vulnerability alone.

#### IV. Study Data and Methods

The remainder of this article analyzes eleven National Risk Assessments published by eight advanced countries; Canada, Italy, Japan, the Netherlands, Singapore, Switzerland, the United Kingdom, and the United States.<sup>13</sup> Three countries, Japan, the United Kingdom, and the United States published two NRAs in the time period covered. All eight countries are FATF members. Included are two of the jurisdictions most prominent in the creation of the FATF, the United Kingdom and the United States. These two countries, plus Singapore and Switzerland are among the most important global financial centers (The Global Financial Centers Index 27, 2020, p4). The jurisdictions span the globe; four in Europe, two in North America, and two in Asia. The IMF identifies these countries as jurisdictions with a systemically important financial sector.<sup>14</sup> Thus the NRAs of these eight countries might be seen as including those most likely to be state-of-the-art, thus providing a particularly striking finding if the maintained hypothesis (“competent at risk assessment”) is disconfirmed.

The data here come from what the nations chose to publish. There may be other risk assessment documents that are not published.<sup>15</sup> Only the NRA of the Netherlands explicitly states that the published risk assessment is the only one that was produced.<sup>16</sup> The existence of other unpublished reports suggests that we cannot assess the government’s competence simply from what is published. However our critique is not of the specific risks estimated but of the way the analysis was performed. It is hard to provide a logic under which the government would choose to publish a report which shows less analytic competence than it demonstrates in the

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<sup>13</sup> Two other NRAs by these countries were not included. A 2019 Italian NRA has not been published in English. A 2020 Dutch NRA came out after the analysis was completed.

<sup>14</sup> <https://www.imf.org/external/np/fsap/mandatoryfsap.htm>

<sup>15</sup> For example the 2014 Mutual Evaluation Report for Spain referred to a variety of risk assessments that were prepared for specific sectors and agencies. It stated that “Spain has a high level of understanding of its ML/TF risks” (p.5). Spain did not publish or execute an overall NRA.

<sup>16</sup> In an interview (on April 1, 2018) we learned that in Canada there is an unpublished version of the report with more sensitive results. Also in the published NRA of Italy, sensitive results concerning the distribution of predicate crimes were left out. For this study, we gained access to the unpublished version of the Italian NRA.

unpublished versions. It seems reasonable to assume that the unpublished reports would simply be more detailed and include information that should not be made public.

We interviewed individuals who contributed to five of the NRAs: Canada, Italy, the Netherlands, Switzerland, and the UK. Primarily we relied on the reports themselves. Most reports provide only brief descriptions of methodology, a point that we emphasize as a weakness since NRAs are not one-time efforts but are intended to provide ongoing guidance.<sup>17</sup> All, except that of Singapore, do show the extent to which they relied on specific data sources: Suspicious Activity Reports, expert opinion, vignettes, etc. We made no effort to assess the accuracy with which they represented those sources.

For analysis purposes we used a four-part framework to summarize and compare the eight NRAs;

- (1) Concepts used. Threats and vulnerabilities, the central concepts in the FATF framework, were almost universal, though variably interpreted. However some NRAs also incorporate the concepts of inherent risk, country risk, and consequences.
- (2) Data sources. Most used Suspicious Activity Reports<sup>18</sup>, enforcement actions, and expert opinion. Occasionally there were also vignettes.
- (3) Analytic methods. This was the hardest category to code because little was said explicitly, except in the NRAs of the Netherlands and Switzerland.
- (4) Outputs reported. A few countries provided detailed tables, showing for each sector the levels of threat and vulnerability. Only Italy went the next step and showed which additional regulatory interventions were most effective for each sector.

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<sup>17</sup> The FATF Guidance states: 'Recommendation 1 requires that countries assess risks "on an ongoing basis", and that they keep assessments up-to-date. The authority or mechanism designated to assess ML/TF risks in the country will likely be responsible for ensuring that this obligation is met. Recommendation 1, however, does not specify a particular period of time. Therefore, the frequency with which a risk assessment is updated is determined by the country, based on a number of factors, including how quickly (and how significantly) the risks may change.' (p18-19)

<sup>18</sup> In some countries these are called Suspicious Transaction Reports; in the Netherlands the term is Unusual Transaction Reports. SARs is used to cover all three.

## **V. Characterizing the Eight NRAs**

### **Conceptualization**

Inasmuch as an NRA was explicit about concepts (Japan was not), it always adopted the FATF framework of identifying threats and vulnerabilities. We discuss the threat assessment and the vulnerability assessment separately. As already noted, the FATF guidance (2013) suggests that the consequences of money laundering, which ideally should be part of a risk assessment, are likely to be difficult to measure. No country made an explicit effort to assess consequences, except the Netherlands where experts were asked about the potential impact of ten specific risks. Canada's NRA did provide an Appendix of possible consequences not included in the analysis of the body of the Report.

### **Threat Assessment**

All but the Japanese NRA include an explicit threat assessment (TA), thus conforming to the broad FATF guidance. However the seven conduct the threat assessment in a variety of ways. Given our skepticism about the utility of the threat assessments as implemented, we examined whether the TA played a role in the NRA Conclusions.

What was meant by threat varied substantially. Some countries identified persons as threats: for example, Canada identified a threat as "a person or group who has the intention, or may be used as a witting or unwitting facilitator, to launder proceeds of crime or fund terrorism" (p15). Threats were identified then as specific groups, such as organized crime groups and professional money launderers. Other countries, such as Singapore, identified particular crimes as constituting the threat. None presented quantitative measures of the threat, but simply identified the principal ones, perhaps with an implied ranking. In all cases the threat assessment was at the national level, not specific to a particular kind of financial institution or DNFBPs.

A threat assessment for money laundering is useful to show knowledge of the crime and money laundering situation in the country, but as operationalized the threat assessment generally does not inform the risk-based approach. In only one of the eight NRAs did the eventual risk level findings for a sector depend on information or results from the threat assessment. Switzerland

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uses an explicit formula (see Ferwerda and Reuter, 2019, p17-18) to relate characteristics of STRs (such as the amount of money involved and country of origin) to estimate the risk for different sectors i.e. to what extent do transactions in the sector share characteristics of known suspicious transactions. Canada, Italy, and the UK refer to the results of the threat assessment when reporting risk level findings, but because the threat to all sectors is by definition the same in their methodologies, the threat assessment does not affect the relative risk scores for different sectors. The Netherlands and Singapore make no explicit reference to the threat assessment when presenting sectoral risk level findings. Japan does present risk levels but does not relate this to the threat and vulnerability assessments. None of the eight NRAs use information or results from the threat assessment in the policy recommendations.

Countries are including threat assessments in NRAs but they are struggling to find ways to use the results of the threat assessments. See Table 1.

**Table 1. The (main) focus of the threat assessment and how the information is used**

|             | What is the (main) focus of the TA?   | TA affecting risk level findings?              | TA affecting policy recommendations? |
|-------------|---|--|--------------------------------------|
| Canada      | Ranking importance of a long list of crimes                                 | Not really, threat is the same for all sectors | No recommendations                   |
| Italy       | Ranking importance of different crimes                                      | Not really, threat is the same for all sectors | No explicit reference                |
| Japan       | Share of predicate crimes in ML cases                                       | No risk level findings                         | No recommendations                   |
| Netherlands | Listing relevant ML methods and channels                                    | No explicit reference                          | No explicit reference                |
| Singapore   | Little domestic ML limited categorization of international predicate crimes | No explicit reference                          | No explicit reference                |
| Switzerland | Share of suspected ML offenses for a limited categorization of crimes       | Yes, but with debatable formula <sup>19</sup>  | No explicit reference                |
| UK (2015/7) | Describing predicate crimes and which estimates are available               | Not really, threat is the same for all sectors | No explicit reference                |
| US          | Describing predicate crimes   | No risk level findings                         | No recommendations                   |

<sup>19</sup> See Ferwerda and Reuter (2019, p.17-18) for a discussion.

*Source: Created by the authors from individual NRAs.*

### Vulnerability

The UK provides an explicit definition of vulnerability. “[V]ulnerability is a concept encompassing things that can be exploited by the threat or that may support or even facilitate its activities. Distinct from threat, vulnerabilities are factors that represent weaknesses in the AML/CFT systems.” (p.9) At the other extreme, the Japanese NRAs barely mentioned either vulnerability or inherent risk.<sup>20</sup>

Considerable emphasis was given to vulnerability, though this was often identified as “inherent risk”, a serious misuse of risk assessment terminology. Canada provided the most detailed guidance to experts for assessing inherent risk, with five distinct components such as geographic reach, demography, and economic structure. For example, the fact that the country has a large and diverse foreign-born population means that it will have financial connections to high-risk countries. Similarly the very open borders with the US facilitate cross-border laundering from the United States. A sector that deals with high-risk regions is more vulnerable.<sup>21</sup> The extent of face-to-face transactions was an instance of product characteristics affecting vulnerability.

The section of the NRA that is supposed to discuss vulnerabilities often appear to equate them with risk (see the NRAs of Japan, Singapore, Switzerland, and the Netherlands). This is another example of conceptual confusion.

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<sup>20</sup> The term vulnerabilities appeared three times in the Japanese NRA in 2015 and four times in 2017; inherent risk four times in 2015 and once in 2017 but only in lists, never as the label for any data or specific judgments.

<sup>21</sup> The five were listed and described as:

“1) Inherent Characteristics: the extent of the sector’s economic significance, complexity of operating structure, integration with other sectors and scope and accessibility of operations.  
2) Nature of Products and Services: the nature and extent of the vulnerable products and services and the volume, velocity and frequency of client transactions associated with these products and services.  
3) Nature of the Business Relationships: the extent of transactional versus ongoing business, direct versus indirect business relationships and exposure to high-risk clients and businesses.  
4) Geographic Reach : the exposure to high-risk jurisdictions and locations of concern.  
5) Nature of the Delivery Channels : the extent to which the delivery of products and services can be conducted with anonymity (face-to-face, non-face-to-face, use of third parties) and complexity (e.g., multiple intermediaries with few immediate controls.” (31)

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A money laundering vulnerability can be caused by legal and/or institutional weaknesses. Most countries<sup>22</sup> devote a significant part of their NRA to a section describing the relevant AML regulations. However, an overview alone of the AML regulations in place is not a vulnerability analysis; the description of the weaknesses of the system is the relevant part for the vulnerability analysis. Countries like Singapore, Switzerland, and the UK include comments on legal and institutional weaknesses in their vulnerability analysis, but there are also countries like Japan and the US where such comments are absent. Table 2 gives a comparative overview of the main differences in vulnerability analyses.

**Table 2. Vulnerability analysis**

| Country     | Has a section devoted to vulnerabilities?                   | Analyzed inherent or remaining vulnerabilities? | Described legal and institutional weaknesses?                        | Analyzed different sectors?                                     |
|-------------|---|---|--|---|
| Canada      | Yes   | Inherent  | No, not part of the inherent vulnerability                           | Yes   |
| Italy       | Yes   | Remaining                                       | Yes  | Some comments on differences between sectors, but not the focus |
| Japan       | Mixed with risks  | Both  | No   | Yes   |
| Netherlands | Only national vulnerabilities described in the introduction | Remaining                                       | Not specific, only a measure of the resilience of policy instruments | No  |
| Singapore   | Mixed with risks  | Both  | Yes, explicit institutional weaknesses per sector                    | Yes   |
| Switzerland | Mixed with risks  | Remaining                                       | Yes  | Yes   |
| UK          | Mixed with risks  | Both  | Yes  | Yes   |
| US          | Mixed with risks  | Remaining                                       | No   | No  |

*Source: Created by the authors. This is a summarizing table which cannot show details and nuances. For instance, some mention both inherent vulnerabilities and observed vulnerabilities (eg. Japan), but not necessarily with a side-by-side analysis of the inherent and observed vulnerabilities for each sector.*

<sup>22</sup> Six of the eight countries have a significant section devoted to describing AML regulations: Italy, Japan, the Netherlands, Singapore, Switzerland, and the UK. The other two, Canada and the US, do describe specific AML regulations where relevant, but do not have a section providing an overview.

### Risk

Canada, Italy, the Netherlands, Switzerland, and the UK distinguish between inherent risk and “mitigated risk”.<sup>23</sup> Canada’s NRA describes only the inherent risks; indeed, that is made explicit in the title *Assessment of Inherent Risks of Money Laundering and Terrorist Finance in Canada*. The UK produces a Table that specifies (with a precise number) the amount of inherent risk and the amount of risk remaining after mitigation. The Netherlands implicitly tries to do something similar.<sup>24</sup> Estimating both inherent risk and mitigated risk seems useful as a way of making the effect of AML efforts explicit. Even though the FATF guidance does not prescribe this approach, most countries in our sample did effectively do this. Without more specific guidance, it is not surprising that the operationalization of these concepts diverges significantly. Appendix 2 discusses to what extent such an analysis is useful and feasible.

The risk analysis is generally mixed with the vulnerability analysis or the conclusions of the research without a separate analysis. Risk analysis is therefore not suitable for a summary Table in the manner we used for threat and vulnerability. The section on outputs (below) gives an overview of what the NRAs report in terms of risk rankings and to what extent the outputs inform a policy decision.

### Data Sources

Canada, Italy, the Netherlands, and the UK use expert opinion as their principal source of data. Switzerland, where the FIU is the central institution for the NRA, mainly uses the FIU access to the SAR database. The US primarily bases its 2016 analysis on a set of 5000 closed cases related to money laundering. Even though this is an unprecedented source of information in the field of money laundering research, the US NRA unfortunately does not produce a single table about the contents of this database; instead it is used only as a source of vignettes. Countries often mention other sources of data, but when it remains unclear in the rest of the report whether and how

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<sup>23</sup> Terminology on this point was inconsistent; we believe this term best captures the general notion.

<sup>24</sup> The concluding section of the Dutch NRA provides Tables on the amount of potential risk and the resilience per risk (p64-65), but it remains unclear whether these have to be combined to find the residual risk.

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these data sources were used, we classify the sources as minor in Table 3. For example, Canada mentions that the assessment is based on “a rigorous and systematic analysis of qualitative and quantitative data and expert opinion” (p15), without ever making explicit which qualitative and quantitative data was used. The rest of the Canadian report only lists the results of expert elicitation, making it impossible to determine whether and which other sources were used in the assessment. Japan and Singapore are not explicit enough about their sources of data or their methodology to determine what served as the main source of data.

The data sources were inadequately described, except for the Netherlands, which was an outstanding exception. For example, none of the other NRAs gave the number of experts that were consulted, and only rarely were their professional settings listed. The quality of statistical series (for example whether the total number of money laundering convictions covered all levels of government in federal nations such as the United States and Canada) were rarely assessed.

**Table 3. Specified data sources for assessment<sup>25</sup>**

|                          | CA   | CH    | IT    | JP    | NL    | SG    | UK   | US    |
|--------------------------|------|-------|-------|-------|-------|-------|------|-------|
| Expert opinion           | Main | Minor | Main  | Minor | Main  | Minor | Main | Minor |
| STRs / SARs              |      | Main  | Minor |       |       |       |      | Minor |
| Closed cases             |      |       | Minor |       |       |       |      | Main  |
| Vignettes                |      |       | Minor | Minor |       |       |      |       |
| Statistics from agencies |      | Minor | Minor | Minor |       |       |      |       |
| Literature/reports       |      | Minor | Minor |       | Minor |       |      | Minor |

Sources: CA p15, CH p13-4, IT methodology p5-6, IT p30<sup>26</sup>, NL p20-2, SG p2, UK p10<sup>27</sup>, US p7. Main: Data source is a direct and principal source of information used to assess risk or relevant risk concepts. Minor: Data source is mentioned and/or shown and has been used to a) describe context b) as input for expert elicitation or c) support an assessment, but is not a direct and main explicit source to assess risk or relevant risk concepts. Since it is not sufficiently clear to us how risks are assessed (and with which data) in Japan and Singapore, the table lists only minor sources for these two countries.

<sup>25</sup> The Table gives an overview of the data sources that are specified in the NRAs as data sources. Unspecified data sources are not shown in the table. For the countries that produced two NRAs, we do not see significant differences in the use of data between the two reports and therefore present them together in this table.

<sup>26</sup> The published version, called synthesis

<sup>27</sup> “The conclusions of the assessment in this paper draws heavily on expert judgment from law enforcement agencies, supervisory authorities and those responsible for AML/CFT within firms.” (UK, 2015, p10)

Only the United Kingdom gave attention to the limits of government knowledge about money laundering and the consequences of those limits. The UK NRA noted that more was known about the use of cash because that had been the focus of investigations and hence cash was probably given too much emphasis as a source of threat.<sup>28</sup> That surely was true for other countries as well but we believe that only the UK acknowledged that limitation and its consequence.

### *Method of analysis*

Countries vary greatly in how explicitly they describe the method of analysis. The Netherlands was most transparent about the methodology, for example providing a full description of the scripts used in workshops with experts. While the US NRA of 2018 had a section called methodology (p6), that section actually described nothing more than the terminology used in the NRA. Singapore gave no information about the method of analysis.

In a field where strong quantitative data is hard to come by, it is not surprising that the knowledge of experts is relevant for all NRAs. How this expert knowledge is collected and used in the analysis differs widely. Canada, Italy, the Netherlands, and the UK all explicitly used expert elicitation<sup>29</sup> as their main method of analysis. The UK and the Netherlands used a formal model for expert elicitation. The Netherlands seems to have the most advanced analytical model with a multi-criteria decision analysis applied in two expert meetings.<sup>30</sup> Italy and Canada also convened experts in workshops to elicit opinions. This raises the question of what to do when experts disagree. The Dutch NRA reports the standard deviation in the answers of the experts but then

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<sup>28</sup> "The UK's law enforcement agencies know most about cash-based money laundering ... This is a result of the resources that law enforcement agencies have invested over a number of years in tackling cash-based money laundering and the drugs trade (which largely generates proceeds in the form of cash) which has long been recognized, and continues to be recognized, as posing a high money laundering risk."

<sup>29</sup> Expert elicitation is a structured approach to systematically consult experts on uncertain issues. (Knol et al., 2010). See below.

<sup>30</sup> Multi criteria decision analysis "is a method used to facilitate the most rational choice possible from a range of potential policy decisions or other decisions. ... MCA gives both structure and transparency to complex decision-making processes, allowing the MCA method itself to be developed and fine-tuned. If new information becomes available on the elements in the method such as the criteria, the method can be adapted accordingly." One disadvantage of the MCA applied in the NRA is the reliance on expert judgements that are themselves inherently subjective, and are expressed in the scores used for the MCA calculations." (NRA Netherlands, 2017, p24-25)

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just uses the simple average in drawing conclusions. In Canada the authors of the NRA listened to the different opinions and the argumentation offered in support of those opinions; they then decided themselves which opinion to choose.<sup>31</sup> In Italy the workshop participants were told that they had to reach a consensus.<sup>32</sup> Countries that did not use expert elicitation as their main method of analysis, still utilized expert opinion in their analysis in some way. Singapore and Japan used experts to validate the findings from other analyses. The US consulted 15 government agencies for the NRA, without making explicit what was asked and how the information was used. The UK mentioned a specific model that was used for data analysis (MORILE: Management Of Risk In Law Enforcement), but it is impossible to find a detailed description of that model or how it was implemented in this case.<sup>33</sup>

Switzerland stated that the quantitative analysis was supplemented with a qualitative analysis, without making explicit how this was done. Mixing quantitative and qualitative analysis is notoriously difficult (Creswell and Clark, 2017), but there are some simple sound practice principles, such as providing explicit statements about the relationship between findings in the two modes and which one, if either, is dominant. These principles were not followed in any of the NRAs.

**Table 4. Method of analysis**

|        |  |
|--------|--|
| Canada | <b>Expert elicitation.</b> Experts informed with basic facts and figures for 22 crimes and 27 products/sectors. Experts rate the characteristics to generate threat and vulnerability ratings in a workshop. Criteria for ranking made explicit, no specification of how the data were analyzed. |
|--------|--|

<sup>31</sup> This has not been made explicit in the NRA. The source for this information is an interview by Joras Ferwerda with three Canadian government officials responsible for the on-going risk assessment on April 1, 2019.

<sup>32</sup> One hypothetical advantage of requiring consensus is that the group ultimately defers to its most knowledgeable member. But it is too optimistic to assume that expertise will dominate, or indeed that there is a single measure of expertise to determine who ought to be the highest authority. There is considerable evidence that face-to-face interaction between group members can create destructive pressures of various sorts, such as domination by particular individuals for reasons of status or personality unrelated to their capability as probability assessors (Myers and Lamm, 1975). Seaver (1978) conducted a series of experiments with 10 four-person groups and concluded that simple aggregation of opinions without interaction produces the best results. He also noted that experts have more faith in assessments with face-to-face interaction, which might be important in persuading them to accept the results.

<sup>33</sup> We not only conducted a web search for MORILE but also asked UK NRA staff for the details; neither effort was successful.

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|             |  |
|-------------|--|
| Italy       | <b>Expert elicitation.</b> Experts informed with basic facts and figures for 2 amplifiers (cash and shadow economy), 9 crime categories and structural risks, and preventive safeguards in 20 sectors. Experts discuss in a workshop until consensus about rating. |
| Japan       | Many statistics shown, <b>no analysis conducted.</b> Expert validation of findings.  |
| Netherlands | <b>Expert elicitation</b> with multi criteria decision analysis. E-mail survey to select 10 main threats. Then 2 workshops with experts. Full description of workshop scripts. Validation with interviews.   |
| Singapore   | <b>Method of analysis not made explicit.</b> Expert validation.  |
| Switzerland | <b>Analysis of database</b> with SARs with explicit formula. This quantitative analysis is supplemented with a qualitative analysis of all relevant information in an unspecified manner.  |
| UK          | <b>Expert elicitation</b> on 9 sectors and 3 products. Explicit formulation of some factors considered for assessment. Lack of expert knowledge as indicator of vulnerability. Explicit chains of logic to explain some scores.                                    |
| US          | <b>Database</b> with closed cases and 15 government agencies. No further specification on the method of analysis.  |

*Created by authors. This table aims to provide a succinct overview of the methods; some less relevant details are necessarily omitted. The full descriptions can be found in the NRAs. Sources: The NRAs of the countries, mostly - but not exclusively - the methodology sections: Canada p15-17 and interview, Italy methodology report p5-7 and interview, Netherlands p17-28, appendix 4 and interview, Switzerland p13-14 and interview, UK 2015 p9-11 and interview, US p6-9.*

### Outputs

The goal of the NRA is to inform governments about the distribution of risk across sectors/products/transactions or some other dimensions among which AML effort might be distributed so as to permit the effective implementation of the Risk Based Approach.<sup>34</sup> As noted previously “In the cases of higher and lower risk determination, country-level risk assessments have very specific roles: Where countries identify higher risks, they should ensure that their AML/CFT regime addresses these risks. Where countries identify lower risks they may decide to allow simplified measures to be applied in relation to some of the FATF Recommendations.” (FATF, 2013; p6)

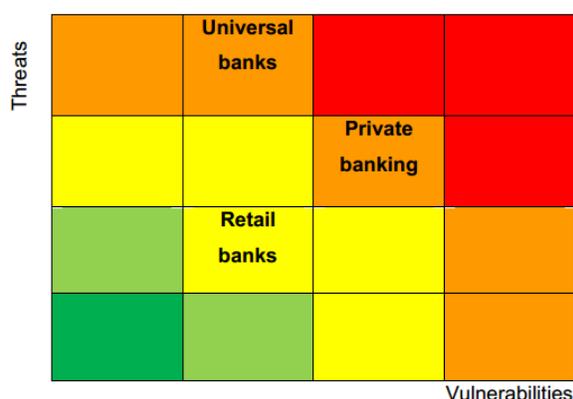
The most explicit statement of this goal is in the UK NRA: the goal is to assist “the government, LEAs [Law Enforcement Agencies], supervisors and the private sector in targeting their resources

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<sup>34</sup> One expert noted that it is useful to distinguish between conducting an NRA and publishing an NRA. He suggest that the purpose of publication, as opposed to conducting one, was to inform the private sector. It may also provide some assurance to the general public that the government is competently controlling money laundering.

at the areas of higher risk, ensuring that the UK’s approach ... is risk-based and proportionate.”  
 (p4) Thus it seems reasonable to expect a set of risk rankings in some dimension.

As shown in Table 5, most countries provide that. Singapore and the United States do not. Canada, Italy, and Switzerland provide “heat maps” showing the distribution of threats and vulnerabilities, which enables identification of sectors by overall risk. We reproduce an example from the NRA of Switzerland (banking sector) to illustrate this technique: the deeper the shade the higher the risk.



Source: NRA Switzerland (2015, p68)

The relatively high threat to “universal banks” is associated with low vulnerability, so that it is no riskier than private banking, whose vulnerability is greater but faces a smaller threat. No sector was associated with both high threat and high vulnerability. None of the NRAs were explicit as to what constitutes “high risk”.

**Table 5. Outputs of the NRAs**

|        | <b>Risk rating or ranking</b>   | <b>Informed policy decision?</b>  |
|--------|---|---|
| Canada | Yes, 198 risk ratings, one for each combination of 9 crime categories and 22 sectors/products       | Yes, risk ratings per sector can be used to decide sectoral AML efforts, no recommendations specified   |
| Italy  | No risk rating or ranking. Synthetic (combined) rating for all threats but none for vulnerabilities | Yes, a detailed overview of priority of actions for each of the 20 sectors; identified which of four specific action types might be appropriate |

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|             |  |  |
|-------------|--|--|
| Japan       | No risk rating or ranking, but a list of transactions that are considered low risk                     | No   |
| Netherlands | Yes, risk and risk mitigation ratings for the 10 most important methods/channels                       | No   |
| Singapore   | No risk rating or ranking, but a list of more vulnerable sectors                                       | Yes, next steps per sector and two risks to study further  |
| Switzerland | Yes, risk ratings for 18 sectors   | Yes with 8 specific recommendations  |
| UK          | Yes, structural risk rating and risk rating after mitigation for 9 sectors and 3 methods of payment    | Mostly on knowledge gaps   |
| US          | No risk rating or ranking. Only a list of laundering methods that remain relatively difficult to catch | No, positive statements about mitigation ability without informing the policy decision <sup>35</sup> |

*Created by authors. Source: Risk rating or ranking: Canada, p44-65 Italy p31, Netherlands p9-11, Switzerland p5, UK 2015 p12, Information for policy decision: Italy p31-32, Singapore p41-83, UK 2015 p6, US p4. To make it easier to get a visual overview, the cells that answer the question with yes are shaded.*

## **VI. How strong are the NRAs?**

The eight NRAs by systemically important countries provide a useful picture of the state of the art for money laundering risk assessment by governments around the world. We note again the great variety of ways in which the eight went about the task. FATF had indicated in its Guidance document that it was not prescribing the process, in contrast to its highly prescriptive efforts in other documents concerning the Recommendations, so this variety is hardly surprising. This section presents our conclusions from the study of the NRAs as a group before we suggest how the exercise could be improved.

We begin with an important and useful negative lesson. Though all NRAs devoted considerable space to discussing predicate crimes and their importance in terms of proceeds of crime, these assessments played a minor or no role in the recommendations or policy analysis section of the NRA. This is consistent with the analytic framework that has informed our own approach, in which the nature of the predicate crime that generates money for laundering is largely irrelevant

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<sup>35</sup> The conclusion of the US NRA is that the US is ‘generally successful in minimizing money laundering risks. Although criminals respond [...], the underlying vulnerabilities remain largely the same.’ (p.86)

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for the purposes of risk assessment. Even for enforcement agencies, it is difficult to see the value of knowing the distribution of money laundering volumes across predicate crimes. Their allocation of AML effort should be determined by the social costs of crime, a very different concept from the proceeds of crime and the utility of AML in reducing those crimes. If AML is useful for solving homicides, that should get considerable attention, even if fraud generates more criminal revenues. It is also good news because no country has strong measures of the Proceeds of Crime and most countries lack any estimates at all.<sup>36</sup>

Each NRA captured some of the required elements. Even those we assess as quite weak offered something different and useful. For example the US NRA, which produced no sector risk rankings and a dearth of data, provided insights by identifying relevant money laundering methods. The Singapore NRA showed that there was little evidence of substantial domestic money laundering. However none of them came close to a well-founded and comprehensive risk assessment. The published NRAs suffer from fundamental problems, which we again divide as before into conceptual framework, sources of data and methods of analysis and the utility of the outputs.

### *Conceptual Analysis*

All are conceptually confused; that is not to say that the authors are confused but that the documents are unclear. We identify four major flaws:

1. Concepts are lacking clear operationalization. Most NRAs simply repeat the FATF Guidance definitions but then don't say how, for example, threats might be measured, simply listing a series of offenses. The Canadian NRA comes closest to operationalize threat by providing a long list of potential indicators for crime types (proceeds of crime is the last).<sup>37</sup> Vulnerability is

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<sup>36</sup> For example, the Canadian mutual evaluation refers to Proceeds of Crime estimates of \$47 billion and RCMP estimates of Money Laundering of \$5-15 billion, which are hard to reconcile. An unpublished 2013 IMF study examined Proceeds of Crime estimates for 35 jurisdictions encompassing about one third of global GDP. The IMF sought estimates for 24 different crimes; for 10 of those 24 crimes fewer than half of the countries had estimates.

<sup>37</sup> "the extent of the threat actors' knowledge, skills and expertise to conduct money laundering; the extent of the threat actors' network, resources and overall capability to conduct money laundering; the scope and complexity of the ML activity; and the magnitude of the proceeds of crime being generated annually from the criminal activity." (p16)

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operationalized in a confusing fashion. The NRAs of Canada, Italy, the Netherlands, Switzerland, and the UK reference “inherent” or “structural risk” that is associated with the nature of the sector or service. Thus banks are inherently attractive because they permit rapid transactions with many other institutions, scattered around the world, and allow easy access to assets; that means they are likely to face a serious threat. However only the UK notes that vulnerability, in the sense of attractiveness to a launderer, is also a function of scale. A small sector cannot handle a large share of laundered money.

2. Many risk assessments operationalize threats and vulnerabilities at different levels. Threats are national aggregates and vulnerabilities are sectoral. For example Italy provides an innovative analysis of the threat posed by the use of cash and by the presence of organized crime (including by region) but then conducts an analysis of vulnerabilities for a very fine-grained set of 18 sectors. Canada appears as the sole exception; its NRA ties threat and product/sector together i.e. it assesses the risk that each kind of financial institution or DNFBP has for each of 21 crimes. However, the basis for which Canada makes its assessments is mysterious and the results show an inexplicable constancy of threat severity across sectors, indicating that the ranking of threats coming from different crimes is the same for all sectors; that is implausible and needed explanation.

3. Risk assessments are designed to inform decisions, as the FATF Guidance itself notes. An early task then is to identify the decision-makers and to frame the analysis so as to help them. If banks have a specialized regulatory authority, then the assessment should consider risk in the banking sector specifically. The Dutch NRA by creating a sector category described as “financial institutions, particularly banks” informs no specific decision-maker, since the category includes a variety of sectors such as insurance companies that have their own regulators. Another example from the Dutch NRA is the analysis of “money laundering via fiscally driven/complex corporate structures”. Which decision-maker can use the results of such analysis? Similarly, the United States by just highlighting the methods to which the system is most vulnerable provides at best modest guidance to regulators or even law enforcement. Without specification which sectors are

vulnerable to the different methods, US regulatory authorities are left in the dark whether the identified risks are relevant in their field.

4. Terminological confusion exacerbates and signals the problem. Risk is used in variable ways within the same NRA so that it is simply impossible to know what is being measured. For example, the NRA of the Netherlands starts with stating that ‘risks’ are a function of threats, vulnerabilities, and consequences, just as in the FATF methodology, but later the top ten threats are called ‘risks’ without considering the vulnerability and consequence level of these threats. The Swiss NRA ends up with a Table (on p.45) in which threat is both on the horizontal and vertical axes under different rubrics, rendering the cell entries meaningless.<sup>38</sup> There is little understanding of the ambiguity of some indicators. For example, some NRAs (e.g. Japan) interpret characteristics of closed cases as providing evidence of patterns of money laundering, while others (e.g. the UK) interpret them as indicative of the pattern of enforcement. In fact closed cases reflect both the underlying distribution of offenses and what offenses enforcement agencies choose to investigate; it is a major analytic undertaking to separate out the two effects<sup>39</sup>.

#### *Data sources.*

Most NRAs relied on just one or two data sources. At an extreme, the Dutch NRA made use only of expert opinion. It presented no data of any other kind. Switzerland’s NRA relied almost entirely on SARs, with expert opinion only used to test the plausibility of the findings from the SARs analysis. Japan showed a wide array of data on every aspect of enforcement, with minimal reference to expert opinion. Italy made use of the most types of data sources, though expert opinion ultimately determined the assessments with the other data sources as inputs for the discussion.

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<sup>38</sup> “the threats associated with bribery and participation in a criminal organisation expose the Swiss financial sector to greater vulnerability because of the larger sums of money involved and more significant potential consequences in terms of reputation both institutionally and systemically.”

<sup>39</sup> Many have devoted considerable effort to just this endeavor for crime generally; see e.g. Black (1970), Bottomley and Coleman (1981), Marvell and Moody (1996), O’Brien (1996), van Dijk and Tseloni (2012), and Tonry (2016)

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The quality of the data sources is never systematically assessed but taken at face value; indeed it is rarely described. There is no effort to triangulate, so as to test the plausibility of conclusions from one source with data from another source. For example, if retail banks are the principal source of SARs and hence appear to be the channel for most money laundering, does expert opinion or intelligence reports support that assertion?

### *Outputs*

As shown in Table 4, there is a great variation in the outputs of the NRA. Some countries (like the UK and the Netherlands) provide detailed rankings of the risk associated with sectors and products. Uniquely, Italy goes even further and identifies which of four different methods could be used to improve the effectiveness of AML in a specific sector. At the other extreme, the United States provides no relative risk measures, even of the vaguest kind, but only the reassurance that the system was robust, hardly consistent with the evidence from its own investigations. The FATF Methodology provides no guidance on this issue, a matter we take up later.

Some countries went beyond relative risk statements and provided risk classifications. That is, some sectors were described as high risk and others as low or moderate risk. There is no evidence of standardization of these labels across countries, so that Canada's alarming 16 out of 27 sectors/products being labeled high risk, suggesting a system that is highly exposed<sup>40</sup>, cannot be compared to the UK finding that only 3 out of 12 should be labeled high risk.

That also raises a question of interpretation. The Swiss NRA correctly notes that money laundering risk cannot be eliminated. However, it is fair to ask whether a system in which six separate classes of institutions are classified as high risk is consistent with the claim that 'Switzerland has a full, coordinated and effective range of legal and institutional resources for combating money laundering and terrorist financing.' (Swiss NRA, p. 4) And perhaps the US claim to a "robust" system is simply a different national tolerance for money laundering risk.

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<sup>40</sup> The Canadian finding is perhaps less alarming if one remembers that this is a categorization based on "inherent risk" rather than "mitigated risk". The latter were never published.

### *Analysis*

It is hard to discuss the analytic methods for most of the NRAs because they are not described. Some did nothing more than present numbers. That seems to be true of the NRAs for Japan, Singapore, and the United States. For example, Japan presents numerous Tables describing criminal justice processing of various kinds of cases; the relationship of these to money laundering risks is never explained. The UK states that it uses a model developed by law enforcement agencies that cannot be found in open-source form, so no one can assess its credibility for the purpose. The Dutch explain their methods in detail but that method has internal inconsistencies<sup>41</sup> that make it of little value for risk assessment.

Finally, as already noted in passing, the description of methodologies mostly varies between non-existent (Singapore) to very thin (the United States), except for the Netherlands and Switzerland. Progress both for successive NRAs in a given country and for the field as a whole is dependent on better documentation of methods and procedures. Our interviews with participants in second round NRA efforts gave the strong impression that documentation was inadequate even within the agency files.

## **VII. Why are the current NRAs so weak?**

The experience of reviewing eight published National Risk Assessments from leading nations is dispiriting. There is conceptual confusion, the data are highly limited, most are analytically weak and/or fail to explain the methodology and the whole goal of the NRA - to inform policy decisions - is often missed. We can only provide a speculative explanation for the weakness of NRAs.

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<sup>41</sup> To give an example: Experts were told “What we ask is that you select the ten threats that you believe represent the greatest potential impact.” That is a complex question that should have been split into at least two components; the probability of a laundered dollar going through a specific channel or method and then the impact, which after all was then assessed through the Multi Criteria Analysis (MCA) that followed. In effect, the experts were asked to do the MCA implicitly and then, having done that, to apply it explicitly to the “risks” that already had it built in. At various points (e.g. p.48) it is difficult to tell whether experts were being asked just about the frequency with which a channel/method was used or the amount of money that was flowing through that channel/method.

*Box Checking* – One plausible interpretation of the low quality of the NRAs is that they were executed simply as a “box-checking” exercise, a concern that has been expressed about many elements of the FATF Mutual Evaluation Report process (Levi, Halliday and Reuter, 2014). The FATF requires that each government identifies, assesses, and understands the risks of money laundering in its jurisdiction. While the FATF does not mandate a published national risk assessment, it does encourage that, as indicated by the publication of the 59-page *Guidance* on how to conduct such risk assessments. For the 6 countries analyzed in this paper<sup>42</sup> which had a mutual evaluation by 2019, the NRA had been given high marks. These are then nations which are most likely to have strong NRAs.

At least one participant supported this interpretation. In his country the preparation and publication of the NRA had attracted no attention from the many agencies involved in its development. He had received no comments once it was published, nor been asked to brief anyone about the findings. Further evidence for this claim is that almost no country had published a risk assessment before the FATF requirement was imposed in 2012, notwithstanding the effort to create a risk-based approach for AML in 2003. Repeatedly we were told that the NRA was prepared in preparation for an MER, not because it was believed to be important for efficient operation of the money control system.

Since the FATF *Guidance* is so general, in contrast to the highly prescriptive nature of other documents from FATF, such as the *Methodology* for mutual evaluations, it is an easy box to check. The variety of approaches taken and approved by mutual evaluations is evidence of that. None of the NRAs, fundamentally flawed as they are, has attracted serious criticism in their mutual evaluation report. One experienced observer noted that the FATF plenaries, at which draft MERs are discussed, had occasionally suppressed criticisms of specific NRAs, suggesting that these exercises only had to show an “understanding” of the risks, a relatively low bar.

*The narrow world of AML* – None of the NRAs show awareness of the broader risk assessment literature. There is an occasional ritual reference to ISO 31000, which lays out how a risk

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<sup>42</sup> The Netherlands and Japan did not have a mutual evaluation in which the NRA was evaluated.

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assessment should be conducted, but no use of any specifics of the framework presented there. The ISO reference in the individual NRAs is essentially cut and paste from the FATF *Guidance* which itself makes little use of the ISO standard. The lack of use of consulting firms, that do have expertise in risk assessment, is also indicative of a reluctance to embrace a broader array of technical skills.<sup>43</sup>

The FATF guidance (p6) mentions that concepts are “usefully described elsewhere” when referring to the international ISO standard for risk assessments, but continues without using these concepts and introducing their own conceptual framework where risk is a function of threat, vulnerability, and consequences. The word ‘hazard’ (as standard in the international literature on risk assessment and the ISO standard) is not used once in the FATF guidance. In the ISO (2009) standard 31010 document, the word ‘hazard’ is used 83 times in 92 pages. On the other hand, in the ISO standard 31000, so frequently mentioned by FATF, the term vulnerability **never** appears<sup>44</sup>.

Without an explicit reference, the money laundering risk assessment concepts put forward by the FATF (threat, vulnerability, and consequence) seem borrowed from terrorism risk assessments. The more general literature on conducting a risk assessment (see e.g. Rausand, 2013) states that Risk = Probability times Consequences. It is specifically in the field of terrorism risk assessment where Risk is determined by Threat, Vulnerability, and Consequences. (see eg. Willis et al., 2005; National Research Council, 2010; Willis, 2007) For terrorism these concepts fit more naturally. Terrorism has two fundamental probabilities: the probability of an attack (by a threat) and the probability the attack leads to damage (dependent on vulnerabilities). It therefore seems fitting to study both probabilities separately, represented by the clearly defined concepts Threat and Vulnerability. (Willis, 2007, p.598) Even though terrorism – more specifically

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<sup>43</sup> This failure to utilize external technical literature is also a characteristic of the *Methodology* developed by the FATF for the Mutual Evaluation Reports. There is a large literature on evaluation methods. The FATF approach makes no reference to it and departs from any of the evaluation methods in that literature.

<sup>44</sup> It appears in ISO 31010 Risk assessment techniques (... The key steps include: • based on the risk and vulnerability assessment....), and in ISO Guide 73:2009 (Risk Management Vocabulary):3.6.1.6 vulnerability intrinsic properties of something resulting in susceptibility to a risk source (3.5.1.2) that can lead to an event with a consequence (3.6.1.3)

countering terrorism financing – is seen as policy-wise related to anti-money laundering, applying the same risk concepts is challenging. While terrorism has two fundamental probabilities that can be studied separately, threat and vulnerability need to be studied together for a money laundering risk assessment (see below our discussion about the problem of endogeneity). There are two other fundamental differences between terrorism risk and money laundering risk that affect how these risks can be measured. First, terrorism events are more sporadic. Money laundering events happen often and in such patterns that it would be better to talk about money laundering frequency than the probability of a money laundering event. Second, when terrorist attacks happen, this has a direct visible consequence. When money laundering is performed successfully, it should generate no visible impact and go completely unnoticed. While the use of the concepts Threat and Vulnerability is natural and well-focused for terrorism risk assessments, money laundering risk assessments are struggling with determining how to measure and analyze Threat and Vulnerability.

It is also striking that there has been no effort to develop a stronger NRA methodology. Some NRA participants whom we interviewed reported that they had read two or three other NRAs but rarely had reached out to consult with other nations about their experiences. At the FATF plenaries, there are regular side events (sponsored by the Risks, Trends and Methods Group) in which a nation presents its NRA but observers report no meaningful critique emerging from these events. We are unaware of any symposia or workshops that have tried to cultivate an NRA community. The fact that only the Netherlands provided an adequate description of their methodology is a further indication of indifference to the development of the field.

## **VIII. Path Forward**

We offer here a set of suggestions about a conceptual framework and the kinds of data and the analytic methods that offer prospects of improving the quality of NRAs. These are not detailed recommendations but arise from our study of the limitations of the eight NRAs. They are intended primarily to stimulate discussion.

*Risk assessment lessons from other fields*

As we argue here and in a preceding article (Ferwerda and Reuter, 2019), the FATF guidance for risk assessment, in particular its conceptual inconsistencies, has created problems. The variety of conceptual frameworks and methodologies that countries apply leads to risk assessments that do not strengthen the fight against money laundering. While it includes a short reference to the international standard for risk assessment generally, the FATF guidance ignores the relevant conceptual framework and lessons that are already learned in other fields about how to conduct a proper risk assessment.

A central formula used in the more general literature on conducting a risk assessment (see e.g. Rausand, 2013) is: Risk = Probability times Consequences. Consequences are measured in money units (eg. dollars) and Probability is a percentage, so the Risk is measured in dollars. This means risk is not a percentage but a dollar value, which might feel inconsistent with the more common language usage of the term risk.

Money laundering is not a one-time event that happens only sometimes, like a flood, a nuclear power accident, a terrorist attack, or a virus outbreak. Since money laundering occurs more or less frequently, we should not focus on the probability but on the frequency of its occurrence. A year would be an intuitive time period for money laundering calculations. (in line with Rausand, 2013, p.40) So applying the more general literature on risk assessments would mean that for money laundering the risk is the frequency that money laundering events occur multiplied by the consequences for the society as a whole each time money laundering occurs.

Although the FATF guidance (2013) refers to a list of 25 different possible adverse consequences of money laundering mentioned in the literature, empirical support for these consequences is missing (Ferwerda 2013). None of these consequences has been reliably estimated; indeed, almost none have been examined empirically at all. Thus the analysis needs to be simplified. The FATF quite sensibly suggests that NRAs can ignore consequences. But what would then happen to the conceptual framework? This would mean that the formula Risk = Frequency times Consequences would be simplified to Risk = Frequency (in line with Savona and Riccardi, 2017,

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p27-31). Leaving out the consequences changes the unit of measurement of risk. Risk is normally a dollar value (basically the expected value of the consequences measured in dollars), but if we ignore consequences, then risk would be measured as a number without dimensions.

As already noted, the FATF (2013, p8) admits that the consequences are hard to measure and finds it acceptable to leave them out of the analysis. But for the conceptual framework to work and to have the right unit of measurement, the consequences of money laundering cannot be ignored. We therefore suggest the following simplification: assume that consequences scale with the amount of money laundered in a transaction. If more dollars are laundered, we expect that the consequences are greater. To use some of the consequences listed by the FATF (2013, p26 referring to Unger 2006) as examples: If more dollars are laundered, we expect a greater distortion of consumption, investment, and savings, a larger artificial increase in prices, more unfair competition, greater changes in imports and exports, etc. Such a simplification fits in terms of the unit of measurement used in the more general literature on risk assessment: consequences can be measured with a dollar value because consequences scale with the expected amount of money laundering.

It might seem strange and unconventional to measure risk with a direct dollar value (a money laundering estimation) and no probability. However, this is the convention in other fields where risk assessments are more established. For example in preparing a guideline for engineers, Hara (2002) states “The most appropriate definition of risk is the expectation of loss because it is necessary to be a dimensional value for comparison. Two components of risk are severity and probability of occurrence. Severity is the amount of loss measured in units of value. The probability, which should be defined as the degree of belief, has no dimension. Accordingly risk has also a dimension of value and should be measured in units of value.”

So we suggest a conceptual framework where *Risk* is the *Frequency of money laundering events* times the *Amount of dollars laundered per event*. Risk then is simply the total amount of money laundered in each specific sector/product being assessed. This calculation can be done at any level of disaggregation. The level of disaggregation should be chosen based on the policy decision

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that is to be informed. For example, the FATF seems to suggest that knowing the risk level in each sector determines in which sectors to intensify AML efforts; then one should estimate the amount of money laundered per sector. A bank wants to estimate how much is laundered through its different services and products to determine which to scrutinize more; then it should calculate the volume of money laundered with these different services and products. Supervisors want to estimate the amount of money laundering per institution they supervise to know which institutions to monitor more closely (ie. risk-based supervision). Estimating the amount of money laundering is hard to do in practice, but by defining money laundering risk this way, one can at least be clear about what is to be analyzed and what could be relevant risk factors: factors that increase the amount of money laundering. This could be factors related to threat: more predicate crimes or factors that make predicate crimes more profitable. Or it could be factors related to vulnerability: legal loopholes, unsupervised sectors, weak borders, etc. Our suggested conceptual framework therefore does not dispute the concepts put forward by the FATF (2013) but tries to use them in such a way that the goal and operationalization are focused and can contribute to the goal of a risk assessment: to inform relevant policy decisions.

### *The problem of endogeneity*

This points to an important problem for the FATF approach, namely that it implicitly views money laundering threat and vulnerability of any one sector as independently determined, since it suggests that high risk sectors (classes of institutions and/or products) should be subject to greater scrutiny and low risk sectors to less.

Drawing an analogy to a risk assessment for flooding shows the problem of this assumption. There are conditions under which threat and vulnerability are independent of each other. New Orleans faces a high probability of flooding. This requires the city of New Orleans to invest heavily in e.g. levees to mitigate that inherent risk. Washington, DC faces a very slight probability of flooding; it invests little in flood mitigation. Thus Washington DC is more vulnerable to a flood, contingent on such an event occurring. That is still an optimal allocation. The greater vulnerability does not lead to more floods.

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But for money laundering, the threat is not exogenous per se (i.e. determined independently of vulnerability), as it is in the previous floods examples. Money laundering threats to an individual sector are importantly influenced by vulnerabilities of that sector relative to that of others. With a lag, money launderers can shift their business away from a given sector if other sectors become increasingly vulnerable, ceteris paribus. A sector with quite weak AML controls may face little threat if there are other still more vulnerable sectors in the same country. Increasing the stringency of controls on one sector may raise the threat in some other sectors. Foreseeing which sectors will have higher threat and how much higher are both major challenges for risk management. Ignoring this interaction though is to undermine the value of the NRA exercise.

The relevant floods analogy is to analyze New Orleans and its neighbors. The threat of flooding to New Orleans can be increased if neighboring communities strengthen their levees, so that the flooding is displaced downstream. If the measure of damage is community specific, then the stronger levees reduce flooding damage. If it includes all the communities that are affected by the stronger levees, the result may be negative. The same holds for increasing sector specific controls; if banks are made less risky, then more money may be laundered through currency exchange operations.

The same is of course true at the country level. Switzerland may find its money laundering threat increase if Luxembourg reduces the overall vulnerability of its AML system. For NRAs, which despite their name assess just relative risks at sector level, not the risk of the country as a whole, that may be only a peripheral consideration.

### *Audiences for the Published National Risk Assessments*

Though labeled National, the published Risk Assessments are of sectors within a nation not of the nation as a whole; it may include sectors that are not currently covered by AML, as was reflected in the Swiss NRA treatment of the real estate sector. The goal is to assess relative risks within the country, not differences in risk across countries. Discussions with AML officials indicate that the FATF did not want to facilitate cross-national comparisons, the creation of a league table as is common with such indicators as the World Bank *Ease of Doing Business* or Transparency

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International's *Corruption Perceptions Index*. Unsurprisingly, the demand for cross-national comparisons has generated its own supply. The Basel Institute on Governance since 2014 has published an annual AML index, which gives for each of 146 countries an absolute score and a ranking on the effectiveness of AML efforts.<sup>45</sup> Our impression is that the Basel Index has not acquired much authority.<sup>46</sup>

Since risk assessments are produced to inform decisions, the first task is to identify the decisions and decision-makers involved. The FATF correctly identifies two distinct policy audiences for NRAs: regulators and investigative agencies (FATF, 2013, p.8), each with its own responsibilities. Adopting the FATF framework of threat and vulnerability one can see that the two audiences have distinct responsibilities.

(1) Regulatory authorities aim to reduce vulnerability by improving prevention, detection, and sanctioning within the financial system. What they cannot do is directly affect the volume and revenues of predicate crimes; that can only be accomplished through feedbacks that are weak and uncertain, from increased difficulty of money laundering to incentives for committing crime. Regulators do not articulate priorities for the kinds of predicate crimes they are most interested in detecting, and in this sense, every laundered Euro is the same to them. The same would apply to a third audience of a published NRA: the private sector with anti-money laundering duties. Suspected money laundering transactions need to be reported irrespectively of the possible predicate crimes that generated the money.

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<sup>45</sup> “The Basel AML Index measures the risk of money laundering and terrorist financing of countries based on publicly available sources. A total of 14 indicators that deal with AML/CFT regulations, corruption, financial standards, political disclosure and rule of law are aggregated into one overall risk score. By combining these various data sources, the overall risk score represents a holistic assessment addressing structural as well as functional elements in the AML/CFT framework. As there are no quantitative data available, the Basel AML Index does not measure the actual existence of money laundering activity or amount of illicit financial money within a country but is designed to indicate the risk level, i.e. the vulnerabilities of money laundering and terrorist financing within a country.” <https://index.baselgovernance.org> The NRA is not yet part of the index, perhaps because it is available for a relatively small number of countries.

<sup>46</sup> The Basel AML index is published yearly since 2012 and thus has 8 editions when writing this paper. A quick search in Google scholar shows only a total of 20 references to the Basel AML index (of different years) in the scientific literature. (Google scholar search on the keywords: “Basel AML index” on May 8, 2020)

(2) In contrast, Investigative agencies aim to reduce the threat. Their goal is to reduce predicate crimes; AML is one of the tools they use for that purpose. By lowering predicate crime, they reduce the Proceeds of Crime that generate money for laundering. They lack the tools to reduce the vulnerability of specific sectors of the financial system.<sup>47</sup> Investigative authorities have a priority list on which proceeds of crime they would prefer most to reduce, due to differences in the severity of the harms specific crimes inflict on society or other reasons. For them, some contaminated Euros are more equal than others; they might make quite refined judgments even within sectors, for example, that the dollar from a major fraudster is more valuable to detect/prevent than the dollar from a small scale fraudster.

One operationally significant implication of identifying the two perspectives, regulatory and investigative, bears on expert opinion, the most important data source for NRAs. Experts from these two groups have to be separated when asking these kinds of questions about sectoral risk. Regulators and enforcement agents will naturally have a different focus and therefore interpret concepts (such as threat and risk) differently. When asked which sector is most risky, representatives of an investigative agency focused on drugs might say ‘banks’ because they see drug criminals depositing cash at banks. Regulatory experts, such as FIU employees, might say ‘lawyers’ because they see that lawyers do not report as frequently as other groups with reporting responsibilities. The most important distinction is thus on the denominator that colours the view of the expert. Enforcement agents see all the crimes (as this is their job, after all) and how they are dispersed, while regulators see all operations within the sector they oversee, with instances of bad behavior among those operations.

### *Data sources*

Credible NRAs will require the use of multiple sources of data. Our suggestions here are intended to be practical, in the sense that they do not involve large scale novel data collection or untested

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<sup>47</sup> In principle, a focus on specific financial sectors by investigative agencies might increase perceived risk associated with laundering of that sector. For example, if fraud investigative units put more emphasis on using SARs from international transfers to target potential offenders, this might make such transfers less attractive to fraudsters. We assess this as a second order effect, as compared to direct regulation of that class of transactions.

methods. Yet they represent a different and demanding approach to the risk assessment exercise. Our proposals also emphasize transparency about data collection and methodology, even if not about the data themselves; AML Risk Assessment will only improve if there is more sharing of how the NRAs are done and discussion of the strengths and weaknesses of the different approaches.

**Transactions**, not Suspicious Transactions, must be a starting point for creating risk profiles. The focus on analyzing patterns in SARs/STRs, reflected in the Swiss, Japanese, and Singaporean NRAs, starts at the wrong point. The issue is not what are common characteristics of SARs but how SARs differ from other transactions. For example, if 50% of Canadian SARs come from the USA, that does not of itself make the USA a high-risk country; if 75% of all transactions are from the USA, then the 50% indicates that this is a low-risk country. There should be no problem in creating a sample of all transactions for a regulated sector and then comparing the characteristics of SARs to the characteristics of the total population of transactions.

**Mystery shopping** In a landmark 2011 study, the World Bank undertook a set of “mystery shopping” exercises (van der Does de Willebois et al, 2011). A sample of Trust Service Providers (TSPs) in a number of countries were approached by email to set up a shell corporation. The pattern of responses in terms of willingness to breach basic AML protections, such as proof of beneficial ownership and authentic identification documents, was very revealing. TSPs in the US and the UK were much more willing to violate the rules than were TSPs in notorious secrecy jurisdictions such as the British Virgin Islands and the Bahamas. This approach has been used in other studies (e.g. Findley, Nelson and Sharman, 2013) and less formally by AML consultants, for example by attempting to make suspicious-looking deposits at banks and finding out whether that leads to the filing of a SAR.<sup>48</sup>

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<sup>48</sup> Described by John Chevis at the following two conferences: 36th Cambridge International Symposium on Economic Crime, Plenary Workshop 10: AML National Risk Assessments - the way forward, held in Cambridge, UK, September 2-9, 2018 and 4th International Conference on Governance, Crime and Justice Statistics, Organized by UNODC for the Sustainable Development Goals, held in Lima, Peru, June 4-6, 2018.

These efforts suggest a plausible method for testing the credibility of claims to have an effective AML system for a particular sector or product. Its breadth and depth should not be overstated but as the methodology is developed through further testing, it may help estimate the probability of detection of laundering at various points in the system.

**Eliciting Expert Opinion** Expert opinion will undoubtedly be an important source of data, even if new data sources are developed. However, there is a specific method for obtaining relevant, comprehensive, and unbiased data, under the general rubric of “eliciting expert opinion”. This involves painstaking preparation of the instruments for asking questions, techniques for establishing the competence of the experts, methods for reconciling, and learning from differences in opinions (Morgan, 2014). This is not the place to describe those techniques in detail but we offer a broad rationale for their development and one example of the kind of exercise that is used to validate experts’ competence.

Tversky and Kahneman (1974) describe and model human heuristics and biases in estimating probabilities. Many studies after that seminal publication have shown (similar) biases, but also provide lessons to improve the results of expert elicitation, across disciplines like psychology, decision and management science, computing, forecasting and statistics (Kynn, 2008). To give some examples, Bolger and Wright (1994) emphasize the importance of having experts questioned within their expertise and experience, in a familiar metric, that they must understand the tasks being asked of them and that they must be expert. Finding the right expert is critical. Shanteau (1992) expands on this issue, describing the different thinking and problem-solving patterns in experts, which novices (even graduate students with several years of experience) may not have yet acquired. (Kynn, 2008, p259)

It is important to learn from the ‘diversity of opinion’ amongst experts, as well as their own confidence in individual judgments when consulting their opinion. (Morgan, 2014) None of the eight countries explicitly referred to how confident experts were, except the Netherlands in a follow-up NRA exercise that was done for the overseas part of the kingdom. (van der Veen and Heuts, 2018) The lack of attention to uncertainty is “a chronic disease of planners” (Quade, 1975).

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It is especially important when experts from very different government organizations and private entities are brought together to determine risk ratings for a large variety of crimes and sectors since each of them is expert on only some of the sectors and modes of laundering about which their opinion is being sought. “[D]ifferences in response may result from different paradigms by which the experts view the world and the data. This often is true when the experts come from different disciplinary backgrounds.” (EPA, 2011) For example, how knowledgeable is a customs official when asked about the money laundering risks for casinos?

To establish consistency experts might be offered a series of pairwise comparisons. A money launderer tries to launder 20,000 USD through a bank and 20,000 USD through a casino. Where do you think it is more likely the money laundering is detected, the bank or the casino? Then compare a bank and a real estate transaction, then a real estate transaction and a casino. Failure to pass a transitive consistency test throws doubt on the individual expert.<sup>49</sup>

**Money laundering cases** Some NRAs include vignettes of specific detected money laundering transactions. To our knowledge, no country has created a database of proven money laundering transactions to determine what can be learned about threats and vulnerabilities<sup>50</sup>. A useful model can be found in the work of Edward Kleemans in the Netherlands, who has created databases on organized crime cases that have proven valuable in providing insights about careers in organized crime, contrasting them with careers in property and violent crime (Kleemans and De Poot, 2008; Kleemans and van Koppen, 2020). Examining a body of cases in the specific country one can learn for example what kinds of institutions/products have been used by money launderers or whether specific locations are more vulnerable. The World Bank has just begun an

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<sup>49</sup> The World Bank NRA workshops also have a elevator pitch exercise, in which the experts are invited to market their country as a good destination for money laundering and guide a criminal about the best methods and sectors to launder their money without being detected. This exercise practically asks the experts to put themselves into criminals’ shoes. This has proven a very useful exercise and many times yielded more meaningful/realistic conclusions than filling the Excel templates.

<sup>50</sup> The United States 2015 NRA refers to such a database but never analyses it or uses it for any purpose other than providing vignettes.

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effort to encourage countries who use its NRA tool to build such a database<sup>51</sup>. This is a long-term effort that should be started now but will yield useful insights only after a few years.

Surely there are still other data sources that can be tapped, such as investigative reports by media. Our message is less that any specific set of sources will be sufficient than that multiple sources will be needed and attention has to be given to their systematic integration.

### *Analytic Methods*

The data do not speak for themselves. Explicit multiple methodologies are needed to relate the data to the estimated risks; no single methodology will allow synthesis of the very varied data that should be used.

An intuitive start for a vulnerability assessment is to assess the strength of the policy framework with critical path analysis. The chain is only as strong as the weakest link. An example of consequential steps in the field of anti-money laundering policy is from investigation via prosecution to conviction. The investigation and prosecution can be successful but are useless when the convictions are hampered by incompetent or corrupt judges. Analyzing where the bottleneck is in such systems is a good start of a vulnerability assessment. Other examples of such chains in the field of AML policy are detecting money laundering by banks that can be rendered useless when the FIU is unable to do its part in processing STRs or monitoring of customers by banks that can be hampered by an unreliable identification infrastructure in a country. The World Bank Tool for National Risk Assessments for money laundering and terrorist financing<sup>52</sup> already includes such a critical path analysis.

## **IX. Concluding Comments**

Our primary motivation in studying the NRAs was to administer a one-tailed test of the competence of the AML regimes at the national levels. Failure to conduct a competent risk

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<sup>51</sup> The database methodology can be found at [Proceeds of Crimes Data Collection Tool: http://pubdocs.worldbank.org/en/422681580318460585/POC-Update-04.pdf](http://pubdocs.worldbank.org/en/422681580318460585/POC-Update-04.pdf).

<sup>52</sup> See <https://www.worldbank.org/en/topic/financialsector/brief/antimoney-laundering-and-combating-the-financing-of-terrorism-risk-assessment-support> (accessed September 12, 2020)

assessment raises serious questions about the government's capability to control money laundering risks. It seems fair to say that most governments failed; the NRAs showed a poor understanding of the distribution of money laundering risks.

Perhaps the most important implication is that the risk-based approach is not being implemented by regulatory agencies. A risk-based approach to AML requires knowledge of the riskiness of regulated activities, at least in a relative sense. The fact that the NRAs were not able to build on existing sector level risk assessments is compelling evidence that the regulators have developed neither such estimates nor the expertise to do so in the near future.

Why were none of these countries implementing a risk-based approach at the time of the NRA exercise, which is to say at least 12 years after the FATF included that as an option in its recommendations and at least 3 years after it was made mandatory? Perhaps it reflects the difficulty of doing this well. No existing model provides real guidance; the FATF *Guidance* document, as already noted, claimed only to provide general guidelines. This broad guidance itself very much contradicts the logic of FATF from the very beginning, which was to learn from what others were doing. The common methodology of the Mutual Evaluation Reviews, the Typology exercises and the peer review were all designed to facilitate comparative lesson-drawing and diagnostic testing with regular updates to the standards over time.

Another explanation is that the Risk-Based Approach has implausible premises for money laundering control. It requires an alignment between the incentives of the bank and the regulator. With prudential regulation such an alignment can be assumed. A bank wants to reduce the extent of fraud and to do so efficiently; so does the regulator. However that same bank is not harmed by the laundering of money. There may be economic and social harms from laundering but none of the harms identified in the long list provided by Ferwerda (2013) are borne by the bank itself. Au contraire, as revealed in such scandals as the 2018 Danskebank<sup>53</sup> and the 2012 HSBC scandals (see e.g. Naheem, 2015), the bank may see laundering as a profitable business

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<sup>53</sup> For a description of the scandal, see eg. <https://sevenpillarsinstitute.org/the-case-of-danske-bank-and-money-laundering/>

line. The sole cost it faces is imposed directly or indirectly (through the loss of reputation) if the complicity in money laundering is discovered. From the bank's point of view, the risk to which it is being exposed is not money laundering but the risk of being detected laundering criminal proceeds.

The National Risk Assessment exercise is in its early stages. There is no shame in stumbling at the starting gate; that has happened in other spheres as well.<sup>54</sup> A variety of approaches is healthy for an institutional setting that does not have a strong history of empirical analysis. What is less forgivable is the lack of transparency and the failure to learn from the experiences of different countries. Fortunately, these faults can readily be remedied.

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<sup>54</sup> For instance, see Masse et al. (2007) for an overview of the development of risk assessment methodologies by the US Department of Homeland Security for terrorism risks. Crevel et al. (2014) shows how risk assessments evolved for food allergens, Dourson et al. (1996) shows the progress made in toxicological noncancer risk assessments. Omenn (2003) analyzes the evolution of risk assessments for chemicals in the environment. See Ball (2007) for a general reflection on how risk assessments have evolved over time and the relevant controversies.

**List of National Risk Assessment Documents Reviewed**

Canada (2016) Assessment of Inherent Risks of Money Laundering and Terrorist Financing in Canada, Department of Finance

Italy (2014) Analysis of Italy's National Money-Laundering and Terrorist Financing Risks, Financial Security Committee, July 2014, Methodology

Italy (2014) Italy's National Assessment of Money-Laundering and Terrorist Financing Risks, Financial Security Committee, Synthesis

Japan (2015) National Risk Assessment of Money Laundering and Terrorist Financing, Working Group on the National Risk Assessment of Money Laundering and Terrorist Financing Of Liaison Conference of Related Ministries and Agencies for Implementation of FATF Recommendations, December 2014, Tentative Translation

Japan (2017) National Risk Assessment of Money Laundering and Terrorist Financing, National Public Safety Commission, November 2017, Tentative Translation

Netherlands (2017) National Risk Assessment on Money Laundering for the Netherlands, H.C.J. van der Veen and L.F. Heuts, Scientific Research and Documentation Centre, Ministry of Justice and Security, Cahier 2017-13a

Singapore (2013) Singapore National Money Laundering and Terrorist Financing Risk assessment Report, Ministry of Home Affairs, Ministry of Finance and Monetary Authority of Singapore

Switzerland (2015) Report on the national evaluation of the risks of money laundering and terrorist financing in Switzerland, Report of the interdepartmental coordinating group on combating money laundering and the financing of terrorism (CGMF), June 2015

UK (2015) UK national risk assessment of money laundering and terrorist financing, HM Treasury and Home Office, October 2015

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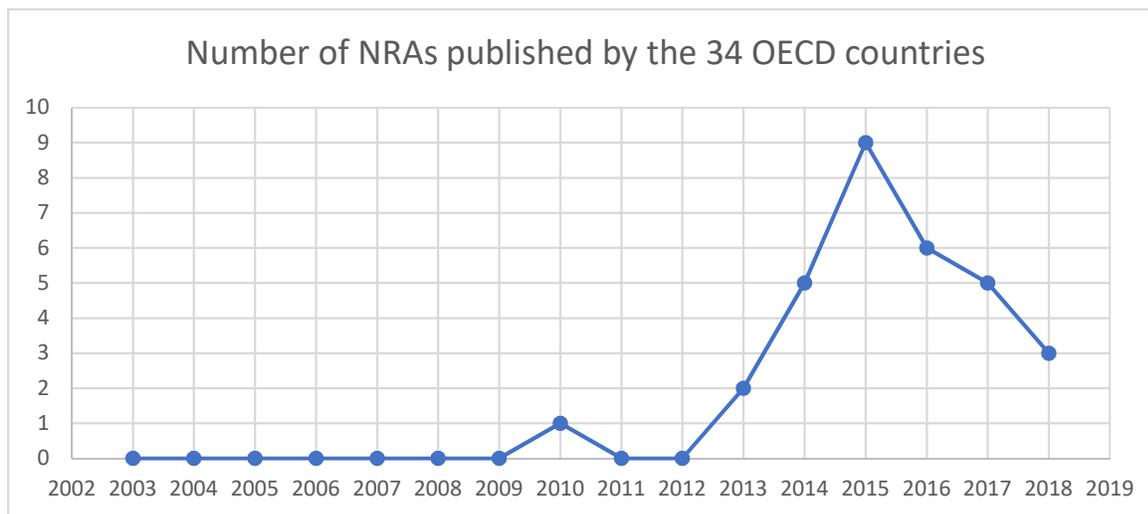
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**Appendix 1. NRAs published by OECD countries**

| OECD Country   | Year NRA | Comment             | OECD Country   | Year NRA | Comment                 |
|----------------|----------|---------------------|----------------|----------|-------------------------|
| Australia      | 2014     | TF focused          | Lithuania      | 2015     |                         |
| Austria        | 2015     |                     | Luxembourg     |          | No public NRA found     |
| Belgium        | 2018     |                     | Mexico         | 2016     |                         |
| Canada         | 2016     |                     | Netherlands    | 2017     |                         |
| Chile          |          | No public NRA found | New Zealand    | 2010     |                         |
| Czech Republic | 2016     |                     | New Zealand -2 | 2018     |                         |
| Denmark        | 2015     |                     | Norway         | 2014     |                         |
| Estonia        | 2014     |                     | Poland         |          | No public NRA found     |
| Finland        | 2015     |                     | Portugal       | 2013     |                         |
| France         | 2016     |                     | Slovakia       |          | No public NRA found     |
| Germany        |          | No public NRA found | Slovenia       | 2016     |                         |
| Greece         | 2018     |                     | South Korea    |          | No public NRA found     |
| Hungary        | 2015     |                     | Spain          | 2014     | Fragmented, not one NRA |
| Iceland        | 2017     |                     | Sweden         | 2013     |                         |
| Ireland        | 2016     |                     | Switzerland    | 2015     |                         |
| Israel         | 2017     |                     | Turkey         |          | No public NRA found     |
| Italy          | 2014     |                     | UK             | 2015     |                         |
| Japan          | 2015     |                     | UK -2          | 2017     |                         |
| Japan - 2      | 2017     |                     | United States  | 2015     |                         |
| Latvia         | 2017     |                     |                |          |                         |

**Figure 1. Number of NRAs published by the 34 OECD countries over time**



Source: Based on the data above. The risk-based approach was introduced in 2003. In 2012 the FATF made explicit that countries should perform a National Risk Assessment.

## **Appendix 2. How useful is it to estimate the risk before policy intervention?**

Canada, Italy, the Netherlands, Switzerland, and the UK distinguish between inherent risk and “mitigated risk”.<sup>55</sup> This raises the question of how useful and feasible it is to separate the money laundering risk in two: a risk before policy intervention (the inherent risk) and a risk after policy intervention (the mitigated risk).

Such an analysis would directly inform policymakers about the effectiveness of AML policy since effectiveness is the difference between inherent risk and mitigated risk. However, this is not the goal of risk assessment, that is the goal of policy evaluation. No matter the inherent risk, policymakers have to adjust policies based on the current, actual risks. Adding the measurement of inherent risk thus only adds a challenge to an already challenging task without helping to inform the relevant policy decision.

The measurement of inherent risk is arguably an even more challenging, if not impossible, task, especially with the currently dominant method of analysis: expert elicitation. Measuring inherent risks with expert elicitation means that experts have to be asked what the risk would be in a hypothetical world without any AML policy. Who would have enough expertise to answer such a question credibly?

Consider the relevant question for measuring inherent risks: what would be the money laundering risk in a world without anti-money laundering policies? We would need to ask ourselves some other questions to start this analysis. Is there no AML in the whole world? Or just not in the country we analyze? Or just the sector we analyze?

Let’s say we want to determine the inherent risks of casinos in Italy, as an example. If the whole world and all other sectors have AML policies, except casinos in Italy, we might expect an unrealistically big inflow of money to casinos in Italy, just for money laundering purposes. An amount that might be bigger than the current turnover of casinos in Italy. This would not provide a useful measure.

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<sup>55</sup> Terminology on this point was inconsistent; we believe this term best captures the general notion.

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An alternative, more helpful scenario assumes other sectors in the country have no AML policies and ignore the potential inflow of money from abroad. This assumes that no sector in Italy has any AML policy and that the total amount of money laundered in Italy stays the same. One could argue that criminals prefer banks for their financial transactions due to the speed, ease, and availability. Criminals would then generally use banks in a country without AML policies. With that conclusion, we could compare the measure of inherent risk for banks with the mitigated risk for banks to determine to what extent money laundering is mitigated by the AML policies in the banking sector. But what does this mean for other sectors? The attractiveness of banks in a country without AML policies means that criminals will use other sectors less, so the inherent risk of casinos might be *lower* than the mitigated risk. This generates a paradox: AML policies can *increase* the amount of money laundering in certain sectors. What is the value of such information? Why conduct an analysis that is unhelpful for risk assessment and potentially generates paradoxes? And to what extent can experts be expected to follow such a theoretical exercise and give a reliable answer?

It might be valuable to measure the inherent risks in the future with other research methods. As long as expert elicitation is the dominant method for risk assessment, it might be better to focus on the actual money laundering risks. In a next step, money laundering risk assessments can be extended to money laundering risk management models where the effectiveness of policies to mitigate risks could be valuable for policymakers. The current struggles to assess money laundering risks indicate that it seems too soon to take this next step.

### **Appendix 3. The Risk Based Approach**

Risk-based regulations promise many advantages over rule-based regulations: less obedience merely for the sake of compliance, less formalism, less administrative burden, in short, less ('unnecessary') bureaucracy. The risk-based approach aims to achieve this by simplifying and focusing on critical points, on those parts in a system or process where things could go wrong, where the risks are greatest. Moreover, risk-based regulation offers to respect those involved in making use of their experience and knowledge. Companies and other private sector actors, the subjects of the law, are treated as resourceful actors, rather than ignorant children who have to be taught a lesson.

The risk-based approach assumes that compliance could be achieved by intrinsic rule internalization, rather than requiring extrinsic threats. Thus it promises to enhance not only the effectiveness and efficiency of regulations but also their legitimacy. Who would not like freedom, less bureaucracy, more legitimacy, and more policy effectiveness? (Unger and van Waarden, 2013) .

However, a risk-based approach has costs as well as benefits. Crucial for a good risk-based approach is adequate information about the risks is gathered and analyzed; resources have to be spent to determine those risks. There is a trade-off between assessment and executing the risk-based policy: Resources spent on determining the risk (and which risk levels to tolerate) cannot be spent elsewhere. (Black, 2010) For many kinds of prudential risk, the task is relatively straightforward. For example, corporate bankruptcy is a well measured and much studied phenomenon (see eg. Hillegeist et al. 2004 for an overview of how the estimation models developed since 1966). Models of varying degrees of sophistication have been developed for assessing the risk that a corporate client of a bank will go bankrupt.

The problem is much more daunting in the field of money laundering. It is universally agreed that most money laundering is never detected. (see eg. Levi 2002) How to properly assess money laundering risk with such limited information? (see also Levi, Reuter, and Halliday 2018).