Burden Sharing in Combating Terrorist Financing

M. Bogers, R. Beeres

Abstract—This paper contributes to the literature concerning burden sharing. We provide a quantitative expression of the burden sharing behaviour of 174 states in the case of combating terrorist financing and address specific burden sharing issues in this context (i.e., weakest link; no substitutability). We conclude that advanced states have shown more effort to control terrorist financing than developing states. In this particular case, there is an incentive for advanced states to support developing states. Failing to do so will make the total financial system worse off.

Keywords—Burden sharing, combating terrorist financing, weakest link.

I. INTRODUCTION

THE post 9/11 era is characterized by an increasing demand of governments for methods and instruments to identify, prosecute and punish (members of) terrorist organizations and networks in order to "diminish, deny, and destroy terrorist capabilities" [1]. The same goes for methods and instruments to deter potential terrorists and to deprive them of their resources [2]. Coping with such demands necessitates international cooperation as can be seen, for instance, in deploying military capabilities during Operation Enduring Freedom (OEF) and during the NATO-led International Security Assistance Force (ISAF). Simultaneously, to cope with terrorist capabilities civilian means and infrastructure are essential [3].

One strategy to eliminate, or at least, contain terrorism is to understand the ways in which the terrorist organizations and networks obtain their financial resources [4], [5] specifically, by following the money (i.e., the paper - or preferably the digital) trail that leads from those secretly financing acts of terrorism to the actual perpetrators of terrorist attacks [6]. Against this background, financial measures developed in the Financial War on Terror play an important role, as they aim to deny potential terrorists to enter into the international financial system.

The Financial Action Task Force (FATF) is a leader in the fight against terrorist financing at an international level [7]. FATF has launched 40 standards against money laundering and issued nine special standards to combat terrorist financing. These standards aim to provide a comprehensive and consistent framework for states to combat money laundering and terrorist financing [8].

Over 180 jurisdictions in the world are committed to FATF standards. The compliance level of individual states is assessed by means of mutual evaluation processes on the basis of FATF's common assessment methodology. Research on

combating terrorist financing, predominantly, examines the extent to which various countries act in compliance with the standards of the FATF [9]-[12].

Some studies [9], [13] explicitly consider the targeting of terrorist financing to be an international collective action problem, as most states benefit from restraining terrorist's abilities to finance brutal actions. To eliminate terrorism by depriving terrorists of their financial resources, each state should implement the FATF standards as efforts to prevent terrorist financing in one state may relocate terrorist financing actions to other less protected states. Therefore collective action is needed to fight terrorist financing effectively, giving rise to a burden sharing debate among the concerned states.

This burden sharing debate, however, differs from the well researched burden sharing debate in the context of the NATO alliance [14]. First, in the case of NATO, larger advanced states could compensate for less performing states as allied defence efforts were substitutable. Interestingly, in the fight against terrorist finance efforts are not substitutable (i.e., FATF standards can only be implemented at a national level by a sovereign government). Second, the collective good 'security' gained through fighting terrorist finance is characterized as a weakest link good [15], [16]. This means that the state with the smallest individual contribution determines the quantity of the collective good for the entire alliance. The weakest link principle may affect the behaviour of individual states in different ways. First, states may be more willing to help weaker link states with the implementation of the FATF standards. Second, states may be prepared to take action against non-cooperative states by denying them access to the global financial system.

The weakest link principle in combination with the non-substitutability of efforts in our view makes the FATF alliance an appealing case for burden sharing research. With this paper we aim to contribute to the existing burden sharing literature in two ways. First, we interpret combating terrorist financing as a collective action problem to be able to explicitly address burden sharing issues in the case of the implementation of FATF standards. Second, by measuring the compliance with FATF standards of 174 states we aim to provide a quantitative expression of the burden sharing behaviour.

To this end we have structured the paper as follows. In the next section, we introduce the FATF organization and its standards. Section three interprets the fight against terrorist financing as a collective action problem and develops two hypotheses that attempt to provide an insight into the burden sharing behaviour of advanced states and developing states. Section four describes the research methodology. In section five we analyze the level of compliance to the FATF standards for 174 states and test both hypotheses. Section six ends with conclusions and a discussion.

M. Bogers and R. Beeres are with the Netherlands Defence Academy in Breda, the Netherlands (e-mail: mp.bogers.01@nlda.nl, rjm.beeres@nlda.nl).

II. THE FATF ORGANIZATION AND ITS STANDARDS

The Financial Action Task Force (FATF) is an inter-governmental body established by its member jurisdictions. Its aims are to set standards to combat money laundering and terrorist financing and to promote the effective implementation of these standards. The FATF cannot enforce states to implement these standards, but is only able to call on its member states to apply countermeasures against non cooperative jurisdictions. In this section we provide a brief overview of FATF's standards.

TABLE I
OVERVIEW OF THE FORTY RECOMMENDATIONS

	Recommendations
Legal System	1-3
- Scope of the criminal offence of money laundering	
- Provisional measures and confiscation	
Measures to be taken	4-25
- Customer due diligence and record-keeping	
- Reporting of suspicious transactions and compliance	
- Other measures to deter money laundering and terrorist financing	
- Measures to be taken with respect to countries that do not or insufficiently comply with the recommendations	
- Regulation and supervision	
Institutional and other measures necessary in systems for combating money laundering and terrorist financing	26-34
- Competent authorities, their powers and resources	
- Transparency of legal persons and arrangements	
International co-operation	35-40
- Mutual legal assistance and extradition	
- Other forms of co-operation	

Source: FATF 40 recommendations [8].

The forty standards against money laundering were drawn up in 1989 as an initiative to combat the misuse of the financial systems by persons laundering drug money. In 1996, 2003, and in 2012, the recommendations were revised to reflect changes in patterns of criminal activities. The standards deal with different topics, for example the adoption of anti-money laundering policies, change of banking secrecy laws, criminalization of money laundering, legal frameworks for seizure and confiscation, customer identification and recordkeeping rules, and exchange of information. Table I provides an overview of the forty standards designed to target money laundering. In the aftermath of the attacks on the New York World Trade Centre on September 11, 2001, FATF expanded its mandate to deal with the issue of financing of terrorist organizations and created eight special standards to combat terrorist financing. These standards contain a set of measures aimed at combating the funding of terrorist acts and terrorist organizations, and are complementary to the forty standards [17]. The standards were expanded in October 2004 to the - now - nine special recommendations against terrorist financing by including measures to interdict cross-border cash movements. Table II provides an overview of the nine Special Recommendations to combat terrorist financing.

TABLE II
OVERVIEW OF THE NINE SPECIAL RECOMMENDATIONS

	Recommendation
I	Ratification and implementation of UN instruments;
II	Criminalizing the financing of terrorism and associated money laundering;
III	Freezing and confiscating terrorist assets;
IV	Reporting suspicious transactions related to terrorism;
V	International cooperation;
VI	Alternative remittance;
VII	Wire transfers;
VIII	Non-profit organizations;
IX	Cash couriers.

Source: FATF IX special recommendations [17].

Almost all jurisdictions in the world have adopted FATF standards through the global network of FATF-Style Regional Bodies (FSRBs) and FATF memberships.

The compliance level of individual states is assessed by means of mutual evaluation processes on the basis of FATF's common assessment methodology [8]. To protect the international financial system FATF encourages more compliance with its standards and supports states with the implementation of the standards. FATF uses a form of coercion to secure state's compliance with its standards. Each year FATF publicly announces high risk and non-cooperative jurisdictions [9]. The FATF also identifies states that have not made satisfactory progress in addressing strategic deficiencies3 and states with strategic deficiencies that are very committed to solve these deficiencies [18].

In sum, FATF uses both a strategy of legitimization and a strategy of coercion. By promoting their standards as legitimate standards of behaviour, FATF strives for voluntary compliance of states [1], [19], [20]. By means of identifying states as non-cooperative jurisdiction, it attempts to force states to implement the standards.

III. COLLECTIVE ACTION THEORY AND DEVELOPMENT OF HYPOTHESES

In this section, we interpret and discuss combating terrorist financing as a collective action problem in order to develop two hypotheses concerning the compliance level of the FATF standards for advanced and developing states to test the burden sharing behaviour of states. Collective action theory is concerned with the provision of economic goods whose benefits are non-rival and non-excludable (i.e., pure public goods) [16]. Non-rivalry means that "each individual's consumption of such a good leads to no subtraction from any other individual's consumption of that good" [21]. Pure public goods are also non-excludable. That means that no one, not even a nonpayer, can be excluded from using the good.

Using these distinctions, we argue that the benefits of combating terrorist financing are non-rival, because 'diminishing, denying, and destroying terrorist capabilities' leads to more security at a global level, and thus, to more security for all states. Second, combating terrorist financing, in the sense of limiting the possibilities of terrorist organizations [22], by an individual state is a non-excludable good, since it

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Combating terrorist financing, in the sense of making the financial system more secure, however, in our view can be considered an excludable good, because people and organizations from non-cooperative states principally can be banned from using the global financial system.

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In sum, we consider combating terrorist financing global public good combining characteristics of both a pure public good and a club good [24].

Although it is in the interest of all FATF and FSRB members to protect the financial system from criminals and terrorists, the benefits resulting from the implementation of the FATF standards will vary among states. This makes some states (e.g., targeted countries) more and other states (e.g., non-targeted countries) less willing to comply with the anti money laundering and combating terrorist financing standards [16].

Clunan [13] states that the willingness to combat terrorist financing appears to rise and fall with states' experience of terrorist attacks. Frequently attacked states, or states that border terrorist inflicted states are perhaps more motivated to counter terrorist financing and implement the FATF standards. In addition, some states may have more interest in a secure financial system than other states because of their interconnected financial institutions and trade interests. In this respect, Verdugo-Yepes [12] suggests that a higher level of economic development is associated with a higher level of compliance with the FATF standards. Lower income countries have fewer resources to finance the implementation of the standards; they often face other more life-threatening problems (e.g., malnutrition, epidemic diseases). Jensen and Png [11] argue that the developing world perceives combating money laundering and financing of terrorism as concerns of advanced states. More in particular, they state that developing countries hold that "requirements for anti financing terrorist measures should not be imposed on developing countries"

[11].

States that are less willing or able to carry the burden of implementing FATF standards can undo the efforts of stares that do. A recent example involves the economic sanctions against Iran. Despite these proclaimed sanctions there are still some international banks that facilitate transactions to financial institutions in Iran [23]. In this respect, the effectiveness combating terrorist financing will be determined by its 'weakest link' [1], [15], [25]. The weakest link principle helps to explain how individual contributions determine the overall supply of a public good [16]. According to this principle, the smallest contribution level determines the quantity of the public good for the entire group. To eliminate terrorism by depriving terrorists of their financial resources, every state must implement the FATF standards as efforts to prevent terrorist financing in one state may relocate terrorist financing actions to other less protected states. For example, according to Del Cid Gómez [26] Al-Qaeda was successful in moving a large part of its financial activities through its related groups to areas in Africa, the Middle East and South-East Asia where the authorities often lack effective controls to prevent terrorist financing. Thus, if only one state fails to fulfil its part, terrorists will remain a threat to the other states. The effect of FATF's fight against terrorist financing is dependent, in part, on its weakest members.

The weakest link principle in combination with the fact that efforts are not substitutable (i.e., FATF standards can be implemented at a national level only) implies that other states have incentives to help the weakest link states with the implementation of the FATF standards or to deny them access to the global financial system. Please note that this is contrary to previous NATO burden sharing discussions [27]-[31]. In these discussions, larger advanced countries were able to compensate for less performing countries as allied defence efforts were substitutable. For example, during the international Security Assistance Force operations in Afghanistan, the US took over the activities of NATO partners who reduced force levels. Because the efforts for providing this public good are substitutable, the possibility to free-ride exists. However, in the case of implementing FATF standards there is no possibility to free ride. As states perceive the threat to be attacked by terrorists differently, the benefits of implementing FATF standards may vary per state. Lower income states also have fewer resources to finance the implementation of the standards. This makes some states more willing and able to carry the burden of implementing the FATF standards than other states.

By means of analyzing the implementation levels of the FATF standards for 174 states we attempt to gain an insight into the individual contribution of states to combating terrorist financing.

To measure these contributions we use two well-known perspectives in the burden sharing literature [30]: (1) ability-to-pay [29], [32]-[34], and (2) the cost-benefit perspective [29], [31], [35]-[37].

The ability-to-pay-perspective suggests that a state's actual contribution to the fight against terrorist financing can be

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explained by its ability to contribute. Because developing states have fewer resources to implement the FATF standards we assume that their 'absolute level of compliance' with the FATF standards is limited in comparison to more advanced economies. In summary we expect:

Hypothesis 1: Advanced economies have on average higher 'absolute' compliance scores than developing economies.

The cost benefit perspective suggests that individual states have incentives to pull their weight in proportion to the obtained benefit, and assumes a close equality between the benefits and costs. In our view the 'absolute' compliance rate does not take into account state's individual costs and benefits to comply with the FATF standards. For this purpose, we introduce 'relative' compliance scores to explore the burden sharing behaviour of states. With the relative compliance score we attempt to relate a state's individual benefits of adopting the FATF standards to the costs of implementing these standards. For various reasons we use GDP per capita as a proxy to measure the benefits.

First, GDP per capita is a frequently used measure for benefits in the economics based burden-sharing literature [29] [31], [35]. A second reason to use GDP per capita as a measure for benefits is Krueger and Laitin's [38] finding that countries with a higher GDP per capita and individuals from rich states are more likely to be the target of international terrorism. Thus, advanced states may be more motivated to implement the FATF standards. A final reason to use GDP per capita as a proxy for benefits is that advanced states may have more interest in a secure financial system than developing states because of their interconnected financial institutions and trade interests.

Furthermore, we assume that a higher compliance score leads to more costs for a state and use the compliance scores as a proxy for the costs of implementing the FATF standards. Following Sandler and Forbes [30] we assume a match between "benefits received and burdens carried" [39]. We expect:

Hypothesis 2: The relative compliance scores do not systematically differ for advanced and developing economies.

By testing both hypotheses we aim to provide an insight into the burden sharing behaviour of the various states.

IV. METHODOLOGY

A. Variables and Data Sources

The dependent variable in our study is compliance with the FATF standards. We use three measures for this compliance: FATFAT (i.e., the total average score of all FATF standards), FATF40 (i.e., the average score on the anti-money laundering standards), FATF9 (i.e., the average score on the standards that concern combating terrorist finance). We use one independent variable in the study: GDP (i.e., the average Gross Domestic Product per capita based on purchasing power parity over the period 2005-2011). The data for calculating the compliance scores come from the 174 mutual evaluation reports. Table III gives a summary of variables and the data sources.

TABLE III
OVERVIEW OF THE VARIABLES AND DATA SOURCE

Abbreviation	Variable	Source
FATFAT	Total average score on all FATF recommendations	
FATF40	Total average score on the 40 anti money laundering recommendations of the FATF	174 mutual evaluation reports (Mutual Evaluation Reports, 2005-2012).
FATF9	Total average score on the 9 special FATF standards to combat terrorist financing	
GDP	GDP per capita based on purchasing power parity (current international $), average over 2005-2011	World Bank (2012)

The Mutual Evaluation Reports (2005-2012) are available from: www.fatf-gafi.org; www.cfatf-gafic.org; www.eurasiangroup.org; www.apgml.org; www.esaamlg.org; www.gafisud.info; www.giaba.org; www.menafatf.org.

B. Analysis

According to the FATF's common assessment methodology, each recommendation can be valued in one of the following categories:

C: Compliant (the recommendation is fully observed with respect to all essential criteria);

LC: Largely Compliant (there are only minor shortcomings, with a large majority of essential criteria being fully met);

PC: Partially Compliant (the country has taken some substantive action and complies with some of the essential criteria);

NC: Non-Compliant (There are major shortcomings, with a large majority of the essential criteria not being met);

NA: Not Applicable (a requirement or part of it does not apply, due to the structural, legal or institutional features of a country, e.g., a particular type of financial institution does not exist in that country).

Countries which have ratings as *compliant* and *largely compliant* are in general considered to have accomplished an acceptable level of performance for the particular recommendation. To score the different compliance categories in our database, we have used the valuation measure adopted by [40]. C scores 3 points; LC scores 2 points; PC scores 1 point; NC scores 0 points. When a recommendation is considered not applicable, we attribute to that recommendation the same value of the average score of all recommendations of the country concerned. To calculate the 'absolute' compliance scores of a state we compiled all scores and divide it by the number of recommendations of that state. To calculate the relative compliance scores of the states we divided the absolute compliance score of a state by its log GDP per capita.

V. RESULTS

Table IV panel A reports the descriptive statistics of our study. The average compliance on all FATF standards is 1.21. Table IV also shows that on average states score higher on the 40 anti money laundering (1.28) than on the 9 special standards (0.90) to combat terrorist financing. Table IV panel B provides Pearson correlations (below the diagonal) and Spearman correlations (above the diagonal) for all variables. All proxies for the dependent variable (compliance with the

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FATF standards) show a very strong positive association [41]. The selection of a specific proxy makes no difference for analyzing the results. Therefore, we selected FATFAT to test both hypotheses. The correlation of FATFAT with GDP can be characterized as 'substantial' [41].

TABLE IV
DESCRIPTIVE STATISTICS AND CORRELATION ANALYSIS

	Panel A: Descriptive statistics of variables used					
	Variables	N	Mean	S.D.	Max	Min
Dep. Var.	FATFAT	174	1.21	0.52	2.27	0.20
	FATF40	174	1.28	0.52	2.36	0.24
	FATF9	174	0.90	0.60	2.44	0.00
Indep. Var.	GDP	158	13,700	14,310	70,251	425.0

	Panel B: Correlation analysis			
	FATFAT	FATF40	FATF9	GDP
FATFAT	1	0.995***	0.923***	0.680***
FATF40	0.995***	1	0.886***	0.669***
FATF9	0.917***	0.875***	1	0.652***
GDP	0.535***	0.518***	0.551***	1

Notes: FATFAT represents the total average compliance score on all FATF recommendations of a state; FATFA40 is the total average compliance score on the 40 anti money laundering standards of a state; FATFA9 is the total average compliance score on the 9 special standards to combat terrorist finance of a state; All proxies are continues measures between 0 and 3. GDP is the GDP per capita based on the purchasing power parity (current international $) average 2005-2011.

*, **, *** represent statistical significance at 10%, 5%, 1% level, respectively (two-tailed test).

To gain more insight into the individual performance of states we show the average scores of four states with the highest and lowest 'absolute' scores for each continent in table V. Table V reveals that there are no continents that score in total above largely compliant. Europe is the highest scoring continent, followed by America and Oceania. There are some countries in Europe, America and Asia that score above largely compliant. Africa has the lowest score of all the continents with an average score of 0.74. Egypt has the highest score of all African states with an average score of 1.60.

Please note that in Asia the compliance with the FATF standards of the most advanced economies (Singapore, Malaysia, and Hong Kong) is higher than for the developing economies in the same region. This provide support for the hypothesis that advanced economies have more resources and interests (because of their higher target-risk and the scale of their financial system) to comply with the FATF standards.

We also investigated the question whether or not differences existed between mutual evaluation reports drafted early in the implementation of the standards and more recent reports. A Kruskal-Wallis test shows that there exist no significant differences between the reports of states that are reviewed more recent than the reports of states that were reviewed earlier in the decade (see Table VI).

TABLE V
FATF AVERAGE SCORES

Country	Date report	FATFAT	FATFA40	FATFA9
AFRICA		**0.72**	**0.79**	**0.43**
Egypt	2009	1.60	1.64	1.44
South Africa	2009	1.51	1.53	1.44
Guinea-Bissau	2011	0.27	0.31	0.11
Mozambique	2011	0.28	0.34	0.00
AMERICA		**1.24**	**1.32**	**0.86**
United States	2006	2.10	2.05	2.33
Cayman Islands	2007	2.04	2.13	1.67
St Lucia	2008	0.42	0.49	0.11
Suriname	2009	0.56	0.69	0.00
ASIA		**1.12**	**1.19**	**0.79**
Singapore	2011; 2008	2.22	2.25	2.11
Malaysia	2007	1.84	1.93	1.44
Tajikistan	2008	0.20	0.24	0.00
Maldives	2012	0.27	0.33	0.00
EUROPE		**1.79**	**1.82**	**1.62**
Belgium	2005	2.27	2.31	2.11
Switzerland	2009; 2005	2.23	2.26	2.11
FYR Macedonia	2008	1.04	1.13	0.67
Luxembourg	2010	1.04	1.10	0.78
OCEANIA		**1.17**	**1.22**	**0.96**
Australia	2006	1.57	1.60	1.44
Fiji	2006	1.39	1.53	0.78
Tonga	2010	0.71	0.77	0.44
Papua New Guinea	2011	0.76	0.80	0.56

Notes: FATFAT represents the total average compliance score on all FATF recommendations of a state; FATFA40 is the total average compliance score on the 40 anti money laundering standards of a state; FATFA9 is the total average compliance score on the 9 special standards to combat terrorist finance of a state; All proxies are continues measures between 0 and 3.

TABLE VI
KRUSKAL-WALLIS TEST EARLY VERSUS LATE REPORTS

Year	N	Mean Rank	Chi-square	df	Sig
2004	1	142.00	12.51	8	0.13
2005	5	110.40			
2006	19	101.05			
2007	24	78.40			
2008	33	86.50			
2009	37	87.96			
2010	22	104.36			
2011	32	72.56			
2012	1	2.50			
Total	174				

Hypothesis 1: Absolute Compliance Scores

We used the Mann-Whitney U-test to examine our first hypothesis: advanced economies have on average higher absolute compliance scores than developing economies. In order to test this hypothesis we divided our data in: advanced states and developing states, using the International Monetary Fund (IMF) World Economic Outlook Index [42]. The results in Table VII show that the absolute compliance scores of advanced economies differ significantly from developing economies on the basis of the IMF categorization.

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TABLE VII
MANN-WHITNEY U-TESTS FOR HYPOTHESIS 1

Description	Measure	N	Mean	U-value	Z-value
Advanced economy	IMF-index	34	129.79		
				432.0	-7.113***
Developing economy	IMF-index	125	66.46		

*, **, *** represent statistical significance at 10%, 5%, 1% level, respectively (two-tailed test)

The average rank number for advanced states (129.79) is higher than the average rank number for developing states (66.46). These results provide support for our first hypothesis. Advanced states have shown more effort to control money laundering and terrorism financing than developing states.

Hypothesis 2: Relative Compliance

We argued in section 3 that the absolute compliance rate does not take account the relative benefits and costs for each state to comply with the FATF standards. In order to account for differences in relative benefits and costs of compliance we introduced the relative compliance rate. According to the correlation analysis in Table IV panel B the compliance scores are positively associated with the economic prosperity score; in our view this implies that a country with higher economic prosperity has both more resources and interest to implement the FATF standards. We divide state's absolute total FATF compliance scores by state's log GDP per capita. Again, we use the Mann Whitney U-test to test our second hypothesis: relative compliance scores do not systematically differ for advanced and developing economies. The results in Table VIII show that the burden for advanced economies differs significantly from developing economies. The average rank number for advanced states (116.89) is higher than the average rank number for developing states (68.20).

These results provide no support for our second hypothesis. The relative compliance scores systematically differ for advanced and developing economies. The value of the mean rankings indicate, that based on these results, advanced economies bear a disproportionally larger share of the collective costs of the financial war on terror than developing economies. This corresponds, however in a different context, to the 'exploitation hypothesis' of Olson and Zeckhauser, where large NATO alliance members bear a disproportionally large share of the collective costs to provide security.

TABLE VIII
MANN-WHITNEY U-TESTS FOR HYPOTHESIS 2

Description	Measure	N	Mean	U-value	Z-value
Advanced economy	IMF-index	33	116.89		
				762.5	-5.498***
Developing economy	IMF-index	123	68.20		

*, **, *** represent statistical significance at 10%, 5%, 1% level, respectively (two-tailed test)

However, as we noted in section three, the Olson and Zeckhouser model assumed that allied efforts are substitutable, which is not possible in this specific context. Each state is responsible for the implementation of the standards in their country. This means that weaker states have no possibilities to free ride on advanced states. Terrorists may move their financial activities to states where effective controls to prevent terrorist financing are not implemented. Consequently there is an incentive for advanced states to assist developing states with the implementation of the standards, because failing to do so makes the total system to fight "the financial war on terror" worse off [16], [43].

Interestingly, with this conclusion we re-introduce the free-riding problem in fighting the financial war on terror by means of implementing FATF standards. Because of the sovereignty of states, states cannot directly compensate for the lower FATF implementation level of weaker states. However, in the case of combating terrorist financing a higher level of the public good can only be reached by improving the FATF compliance rate of weaker states. Because weaker states may have less resources to finance the implementation of the standards and have a lack of knowledge, advanced states ought to channel funds and technical expertise to these states in order to increase the total FATF compliance level.

VI. CONCLUSION AND DISCUSSION

The paper discusses the burden sharing behaviour of states in the context of implementing FATF standards to combat terrorist finance. We consider combating terrorist financing global public good combining characteristics of both a pure public good and a club good. Collective action is necessary to ensure an efficient supply of this public good, because states individual efforts may result in a less optimal provision of the good. Although it is in the interest of all states to protect the financial system from criminals and terrorists, the benefits resulting from the implementation of the FATF standards will differ for each state. This makes some states (e.g., targeted countries) more and other states (e.g., non-targeted countries) less willing to comply with the anti money laundering and combating terrorist financing standards.

Our empirical results show that advanced economies have shown more effort to control terrorist financing than developing states. Consequently, advanced states bear a disproportionally larger share of the collective costs of combating terrorist financing by implementing FATF standards. Unfortunately states that do not contribute, can undo the actions of those do. The effectiveness of the fight against terrorist finance will be determined by its weakest link. Terrorists may move their financial activities to states where effective controls to prevent terrorist financing are not implemented. Consequently there is an incentive for advanced states to assist developing states with the implementation of the standards, because failing to do so will make the total system to fight 'the financial war on terror' worse off. Also there is an incentive and a possibility to deny non-cooperative states access to the global financial system. However, such a policy may aggravate feelings of exclusion among states that are not permitted to join 'the FATF club', giving rise to building economic free havens for terrorists induced by those resenting being barred from the goods provided to 'members only'.

A limitation of our study is that in order to measure the

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burden of combating terrorist financing we had to use a proxy because no data is available on the actual costs of implementing the FATF standards. Our proxy is based on the assumption that a higher compliance score implies higher implementation costs for a state. To us this seemed -and seems- a reasonable assumption. However, in our study we discovered that a state can contribute in two ways to implement the FATF standards. First, the state can adopt these standards itself. Second, it can help other states by means of funding or technical expertise to raise the weaker states compliance levels. For this second way we could find no information. Our results therefore are limited to analysis of the burden of combating terrorist financing by implementing the FATF standards of individual countries, not by supporting other countries.

REFERENCES

[1] K. L. Gardner, "Fighting Terrorism the FATF Way," *Global Governance*, vol. 13, nr. 3, 2007, pp. 325-345.
[2] L. K. Donohue, *The Cost of Counterterrorism. Power, Politics, and Liberty*. Cambridge: Cambridge University Press, 2008, pp. 122-123.
[3] R. Beeres and M. Bollen, "An Economic Analysis of Cyber Attacks," in *Cyber Warfare. Critical Perspectives*, P. Ducheine, F. Osinga, and J. Soeters, Eds. The Hague: Asser Press, 2011, pp. 147-164.
[4] J. Adams, *The Financing of Terror. How the groups that are terrorizing the world get the money to do it*. New York: Simon and Schuster, 1986.
[5] L. Napoleoni, *Terror Inc. Tracing the money behind global terrorism*. London: Penguin, 2004.
[6] N. Raphaeli, "Financing of Terrorism: Sources, methods and channels," *Terrorism and Political Violence,* vol. 15, nr. 4, 2003, pp. 59-82.
[7] J. Johnson, "Is the global financial system AML/CTF prepared?," Journal of Financial Crime, vol. 15, nr. 1, 2008, pp. 7-21.
[8] FATF, *International standards on combating money laundering and the financing of terrorism & proliferation* (22 June 2012), available from: http://www.fatf-gafi.org.
[9] A. Acharya, *Targeting Terrorist Financing: international cooperation and new regimes*. New York: Routledge, 2009.
[10] J.K. Giraldo and H.A. Trinkunas, *Terrorism financing and state responses: a comparative perspective*. Stanford University Press. California, 2007.
[11] N. Jensen and C. Png, "Implementation of the FATF 40+9 recommendations: a perspective from developing countries," *Journal of Money Laundering Control*, vol. 14, nr. 2, 2011, pp. 110-120.
[12] C. Verdugo-Yepes, "Compliance with the AML/CFT International Standard: Lessons from a Cross-Country Analysis," *IMF Working Paper* 11/177, 2001.
[13] A. L. Clunan, "The fight against terrorist financing," *Political Science Quarterly*, vol. 121, nr. 4, 2006, pp. 569-596.
[14] D.S. Siroky, "Each Man for Himself? Rival Theories of Alliance Economics in the Early State System," *Defence and Peace Economics*, vol. 23, nr. 4, 2011, pp. 321-330.
[15] J. Hirschleifer, "From weakest-link to best-shot: the voluntary provision of public goods," *Public Choice*, vol. 41, nr. 3, 1983, pp. 371-386.
[16] T. Sandler, *Global Collective Action*. Cambridge: Cambridge University Press, 2004.
[17] FATF, *IX Special Recommendations (October 2001 incorporating all subsequent amendments until February 2008* (22 June 2012)*,* available from: http://www.fatf-gafi.org.
[18] FATF, *List of high risk and non-cooperative jurisdictions* (22 June 2012) and *Improving Global AML/CFT Compliance: on going process* (22 June 2012), available from: http://www.fatf-gafi.org.
[19] R. Hülsse, "Even clubs can't do without legitimacy: Why the anti-money laundering blacklist was suspended," *Regulation & Governance*, vol. 2, nr. 4, 2008, pp. 459-479.
[20] C. Reus-Smit, "International Crisis of Legitimacy," *International Politics*, vol. 44, nr. 2/3, 2007, pp. 157-174.
[21] P.A. Samuelson, "The pure theory of public expenditure," *Review of Economics and Statistics*, vol. 36, nr. 4, 1954, pp. 387-389.
[22] S. Kiser, *Financing Terror: an analysis and simulation for affecting Al Qaeda's Financial Infrastructure*, 2005. Available from: http://www.rand.org.
[23] CNN, *New Iran sanctions hit banks in China*, Iraq, 31 July 2012.
[24] H. Engerer, "Security as a Public, Private or Club Good: Some Fundamental Considerations", *Defence and Peace Economics*, vol. 22, nr. 2, 2011, pp. 135-145.
[25] O. Bures, "Private Actors in the Fight Against Terrorist Financing: Efficiency Versus Effectiveness," *Studies in Conflict & Terrorism*, vol. 35, nr. 10, 2012, pp. 712-732.
[26] J.M. Del Cid Gómez, "A financial profile of the terrorism of Al-Qaeda and its affiliates," *Perspectives on Terrorism*, vol. 4, nr. 4, 2010, pp. 3-27.
[27] M. Bogers, R. Beeres, and I. Lubberman-Schrotenboer, "Dutch Treat? Burden sharing in Afghanistan," *in Mission Uruzgan. Collaborating in Multiple Coalitions for Afghanistan*, R. Beeres, J. Van der Meulen, J. Soeters and A. Vogelaar, Eds. Amsterdam: Amsterdam University Press, 2012, pp. 267-280.
[28] J. Ringsmose, "NATO Burden-sharing Redux: Continuity and Change after the Cold War," *Contemporary Security Policy*, vol. 31, nr. 2, 2010, pp. 319-338.
[29] T. Sandler and J.F. Forbes, "Burden Sharing, Strategy, and the Design of NATO," *Economic Inquiry*, vol. 18, nr. 3, 1980, pp. 425-444.
[30] T. Sandler and J.C. Murdoch, "On Sharing NATO Defence Burdens in the 1990s and Beyond," *Fiscal Studies*, vol. 21, nr. 3, 2000, pp. 297-327.
[31] B. Solomon, "NATO Burden Sharing Revisited," *Defence and Peace Economics*, vol. 15, nr. 3, 2004, pp. 251-258.
[32] M. Olson and R. Zeckhauser, R., "An Economic Theory of Alliances," *Review of Economics and Statistics*, vol. 48, nr. 3, 1966, pp. 266-279.
[33] J.R. Oneal and M.A. Elrod, "NATO burden sharing and the forces of change," *International Studies Quarterly*, vol. 33, nr. 4, 1989, pp. 435-456.
[34] B.M. Russett, *What Price Vigilance? The Burdens of National Defense*. New Haven: Yale University Press, 1970.
[35] K. Gaibulloev, T. Sandler, and T. Shimizu, "Demands for UN and Non-Un Peacekeeping. Non-voluntary versus Voluntary Contributions to a Public Good," *Journal of Conflict Resolution*, vol. 53, nr. 1, 2009, pp. 827-852.
[36] J. Khanna and T. Sandler, "NATO burden sharing: 1960–1992", *Defence and Peace Economics*, vol. 7, nr. 2, 1996, pp. 115-133.
[37] C. Kollias, "A preliminary investigation of the burden sharing aspects of a European Union common defence policy," *Defence and Peace Economics*, vol. 19, nr. 4, 2008, pp. 253-263.
[38] A.B. Krueger and D.D. Laitin (2008) "K to kogo?: A cross-country study of the origins and targets of terrorism" in *Terrorism, Economic Development and Political Openness*, P. Keefer and N. Loayza, Eds. Cambridge: Cambridge University Press, 2008, pp. 148-173.
[39] T. Sandler and K. Hartley, "Economics of Alliances: the lessons for collective action," *Journal of Economic Literature*, vol. 39, nr. 3, 2001, pp. 869-896.
[40] M. Arnone and P.C. Padoan, "Anti-money laundering by international institutions: a preliminary assessment," *European Journal of Law and Economics*, vol. 26, nr. 3, 2008, pp. 361-386.
[41] J. A. Davis, *Elementary Survey Analysis*. Englewood Cliffs, New Jersey: Prentice Hall, 1971.
[42] IMF, *World Economic Outlook Index*, available from: http://www.imf.org.
[43] S. Vicary and T. Sandler, "Weakest-link public goods: Giving in-kind or transferring money," *European Economic Review*, vol. 46, nr. 8, 2002, pp. 1501-1520.