

Is Excess Bank Liquidity within the West African Economic and Monetary Union Explained by Regulations?

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Abstract

For about fifteen years, the banking system of the West African Economic and Monetary Union (WAEMU) has been characterized by excess liquidity. In this paper, we analyze the explaining factors of excess liquidity by considering regulations as key variables and a dynamic Panel Model is used on aggregate banking data covering the period from 1990 to 2013 for the methodology. Results show the following explaining factors: government's deposits, credit granted to public companies and to central administration, the entry into force of the single agreement act, the act on financial relationships with foreign countries, and on the suppression of usurious transactions and interest rates, the obligation to publish the whole effective rate and the redefinition of new minima caps in terms of share capital.

Keywords: bank, excess liquidity, regulation, West Africa

1. Introduction

In the 1980s, the banking system of the West African Economic and Monetary Union (WAEMU) was marked by an acute financial crisis with the disappearance of nearly a quarter of the number of banks. Reforms have been initiated to restore the liquidity of banks being stricken by the crisis. One of the reforms concerns the restructuring of banking institutions, but also the enhancement of the bank supervision with the creation of the supranational supervision institution: the West African Monetary Union (WAMU) Banking Commission.

These major changes have shaken up the banking system of the region with liquidity ratios exceeding the standard of 75%. In 2011, 69 WAEMU banks which account for 74.9% of the deposits met this requirement (BCEAO, 2011). However, if reforms have improved the banks' solvency and liquidity, they have also caused the appearing of excess bank liquidity.

For Ag énor and El Aynaoui (2008), excess liquidity can be defined as the involuntary accumulation of reserves for commercial banks. But the most common definition in literature is related to the reserves' surplus set up by banks at the central bank. This excess liquidity may be due to structural factors (Caprio and Honohan (1991), Kremraj (2008), Wanda (2007) or cyclical factors (Ag énor and Aynaoui (2008), Kremraj (2007) and Saxegaard (2006).

Within the Central African Economic Community (CEMAC), many authors have taken an interest in this issue. Only the Wanda (2007) study, to our knowledge, shows that regulations are an important determining factor of excess bank liquidity. We have not yet seen studies of this kind in the WAEMU countries and it is this gap that we want to fill here.

The aim of this study is therefore to assess the determining factors of excess bank liquidity within the WAEMU region, based on the Saxegaard (2006) literature. The first part recalls the material studied, area descriptions and methods use to explain excess bank liquidity. The second and third part present the results and discussions and the last section concludes.

2. Material Studied, Area Descriptions and Methods

2.1 Material Studied

The liquidity which is targeted in our study is the liquidity of banks. Excess liquidity is often related to currency

or to bank. Excess bank liquidity corresponds to reserves' surpluses at the Central Bank. It is also defined as the holding of liquid assets beyond the authorized level Saxegaard (2006). Kremraj (2007, 2008) tackles this issue in the same way by defining excess liquidity as the set of liquid assets from which required reserves are subtracted. Required reserves refer to regulations whereby central banks require commercial banks to respect a minimum reserve ratio, Mankiw and Taylor (2011).

In the franc zone, excess liquidity is presented as a paradox insofar as it is not beneficial to the countries of this zone. Banks accumulate liquidity surplus whereas the economy is characterized by a very big need for funding. FOUDA-OWOUNDI (2009) gives a good review of the literature within the Central African Economic Community. This excess liquidity may be explained, as mentioned above, by structural or cyclical factors.

Structural factors include works by Caprio and Honohan (1991), Kremraj (2008), Guineau and Guillaumont (2007), Wanda (2007). For example, Wanda (2007) shows that the institutional framework may encourage banks to hold excess liquidity. In the case of Cameroon, he identifies two main factors explaining excess bank liquidity: they are among others, the risk of being controlled by the Central African Banking Commission (COBAC) and the resort to arbitration in the solving of commercial disputes. Hugon (1996) also shows that in Africa, one of the major difficulties in making medium and long-term loans remains the great risks of non-payment and embezzlement within the financial systems. For him, the institutional environment in which the financial systems operate suffers from the absence of law and jurisdiction which punish non-compliance with contracts.

Wanda (2007) shows also that the COBAC rigor in surveillance is a lever of excess bank liquidity in Cameroon and is the second most important explaining factor.

Caprio and Honohan (1991) show that structural adjustment reforms are an explaining factor for excess bank liquidity in the developing countries in the 1980s decade. According to both authors, these reforms led to the destruction of the information capital of the banks.

Kremraj (2008) shows that the oligopolistic nature of the banking system explains the high level of credit costs in Guyana. This situation discourages a major part of borrowers whereas at the same time treasury bills are issued at an interest rate higher than the expected minimum rate obtained through loans. The author also highlights the currency reserves' constraints. This explains why banks do not invest their excess liquidity in secure accounts abroad. Guéineau and Guillaumont (2007) support this idea by arguing that excess bank liquidity in the WAEMU region can be explained by the ban on banks to invest their excess liquidity abroad. For both authors, the accumulation of these reserves is due to the patrimonial management of the central bank which defines the investments' interests of these resources. The underdeveloped market structure is another explanation of excess bank liquidity.

On the other hand, the literature also provides explaining factors based on cyclical factors. For example, the devaluation of the Franc CFA in 1994 within the WAEMU countries had created a decline in credit and a rise in prices. Among the cyclical factors, there are uncertainties introduced by price volatility but also shocks on the capital with foreign countries. Agénor and El Aynaoui (2008) have shown that the increase in foreign direct investment flows in Morocco has supplied Bank liquidity. According to Saxegaard (2006), development aid flows may also affect the holding of surplus's reserves.

For Dollar and Hallward-Driemeier (2000) and Wyplosz (2005), banks may hold surplus reserves as a result of a decline in credit demand or an increase in the risk related to loans leading to adverse selection.

2.2 Area Descriptions

Banking regulations includes all regulations applicable to credit institutions. It aims to guarantee their solvency, their liquidity, the protection of depositors and the security of the banking system in general. In the WAMU region, several authorities interfere to regulate this activity: the WAMU Council of Ministers which establishes the legal and regulation framework, the Central Bank which draws up prudential and accounting regulations and plays on its own a supervision role of the banking system and the Banking Commission which controls the organization and supervises banks and financial institutions.

Several dates mark the institutional change in this area. The act N°76-52 which governs banking regulations enters into force in April 1976. Then, the authorities set the minimum capital of banks: procedures for agreement, authorization and withdrawal in January 1977. In June 1987 this regulation requires the revision of the banks' share capital to 2.5 billion (in Senegal by decree n° 87-808). The period from July 1987 to September 1990 marks the withdrawal of agreement for several banks. In June 1990, a new act governs banking regulations. This was done following the crisis in the banking system in the late 1980s and which has undermined the banking and financial system as a whole. For example, there have been about ten agreements' withdrawals, 27 bankruptcies

including 15 State's banks. The purpose of the new Act is to tighten the conditions for the profession practice and to protect depositors and the system as a whole.

In June 1991 the classification agreements' act was introduced with the aim to bring the banks to have a quality portfolio but also to enable them to refinance themselves with the central bank. The old method was much more based on credits granted to the development sectors. In November 1995, the total actual loans' rate act was introduced. The year 1996 was marked by two major decisions: the entry into force of the new banking plan act and the adoption of the standard Law on Payment Instruments. In July 1998 the single agreement act came into force. January and April 1998 marked respectively the entry into force of a new act on financial relationships with foreign countries and the act on the suppression of usurious transactions and interest rates and the obligation to publish the usury rate.

In January 2000, the new prudential system of the banks entered into force. The year 2002 was marked by the act on banking promotion and the use of non-cash means of payment obliging any creditor to pay by check or by transfer whenever the amount to be paid reaches FCFA 100,000.

We note two major decisions in January 2010 and 2012, first, the increase of the banks' share capital to 5 billion FCFA and second another increase to FCFA 10 billion.

In January 2013, we firstly note a decrease in the medium and long-term employment coverage ratio with stable resources reduced to 50% from 75% previously, and secondly, the suppression of the portfolio structure ratio which obliged banks to hold in their credit portfolio at least 60% of files benefitting from classification agreements.

Table 1. Summary of decisions on banking regulation in WAEMU countries

Dates	Regulating decisions
09 April 1976	Act N° 76-52 on Banking regulation
23 September 1976	Setting the minima share capital of banks Agreement Procedure: authorization, withdrawal
26 January 1977	Creation of the Supervision Commission of Banks and Financial Institutions This commission will be later replaced by the Banking Commission
22 June 1987	Revision of the banks' share capital to 2.5 Billion (in Senegal by decree N° 87-808)
July 1987 to September 1990	Period marked by the agreement withdrawal of several banks (crisis of the WAEMU banking system)
26 June 1990	New act N 90-06 on banking regulation This follows the crisis which the banking system experienced during the late 1980s and which has undermined the banking and financial system as a whole. For example, there were about ten withdrawals. The new act aims to tighten the practice conditions of the profession and to protect depositors and the system as a whole.
24 April 1990	Creation of the banking commission ratified in Senegal by Act N° 90-19 of 26 June 1990
03 June 1991	Establishment of the classification agreements' regime (objective: to get the banks to have a quality portfolio but also to allow them to refinance themselves with the central bank, the old method of refinancing with the central bank having shown its limits). The old method relied much more on loans to development sectors, banks would make false statements in order to easily access the resources of the central bank.
7 November 1995	Introduction of the calculation of the total actual loans' rate
1st August 1996	Entry into force of the new bank Accounts plan The accounting system that existed was one of the causes of bankruptcies. The new system aims to harmonize practices at all banks but also to provide the authority with reliable data to control at any time the situation of banks.
28 August 1996	Act N° 96-13 on the adoption of the standard Law on Payment Instruments Check without provision/ payment incident central file/ payment incident adjustment
3 July 1997	Entry into force of the single agreement act
8 January 1998	Act on financial relationships with foreign countries replaced by act N° R09/98CM/WAEMU of 20 December 1998
17 April 1998	Act on the suppression of usurious transactions and interest's rates and obligation to publish the usury rates
1st January 2000	Entry into force of the new banks' prudential system
19 September 2002	Measure on the promotion of banking and the use of non-cash means of payment obliging any creditor to pay by check or by transfer when the amount to be paid reaches 100,000 FCFA.
1st January 2010	Increase of the banks' share capital to 5 billion FCFA
1st January 2012	Increase of the banks' share capital to 10 billion FCFA
1st January 2013	decrease in the medium-term and long-term employment coverage ratio with stable resources reduced to 50% from 75% previously Removal of the portfolio structure ratio which obliged banks to hold in their credit portfolio at least 60% of records benefitting from classification agreements.
1st January 2014	Reduction of the bank usury rate from 18% to 15%

Source: Central Bank of the Western African States (BCEAO, 2012)

2.3 Methods

Our sample includes twenty-four (24) years of observation for each country from 1990 to 2013 with a total of 144 observations if we consider the six (6) countries in the panel data. We chose this observation period (1990-2013) for one main reason, which is the availability of data¹. Indeed, considering our objective to explain the phenomenon of excess bank liquidity from banking and financial reforms, we should have started our study in the late 1970s (not all data available) when the restructuring of the banking system really began. This availability of data has always motivated us to limit ourselves to six countries within the WAEMU region: Benin, Côte d'Ivoire, Mali, Niger, Senegal and Togo. For the two other countries in the WAEMU region, namely Burkina Faso and Bissau Guinea, some data were not available.

Indeed, although we are interested in regulations, we must also integrate control variables that are supposed to have an impact on banking excess liquidity. For this reason, we focused on the Saxegaard (2006) literature to propose the following variables

- $TxDegPort_{i,t}$: The gross rate of bank portfolio degradation of country i at date t . it measures the credit risk (compromised, doubtful and unpaid debts / Total of credits. It is in percentage and is supposed to have a positive impact on bank reserves' excess.
- $TxCTCred_{i,t}$: it measures the credit structure granted by banks of country i at date t . it is defined by the ratio between short-term credits and total credits to the economy. This rate is in percentage and has often a positive impact on the bank reserves' excess as it penalizes medium and long term investments.
- $TxDebMoy_{i,t}$: the average debit rate of the banks of country i at date t in Percentage, to see whether it has a positive impact on banks reserves' excess as they disadvantage the credit demand.
- $TxDepGouv_{i,t}$: The ratio between the State's deposits and the GDP of country i at date t in percentage. This ratio helps identify the positive impact on banks reserves' excess as they increase deposits.
- $TxCredSP_{i,t}$: The ratio between the credits granted to the private sector and the GDP of country i at date t in percentage. It also helps to assess the negative impact on banks reserves' excess.
- $TxAEN$: the ratio between the banks' net foreign assets and the GDP of country i at date t in percentage. It is supposed to have a negative impact on the banks reserves' excess as it reduces the banks' liquidity level.
- $TxPNG$: the ratio between the government's position and the GDP of country i at date t .

It measures the credit granted to public companies and to central administration on the GDP in percentage. We expect a negative impact on the banks reserves' excess.

- Nine indicating variables I95, I96, I97, I98, I100, I102, I110, I112, I113 were introduced to find out the regulating measures which appeared respectively in 1995, 1996, 1997, 1998, 2000, 2002, 2010, 2012 and 2013. They take zero before the event (date) and one after the event.

The model estimation was made following several steps. In the first step, we used the stationarity test in Panel data by Im, Peseran and Shin (2003) (IPS) in order to determine the order of integration of all the variables. The results of these stationarity tests applied to the various variables are presented in Table 1. This table shows that the average debit rate of banks ($TxDebMoy$), the gross rate portfolio's degradation ($TxDegPort$), the ratio between short term deposits and the total $TxCTCred$ and the ratio between the net government position and the GDP ($TxPNG$) are stationary in level that is to say integrated of order 0 (I(0)). For other variables namely reserves' excess ($ResExc$) which represent our dependent variable, the ratio of credits granted to the private sector on the GDP ($TxCredSP$), the ratio between the bank's net foreign assets and the GDP ($TxAEN$) and the ratio of the State's deposits to GDP ($TxDepGouv$), we found that they are stationary in first difference that is to say integrated of order 1 (I(1)). After the determination of the integration order, we use in the second step, a dynamic approach to estimate the impact of the various explaining variables by working either on their variables at level (case I(0)) or on their differentiated variables (case I(1)).

This gives the following model:

$$ResExc_{i,t} = c_i + ResExc_{i,t-1} + \beta_1 TxDegPort_{i,t} + \beta_2 TxCTCred_{i,t} + \beta_3 TxDebMoy_{i,t} + \beta_4 TxDepGouv_{i,t} \\ + \beta_5 TxCredSP_{i,t} + \beta_6 TxAEN_{i,t} + \beta_7 TxPNG_{i,t} + \gamma_1 I95_t + \gamma_2 I96_t + \gamma_3 I97_t + \gamma_4 I98_t \\ + \gamma_5 I100_t + \gamma_6 I102_t + \gamma_7 I110_t + \gamma_8 I112_t + \gamma_9 I113_t$$

¹The data come from the site of the central bank of the states of west Africa (<http://edenpub.bceao.int/>)

In matrix form, it can be rewritten by considering two sets. The first set $X_{i,t}$ contains the explaining variables depending on i and t and the second Z_t corresponds to regulation variables depending only on time t , which gives more simply

$$ResExc_{i,t} = c_i + ResExc_{i,t-1} + {}^t\beta X_{i,t} + {}^t\gamma Z_t \quad (1)$$

Where ${}^t x$ means the transpose of the column vector x

The choice of the dynamic approach compared to the static approach is justified by the fact that the lag of the depending variable had a significant explaining power on the depending variable itself. Moreover, for the choice of the number of lags (of the depending variable), we find that a single one was enough to obtain an absence of autocorrelation at the level of the error terms and to validate the instruments used in the approach by Arellano and Bond (1991), in the other hand as shown in Table 4.

After the validation of the model specification, we show the results of the estimates obtained for the various explaining variables using the robust estimator of Arrelano and Bond (1991) and taking into account the presence of heterogeneity in the variance of the error terms of the dynamic panel model. This estimator helped to reduce quite considerably the variance of the various estimated parameters.

3. Results

The tables below show the results of the Stationarity tests with the different levels of significance (Table 2), the estimated parameters for the Dynamic Panel Model (Table 3) with post-estimation validation (Table 4).

Table 2. Stationarity tests' results

Variables	Level	Stationarity	First Difference	Stationarity
ResExc	1,03	No	-7,28(***)	Yes
TxDegPort	-1,52(*)	Yes	-	-
TxCTCred	-2,46(***)	Yes	-	-
TxDebMoy	-3,96(***)	Yes	-	-
TxDepGouv	0,73	No	-5,71(***)	Yes
TxCredSP	2,92	No	-5,28(***)	Yes
TxAEN	0,15	No	-5,71(***)	Yes
TxPNG	-2,10(***)	Yes	-	-

Note: Symbols *, **, *** mean a significance of the test (Stationarity of some series) respectively at the cap of 10%, 5% and 1%

Table 3. Results of the dynamic model estimates (1)

Depending Variable: Reserves' excess

Var. Explic	coeffs	variance	T-Statist	Pvalue
ResExc(-1)	-0.52	0.018	-27.2	0.000
TxDegPort	11.46	201.4	0.06	0.95
TxCTCred	-737.1	201.3	-3.66	0.000
TxDebMoy	201.8	709.2	0.28	0.77
TxDepGouv	4675.9	2067.5	2.26	0.024
TxCredSP	-646.4	720.8	-0.90	0.37
TxAEN	2641.9	3324.5	0.79	0.42
TxPNG	-161.1	45.8	-3.52	0.000
I95	13459.9	8796.1	1.53	0.12
I96	-391.8	7101.3	-0.06	0.95
I97	9433.2	4081.8	2.31	0.020
I98	-15188.9	7330.9	-2.07	0.038
I100	4296.6	6695.2	0.64	0.52
I102	7256.8	4587.0	1.58	0.11
I110	-20418.2	16705.1	-1.22	0.22
I112	15667.9	6259.0	2.50	0.033
I113	2866.6	7629.2	0.38	0.707
constant	39111.1	16815.9	2.33	0.

Note: In bold, we highlighted those variables which had significant impact at least to 10%.

Table 4. Tests of validation of the Dynamic Panel model

Arrelano-Bond(Autocorrelation)	lag 1	lag 2
Statistics	-1,24	-1,28
P-value	0,21	0,19
Sargan Test	Validity of	instruments
Statistics	96,19	
P-value	0,71	

4. Discussion

The results show that excess bank liquidity is positively correlated with the ratio (government deposit / GDP) and the reforms of 1997 and 2012, namely the entry into force of the single agreement and the increase in the share capital of the banks to FCFA 10 billion. Credit institutions' activities have for a long time been limited within national borders. In view of the objective of creating a unified economic and financial space, it has proved essential to foster greater integration of the banking and financial markets by organizing the freedom to provide services throughout the whole Union's region. Banks and financial institutions already licensed and wishing to establish themselves in another Member State of the Union are exempt from any other agreement procedure to carry out their activities or to freely provide services in the other Member States, subject to obtaining an authorization. The 2012 reform on conditions concerns the redefinition of new minima caps in terms of share capital required for the creation of a credit institution. For all regulations, it is this 2012 reform which represents the most determining variable in the explanation of excess bank liquidity within the WAMU with a positive coefficient of 15667.9. This reform may constitute a hindrance for new banks which want to settle and thus reduce competition in the WAEMU banking system. This can result in high debit rates and in a decline in credit demand and then in excess liquidity.

State's deposits (TxDepGouv) are also a determining factor of excess bank liquidity in the WAMU with a positive coefficient (4675.9) meaning that an increase in deposits also increases excess bank liquidity. Credits granted to the private sector (TxCTCred) have a negative influence on excess bank liquidity which is confirmed by a negative coefficient (-737.1). The results also show that the ratio between the government's position and the GDP (TxPNG) has a negative impact (-161.1) on Excess bank liquidity. All these results are in line with economic theory. The Excess bank liquidity is also explained by the regulations that appear in 1998. Indeed, the reform of the act on Financial Relationships with foreign countries and replaced by the Regulation of 20 December 1998, and Act on the suppression of usurious transactions and interest rates and obligation to publish the usury rates (See Table 1) have reduced the Banks' excess Liquidity (-15188.9). These measures have reduced credit costs and at the same time increased credit demand.

5. Conclusion

The aim of this study is to highlight the explaining factors of the WAEMU excess bank liquidity. From a Dynamic Panel Model, it is shown that excess bank liquidity is explained by seven factors which are: 1- the excess liquidity level at the previous year t-1, 2 – State's deposits, 3- credit granted to public companies and central government, 4. the government's position, 5- Entry into force of the single agreement act in 1997, 6- the regulating character of the Central Bank of West African States (BCEAO in French), namely the 1998 reform on the act on Financial Relationships with Foreign countries replaced by the regulation of 20 December 1998 and the act on the suppression of usurious transactions and interest rates and the obligation to publish the usury rate. 7- The 2012 regulating decision on conditions regarding the redefinition of new minima caps in terms of share capital required for the creation of a credit institution.

The reform on financial relationships with foreign countries prohibit banks to place their funds abroad. As a consequence, this allowed the development of portfolio allocations in the WAEMU financial market. This development is accompanied by the creation in this market of undertakings for collective investment in transferable securities (UCITS), especially in mutual funds (Mutual Funds), enabling institutional investors (banks, insurance companies) to diversify their investments and to reduce their excess liquidity. At this rate, we hope this excess liquidity will tend to disappear in the years to come.

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References

Ag énor, P. R., & El Aynaoui, K. (2008). Excess Liquidity, Bank Pricing Rules, and Monetary Policy. Centre for Growth and Business Cycle Research Discussion Paper Series 105, Economics, The Univeristy of

Manchester.

- Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *Review of Economic Studies*, 58, 277-297. <https://doi.org/10.2307/2297968>
- Banque Centrale des Etats de l'Afrique de l'Ouest (BCEAO). (2011). "Rapport sur la politique monétaire.
- Banque Centrale des Etats de l'Afrique de l'Ouest (BCEAO). (2012). "Recueil des textes législatifs et réglementaires régissant l'activité bancaire et financières dans l'Union Monétaire Ouest Africaine".
- Caprio, et H. (1991). Excess Liquidity and Monetary Overhangs" Working Paper, Policy research , Financial Policy and Systems, Country Economics Department, The World Bank, October 1991, WPS 796.
- Dollar, D. et & Hallward-Driemeier, M. (2000). Crisis, Adjustment, and Reform in Thailand's Industrial Firms. *World Bank Research Observer, Oxford University Press*, 15(1), 1-22. <https://doi.org/10.1093/wbro/15.1.1>
- Fouda-Owoundi, J. P. (2009). La surliquidité des banques en zone franc: Comment expliquer le paradoxe de la CEMAC ? *Revue africaine de l'Intégration*, 3(2).
- Guéineau, S., & Guillaumont, S. J. (2007). Le temps retrouvé de l'endettement interne pour les pays en voie de développement ? L'exemple de l'Union économique et monétaire ouest africaine (UEMOA). *CERDI, Etudes et Documents*, 03, 25.
- Hugon, P. (1996). Incertitude, précarité et financement local: le cas des économies africaines revue Tiers-Monde. *Tome*, 37(145), 13-40. <https://doi.org/10.3406/tiers.1996.5026>
- Im, K. S., Pesaran, M. H., & ET Shin, Y. (2003). Testing for unit Roots in Heterogenous panels. *Journal of Econometrics*, 115, 53-74. [https://doi.org/10.1016/S0304-4076\(03\)00092-7](https://doi.org/10.1016/S0304-4076(03)00092-7)
- Kremraj, T. (2008). Excess liquidity and effectiveness of monetary policy: evidence from sub-Saharan Africa. *Working Paper*, 115, IMF, P1-52.
- KRemraj, T. (2007). Why do Banks Demand Excess Liquidity? Evidence from Guyana. MPRA Paper No. 4721, University of Munich (June 2007).
- Mankiw, G., & Taylor, M. P. (2011). "Economics" 2nd Revised Edition International Students Edition.
- Saxegaard, M. (2006). Excess liquidity and effectiveness of monetary policy: evidence from Sub-Saharan Africa. *Working Paper*, 115, IMF, P1-52. <https://doi.org/10.5089/9781451863758.001>
- Wanda, R. (2007). Risques, comportements bancaires et déterminants de la surliquidité', La revue des Sciences de Gestion, Direction et Gestion n°228 - Finance
- Wyplosz, C. (2005). Excess Liquidity in the Euro Area: Briefing Notes to the Committee for Economic and Monetary Affairs of the European Parliament," unpublished, Graduate Institute of International Studies, (Geneva: Switzerland).

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