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Regional externalities and direct effects of legislation against money laundering: a test on excess money balances in the five andean countries[1]

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Abstract

We analyse the accomplishment rates of anti money laundering recommendations of the Financial Action Task Force (FATF) in the five Andean countries between 1989 and 1999. We find an uneven application of FATF recommendations across these countries, mainly due to differences in the regulation of the financial and banking systems and in the degree of interregional and international cooperation. We also identify the main money laundering channels adopted in each country and find a correspondence between the lack of specific domestic legislation and the development of specific local money laundering techniques. Finally, with an econometric test on money demand, we observe that a stricter FATF compliance relative to neighbouring countries has significant negative effects on excess domestic cash balances, net of the positive effect generated by the higher compliance *per se*. Our policy advice is therefore that a coordinated anti money laundering action is urgently needed in order to avoid such externalities.

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Introduction

Money laundering[2] may generate serious costs for the hosting countries (increased political corruption, criminal infiltration and crowding out of sound firms in the banking and in the industrial sector) as well as negative externalities for the whole financial system (Quirk, 1996; Tanzi, 1996). For this reason, growing attention is being paid to the role that the size of the illegal economy and money laundering may play in the observed asset volatility and in the recent surge in financial market instability (Camdessus, 1998).[3]

Conventional wisdom assumes that, since money laundering may create short term benefits in terms of higher capital inflows, insufficient international cooperation against money laundering creates a typical free riding problem. A country which adopts a more relaxed attitude may attract an inflow of regional illegal wealth to be laundered, thereby generating severe negative externalities for their neighbours. An effective coordination of regulation and enforcement from neighbouring countries is therefore fundamental to tackle this problem. This paper tests the relevance of this hypothesis. It compares the accomplishment of money laundering international recommendations in the Andean countries and relates it to the existing typology of money laundering techniques and to the dynamics of cash money balances in these countries.

The paper is divided into four sections.

[2] The 91/308 EEC Directive defines Money Laundering as: 1) the conversion or transfer of property, knowing that such property is derived from criminal activity or from an act of participation in such activity, for the purpose of concealing or disguising the illicit origin of the property or of assisting any person who is involved in the commission of such activity to evade the legal consequences of his action; 2) the concealment or disguise of the true nature, source, location, disposition, movement, rights with respect to, or ownership of property, knowing that such property is derived from criminal activity or from an act of participation in such activity; 3) the acquisition, possession or use of property, knowing, at the time of receipt, that such property was derived from criminal activity or from an act of participation in such activity; 4) participation in, association to commit, attempts to commit and aiding, abetting, facilitating and counselling the commission of any of the actions mentioned in the previous paragraphs.

[3] It is believed in fact that the presence of money launderers in financial markets generates inefficient trades for reasons which are different from those of noise or liquidity traders (Grossman-Stiglitz, 1980; De Long et al.,1990). In the money launderer's case, the investment in assets which are below the efficient frontier becomes individually profitable if we consider the reduction of risk of seizure and prosecution generated by the money laundering activity.

The first section describes the methodology adopted by the EEC-commissioned research team analysing anti money laundering legislation in the Andean countries. It focuses on the cooperating relationship between the EEC Central Research Unit (CRU) and the Local Research Units (LRUs) in the Andean countries, and on the reasons for the choice of the 40 Financial Action Task Force recommendations as a benchmark for the investigation. The second section illustrates the results of the comparative analysis of anti money laundering legislation in the five Andean Pact member states (Bolivia, Colombia, Ecuador, Peru, and Venezuela) between 1989 and 1999 emphasising differences in FATF compliance in time and across countries.

The third section analyses responses to a qualitative questionnaire submitted to domestic financial and regulatory authorities. The questionnaire aimed to identify the main money laundering channels adopted in each country and to verify if a correspondence exists between insufficient compliance to FATF legislation and the taxonomy of local money laundering techniques.

The fourth and final section tries to measure with an econometric test the impact of the uneven FATF compliance in the Andean countries on their excess money balances. Our methodology identifies and tests two different sources of effects: the degree of compliance to FATF regulation *per se* and the individual country deviation from average regional compliance as a measure of the externality effect generated by the lack of international cooperation against money laundering.

1 Structure and methodology of the research

The EEC-commissioned international research team was composed of a Central Research Unit and five Local Research Units, one for each country. The LRUs carried out field work by

contacting local authorities and institutions in order to collect legal and economic information in areas and sectors involved in the fight against money laundering. [4]

The CRU asked each LRU to elaborate a detailed report on the domestic legislation against money laundering. These reports were revised by the CRU which wrote a final document on the basis of the information contained in each country report. In a second step of the research, the LRUs were asked to submit a questionnaire to local financial and regulatory authorities for a qualitative estimation of the most important money laundering techniques adopted in each country.

In its final report the CRU developed, jointly with the LRUs, a comparative analysis of the Andean countries anti money laundering legislation with respect to the exogenous benchmark represented by the 40 recommendations of the Financial Action Task Force (FATF). The comparison consisted of attributing a score to the relative accomplishment for each of the recommendations according to the greater/lesser degree of closeness of domestic legislation to the FATF guidelines.[5]

The choice of the FATF guidelines as a benchmark is justified by the characteristics of this organization. The Financial Action Task Force is an international institution which was created in 1989 by 26 member states (belonging to the G-7 countries, to OCSE and to the European Union). It has neither a statute nor a constitution and it rather operates as an informal group based on consensus. Because of this, the 40 FATF guidelines are not compulsory legal norms, although the G-7 mandated constitution of the group attaches high relevance to them. These guidelines also have

[4] The composition of CRU and LRUs and the list of cooperating institutions is presented in an Appendix available upon request.

[5] This choice was implicitly based on the assumption that a rational money launderer is expected to evaluate anti money laundering legislation when selecting a country to place his illegal proceeds. Since the decision-making process of money launderers hinges on the existence of legal loopholes in the legislation of different countries, the CRU decided that the identification of *gray zones* in each legislation was of paramount importance and had to be the main focus of the research.

"prudential, general and comprehensive" character and are meant to be accepted by both member and non-member countries.[6]

In order to give some quantitative relevance to the LRUs' assessment, the CRU defined a scale of compliance with FATF recommendations which is illustrated in the table below (Table 1).

The score covers different degrees of anti money laundering legislative effort ranging from the absence of the norm incorporating the FATF recommendation into domestic legislation to the existence of an explicit regulation for its application. Its limit, though, is the impossibility of verifying the effective enforcement of the law and of the related regulation.

Tab. 1 Scores for the evaluation of the Andean countries accomplishment rates with the 40 FATF regulations

Category	Characteristics
I : insufficient (Score 0)	The norm incorporating the FATF recommendation into domestic legislation does not exist. There is no bill of law that contemplates its creation.
L : low (Score 1)	There is a bill of law that contemplates the creation of the norm. This should reveal the willingness to enact the norm.
M : middle (Score 2)	The norm exists but has to be regulated in order to be effectively applied.
H : high (Score 3)	The norm exists and is adequately regulated in the domestic legal system.

2 Comparative results on the accomplishments of FATF regulation in the Andean countries

The detail of country scores assigned in the year of the inquiry (1999) for any of the 40 Recommendations is presented in Table 2. The synthesis of the relative compliance in each of the four subsections in which the 40 recommendations are divided (general framework, legal system,

[6] As a further confirm of the relevance of this institution it must be considered that observing the recommendations and joining the FATF constitutes a kind of *international certification* for the country following such a course of action. FATF compliance is in fact regarded as conferring greater international credibility and reducing *country risk* under the specific feature of the danger of criminal infiltration in the economic and financial system (FATF Report, 1999).

financial system, international cooperation) is presented in Table 3, while the years in which principles of each recommendation were incorporated into domestic legislation are shown in Table 4. The full description of the contents of any Recommendation and the justification for the score assigned by the CRU are provided in an Appendix of the paper and are available upon request.

As a general comment to the collected evidence we observe that, even though no country reached the highest possible score (120), all countries are getting closer to the FATF guidelines in the considered period (Table 3). The countries whose legislation is closer to the FATF 40 Recommendations in 1999 are Colombia (110/120) and Venezuela (104/120). Behind them are Bolivia (100/120), Ecuador (95/120) and Peru (83/120).

Besides the total scores, it is interesting to comment the partial scores obtained in the four areas into which the recommendations are divided by the FATF: i) General framework; (recommendation 1 to 3); ii) Role of the domestic legal systems against money laundering (recommendation 4 to 7); iii) Role of the financial system against money laundering (8 to 30); iv) Strengthening of international cooperation (31 to 40).

The analysis by subgroups shows that the difference between Bolivia, Ecuador and Peru, on the one side, and Colombia and Venezuela, on the other side, is mainly due to the different role of the domestic financial systems' legislation against money laundering.

The synthetic perspective shown in tab. 3 confirms that Bolivia and Peru are distant more than 20 percent (and Ecuador more than 40 percent) from the top score when the role of financial systems is considered, while Peru and Venezuela are ranked lowest in terms of international cooperation (more than 33 percent).

Several findings justify the low score of Ecuador, Peru and Bolivia in the financial system legislation during our sample period (Table 2). Peru, did not extend the scope of anti money laundering recommendations to non-bank financial institutions and to businesses and professions which are not financial institutions but conduct financial activities (recommendation 8). Bolivian legislation does not prohibit anonymous accounts, accounts on fictitious names and secret accounts

(recommendation 10). Neither Ecuadorian nor Bolivian legislation include any norm or procedure about the identity of the person on behalf of whom an account is opened when there is a suspicion that customers are not acting on their own behalf (recommendation 11). Contrary to the other Andean countries, Bolivia and Peru have not activated any measure to protect the financial system from the "*threat inherent in new or developing technologies that might favor anonymity*" (recommendation 13). Bolivia, Peru and Ecuador rules of law do not focus on the problem of "*complex, unusual and large transactions which have no apparent economic purpose"* and which are, on the contrary, exactly defined in Venezuelan and Colombian legislation (recommendation 14). Furthermore, Ecuador is the only country which does not protect directors, officers and employees of financial institutions from criminal or civil liability for breach of any restriction on disclosure of information, if they report their suspicions in good faith to the competent authorities (recommendation 16). In all countries, with the exception of Ecuador, employees of financial institutions are prevented from warning customers about the suspicions reported to anti money laundering authorities (recommendation 17). Finally, Peru is the only country which in 1999: i) has no definite criteria to verify the development of anti money laundering regulations by financial intermediaries (recommendation 19); ii) lacks of a specific norm that guarantees the extension of anti money laundering rules to branches and subsidiaries of national financial institutions located abroad (such coverage is only presumed by the general principles of the legislation) (recommendation 20); iii) has no specific norm that guarantees attention to business relationships with countries possessing insufficient or no anti money laundering regulation (recommendation 21); iv) does not apply banking anti money laundering regulations to "*the physical money cross-border transportation of cash and bearer negotiable instruments*" (recommendation 22); v) puts low emphasis on the replacement of cash transfers with secure techniques of money management, including the increased use of "*checks, payment cards, direct deposit of salary checks, and book entry recording of securities*" (recommendation 24).

Finally, with regard to the fourth subsection of the FATF recommendations (strength of international cooperation), the relatively lower score of Venezuela and Peru in terms of international cooperation is justified by the fact that: i) the Venezuelan Central Bank does not disseminate information about money laundering as other Central Banks in the Andean countries (recommendation 31); ii) Venezuela does not participate to agreements for mutual assistance in the production of records by financial institutions (recommendation 37) and iii) money laundering is not a cause of extradition in this country (recommendation 40). In the same way, Peru has not ratified treaties to exchange information on suspicious transactions with their neighbours (recommendation 32) and has no regulation on the allocation of confiscated assets related to money laundering for individuals subject to prosecution in more than one country (recommendation 39).

4.1 Descriptive evidence on the relationship between FATF compliance and the taxonomy of money laundering techniques in the Andean countries

The identification of the most important and frequent techniques that are used to "recycle" illegal proceeds is a fundamental step for an effective action against money laundering. For this reason local financial and regulatory authorities were asked by the LRUs to identify the most widely followed techniques.

The identified techniques are presented here according to a taxonomy which divides them into different subsystems (financial sector, monetary and derivatives sector, non financial sector)

Our attempt in this section is to relate the techniques used in each sub-system to the loopholes of domestic legislations in order to identify the regulatory changes needed to fight money laundering.

In interpreting the results given by the LRUs' inquiry on the relative choice of different money laundering techniques in each country, we must consider that the main goal of any money

laundering operation is that of hiding the illegal origin of the money used in the transaction together with the identity of the transactor.

Since the value of money depends on the possibility of its fruition, the value of illegal wealth is greatly reduced by the risk of confiscation and of prosecution of the owner. Therefore, in choosing the laundering channel, the owner of the illegal wealth considers both the gain from partially or completely eliminating the risk of seizure and prosecution and the expected gain from the asset in which he invests.

Given the relevant weight of the first element in this choice, channels in which the anonymity of transaction is higher, and anti money laundering legislation weaker, are generally preferred. In this perspective, consider that the use of the stock market, the banking system and the real estate sector as laundering channels does not easily allow to conceal the identity of the customer.[7] On the contrary, in other markets (black market of foreign currency, precious stones and gold), concealment of the illicit nature of funds is eased as the identity of the transactor may not be publicly revealed. In these cases, it would be advisable for anti money laundering legislation to find a mechanism to uncover the origins of such proceeds.

Tables 5 and 6 sum up the information collected by the CRUs on the most frequently used money laundering techniques in the Andean Countries.

In particular, table 6 analyses the economic sub-systems affected by the different types of recycling operations. The LRUs provided the information contained in this table by identifying the techniques most frequently used in their countries and by producing additional information on cases discovered and studied.[8]

[7] In such a case, the objective of any launderer is to sponge out any traces of the *placement* phase. This is possible through a series of complex transactions and by the use of of shell companies in order to eliminate any link with the origin of funds.

[8] Two caveats need to be taken into account when interpreting the information contained in Tables 5 and 6. First, the identification of money laundering techniques used in a country is the result of the LRU's analysis, on the basis of the *indirect evidence* on the phenomenon (*i.e.*, excess inflow of capital relative to the expected asset profitability). Second, it is worth mentioning that the techniques listed in the tables have been classified as frequently used, by the LRU's and the CRU, on the basis of the results obtained by police investigations and case studies.

An interesting finding from Table 6 is that countries with weaker regulations against money laundering in the financial system (Peru, Bolivia, Ecuador) have the widest range of money laundering techniques activated just in the financial system. In addition, the country with the weakest regulation in the financial system (Peru) has the highest ratio of financial to non financial money laundering techniques and, therefore presumably, a strong relative specialisation in financial sector money laundering with respect to the other Andean countries .

4.2 The direct effect and the externality effect of FATF accomplishment. A test on excess money balances

The 1999 FATF report on Bolivian economy emphasised the relevance of money laundering in this country by indicating that the average domestic bank deposit per person was above 200 thousand dollars. This figure was definitely not in line with the expected average money balance-domestic per capita income relationship both in developed and developing countries.

This simple descriptive example helps to understand why the few empirical papers trying to measure the size of the illegal economy and of money laundering consider the residual of money demand as one of the most reliable indicators. By microfounding the demand for currency in the recorded and in the illegal sector Bhattacharya (1990) provides a tentative estimation of the size of the latter relating it to the residual of the estimated demand for money. His reasoning is that the residual in the traditional money demand specification should proxy for the income from the illegal sector, since the only variable positively affecting the demand for currency in the illegal sector (illegal income) is not observed.

This approach has been criticised by Thomas (1999) who argues that this hypothesis for the explanation of the residual is observationally equivalent to a more general problem of misspecification of the money demand equation. Therefore, any attempt to infer the size of the

illegal economy from the money demand residual would be biased by the likely omission of whatever relevant variable (or misspecification of the functional form).

In the approach we follow here we want to show that, even accepting the Thomas (1999) critique on the unmeasurability of illegal income, we can evaluate the impact of the observed compliance with FATF recommendations on money laundering under assumptions on the dynamics of illegal income which are not too restrictive.

Consider in fact the following demand for currency:

(1) $M_{Rt} = a_1 Y_{DLt}^{\ b_1} R_t^{b_2} f S_t^{b_3} \left[(f - \bar{f}) Y_{RIt} \right]^{b_4} e^{ut}$

where M_{Rt} are real domestic money balances, $f \hat{I} [0,40]$ measures compliance with FATF regulation proxied by the strength of anti money laundering legislation (40 is maximum compliance) , $\bar{f}$ is the average compliance in the Andean countries (with the exception of the observed country), S is the soundness of the domestic financial system, Y_{DLt} and Y_{RIt} are, respectively, domestic legal and regional illegal income and R is the domestic interest rate. Our assumption is that stricter anti money laundering rules have a *per se* effect and - when compared to those of the neighbouring countries - an externality effect. This is because tougher regulation increases, on the one side, the reputation of the domestic banking system *(S)* and therefore its capacity of attracting legal domestic money balances, while, on the other side, it may have a negative effect on the capacity of attracting illegal income when rules of the neighbouring countries are more relaxed.

Taking logarithms we get:

(2) $m_t = \ln a_1 + b_1 y_{DLt} + b_2 r_t + b_3 (f + S_t) + b_4 \left[(f - \bar{f}) + y_{RIt} \right] + u_t .$

The problem in (2) is that f and $\bar{f}$ are observable but S and y_{RIt} are not. We therefore may estimate only:

(2') $m_t = \ln a_1 + b_1 y_{DLt} + b_2 r_t + b_3 f + b_4 (f - \bar{f}) + u_t$

The omitted variable bias should affect the significance of our estimated coefficients if their variables are correlated with those omitted. Furthermore, it should generate an upward bias on coefficient standard errors proportional to the variance of the omitted variables.

We take into account these biases when interpreting the results on the effect of FATF accomplishment to FATF recommendations. With regard to the first, a significant and positive b_3 would imply that compliance with anti money laundering rules is associated to an increase in money balances, unless the soundness of the banking system is positively related to FATF compliance but for reasons which are unrelated to the anti money laundering effort.

In the same time, a significant and negative b_4 should measure the negative externality effect of a relatively more severe anti money laundering effort, unless we suppose that the dynamics of regional illegal wealth is inversely related to the dynamics of the (f - $\overline{f}$) variable. Even though we cannot observe the dynamics of illegal regional wealth it is clear that this last hypothesis cannot hold since, by definition, regional illegal wealth cannot be related to each of the individual country deviations from the regional mean (i.e. if it is correlated with one country which is above the mean it cannot be correlated in the same direction with another country which is below the mean).

With regard to the second point, the overestimation of standard errors due to the omission of additional sources of variability strengthens the confidence in coefficients which are found significantly different from zero in our estimates.

In specifying the demand for currency in a small open economy we must also consider that money demand is not determined by home variables alone. In fact, some economists add foreign interest rates and exchange rate depreciation to equation (1). This extended specification helps to reduce the error in measuring the opportunity cost of holding money balances in a small open economy of a developing country, where the two additional variables may capture currency substitution and capital mobility effects.

On such a basis, and to reduce the possibility that our model is misspecified, we estimate this alternative specification which follows Khalid (1999) approach:

$$\textbf{(3)}\ M_{Rt} = a_1 Y_{DLt}^{b_1} (f - \bar{f}) Y_{RIt}^{b_2} R_t^{b_3} RF_t^{b_4} ED_t^{b_5} fS^{b_6} e^{ut}.$$

All variables are the same as those described in (1) with the exception of *RF* which is the foreign interest rate and *ED* which is the expected depreciation of domestic currency.

By taking logs, and considering the unobservable variable problem, we rewrite (3) as:

$$\textbf{(4)}\ m_t = \ln a_1 + b_1 y_{DLt} + b_2 (f - \bar{f}) + b_3 r_t + b_4 rf_t + b_5 ed_t + b_6 f + u_t$$

Finally, we compare results for our model under the two different specifications, (2') and (4), with a simpler approach to the effect of anti money laundering legislation in which f and $\bar{f}$ are replaced by a dummy for each country in the year in which the change in legislation has been stronger (1996 for Bolivia, 1991 for Colombia; 1993 for Ecuador, 1990 for Peru, 1993 for Venezuela) (see legend to tables 9-11).

4.3 Data source and estimation methods

Given the limited time span of our sample (11 years) we estimate the model with both yearly and quarterly data taken from the Datastream database which collects macroeconomic information from international and domestic sources. For each Andean country we build series of real GDP, average time deposit interest rate, real money and quasi money[9] in US dollars. Since some Andean countries do not have quarterly data for the GDP we linearly interpolate yearly data.

[9] Money equals the sum of currency outside deposit money banks and demand deposits other than those of the central government. Quasi money adds time savings and foreign currency deposits of resident sectors other than the central government to the previous monetary aggregate.

Stationarity tests carried on quarterly data clearly show that our variables are I(1) (table 7). Country specific cointegration analysis rejects the null of the absence of cointegrating vectors for any of the considered set of variables in each country (table 8). In some cases the tests indicate the presence of more than one cointegrating vector. Since we assume that changes in anti money laundering regulation represent structural changes in the relative convenience of holding money balances (and of laundering illegal income into domestic money balances) in domestic financial systems, we regard them as having effects on the long run relationship among money, income and interest rates. Therefore we test the effect of FAFT variables on the level and not on the first difference equation.

We estimate our model with panel (within group) estimators. We consider both fixed and random effect models and, through the Hausman statistic, we test whether parameters are not significantly different across the two specifications. The panel approach has a clear limit as it assumes that different countries have the same money demand model (or that regression coefficients are invariant across countries). For this reason we re-estimate the model with pooled data in which time and country dummies (for each parameter) are included.

Results on the impact of FATF compliance on excess money balances using yearly data are resumed in Table 9, while full details of each estimate are available from the authors upon request.

These results clearly show that the two effects (the positive effect of FATF compliance *per se* and the negative effect when compliance is higher than neighbours' average) are significant and robust across different estimated models (fixed effects, random effects, pooled data), different specifications (Khalid, 1999 and Bhattacharya, 1990) and different dependent variables (money and quasi money).

Moreover, the specification with the dummy variable measuring FATF compliance hardly passes the Hausman test. This demonstrates that our model with the direct and externality effects provides a richer interpretation of the available evidence. Furthermore, in the specification which tests the effects of drastic changes in domestic regulation, the FATF compliance dummy is always negative

and significant suggesting that, at the moment of the stronger anti money laundering effort, the externality effect prevails over the effect of the increased attraction of legal capital from a sounder financial system. In fact, the date of the most drastic increase in FATF compliance for one country does not coincide with that of all their neighbours (only the years of Colombia and Venezuela coincide) and this lack of coordination generates drastic changes in the externality variable.

As expected, the effect of FATF compliance is stronger and more significant when measured on quasi money, an aggregate which includes also foreign currency domestic deposits, usually considered as a traditional money laundering channel. In this case, Hausman tests do not reject the null and therefore do not support the alternative of either misspecification or nonzero covariance of the vector of regressors with equation residuals. The Hausman tests also seem to show that the Khalid model is less prone to misspecification and therefore appears more adapt to model money demand in a small open economy of a developing country.

In order to have country specific estimates which do not need to assume equality of parameters across different countries we repeat our estimates on quarterly data for each individual country. The cost of adding degrees of freedom to our estimate, though, is quite high. First, we do not have quarterly GDP data and therefore we need to interpolate them. Second, unavoidable measurement inaccuracies in the anti money laundering compliance variables are enhanced when we stretch them to produce higher frequency observations.[10]

Country specific estimates carried on with the above mentioned limitations show that our model fits well for Ecuador, Bolivia and Colombia, does not give significant results for Peru and is not consistent with Venezuelan data.[11]

[10] This is because we know the year but not the quarter in which a given recommendation has been incorporated into domestic legislation.

[11] To verify the robustness of our findings we re-estimated the different models with the inclusion of variables measuring structural changes occurred in some of the Andean countries in the considered period (such as the introduction and removal in Peru and Venezuela of the prohibition to open current accounts abroad). We also tested the models with alternative FATF variables based on: i) on using recommendations on the financial system only (1 to 30), ii) on weighting our indexes with the enforcement capacity of the legal system - the definition of the variable is *Legal institutions, including access to discriminatory non judiciary that are supportive of rule of law principles* and the source of this information for 1980-1997 is PRS Group, International Country Risk Guide (various issues).

5 Conclusions and policy suggestions

There is widespread consensus among academicians and policymakers on the increasingly important effects that illegal economy and illegal capital movements have on the observed macroeconomic and financial variables. This consensus is matched by a discomforting declaration of impotence due to the admission of the incapacity of monitoring and statistically evaluating such effects.

The present paper tries to perform this task by developing a field research which measures the compliance with anti money laundering FATF recommendations of domestic legal systems and the relationship between it and the most important money laundering channels in the five Andean countries. Even though we are aware that our attempt is subject to several limits (some arbitrariness in the calculation of the compliance indicators, poor quality of some indicators) which we try to overcome with our sensitivity analysis, we nonetheless believe that it indicates a valuable path which can be followed by future investigation.

The research finds an uneven accomplishment of FATF regulation across countries and (at a descriptive level) a relationship between loopholes of domestic legal systems and the types of money laundering techniques adopted in a given country.

The econometric analysis relates legislation efforts to the dynamics of cash money balances and does not reject the hypothesis that an increase in anti money laundering effort has a positive

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Sources of the restrictions on currency accounts are: Currency Data and Intelligence, Inc., World Currency Yearbook (various issues) and International Monetary Fund, Annual Report on Exchange Arrangements and Exchange Restrictions (various issues). An alternative has been that of introducing as a proxy for S, the institutional quality of the financial system, an indicator measured by the *Economic Freedom of the World: 2000 Annual Report*. The indicator used was ECFREE(VII) Freedom of Exchange in Capital and Financial Markets which is a weighted average of the following items: i) Ownership of Banks: Percent of Deposits Held in Privately Owned Banks (27.1%); ii) Extension of Credit: Percent of Credit Extended to Private Sector (21.2%); iii) Interest Rate Controls and Regulations that Lead to Negative Interest Rates (24.7%); iv) Restrictions on the Freedom of Citizens to Engage in Capital Transactions with Foreigners (27.1%). Results obtained are not substantially different from those shown here and are available from the authors upon request.

effect *per se* (attributed by us to the increased soundness of the banking system) and a negative effect if it is not accompanied by a similar move from neighbouring countries (negative externality effect). Furthermore, when the test is performed just on a dummy variable which accounts for the more drastic change in FATF compliance in each country, the effect on money balances is negative and significant. Since these drastic changes are nonsynchronous and therefore generate severe externality effects, they appear consistent with the hypothesis that the externality effect prevails on the *per se* effect in these cases.

Our results lead us to formulate some policy proposals. More specifically we suggest: i) to implement a common course of action to harmonize and level up the Andean regulations in order to make them closer to the FATF recommendations; ii) to create an institutional network to guarantee an adequate perception of recycling phenomena and the constant evolution of laundering strategies and techniques; iii) to update the FATF recommendations to support local efforts in the creation of new investigative techniques that counter modern laundering techniques; iv) to implement a common enforcement system to guarantee observance of FATF recommendations.

We think that these proposals may contribute to implement the cooperative effort needed to reduce the negative externality effect of isolated anti money laundering effort documented by our paper, an effect which may be one of the main obstacles in the improvement of the international effort against this type of crime.

Table 2 – Andean countries legislation against money laundering: relative compliance of category-based scores

	Synthesis	Area	Bolivia	Colombia	Ecuador	Peru	Venezuela
	General framework						
1	Ratification and implementation of the 1988 UN convention	A	H	H	H	H	H
2	Financial institution secrecy	A	H	H	H	H	H
3	Multilateral cooperation and mutual legal assistance in money laundering investigations	A	M	M	H	M	H
	Role of the domestic legal system						
4	Criminalization of money laundering	B	H	H	M	M	M
5	Knowledge and objective factual circumstances	B	H	M	L	H	H
6	Criminal liability of corporations	B	H	H	H	H	H
7	Confiscation	B	H	H	H	H	H
	Role of the financial system						
8	Recommendations 10-29 to be applied also to non-bank financial institutions	C	H	H	H	M	H
9	Recommendations 10-21 and 23 to be applied also for occasional or limited financial activities	C	H	H	H	M	H
10	Prohibition of anonymous accounts	C	M	H	H	H	H
11	True identity of persons on whose behalf an account is opened or a transaction conducted	C	M	H	L	H	H
12	Records on transactions and customer identification to be kept for at least 5 years	C	M	H	M	H	H
13	New or developing technologies favoring anonymity	C	I	M	L	I	H
14	Complex, unusual, large transactions	C	M	M	M	M	H
15	Reporting suspicious behaviour	C	M	H	M	M	H
16	Protection from criminal or civil liability for breach of banking secrecy	C	H	H	L	H	H
17	Not warning customers about reports to the authorities	C	H	H	L	H	H
18	Complying with the authorities' instructions	C	M	H	L	I	H
19	Financial Intermediaries programs against money laundering (minimum measures)	C	H	H	H	M	H
20	Branches and subsidiaries located abroad	C	H	H	H	I	H
21	Attention to business relations and transactions with countries that do not or insufficiently apply FATF recommendations	C	H	H	H	I	H
22	Detection and monitoring of physical cross-border transportation of cash and bearer negotiable instruments	C	M	H	M	I	H
23	Central data base on international currency transactions exceeding a fixed top amount	C	M	M	H	M	H
24	Encouraging replacement of cash transfers	C	M	M	H	I	H
25	Shell corporations	C	M	M	M	I	H
26	Supervising programs against money laundering	C	M	H	H	H	H
27	Effective implementation of the 40 recommendations	C	H	H	H	M	H
28	Guidelines for financial institutions	C	H	H	M	M	H
29	Control or acquisitions of participation in financial institutions	C	H	H	H	H	H
30	Aggregate international flows of cash in whatever currency	C	H	H	H	H	M
	Strengthening of international cooperation						
31	Information about the latest developments in money laundering and money laundering techniques	D	M	H	H	H	H
32	Spontaneous or "upon request" international information exchange	D	M	H	H	M	H
33	Standard national definitions	D	H	H	H	M	M
34	International cooperation supported by bilateral and multilateral agreements	D	M	H	H	M	M
35	Ratification and implementation of international conventions on money laundering	D	M	M	M	M	M
36	Cooperative investigations	D	H	M	H	I	I
37	Mutual assistance in criminal matters	D	M	H	H	M	M
38	Authority to take expeditious actions upon request by foreign countries	D	M	M	M	M	M
39	Conflicts of jurisdiction	D	H	M	H	M	H
40	Extradition	D	H	H	I	H	L

Legend: I : insufficient The norm incorporating the FATF recommendation into domestic legislation does not exist. There is no bill of law that contemplates its creation; L : low There is a bill of law that contemplates the creation of the norm. This should reveal the willingness to enact the norm. M : middle The norm exists but has to be regulated in order to be effectively applied H : high The norm exists and is adequately regulated in the domestic legal system.
The full text of each recommendation is presented in an Appendix available from the authors upon request.

Tab. 3 Synthesis of FATF accomplishment rates of the Andean Countries with the 40 recommendations

ABSOLUTE SCORE					
AREA	**Bolivia**	**Colombia**	**Ecuador**	**Peru**	**Venezuela**
General framework	8/9	8/9	9/9	8/9	9/9
Role of domestic legal systems against money laundering	12/12	11/12	9/12	12/12	12/12
Role of the financial system against money laundering	52/69	64/69	53/69	41/69	68/69
Strengthening of international cooperation	24/30	26/30	25/30	20/30	20/30
ALL RECOMMENDATIONS	96/120	109/120	97/120	81/120	108/120
DISTANCE FROM THE TOP SCORE (PERCENT VALUES)					
General framework	11.12	11.12	0.00	11.12	0.00
Role of domestic legal systems against money laundering	0.00	8.34	25.00	0.00	0.00
Role of the financial system against money laundering	24.64	7.25	23.19	40.58	1.45
Strengthening of international cooperation	20.00	13.34	16.67	33.34	33.34
ALL RECOMMENDATIONS	20.00	9.17	19.17	32.50	10.00

Table 4 Dynamic accomplishment of FATF recommendations among Andean countries

	Synthesis	Area	Bolivia	Colombia	Ecuador	Peru	Venezuela
	General framework						
1	Ratification and implementation of the 1988 UN convention	A	1990	1993	1990	1991	1991
2	Financial institution secrecy	A	1993	1992	1994	1991	1993
3	Multilateral cooperation and mutual legal assistance in money laundering investigations	A	1992	1992	1992	before 1990	1992
	Role of the domestic legal system						
4	Criminalization of money laundering	B	1997	1992	1990	1997	1993
5	Knowledge and objective factual circumstances	B	1997	1997	1998	1991	1993
6	Criminal liability of corporations	B	1997	1997	1992	1997	1993
7	Confiscation	B	1997	1996	1990	1997	1993
	Role of the financial system						
8	Recommendations 10-29 to non-bank financial institutions	C	1997	1992	1990	1997	1993
9	Recommendations 10-21 and 23 for occasional or limited financial activities	C	1997	before 1990	1994	1997	1993
10	Prohibition of anonymous accounts	C	1997	1992	1994	1996	1997
11	True identity of persons on whose behalf an account is opened or a transaction conducted	C	1997	1996	1998	1996	1997
12	Records on transactions and customer identification to be kept for at least 5 years	C	1997	1993	1994	1996	1997
13	New or developing technologies favoring anonymity	C	1998	1993	1998	1998	1997
14	Complex, unusual, large transactions	C	1997	1992	1994	1996	1997
15	Reporting suspicions	C	1997	1992	1994	1996	1993
16	Protection from criminal or civil liability for breach of banking secrecy	C	1997	1995	1998	1996	1993
17	Not warning customers about reports to the authorities	C	1997	1993	1998	1996	1993
18	Complying with the authorities' instructions	C	1997	1992	1998	1998	1993
19	Programs against money laundering (minimum measures)	C	1997	1992	1994	1996	1997
20	Branches and subsidiaries located abroad	C	1993	1993	1994	1998	1997
21	Attention to business relations and transactions with countries that do not or insufficiently apply these recommendations	C	1997	1996	before 1990	1998	1997
22	Detection and monitoring of physical cross-border transportation of cash and bearer negotiable instruments	C	1997	1993	1990	1998	1993
23	Central data base on international currency transactions exceeding a fixed top amount	C	1997	1993	1990	1997	1997
24	Encouraging replacement of cash transfers	C	1998	1990	1998	1998	1998
25	Shell corporations	C	1997	before 1990	1994	1998	1997
26	Supervising programs against money laundering	C	1997	1992	1994	1996	1997
27	Effective implementation of the 40 recommendations	C	1997	1995	1990	1997	1997
28	Guidelines for financial institutions	C	1993	1996	1994	1997	1993
29	Control or acquisitions of participation in financial institutions	C	1997	1993	1994	1997	1993
30	Aggregate international flows of cash in whatever currency	C	1997	before 1990	1995	before 1990	1993
	Strengthening of international cooperation						
31	Information about the latest developments in money laundering and money laundering techniques	D	1997	1996	1990	1997	1993
32	Spontaneous or "upon request" international information exchange	D	1997	1992	1994	1991	1997
33	Standard national definitions	D	1990	1992	1990	1991	1997
34	International cooperation supported by bilateral and multilateral agreements	D	1992	1992	1993	1991	1997
35	Ratification and implementation of international convention on money laundering	D	1992	1992	1992	before 1990	1991
36	Cooperative investigations	D	1997	1992	1990	1998	1998
37	Mutual assistance in criminal matters	D	1997	1992	1990	1991	1993
38	Authority to take expeditious actions upon request by foreign countries	D	1997	1992	1992	1991	1992
39	Conflicts of jurisdiction	D	1997	1992	1992	1991	before 1990
40	Extradition	D	1997	1997	1998	before 1990	1998

The full text of each recommendation is presented in an Appendix available from the authors upon request.

Table 5 - Synthetic Taxonomy of Money Laundering Techniques in the Andean countries

	Financial Sector	Area	Bolivia	Colombia	Ecuador	Peru	Venezuela
A.1	Capital market	A	X	X	X	X	X
A.2	Banking, Financial and Insurance System	A	X	X	X	X	X
A.3	New Payment Technologies	A					
	Monetary and Derivatives Sector	Area	Bolivia	Colombia	Ecuador	Peru	Venezuela
B.1	Black Market	B	X	X	X	X	X
B.2	Bureaux de Change and International Money Transfers	B	X	X	X	X	
B.3	Derivatives	B				X	
	Non Financial Sector	Area	Bolivia	Colombia	Ecuador	Peru	Venezuela
C.1	Registration Offices, Notaries, Real Estate Investment, Fictitious Companies	C	X	X	X	X	X
C.2	Gambling and Lotteries	C	X	X	X	X	X
C.3	Gold and Precious Stones Market	C			X		X

Table 6 Extended taxonomy of money laundering techniques in the Andean countries

A	FINANCIAL SECTOR	Area	Bolivia	Colombia	Ecuador	Peru	Venezuela
1	Capital market investments	A.1	X	X	X	X	X
2	Acquisition of air transport companies stocks	A.1	X		X		
3	Bank transactions	A.2	X	X	X	X	X
4	Loans at low or no interest rates	A.2	X		X	X	X
5	Insurance market	A.2		X		X	X
6	Low amount financial transactions	A.2	X	X	X		X
7	Financial transactions through banking intermediaries	A.2	X		X	X	X
8	Travelers' checks	A.2			X	X	
9	Smurfing and Structuring	A.2	X	X	X	X	X
10	Collective accounts	A.2	X		X		
11	Payable-through accounts	A.2					
12	E-cash	A.3					
13	On-line banking	A.3					
14	Smart and stored value cards	A.3					
B	MONETARY AND DERIVATIVES SECTOR	Area	Bolivia	Colombia	Ecuador	Peru	Venezuela
15	Black market	B.1	X	X	X	X	X
16	Exchange bureaux	B.2	X	X	X	X	X
17	International money transfers, offshore banking	B.2	X	X	X	X	
18	Derivatives	B.3				X	
C	NON FINANCIAL SECTOR	Area	Bolivia	Colombia	Ecuador	Peru	Venezuela
19	Lawyers, Notaries, Trials	C.1	X	X	X		X
20	Real estate property acquisition	C.1	X	X	X	X	X
21	Farm acquisition	C.1	X		X		
22	False contracts and documents	C.1	X	X	X		X
23	Investments in the chemical industry	C.1			X		
25	Fictitious sales and purchases	C.1	X	X	X	X	X
26	Bankruptcy	C.1	X	X	X		X
27	Acquisition of gas stations	C.1			X		
28	Fictitious companies, shell companies, "Blending"	C.1	X	X	X		X
29	Gambling	C.2	X	X	X	X	X
30	Gold and precious stones	C.3			X		X
D	OTHER TECHNIQUES	Area	Bolivia	Colombia	Ecuador	Peru	Venezuela
31	Smuggling and illegal imports	D	X	X	X	X	X
32	Acquisition of arms	D	X	X	X		
33	Acquisition of luxury goods	D	X	X	X	X	X
34	Charity donations	D	X		X		
35	Fictitious investments in the tourist sector	D	X		X	X	

Table 7 Stationarity tests on money demand equation variables (all variables are expressed in logs)

Bolivia		
	LEVEL	1ST DIFFERENCE
Domestic time deposit interest rate (r)	-0.137	-6.342
Weighted average of G7 time deposit interest rates (rf)	-0.947	-4.521
Domestic currency-US dollar exchange rate (ed)	-4.873	-7.942
Domestic real income (y_{DL})	-2.415	-4.474
Money (m_1)	-1.963	-5.674
Quasi Money (m_2)	-1.168	-5.796
Domestic consumer price index (p)	0.106	-4.914
Colombia		
	LEVEL	1ST DIFFERENCE
Domestic time deposit interest rate (r)	-3.222	-4.077
Weighted average of G7 time deposit interest rates (rf)	-0.947	-4.521
Domestic currency-US dollar exchange rate (ed)	-4.873	-7.942
Domestic real income (y_{DL})	-1.767	-5.059
Money (m_1)	-0.756	-5.175
Quasi Money (m_2)	-2.513	-4.113
Ecuador		
	LEVEL	1ST DIFFERENCE
Domestic time deposit interest rate (r)	-2.865	-5.496
Weighted average of G7 time deposit interest rates (rf)	-0.947	-4.521
Domestic currency-US dollar exchange rate (ed)	-4.873	-7.942
Domestic real income (y_{DL})	-1.740	-4.694
Money (m_1)	-2.224	-2.983
Quasi Money (m_2)	-2.681	-3.608
Peru		
	LEVEL	1ST DIFFERENCE
Domestic time deposit interest rate (r)	-1.317	-4.783
Weighted average of G7 time deposit interest rates (rf)	-0.947	-4.521
Domestic currency-US dollar exchange rate (ed)	-4.873	-7.942
Domestic real income (y_{DL})	-2.056	-5.980
Money (m_1)	-2.674	-2.994
Quasi Money (m_2)	-2.717	-3.002
Venezuela		
	LEVEL	1ST DIFFERENCE
Time deposit interest rate (r)	-2.293	-3.285
Weighted average of G7 time deposit interest rates (rf)	-0.947	-4.521
Domestic currency-US dollar exchange rate (ed)	-4.873	-7.942
Domestic real income (y_{DL})	-0.348	-5.131
Money (m_1)	-1.635	-4.571
Quasi Money (m_2)	-1.564	-4.847

The critical value to reject the null that series are I(1) is: -3.5778 (at 99 percent), -2.9256 (at 95 percent) and -2.6005 (at 90 percent).

Table 8 Cointegration test on money demand equations in the five andean countries

Bolivia M1				
EIGENVALUE	LOG L. RATIO	5% CRIT. VALUE	1% CRITICAL VALUE	NULL HYP.: NO. OF COINTEGRATING VECTOR(S)
0.412	76.201	68.52	76.07	None **
0.368	52.315	47.21	54.46	At most 1 *
0.335	31.633	29.68	35.65	At most 2 *
0.249	13.270	15.41	20.04	At most 3
Bolivia M1				
EIGENVALUE	LOG L. RATIO	5% CRIT. VALUE	1% CRITICAL VALUE	NULL HYP.: NO. OF COINTEGRATING VECTOR(S)
0.468	74.206	68.52	76.07	None *
0.386	45.806	47.21	54.46	At most 1
Colombia M1				
EIGENVALUE	LOG L. RATIO	5% CRIT. VALUE	1% CRITICAL VALUE	NULL HYP.: NO. OF COINTEGRATING VECTOR(S)
0.461	69.538	68.52	76.07	None *
0.341	41.748	47.21	54.46	At most 1
Colombia M2				
EIGENVALUE	LOG L. RATIO	5% CRIT. VALUE	1% CRITICAL VALUE	NULL HYP.: NO. OF COINTEGRATING VECTOR(S)
0.478	80.194	68.52	76.07	None **
0.410	50.975	47.21	54.46	At most 1 *
0.305	27.247	29.68	35.65	At most 2
Ecuador M1				
EIGENVALUE	LOG L. RATIO	5% CRIT. VALUE	1% CRITICAL VALUE	NULL HYP.: NO. OF COINTEGRATING VECTOR(S)
0.638	95.468	68.52	76.07	None **
0.436	50.794	47.21	54.46	At most 1 *
0.309	25.590	29.68	35.65	At most 2
Ecuador M2				
EIGENVALUE	LOG L. RATIO	5% CRIT. VALUE	1% CRITICAL VALUE	NULL HYP.: NO. OF COINTEGRATING VECTOR(S)
0.737	121.808	68.52	76.07	None **
0.520	61.627	47.21	54.46	At most 1 **
0.315	28.618	29.68	35.65	At most 2
Peru M1				
EIGENVALUE	LOG L. RATIO	5% CRIT. VALUE	1% CRITICAL VALUE	NULL HYP.: NO. OF COINTEGRATING VECTOR(S)
0.854	135.382	68.52	76.07	None **
0.353	50.725	47.21	54.46	At most 1 *
0.291	31.543	29.68	35.65	At most 2 *
0.214	16.434	15.41	20.04	At most 3 *
0.124	5.818	3.76	6.65	At most 4 *
Peru M2				
EIGENVALUE	LOG L. RATIO	5% CRIT. VALUE	1% CRITICAL VALUE	NULL HYP.: NO. OF COINTEGRATING VECTOR(S)
0.433	69.445	68.52	76.07	None *
0.319	43.935	47.21	54.46	At most 1
Venezuela M1				
EIGENVALUE	LOG L. RATIO	5% CRIT. VALUE	1% CRITICAL VALUE	NULL HYP.: NO. OF COINTEGRATING VECTOR(S)
0.824	125.009	68.52	76.07	None **
0.421	46.743	47.21	54.46	At most 1
Venezuela M2				
EIGENVALUE	LOG L. RATIO	5% CRIT. VALUE	1% CRITICAL VALUE	NULL HYP.: NO. OF COINTEGRATING VECTOR(S)
0.821	124.583	68.52	76.07	None **
0.407	47.053	47.21	54.46	At most 1

** indicates rejection of the null at 99 percent

* indicates rejection of the null at 91 percent

Legend to tables 9-11. The tables present synthetic results on coefficients of the anti money laundering effort variables from the following models:

Bhattacharya (1990) (coefficents b_3 and b_4)

$$m_t = \ln a_1 + b_1 y_{DLt} + b_2 r_t + b_3 f + b_4 (f - \overline{f}) + u_t$$

Bhattacharya (1990) with dummy variable (coefficent b_3)

$$m_t = \ln a_1 + b_1 y_{DLt} + b_2 r_t + b_3 DFATF + u_t$$

Khalid (1999) (coefficents β_2 and β_6)

$$m_t = \ln a_1 + b_1 y_{DLt} + b_2 (f - \overline{f}) + b_3 r_t + b_4 rf_t + b_5 ed_t + b_6 f + u_t$$

Khalid (1999) with dummy variable (coefficent b_5)

$$m_t = \ln a_1 + b_1 y_{DLt} + b_2 r_t + b_3 rf_t + b_4 ed_t + b_5 DFATF + u_t$$

Variable legend: m_t is the log of real money or quasi money in US dollars (according to the two different specifications) based on IMF monetary survey, y_{DLt} is the log of real GDP at constant values in 1995 US dollars based on IMF statistics. f is relative the degree of FATF compliance (ranging from 40, if all of the 40 recommendations have been incorporated in the domestic legislation, to 0, if none of them has been incorporated) and $\overline{f}$ is the average accomplishment rate for the Andean countries (excluding the country under observation), r_t is the log of the time deposit interest rate on domestic currency of the Andean countries taken from IMF statistics, rf_t is the log of the weighted average of G-7 deposit rates (IMF statistics). The weights are given by the G7 domestic nominal GDPs in US dollars, ed_t is the log of domestic currency-US dollar exchange rate. *DFATF* is a dummy which takes the value of one from the year in which we observe a drastic change in compliance with FATF recommendations (1996 for Bolivia which passes from 8 to 38 recommendations, 1991 for Colombia which passes from 1 to 19 recommendations, 1993 for Ecuador which passes from 18 to 31 recommendations, 1990 for Peru which passes from 4 to 13 recommendations, 1993 for Venezuela which passes from 5 to 22 recommendations) and zero before that date.

Tab. 9 The effect of FATF compliance on excess money balances (yearly data)

		Bhattacharya specification		Khalid specification	
		Continuous variable for FATF compliance	Dummy for FATF compliance	Continuous variable for FATF compliance	Dummy for FATF compliance
Pooled data with country and time dummies	Dep. Var: MONEY	b_3=.0002 (-0.04) b_4=-.004 (-0.61)	b_3 =-.301 (-2.452)	b_2=.006 (1.60) b_6=-.011 (-1.54)	b_5 =-.270 (-2.385)
	Dep. Var: QUASI-MONEY	b_3 =.012 (1.82) b_4=-.017 (-2.11)	b_3 =-.341 (-3.198)	b_2=.014 (2.60) b_6=-.018 (-2.98)	b_5 =-.311 (-3.008)
Fixed effects	Dep. Var: MONEY	b_3 =.014 (4.26) b_4 =-.017 (-3.40)	b_3 =-.062 (-0.641)	b_2 =.010 (2.02) b_6=-.014 (-2.27)	b_5 =-.212 (-2.112)
	Dep. Var: QUASI-MONEY	b_3 =.025 (6.786) b_4=-.028 (-5.25)	b_3=.029 (0.233)	b_2 =.0190 (3.58) b_6=-.0231 (-3.61)	b_5=-.221 (-1.902)
Random effects	Dep. Var: MONEY	b_3 =.004 (1.22) b_4=-.006 (-0.98)	b_3=-.2123 (-2.508)	b_2 =.008 (1.29) b_6=-.010 (-1.22)	b_5=-.393 (-3.753)
	Dep. Var: QUASI-MONEY	b_3=.014 (3.89) b_4= -.015 (-2.27)	b_3 =-.021 (-0.192)	b_2 =.015 (2.81) b_6 = -.019 (-2.87)	b_5= -.336 (-2.707)
Hausman test (H_0: random and fixed effect coeff. are not significantly different)	Dep. Var: MONEY	5.26 (0.3845)	92.72 (0.0000)	0.28 (0.9996)	1.80 (0.877)
Hausman test (H_0: random and fixed effect coeff. are not significantly different)	Dep. Var: QUASI-MONEY	5.40 (0.3694)	20.81 (0.0003)	4.40 (0.6221)	1.78 (0.8788)

Tab. 10 The effect of FATF compliance on excess money balances (4 countries Venezuela ecluded - quarterly data)

		Bhattacharya specification		Khalid specification	
		Continuous variable for FATF compliance	Dummy for FATF compliance	Continuous variable for FATF compliance	Dummy for FATF compliance
Pooled data with country and time dummies	Dep. Var: MONEY	β_3=-.0003 (-0.189) β_4=-.003 (-1.746)	β_3 =-.348 (-4.126)	β_2 =.00009 (0.040) β_6=-.004 (-1.581)	b_5 =-.348 (-4.099)
	Dep. Var: QUASI-MONEY	β_3=.011 (5.696) β_4=-.013 (-5.436)	β_3 =-.368 (-4.973)	β_2 =.010 (3.944) β_6=-.013 (-4.530)	b_5 =-.368 (-4.948)
Fixed effects	Dep. Var: MONEY	β_3 =.007 (8.666) β_4 =-.009 (-7.222)	β_3 =-.014 (-0.224)	β_2 =.0005 (0.429) β_6=-.004 (-2.586)	b_5=-.288 (-4.018)
	Dep. Var: QUASI-MONEY	β_3 =.017 (16.731) β_4 =-.017 (-11.751)	β_3 =.182 (1.844)	β_2=.010 (8.764) β_6=-.012 (-7.417)	b_5=-.108 (-1.136)
Random effects	Dep. Var: MONEY	β_3=.019 (2.892) β_4 =-.041 (-3.668)	β_3=1.012 (2.474)	β_2=-.013 (-1.328) β_6=.012 (0.928)	b_5 =.309 (0.598)
	Dep. Var: QUASI-MONEY	β_3 =.028 (4.187) β_4 =-.052 (-4.587)	β_3 =1.066 (2.517)	β_2=-.004 (-0.371) β_6=-.0005 (-0.040)	b_5=.261 (0.503)
Hausman test (H_0: random and fixed effect coeff. are not significantly different)	Dep. Var: MONEY	29.64 (0.0000)	107.15 (0.0000)	0.00 (1.0000)	0.00 (1.0000)
Hausman test (H_0: random and fixed effect coeff. are not significantly different)	Dep. Var: QUASI-MONEY	24.23 (0.0002)	105.32 (0.0000)	0.00 (1.0000)	0.00 (1.0000)

Tab. 11 The effect of FATF compliance on excess money balances (individual country estimates - quarterly data)

		BHATTACHARYA SPECIFICATION		KHALID SPECIFICATION	
		Continuous variables for FATF compliance	Dummy for FATF compliance	Continuous variables for FATF compliance	Dummy for FATF compliance
Bolivia	Dep. Var: MONEY	β_3=.004 (2.730) β_4 =-.010 (-5.268)	β_3=-.288 (-3.497)	β_2 =.002 (1.443) β_6=-.010 (-5.951)	b_5=-.393 (-6.525)
	Dep. Var: QUASI-MONEY	β_3 =.001 (1.728) β_4=.00002 (0.018)	β_3=.060 (2.159)	β_2 =.0009 (1.289) β_6=.0005 (0.621)	b_5=.076 (2.501)
Colombia	Dep. Var: MONEY	β_3=-.002 (-1.686) β_4 =.002 (1.685)	β_3=.015 (0.255)	β_2 =-.002 (-1.873) β_6=.002 (1.209)	b_5=.007 (0.093)
	Dep. Var: QUASI-MONEY	β_3=.008 (6.544) β_4= -.005 (-3.422)	β_3 =.125 (1.329)	β_2 =.008 (7.641) β_6=-.004 (-2.738)	b_5 =.265 (2.334)
Ecuador	Dep. Var: MONEY	β_3 =.007 (4.320) β_4 =-.003 (-2.059)	β_3 =-.270 (-2.564)	β_2=.009 (3.504) β_6=-.004 (-2.160)	b_5=-.254 (-2.788)
	Dep. Var: QUASI-MONEY	β_3=.030 (10.806) β_4 =-.021 (-6.362)	β_3 =-.839 (-3.980)	β_2 =.034 (9.478) β_6= -.022 (-6.518)	b_5=-.859 (-4.240)
Perù	Dep. Var: MONEY	β_3 =.001 (0.491) β_4 =.011 (1.996)	β_3=-.998 (-3.769)	β_2 =.002 (0.824) β_6=.010 (1.832)	b_5=-.895 (-2.660)
	Dep. Var: QUASI-MONEY	β_3=.001 (0.502) β_4 =.005 (1.124)	β_3 =-.658 (-1.588)	β_2=.001 (0.559) β_6=.005 (1.018)	b_5=-.712 (-1.850)
Venezuela	Dep. Var: MONEY	β_3=-.076 (-2.326) β_4=.162 (3.319)	β_3 =.082 (0.085)	β_2 =-.048 (-1.484) β_6=.136 (2.949)	b_5=1.656 (2.310)
	Dep. Var: QUASI-MONEY	β_3 =-.081 (-2.728) β_4 =.170 (3.828)	β_3 =.299 (0.325)	β_2=-.071 (-2.315) β_6= .161 (3.740)	b_5=1.815 (2.628)

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