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EUROSISTEMA

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A CRITICAL REVIEW OF THE STATISTICS ON THE SIZE AND RISKINESS OF THE SECURITIZATION MARKET: EVIDENCE FROM ITALY AND OTHER EURO-AREA COUNTRIES

by Giorgio Nuzzo*

Abstract

The paper provides a critical analysis of the indicators most widely used at international level to measure the size and risk of the securitization market and its contribution to shadow banking. The analysis outlines the reasons why measuring the size of the market on the basis of the total assets of Financial Vehicle Corporations (FVCs) is likely to result in an overestimation of the phenomenon. An alternative measure is proposed, based on the stock of securities issued by FVCs, net of those repurchased by the banks. The paper argues against an approach to measuring the risk of shadow banking by applying the same measures for different non-bank financial intermediaries. In particular, it is suggested that some of them, such as leverage, interconnection with the banking system and credit intermediation, may be misleading if they are applied to the securitization market and assessed through the FVCs' balance sheet. The analysis, however, highlights the degree of opacity/complexity of a specific area for the analysis of risks from securitizations and proposes two new indicators. According to the proposed indicators, at the end of 2016, the Italian securitization market is smaller and less risky than that of other euro-area countries.

JEL Classification: E44, E58, G00, G01, G23.

Keywords: shadow banking system, securitizations, risk measures.

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1. Introduction

The global financial crisis that erupted in 2007 has highlighted the risks stemming from non-bank financial intermediation (Gorton and Metrick, 2012; Acharya et al., 2013; Adrian and Ashcraft, 2012).¹ The debate on these risks has expanded and the notion of shadow banking has been created (the term was coined by McCulley, 2007). However, the risks have been important mainly in Anglo-Saxon countries. In Italy, non-bank financial entities are fully regulated in accordance with the principle of “bank equivalent regulation” and have proved to be safe (see Gola et al., 2017 for a detailed description of the Italian supervisory and regulatory framework of non-bank financial intermediaries).

Among shadow banking activities, securitization is often indicated as one of the most significant and potentially harmful (e.g. Stein, 2010; Pozsar et al., 2013). Therefore, the international debate has paid increasing attention to measuring the size and riskiness of the securitization market. In this note size and riskiness are discussed separately, on the grounds that a bigger securitization market is not necessarily riskier than a smaller one.

The data on the balance sheets of financial vehicle corporations (FVCs) are a useful source for the analysis of the securitization market and in fact the European Central Bank (ECB) has been collecting them since 2009 (see Appendix for details). The main activity of FVCs is the “securitization” of a bundle of assets (mainly loans) transferred from banks and other intermediaries by transforming them into debt securities. However, data on FVCs’ balance sheet are complex and hide insidious technical details: on closer scrutiny they are likely to provide poor estimates of the size and riskiness of the securitization market. This note provides a critical review of the metrics mainly used in international fora and applies them to both Italy and the rest of the euro area; it also compares the results obtained by the standard analyses with those obtained using new indicators.

The analysis confirms that FVCs’ total assets are not a satisfactory statistic for measuring the size of the securitization market. Rather, risk analysis should focus on specific areas such as maturity mismatch and the opaqueness/complexity of operations. According to more appropriate measures, the Italian securitization market is much smaller and characterized by a lower risk than those of other euro-area countries.² This evidence is in line with the negligible defaults of Asset Backed Securities (ABS) in Italy since the introduction of securitization in 1999.

The rest of the note is organized as follows. The second section analyses the measures of the size of the securitization market. The third section reviews risk indicators of securitization activities. Final remarks conclude.

¹ Gorton and Metrick (2012) mainly describe the panic in the “repo” market in the years 2007-08. Acharya et al. (2013) highlight the role of regulatory arbitrage in widening the shadow banking system. For a review of the literature on shadow banking see Adrian and Ashcraft (2012).

² See Affinito and Tagliaferri (2010) on *ex-ante* determinants of bank loan securitization in Italy.

2. How to measure the size of the securitization market

2.1 The trouble with the current measures

There are several definitions of shadow banking (See Financial Stability Board, 2013 in Annex 2.1 for an overview of those used in the literature). We focus on the most widely used definition, that proposed by the Financial Stability Board (FSB): “*credit intermediation involving entities and activities outside the regular banking system*” (FSB, 2013). According to the FSB, shadow banking includes all the non-bank financial intermediaries that create/bear bank-like risks, regardless of whether they are regulated and/or supervised.³ The choice is motivated by the willingness of the FSB to “cast the net wide” and not to take account of specific country supervisory/regulatory frameworks. Here, we accept the point of not considering the supervision/regulation of these entities as a sufficient reason for excluding them from the shadow banking perimeter. Nevertheless, I argue that there are some critical issues with the current entity-based statistics of the size of shadow banking, in particular in the context of the securitization market.⁴

Indeed, standard measures of the size of the securitization market use FVCs’ total asset as they are reported in the statistics on FVCs.⁵ This approach can result in an over-estimation of the market’s size for two reasons: the first is the presence in the assets of FVCs of retained securitizations (example A in the Appendix); the second stems from the failure to give adequate consideration to an accounting evaluation problem that occurs when loans (mainly non-performing ones) are securitized at a discount price (example B in the Appendix).

As for the first issue, retained securitizations, i.e. those operations where securities issued by FVCs are mainly bought back by the originators of the securitized loans,⁶ should not be considered in shadow banking, but more properly as a banking activity.⁷ In the most recent reports by the FSB this issue is taken into account, even if only in the process of narrowing down the broad shadow banking definition. In FSB (2013) only self-securitizations (those operations where the bank acquires all the securities backed by its securitized loans), which are a part of all retained securitizations, are filtered out when calculating “narrow” shadow banking, while in FSB (2014, 2015) all FVCs prudentially consolidated in banking groups are more correctly ruled out.

³ OECD (2016) also shows the mapping of shadow banking through national accounts as including all non-bank financial entities, even if they are regulated and supervised.

⁴ As an alternative to the FSB’s entity-based measurement approach, IMF (2014) and Harutyunyan et al. (2015) have proposed an activity-based measure of the size of shadow banking that uses all non-core liabilities (i.e. other than deposits) of both bank and non-bank financial institutions. However, under their approach the contribution of securitizations to shadow banking cannot be singled out.

⁵ These data are available for all the euro-area countries.

⁶ Such operations became common in the years immediately after the collapse of Lehman Brothers in order to produce collateral to use in refinancing operations with the ECB. In recent years, the presence of alternative funding instruments, such as covered bonds, has reduced the importance of these operations.

⁷ However, Grillet-Aubert et al. (2016) argue that when retained securitizations are placed with investors, they should be taken into account again.

In addition, it should be noted that in some euro-area jurisdictions originators' statistical reports continue to show the loans connected to retained securitizations in their balance sheets. For example, in Italy the International Accounting Standard (IAS) rules on derecognition apply to banks' statistics. Thus, derecognition is not allowed when originating banks transfer an asset but retain the related risks and rewards. FVCs' statistics record assets regardless of whether they are derecognized by the originators or not (see example A in the Appendix). Therefore, summing FVCs' and banks' assets to calculate total financial assets is not correct, since non-derecognized securitized assets are added twice; more properly they should be considered only as banks' assets. In other words from an accounting and risk perspective, these assets should be considered banks' assets. The issue is sizeable: in December 2016 loans securitized and non-derecognized (through euro-area FVCs) amounted to around 47 per cent of the total loans securitized by euro-area FVCs. The share is even higher for Italy (69 per cent; 29 per cent of total euro-area non-derecognized loans).

A double counting problem also arises for two entities both in the shadow banking system. This is the case of loans originated by other financial institutions (OFIs), especially financial intermediaries engaged in lending (FCLs), and securitized but not derecognized in their statistical reports. In the calculation of the size of shadow banking these securitized loans are counted twice: in both FVCs' and FCLs' balance sheets.

Therefore, there is room for further improvements on recent FSB reports by clearing out retained securitizations from the narrow shadow banking measure (FSB 2014, FSB 2015). Activities recorded for statistical purposes by other financial intermediaries which securitized but did not derecognize should be filtered out. This operation could rule out double counting among OFIs not participating in banking groups.

The second over-estimation is related to an accounting valuation problem. In FVCs' statistics securitized assets are evaluated at their nominal value (see example B in the Appendix). However originators can write down the assets before they are transferred to the vehicles so that FVCs purchase assets at a price below the nominal value. The issue is particularly significant in the case of the securitization of non-performing loans. The item "other liabilities" in FVCs' balance sheet may show the importance of this mismatch as it includes the difference between the nominal value and the purchase price of assets, in accordance with ECB regulations. In December 2016 the ratio between "other liabilities" and total securitized loans was 15 per cent for euro-area FVCs⁸ and 36 per cent for Italian FVCs.

The disposals of bad loans at a discount price usually occur outside the boundaries of banking groups. Therefore the FSB narrow shadow banking measure, which filters out FVCs consolidated in banking groups, is still affected by an over-estimation problem. In the FSB reports this question is not addressed, while it is highlighted in a recent report on

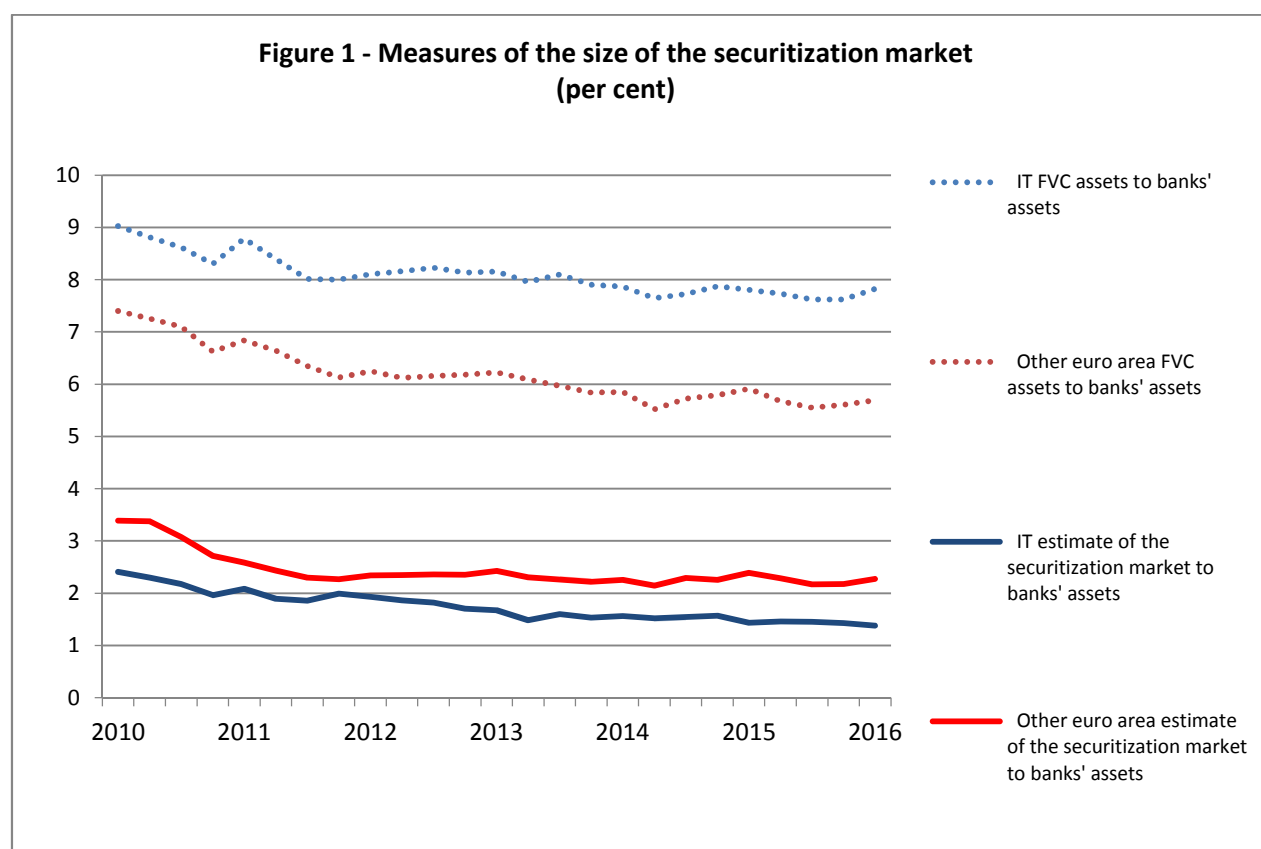
⁸ The data refer to the item published in the ECB statistical datawarehouse (SDW) related to traditional FVCs, which also includes "passive financial derivatives". According to confidential data available to national central banks, financial derivatives on the liability side of FVCs' balance sheet are a small part of the total item "financial derivatives and other liabilities". In addition, a reason to consider the item "other liabilities" as consisting mainly of the difference between nominal and acquisition values is the fact that its value is near zero in countries where securitizations of non-performing loans are rare.

shadow banking in Italy (Gola et al., cit.). This issue also poses a problem of comparability among shadow banking activities, since other important sectors (e.g. investment funds) are usually evaluated at market price.

To sum up, the two overestimating factors are not negligible and their impact is strikingly more important for Italian securitizations than for those of other euro-area countries.

2.2 An alternative measure of the size of the securitization market

A feasible measure⁹ of the actual importance of the securitization market may be obtained as the difference between all debt securities issued by domestic FVCs and the FVCs' securities bought back by banks.¹⁰ On the one hand, subtracting FVCs' securities bought back by banks clears up “retained securitization”; on the other, using debt securities issued by FVCs reduces valuation problems, since in a typical securitization the FVC issues debt securities at a value in line with the acquisition value of the assets.



Source: our estimates on ECB data.

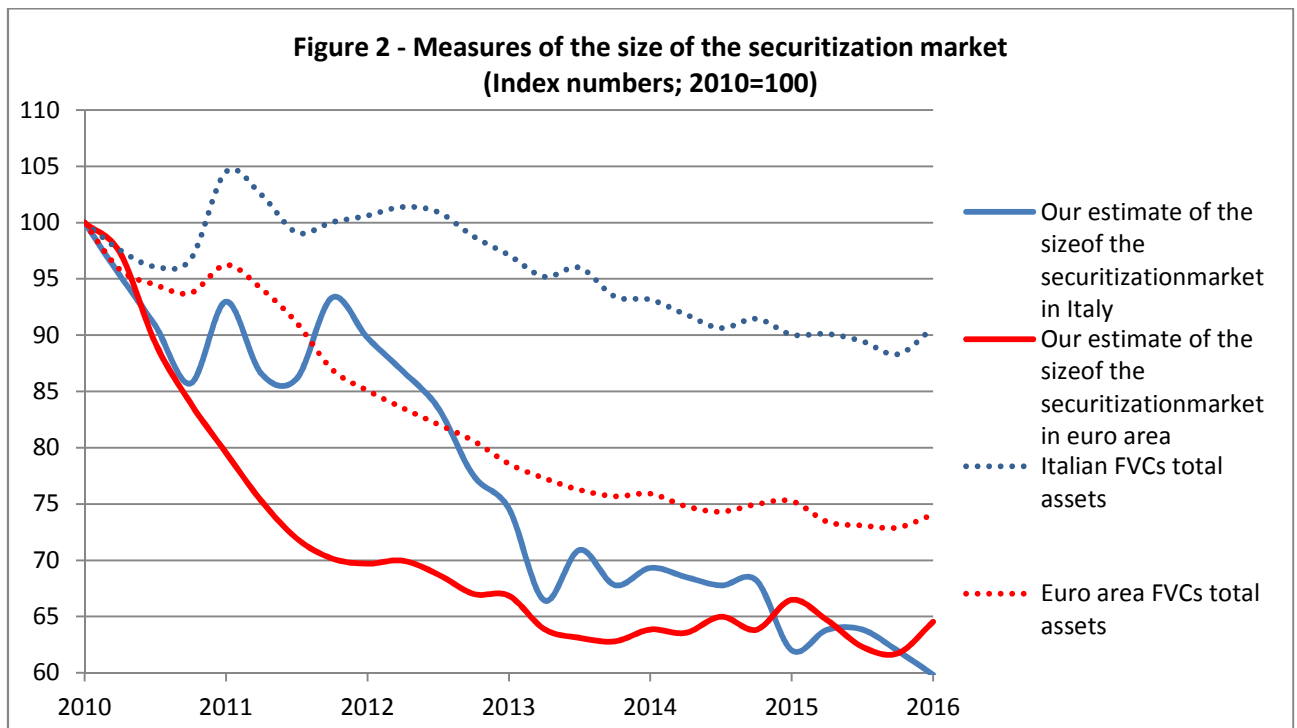
⁹ This measure is not applicable to synthetic securitizations or to activities (such as the direct lending permitted recently in Italian legislation on FVCs) not typically linked to securitizations.

¹⁰ Focusing on securities issued rather than on total assets is in line with IMF (2014) and its activity-based approach to measuring shadow banking with non-core liabilities. Nevertheless, the statistics proposed here make it possible, using entity-based data on FVCs, to identify the securitization component of shadow banking.

However, this measure is accurate only for those euro-area countries, such as Italy, where securitization markets are self-contained at the domestic level; in addition, by definition, it is correct for the aggregate of the whole euro area.

Figure 1 shows the proposed measure of the size of the securitization market compared with banks' total assets. Italy has a securitization market larger than the rest of the euro area when FVCs' total assets are considered, but it is significantly smaller when the alternative measure is considered.

The two measures also differ markedly in terms of their dynamics. In Figure 2 the two measures are reported as index numbers. While for the rest of the euro area both indexes have almost the same declining trend, in Italy the difference between them is quite striking: according to our measure, the securitization market in Italy contracted sharply during the years 2012-15. This better reflects developments in the Italian securitization market, where several self-securitizations were closed in advance or expired.



Source: our estimates on ECB data.

A possible alternative measure may be obtained as the difference between debt securities issued by domestic FVCs and the securitized loans not derecognized by domestic banks. This measure is correct where bank loans originated in a country are completely securitized by domestic FVCs, as is the case in Italy and in the euro area as a whole. However, this measure is able to clear-out self-securitizations only for jurisdictions, such as Italy, that apply strict criteria for derecognizing loans (in Italy IAS 39 criteria are applied).

Nevertheless, in other jurisdictions, such as Belgium and France, even loans related to self-securitizations are cancelled from banks' balance sheet in their reporting for monetary aggregates. As for Italy, it is possible to confirm, using this alternative indicator, that the correct size of the securitization market lies between 2 and 1 per cent of total national banks' assets and followed a declining path from 2010 to 2016.

3. How to measure the riskiness of securitizations

Several attempts to measure the risks associated with shadow banking activities have been made to date. We focus on the recent work by Grillet-Aubert et al. (2016), who describes the monitoring framework developed by the European Systemic Risk Board (ESRB).¹¹ The paper provides a useful classification of risk indicators, but in our view it fails to properly recognize that very different non-bank financial intermediaries are included in the shadow banking system and have very diverse risk profiles.¹² For instance, Doyle et al. (2016) stress that investment funds are characterized by their own specific risks. The same is likely to hold for FVCs. This section is a first attempt to identify more specific risk measures for the securitization market.

Grillet-Aubert et al. identify the following common risk areas for all the non-bank financial intermediaries included in shadow banking:

- maturity transformation;
- liquidity transformation;
- leverage;
- credit intermediation;
- interconnectedness with the regular banking system.

Risks related to maturity and liquidity transformation are important for securitizations. Risks stemming from maturity mismatch materialized during the global financial crisis, due to the widespread use of very-short-term liabilities, such as asset-backed commercial paper, typically in the U.S. (Gorton and Metrick, 2012). As for Italian securitizations, the issue of short-term securities is disincentivized by a penalizing fiscal treatment. Indeed, data on Italian FVCs show that at the end of 2016 no securities with original maturity of less than 1 year had been issued, while for the other euro-area countries they were about 6 per cent of total securities (3 per cent in December 2009).

¹¹ Recent FSB reports on shadow banking present risk areas similar to those of the ESRB and also apply indifferently to all shadow banking entities. OECD (2016) also provides an assessment of credit risk transfer, leverage and interconnectedness based on instruments available in national accounts for different sub-sectors, while not adequately identifying securitization peculiarities. Therefore, our main critical review of ESRB risk metrics also applies to the reports of the above-mentioned institutions.

¹² However, Grillet-Aubert et al. (2016) complement their entity-based approach to risk measures with an activity-based approach which is more appropriate in the context of securitizations.

On the contrary, risk areas such as leverage, credit intermediation and interconnectedness with the regular banking system are not very significant if assessed through FVCs' balance sheets.

Leverage is always very high for FVCs. In some jurisdictions they typically have only the minimum statutory shareholders' equity required by their respective national laws. In many jurisdictions, such as Italy, FVCs are bankruptcy free. Therefore, holders of ABS can claim on the cash flows of the securitized assets or the eventual rescue by the sponsoring banks¹³ rather than on the FVCs' capital. In addition, data on euro-area countries reveal high heterogeneity in FVCs' capital, which severely affects leverage measures.

Nor are risks related to credit intermediation correct when addressed through FVCs' balance sheet. As highlighted in the previous section, FVCs' balance sheet record both derecognized and non-derecognized loans, which have a different role in credit intermediation. The derecognition of loans allows originators to free up capital. On the contrary, the main purpose of typical operations with non-derecognized loans, such as self-securitizations, is to provide temporary liquidity to originators. Therefore, indicators on credit intermediation that include both these two kinds of securitized loans could be misleading.¹⁴

As for interconnection with the regular banking system, the evidence based on FVCs' statistics is not easy to interpret. For example, a higher interconnection related to self-securitization could be interpreted as an increase in the risk of contagion between banks and FVCs; however self-securitizations are banking operations and are therefore not part of shadow banking.

To sum up, only liquidity and maturity mismatch are assessed properly using FVCs' data. In addition, there are risk areas not mentioned by Grillet et al. that deserve the development of proper analytical tools. In particular, the financial crisis showed that complexity and opaqueness in securitization structures are closely correlated and pose several risks.¹⁵ To fill this gap we propose two indicators calculated using FVCs' statistics.¹⁶ The first is the percentage ratio of debt securities issued by synthetic securitizations¹⁷ and other non-traditional FVCs¹⁸ to the total debt securities issued by all

¹³ See Segura (2017) on the reasons why sponsoring banks rescue their structured investment vehicles despite having no contractual obligation to do so.

¹⁴ Grillet-Aubert et al. (2016) also admit that retained securitizations do not contribute to risks in shadow banking; they nonetheless calculate risk indicators on FVCs' data that include retained securitizations.

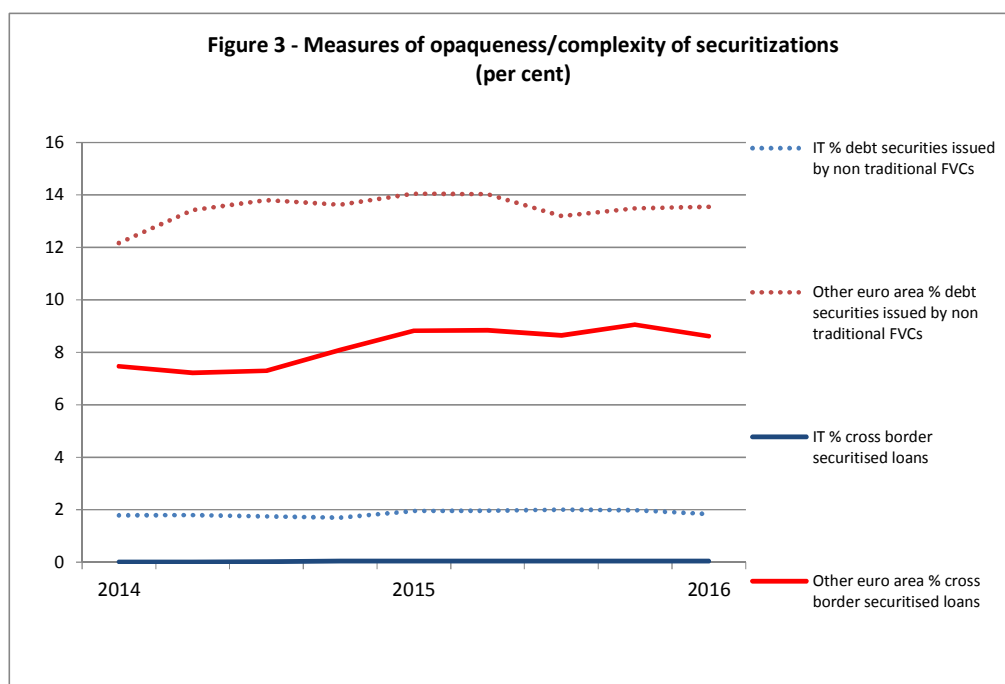
¹⁵ IMF (2014) also identifies "*opacity and complexity*" as a risk profile relevant for shadow banking, but it fails to identify specific risk measures. Caballero and Simsek (2009) argue that opaqueness/complexity constitute vulnerabilities, since during periods of stress investors tend to retrench and flee to quality and transparency.

¹⁶ The measures proposed here cannot be used to properly estimate the importance of simple, transparent and standardized securitization for prudential purposes.

¹⁷ Synthetic securitizations imply the transfer of the credit risk of an asset or pool of assets through the use of credit derivatives, guarantees or some similar mechanism.

¹⁸ Those typically engaged in the securitization of non-credit related assets. ECB Regulation no. 40/2013 defines traditional securitizations as "*securitizations where there is a transfer of credit risk of an asset or pool*

FVCs. The second indicator is the percentage ratio of securitized loans with a non-domestic counterparty to total securitized loans. The two indicators are computed under the hypotheses that operations involving derivatives, non-credit assets and different jurisdictions can be considered more complex/opaque. Figure 3 shows that Italian FVCs are characterized by a negligible diffusion of non-traditional operations and by the importance of “domestic” securitizations, i.e. operations where operators and assets belong to the same jurisdiction.



Source: our estimates on ECB data.

To conclude, in our selective analysis of risk areas, the Italian securitization market is found to be less risky than that of the other euro-area countries. Using less appropriate measures of credit intermediation and interconnectedness with the banking system could give more puzzling results, given the importance of retained securitization in Italy.

4. Concluding remarks

This note highlights some critical aspects related to the statistics currently used to evaluate the size and riskiness of the securitization market.

In order to produce proper statistics on the size of the market, retained securitization and the difference between nominal and acquisition value have to be taken into account. Thus, the simple use of FVCs’ total assets implies an over-evaluation of the market. This is even more important in the Italian securitization market, characterized by a large share of loans which remain in their originators’ balance sheets and by a significant difference

of assets achieved either by the transfer of legal title or beneficial interest of the assets being securitised or through sub-participation”.

between the values of securitized assets and the securities issued. Given these characteristics, a new measure of the size of the securitization market has been proposed. This provides a very different picture of the size and dynamics of the Italian securitization market compared with the measure based on FVCs' total assets.

As for risk metrics, the note argues that only some risk profiles (maturity mismatch and over-complexity of some operations) are properly addressed using FVCs' data, while other risks currently taken into account are meaningless or even misleading if assessed through an entity-based approach using FVCs' data (leverage, credit intermediation and interconnectedness with the regular banking system). The note proposes new risk indicators for risk areas not sufficiently investigated in the current debate, such as opaqueness/complexity. According to these indicators the riskiness of the Italian securitization market is lower than that of the other euro-area countries. In fact, Italian experience with securitizations shows low default rates and relatively good quality in assets securitized (Albertazzi et al., 2011). This is due mainly to a strict legal and supervisory framework.

APPENDIX

In this appendix a brief and simplified description of the statistical treatment of securitization in banks' and FVCs' statistical balance sheets is provided. The reference is to European Central Bank (ECB) Regulations applied to euro-area countries (ECB/2013/33 concerning the balance sheet of the monetary financial institutions sector - recast; ECB/2013/40 concerning statistics on the assets and liabilities of financial vehicle corporations engaged in securitization transactions – recast).

Two examples are reported: one refers to self-securitizations (example A) and the other to disposals of bad loans with balance-sheet derecognition (example B). The appendix includes the calculation with alternative methods of the size of the securitization market using the data reported in the two examples.

The following main simplifications are used in the examples: a) banks finance their loans only through deposit accounts; b) loans by banks to FVCs are not reported.

Example A) Self-securitization

In the period between T-1 and T, a bank sells its loans to an FVC and acquires all the securities issued by the FVC backed by these loans issued by FVCs. In such cases loans are not derecognized from banks' balance sheets.¹⁹

The regulations on Monetary Financial Institutions (MFIs, hereafter banks to simplify) require the provision of off-balance-sheet information on loans securitized and not derecognized.

A- The bank's balance sheet.

Time T-1		Time T	
Assets	Liabilities	Assets	Liabilities
100 loans	100 deposit accounts	100 loans	100 deposit accounts
		100 Securities issued by FVCs	100 deposit with agree maturity over two years with FVCs ²⁰

Off-balance sheet information: 100 loans securitized and not derecognized.

A – The FVC's balance sheet

Time T-1		Time T	
Assets	Liabilities	Assets	Liabilities
0	0	100 loans securitized	100 securities issued

¹⁹ Rules on derecognition are not harmonized among euro-area countries. In Italy the strict IAS 39 rules are also applied at individual bank level.

²⁰ According to ECB rules for the compilation of banks' statistics, a fictional deposit in the item "deposits with agreed maturity over 2 years" (not in broad money definition) must be compiled in banks' balance sheets in order to counterbalance FVCs' securities held by banks backed by their own non-derecognized loans.

Example B) Disposals with derecognition of bad loans from the bank's balance sheet

In the period between T-1 and T, bank B securitizes bad loans with derecognition (in other words it cancels them from its balance sheet). FVC B acquires the loans at a discount price (30 in the example, but according to FVC regulations it must report loans at their nominal value (100).

Usually FVCs issue securities of a value somewhat higher than 30 to have some gain; here, for the sake of simplicity, the FVC issues securities for a value of 30.

In this simplified example bank's losses during the period are not reported. In addition, banks do not have to hold a share of the securities issued by the FVC backed by their securitized loans, which instead they are required to do under the EU capital requirement regulation.

B -Bank's balance sheet

Time T-1		Time T	
Assets	Liabilities	Assets	Liabilities
100 loans	100 deposit accounts	0	0

B -FVC's balance sheet

Time T-1		Time T	
Assets	Liabilities	Assets	Liabilities
0	0	100 loans securitized	30 securities issued
			70 remaining liabilities ²¹

The alternative calculation methods.

In this note a numerical example of the calculation of the size of shadow banking under different methods is performed considering only the two operations above (examples A and B). The reference is to FSB (2015).

FSB broad measure = 200 (total assets of FVC A + total assets of FVC B)

FSB narrow measure = 100 (only total assets of FVC B). FVC A is not counted since it is consolidated in banking groups (self-securitizations can be considered consolidated).

The proposed measure = 30 (130 securities issued by FVC A and FVC B minus 100 FVC securities bought back by bank A).

²¹ The ECB Regulation on FVCs explicitly requires the difference between the nominal and the acquisition value of the securitized assets to be put under the item "remaining liabilities".

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