

A step too far?
The European Financial Transactions Tax on the Repo Market

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ABSTRACT. This paper defines and explores an important puzzle of the European Financial Transactions Tax: why did resistance to the FTT concentrate around the repo market, a systemic shadow market? It argues that taxing repos is the key transformational element of the FTT because it goes to the heart of cross-border, cross-market systemic interconnectedness in Europe. The widespread resistance to the repo-FTT invites a broader reflection on the governance of financial interconnectedness. The parameters of possible reforms become narrower when regulators are deeply embedded - through their government bond markets or policy frameworks - in interconnected (often shadow) financial architectures.

To include such [repo] transactions will simply pose a major risk to the functioning of the credit market..... Pierre Moscovici, French Minister of Finance, June 2013

The most important concern for the central banks [is] the risk of the total drying up of repo markets. That means the transmission of our monetary policy would be seriously impaired and the risk in terms of financial stability would not be negligible.

Christian Noyer, Governor of the French Central Bank, October 2013¹

In February 2013, the European Commission (EC) published the draft directive for a Financial Transactions Tax (FTT). Throughout negotiations, the FTT became more comprehensive in scope and narrower in the number of states supporting it². The proposals caused uproar. Financial institutions declared it an ill-thought initiative that would reduce Europe's competitiveness, increase financial instability and reduce investment in fast growing companies (Financial Times, 2013a). Opposition rallied around the tax on the repo market, a market that the Financial Stability Board (FSB 2011, 2012) places at the core of shadow banking.

Opponents stressed the structural implications of the repo-FTT. The European Repo Council³, the private repo lobby, warned that taxing repos would eradicate collateralized funding markets on which banks relied for funding (Comotto, 2013)⁴. The European Central Bank agreed that the repo market was fundamental to monetary policy, and a tax on repos would impede it from exiting unconventional monetary policies (Financial Times, 2013b⁵). Pension funds and banks complained that the repo tax would reduce profitability (ISLA, 2013⁶; Goldman Sachs 2013). France, who (alongside Germany) pushed for repos to be included in 2011, raised concerns that government bond markets would suffer from taxing repos⁷. After the 2013 German elections, a new 'step by step' FTT emerged: yes on equity, maybe for derivatives (a German priority), and never for repos.

Starting from these observations, the paper is guided by a simple question: what stakes do private financial institutions with different investment strategies - including pension funds, treasuries of multinational companies, banks - governments and central banks have in a market that is yet to come under regulatory oversight (see FSB 2011, 2012, European Commission 2013)? This is an important, yet missing, question for ongoing reflections on the governance of highly interconnected, market-based financial systems (see Mugge

¹ <http://www.ft.com/cms/s/0/1c686796-3ee6-11e3-b665-00144feabdc0.html#axzz2jfiwrmmv>

² Henceforth FTT11: Belgium, Germany, Estonia, Greece, Spain, France, Italy, Austria, Portugal, Slovenia and Slovakia.

³ The European Repo Council (ERC) operates under the umbrella of International Capital Markets Association (ICMA).

⁴ <http://www.ft.com/cms/s/0/411cb28c-b1aa-11e2-b324-00144feabdc0.html#axzz2dpH7UKZB>

⁵ <http://www.ft.com/cms/s/0/61f2f41e-df39-11e2-a9f4-00144feab7de.html#axzz2g0XIN0hU>

⁶ The International Securities Lending Association claimed that 'the proposed levy will eradicate 65% of lending activity in Europe, slashing the €3bn (£2.6bn) annual windfall revenues earned by long-term asset owners including pension funds and [mutual funds](#) by more than €2b'.

⁷ http://www.tax-news.com/news/France_Seeks_Improvements_To_FTT_Proposal___61436.html

2014, Bieling 2014, Hardie et al. 2013). Indeed, scholars noted that reforms of European finance have fallen short of post-crisis ambitions (see Mugge 2014), particularly in what concerns shadow banking (Rixen, 2013). Rixen (2013) argues that governments, confronted with international competition for mobile financial capital and domestic pressures for reform, resolve such competing demands by introducing largely cosmetic changes.

However, the repo-FTT episode suggests that struggles over the regulation of shadow banking go beyond the simple regulatory capture/international competition account. Echoing Bieling (2014)'s argument that the financialized nature of European capitalism matters for the dynamics of regulatory reform, the paper shows that opposition coalesced around repos precisely because the FTT would be at its most transformational when taxing the repo market, the heart of cross-border, cross-market interconnectedness in Europe. In particular, the repo-FTT would reduce the incentives for risk-driven, market-based banking that the Liikanen Report (2012) linked to the European banking crisis. Furthermore, financial stability gains notwithstanding, the repo-FTT debates illustrate the dilemmas faced by governments who are part and parcel of interconnected financial architectures through their government bond markets. Governments did not abandon the repo-FTT because of renewed regulatory capture, but because private finance successfully pointed out that government bonds have benefited from repo markets, and conversely, may be hurt by the repo-FTT; and enlisted the ECB in stressing the positive liquidity effects of repos.

The paper develops three arguments. First, it is difficult to understand the repo-FTT negotiations without considering the ambiguous relationship between repos and risk. While repos - the instrument of choice for central banks - offer risk protection for individual institutions, they may feed systemic risk through pro-cyclical leverage (FSB 2011, 2012, Hauser 2013). Second, repos create dense and opaque connections between financial institutions with different investment strategies, across private asset markets and government bond markets. This explains why repos are an important, if undertheorized, feature of Europe's financial system. Furthermore, while for constraints of space, the paper does not consider in detail the political processes that led to the inclusion of the repo market in the FTT, it argues that the FTT made European repos politically salient just as Lehman's collapse did for the US repo market. In response, private finance lobbies used both narrative ambiguity and systemic interconnectedness to contest the repo-FTT proposals, highlighting the potential trade-offs for governments and for the ECB. This strategic reframing was effective in moving repos out of the FTT.

The paper first details the AAA approach and its provisions for repos, which it sets against the literature on taxing finance. It shows how DG TAXUD embraced a Minskian reasoning that puts emphasis on the destabilizing nature of interconnected financial activity, for government and privately issued debt. In this, DG TAXUD shares a similar approach to that of the Financial Stability Board and academic research. The paper then turns to examine the short life of the repo-FTT.

In a nutshell: the 2013 AAA Financial Transactions Tax

The European FTT is unprecedented in its ambition. In targeting both organized markets and over-the counter-transactions across equity, fixed income, securitised instruments and derivatives, the FTT's AAA approach (all institutions, all markets, all instruments) goes well beyond the 2012 French and 2013 Italian FTT on equity (and equity derivatives in Italy), the 1990s Swedish FTT on equity and fixed-income instruments, and the Tobin tax on currency transactions that serves as theoretical foundation for FTT initiatives. It combines a 'residence principle', if a party in a transaction is resident of an implementing Member State, with an 'issuance principle' proposed by the European Parliament, that applies the FTT to transactions with instruments issued in the Member States, regardless of where that transaction takes place and between whom (see EC, 2013a).

While the 'AAA' tag encompasses well its ambition, the FTT excludes traditional lending and deposit taking (relationship banking) as well as currency trading. It taxes gross transactions on secondary markets and over-the-counter, at a level intended low enough to prevent disruptions of financial markets but high enough to generate revenue from business models associated with intra-financial system risk-trading. Manfred Bergmann, of DG TAXUD, stressed that the Commission expected the FTT to largely impact trades between financial institutions 'according to available estimates, about 80-90% of all transactions for which an FTT would be due are transactions where financial institutions trade in their own name and own account'⁸. Furthermore, the Commission stressed that the broad FTT would 'complement and support financial market regulation' rather than undermine ongoing regulatory efforts.

The FTT proposals include activities that the Financial Stability Board (2011) and the IMF (Claessens et al, 2012) located in the shadow banking universe: securitization and repo intermediation. The Commission's definition of financial instruments covers trading in structured products created through securitization. It also proposes to tax repo (repurchases agreements) and securities lending. These are securities financing transactions through which two institutions borrow cash (or securities) against collateral, with a promise to reverse that transaction later⁹. Repos are treated as one transaction, and taxed with 10 basis points on the market value of the repo collateral.

The FTT is more than a tax measure. While formally motivated by ideas of levelling out national tax differences, the FTT poses fundamental questions about the nature of finance and the desirability of distinctive bank business models¹⁰, questions routinely asked since Lehman's collapse. Indeed, DG TAXUD portrayed the FTT as an opportunity to distance

⁸ <http://www.internationaltaxreview.com/Article/2974990/EXCLUSIVE-ECs-Manfred-Bergmann-reveals-why-the-FTTs-critics-are-wrong.html>

⁹ For the purposes of this paper, securities lending will be treated as a repo.

¹⁰ "Taxing such activities could roll back business models that "internalise" spreads and, thus, only redistribute rents to the financial sector at the expense of the non-financial economy." (EC, 2013b).

the Commission from the ‘pre-crisis paradigm of ‘the more the better” as regards liquidity and financial intermediation’ (EC 2013b). This paradigm had informed the Commission’s efforts to accelerate European financial integration through a light-touch approach (see Mugge 2013). Through the FTT, the Commission complicates its established notions of market liquidity, now articulating the possibility of ‘excessive’ or ‘virtual’ liquidity produced by speculative activity over and above what emerges from lending to the real sector or hedging.

The concept of ‘virtual’ liquidity has firm theoretical anchoring in both mainstream finance and Minskyan scholarship (see Nesvetailova 2008). It is equivalent to the ‘excess global’ liquidity term used by central banks (Rueffer and Stracca 2006) and international institutions (CGFS 2011, IMF 2012, Landau 2013) to conceptualize ease of financing in global financial markets. It echoes Adrian and Shin’s (2010) approach to liquidity as the rate of growth in the balance sheets of financial institutions, growth driven by business models reliant on repos and pro-cyclical leverage (see also Haldane, 2009). Such academic notions about liquidity have travelled to new fields of financial regulation, as for example the Basel III liquidity requirements, explicitly tailored to mitigate the unstable nature of liquidity.

Indeed, the next section argues, questions about virtual/illusory liquidity have become pervasive in (empirical) research on financial transaction taxes since 2008.

Taxing finance: a literature review

Before the global crisis, scholarly research on financial taxes was divided. Research in favour shared several premises (see Schulmeister, 2009). It posited that speculative activity moves prices away from fundamentals, rather than returning them faster to equilibrium, as proposed by Milton Friedman. In doing so, ‘excessive’ trading creates cyclical liquidity. Markets are highly liquid during periods of confident expectations and collective trust in the tradability of assets, but loose liquidity in a crisis, driving asset prices through boom/bust cycles (Nesvetailova, 2008). Hence, taxes should be levied on the markets most affected by speculative activity (see Stiglitz, 1989), be it the stock market, as advocated by Keynes, or currency markets. Ultimately, such arguments rest on the adverse consequences that finance has on economic activity, growth and employment.

More engaging critiques of FTTs pointed to un-intended effects, relying on two distinctive arguments: the failure to distinguish between *types* of financial transactions and the feasibility of enforcing FTTs. The first view typically invoked the hedger/speculator dichotomy. Hedgers seek protection from an undesired exposure to risk; in contrast to speculators who manufacture risk by betting on future price movements (see Engel 2013). The ECB, for example, used this dichotomy to argue that most short-term transactions arise from hedging, rather than speculative activity (Schulmeister 2009), so that a tax would punish hedgers, and in doing so, harm economic growth. The second type of arguments draws more on political economy concerns with relocation and tax arbitrage. The well-documented ability of financial actors to innovate

makes it difficult to design an effective FTT regime, while a poorly designed tax generates significant economic costs (Grahl and Lysandrou, 2003). Relocation/innovation may harm market liquidity, and in doing so, increase price volatility, achieving the exact opposite of the FTT intention to stabilize asset prices.

After the crisis, research suggested that unintended effects can be avoided through careful design. Schulmeister (2011), closely anticipating the Commission's proposals, argued that a general FTT levied on organized exchanges and over the counter, on both parties and at very low levels would target impatient investors that rely on technical analysis while protecting long-term investors that follow buy-to-hold strategies. Griffith-Jones and Persaud (2011) highlighted various strategies for reducing avoidance, including transfer of ownership conditional on tax payment and the exclusion of non-taxed instruments from central clearing (thus bearing higher capital requirements). Masciandaro and Pasarelli (2013) stressed that (Pigouvian) taxes are more effective than regulation in addressing systemic risk externalities; but warn that careful calibration is necessary in order to overcome the political resistance to such measures.

Recent finance research echoes these ideas. Under the efficient market hypothesis, taxes on transactions reduce market liquidity and sharpen volatility. Yet once this assumption is relaxed to allow for heterogeneous traders, predictions are no longer clear cut. Several recent studies concluded that FTTs had no impact (Pomeranets and Weaver, 2012) or even *reduced* market volatility (Foucault et al, 2011). Particularly interesting, Capelle-Blancard and Havrylchuk (2013) found no effects of the 2012 French FTT on either liquidity or volatility in the French stock market. In contrast, their literature review reveals that ten out of twelve empirical studies found *no significant* increase in volatility. Furthermore, their study highlights the conceptual ambiguity that pervades mainstream finance once it abandons assumptions of efficient market hypothesis: the world of imperfect financial markets is the world of elusive definitions of liquidity and volatility (Gabrielsen et al, 2011).

These studies pay no attention to repos. A notable exception, Lysandrou and Grahl (2014) strongly criticize the Commission since repos (a) are economically necessary for Europe's new, market-based system of financial intermediation and (b) can be easily replaced by foreign exchange swaps, a similar instrument not in the FTT proposals. Yet, the next sections argue, their criticism sidelines the systemic risk underpinning repos and is erroneous in suggesting that swaps enable leverage in the same way that repos do.

How repos made it into the FTT proposal

Initially, the Commission showed little interest in repos. The February 2011 consultation mentioned repos in question 52 (EC 2011), in relationship to financial instability: 'some authors argue that overnight secured credit (through repos mainly) necessitates special treatment of those types of funding because of the cheap, but unstable funding leading to systemic risk. Do you agree to such an argument and if so, what treatment do you suggest?'

The few that answered the question either rejected the systemic risk framing, or argued that regulation rather than taxation would work best. Financial institutions claimed that the question essentially misrepresented repos. In their reading, repos offered a ‘low risk’ alternative to unsecured funding markets, as for example made clear by the UK bank levy that exempted repos collateralized with high-quality assets from the tax base (EBF, 2011; ERC, 2011). The French government¹¹ alone associated repos with bank vulnerability yet proposed regulatory restrictions on eligible collateral.

Yet when the Commission published the September 2011 FTT proposals, it included repos. What explains this shift? The two drivers of the FTT proposals, France and Germany (see Vella et al 2011), were instrumental. In the context of extreme pressures for European banks and sovereigns throughout the summer of 2011, Wolfgang Schauble and Francois Baroin, Ministers of Finance for Germany and France, sent a joint letter to the Commission outlining the Franco-German vision for a broad FTT¹². The letter explicitly called for repos/securities lending to be taxed since these enable speculative short-selling and feed systemic risks.

Narrative ambiguity: repos and risk

The question whether repos reduce or increases risk has macroprudential overtones: repos offer risk protection at individual level, but pose systemic risks by ‘increasing procyclicality of system leverage’ (FSB 2012: 8, also Adrian and Shin 2010, Gorton and Ordunez 2012, Hauser 2013).

Indeed, those opposing the FTT focus on risk protection. The repo lobby often cites the crisis-induced shift from un-collateralized to repo markets in Europe as evidence that repos curtail risk during periods of market tension (ERC, 2011; Comotto, 2013). Furthermore, central banks implement monetary policy through repos, conferring these an air of (re)s(pec)tability.

Consider the mechanics of the repo. Deutsche Bank (DB) raises cash by pledging Greek government bonds as collateral to cash-rich Commerzbank. When the repo expires (overnight, one week, one month), Commerzbank returns the Greek government bonds and receives from DB the cash and repo interest. For the two parties, what makes repos safer than unsecured lending - the traditional form of interbank lending - is the risk management framework. Commerzbank is protected against counterparty risk because it becomes the legal owner of the collateral posted, and can sell it if DB defaults.

Commerzbank can impose an initial *haircut* dependent on how risky it perceived the collateral to be. For example, in early 2010, DB would have had to provide EUR160 of Greek bonds at market value in exchange for EUR 100 of liquidity. Commerzbank also

¹¹http://www.sgae.gouv.fr/webdav/site/sgae/shared/04_Consultations_publicques/201104/201104_19_ReponseFR_Taxation_secteur_financier.pdf

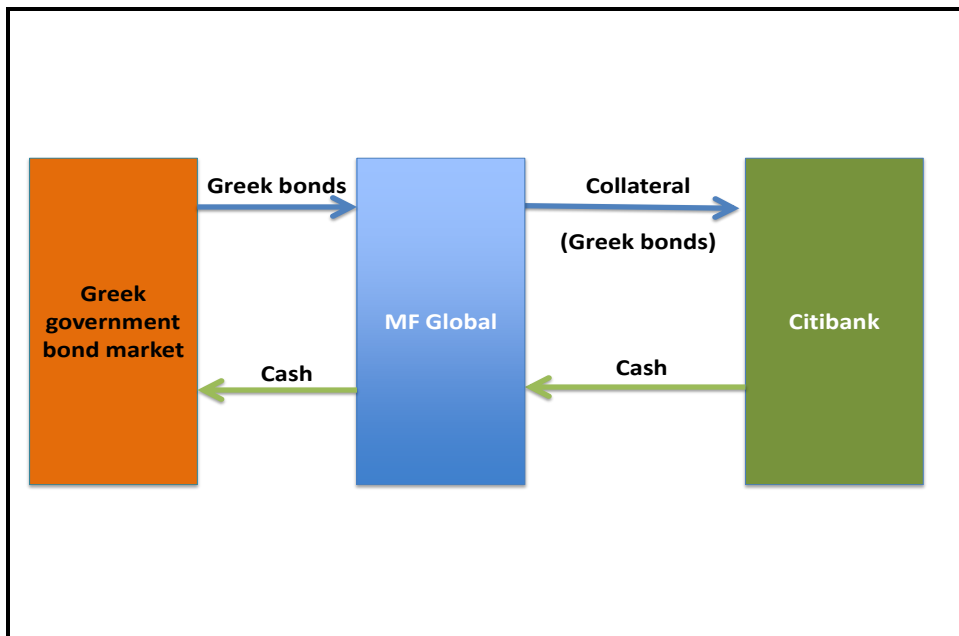
¹² <https://www.tuc.org.uk/tucfiles/79/lettre-franco-allemande.pdf>

relies on *margin calls*, calculating daily the market value of the collateral portfolio (marking it to market), and asking DB to send additional collateral if Greek government bonds have fallen in price. Furthermore, Commerzbank does not assume the risks of the Greek government bonds because in a repo transaction the seller of collateral (DB) retains the risk and return on that collateral (see Gabor, 2013). Despite the transfer of ownership, Commerzbank sends accrued payments on that asset back to Deutsche Bank. This complex risk management regime implies that the two repo parties can clearly define and manage credit and collateral risk.

From this micro perspective, the FTT makes little sense. It targets the largest, safest funding market in Europe (see ERC, 2011). If DB and Commerzbank choose, as most repo parties do in Europe, to roll-over short-term repos, both would have to pay the FTT repeatedly. This, for the repo lobby, would lead to the disappearance of the short-term repo market (Comotto, 2013).

Yet the French government, in its 2011 response to the FTT consultations, alluded to the opposite interpretation. Repos offer the cheapest mechanism for leverage (BIS, 1999), a view most central banks and supranational regulators now share (Courre, 2012¹³; Hauser, 2013, Adrian 2013). Consider an example with US-based actors. MF Global wants to gain exposure to high-risk, high-return Greek government bonds. It buys two-year bonds in 2011, knowing that the EFSF¹⁴ in Europe reduces considerably the chances of a Greek default until 2013 (see Figure 1).

Figure 1 Repos and leverage



¹³ Benoit Courre, member of the ECB Board, argued that that repos ‘can contribute to pro-cyclicality and the so-called leverage cycles’ (Courre, 2012).

¹⁴ European Financial Stability Facility.

A repo-to-maturity allows MF Global to finance these securities by borrowing cash through a two-year repo from Citibank, cash it uses to pay for the bonds acquired. At maturity, MF Global receives the principal payments from the Greek government, and sends that cash back to Citibank. MF Global can repeat this transaction to increase leverage, bound only by the repo interest rate and the haircut. The lower the two, the less MF Global has to provide of its own capital/cash. To paraphrase Paul Tucker, of the Bank of England, anyone with a securities portfolio could build a shadow bank through repo markets. Therein lies the systemic risk problem.

Indeed, since the crisis, the Financial Stability Board (2011) and individual central banks (Hauser 2013, Adrian 2013) have recognized that practices of risk management (including haircuts, mark to market, margin calls and short maturities) that reduce counterparty and liquidity risk for individual institutions may pose systemic risks (Plantin et al, 2005). During boom periods, repos enable rapid leverage and feed higher asset prices, *a la* Commission's notion of 'virtual liquidity' (see Domanski and Neuman 2001, Adrian and Shin 2010).

Collateral fragility is at the root of shadow banking/repo fragility. Continuing with the earlier, a funding problem for MF Global may introduce volatility in the Greek government bond market through what Brunnermeier and Pedersen (2009) termed a liquidity spiral. MF Global has to post additional collateral or pay back some of the cash borrowed. During periods of market turbulence, it may not find additional collateral or cash, so it must sell some assets - say Greek bonds. The fall in the price of Greek bonds triggers further margin calls for those institutions that collateralized repos with Greek bonds, and further asset sales. Fire-sales spread through Greek and other asset markets, and suddenly those institutions reliant on repo funding are confronted with daily margin calls, forcing further asset sales, falling asset prices and increasing funding difficulties. In overnight repos, cash-rich counterparties only accept high-quality collateral and/or increase haircuts on repos with lower-quality assets. Substitute MF Global for Lehman Brothers, and this, Gorton and Metrick (2012) argue, is a close account of the 2008 'run on repo'. Substitute Lehman Brothers for a Greek bank, and this, Gabor and Ban (2013) argued, is a close account of the Greek sovereign debt crisis; the Irish, the Portuguese, and the 'almost' Italian and Spanish crisis throughout 2011 and 2012, until the ECB promised to do whatever it takes (see Courre, 2013).

The first FSB proposals for regulating repos stressed the importance of setting minimum haircuts, including for government bond collateral, to make repo-supported leverage more expensive (FSB, 2012). The repo-FTT takes these proposals further. The tax is applied on the market value of the collateral portfolio, so it includes the haircut. The intended extra-territorial effect renders leverage more expensive for institutions that *are not* based in the FTT countries but that use FTT11 collateral. Under the FTT, both MF Global and Citibank would be established in Greece, and would have to pay repo tax to the Greek government. If they chose to roll overnight repos rather than a repo to maturity, they would pay the repo tax daily.

Does the FTT seek to destroy the overnight repo market? Set at 10 basis points, the Commission recognized, it may well do so. Granted, the effects are difficult to estimate empirically precisely because there is very limited data on repo transactions. The repo lobby suggested that market makers in repos typically operate with a spread of 2 basis points. With the FTT rate lowered to 0.01%, as suggested by the European Parliament, spreads would halve but not disappear completely. Banks may continue to rely on repo markets for short-term liquidity management. Indeed, the next sections argue, the overnight repo market is not a problem *per se*, but its pre-crisis growth has been driven by what Haldane (2009) called a ‘collective migration’ of (European) bank business models to interconnected, leveraged, high-yield activities (see also Liikanen Report 2012).

Systemic (European) connectedness: cross-border and cross-markets

Systemic interconnectedness is crucial to understand why the proposals to tax repos have ignited such a wide opposition. Estimates of substantial repo-related FTT losses for private finance, far larger in comparison to derivative or securities portfolios (Goldman Sachs, 2013; ISLA, 2013; also European Commission, 2013b¹⁵ and Schulmeister, 2013 for a critique), bring into sharp focus the systemic role of repo markets (Comotto, 2013¹⁶). Through collateral flows, repos connect financial institutions across various asset markets, including government bond markets, entangling a broad bucket of financial institutions in leverage cycles. The repo-FTT goes at the heart of interconnectedness generated through market-based finance.

Since the introduction of the Euro, repo markets grew rapidly, tripling in size to around EUR 6 trillion by 2008. Such rapid growth reflects ‘the era of the great glut in financial transactions’ (Fisher, 2013:93) as much as the shift to large, market-based banking in Europe (Liikanen Report, 2012). Indeed, in contrast to the US, large European banks dominate the European repo market (ICMA, 2012), with data for 2008 suggesting that the 20 largest banks generated between themselves around 80% of repo transactions (Hordahl and King, 2008). The larger the trading activity of a bank, the more it may be involved in repo markets simply because it can fund securities portfolios through repos or gain additional returns from lending securities.

Banks aside, how does repo involve long-term investors usually subject to strict regulation (pension funds), investors with shorter trading horizons (hedge funds), large multinational companies, and implementing Member States? To answer this question, it is useful to think of repos as the nervous central system of market-based finance, a

¹⁵ “According to information provided by representatives of the Dutch pension fund industry, it appears that around 50% of a tax bill of EUR 3 bn. annually would stem from the tax on repurchase agreements, 37% from taxing its investment in equities and bonds and about 13% from the tax on derivatives.” EC, 2013b.

¹⁶ “Given the systemic role of collateral, it should be a matter of the greatest concern for regulators that movements of collateral through the repo market would be taxed.” Comotto, 2013.

system that dissolves borders between securities markets, and in the context of the European integration process, national borders between government bond markets.

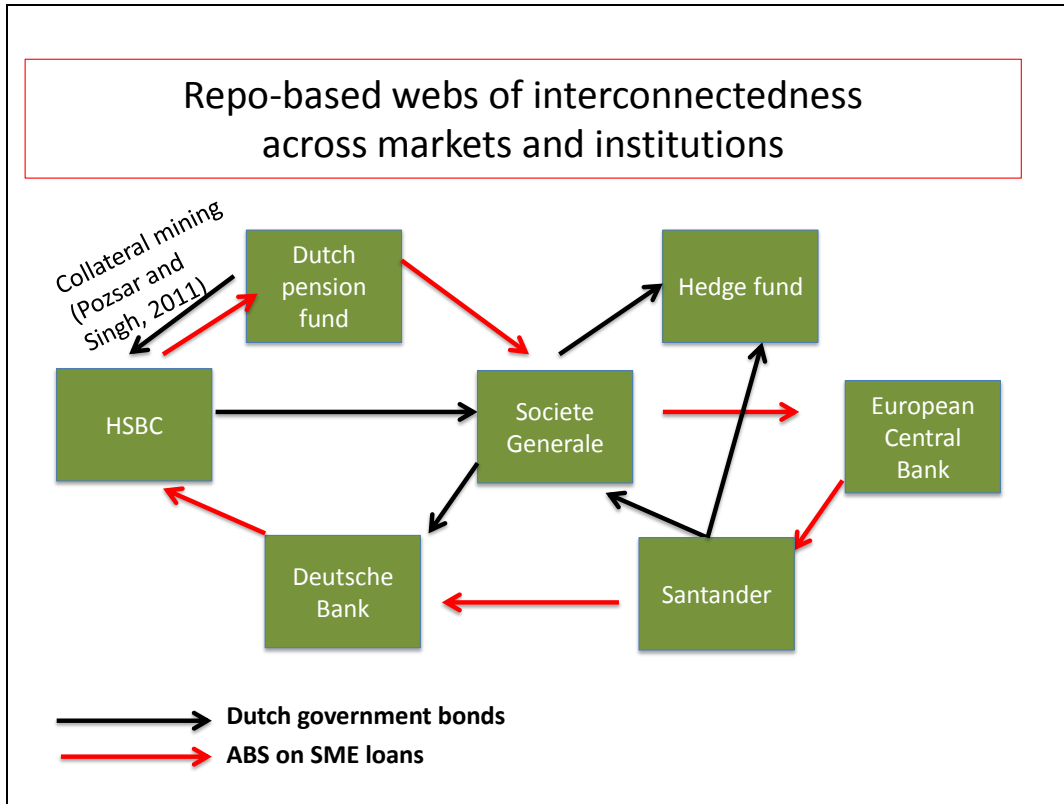
Repos can be used to obtain cash and build leverage in any asset market (see FSB, 2011). In theory, any asset can be repo-ed out if the counterparty agrees on the adequate haircut. Yet in practice, most trading is funded through repos with high-quality collateral because high-quality equals lowest funding costs in terms of both haircuts and price volatility. Typically, these are government bonds that trade in liquid markets. Data from the repo lobby shows that around 80% of repo market transactions in Europe were supported by government bonds before 2008 (ICMA, 2008), a share similar to the US repo markets.

Demand for government bonds as collateral is, from a repo perspective, demand for leverage (see BIS, 1999). This is how repo markets introduce what the European Commission calls ‘virtual liquidity’ simultaneously in government bond markets and in higher-risk securities markets financed through repo transactions. Through repos, government bond markets become more liquid *because* banks can use them as collateral to support rapidly growing balance sheets (see Adrian and Shin, 2010, FSB 2012).

But repos also bring distinctive types of financial institutions in the shadow banking world, weaving networks of interconnectedness through collateral flows. Indeed, a known theme in the shadow banking literature is the pre-crisis shortage of high-quality collateral issued by governments (Pozsar and Singh, 2011; Singh and Stella, 2012). Fiscal policy in high-income countries was not expansionary enough to manufacture high-quality collateral in tune with demand for leverage. To mitigate shortages, financial institutions have three options (see Pozsar 2011): (i) increase the velocity with which collateral circulates in the system; (ii) ‘unearth’ or ‘mine’ high-quality collateral parked in ‘buy-to-hold’ portfolios (such as pension funds) or (iii) manufacture private collateral functionally similar to government bonds. The first two strategies are linked, and rely on the right to *re-use/re-hypothecate* collateral in repo transactions.

In Figure 2, HSBC can borrow Dutch government bonds from a Dutch pension fund, assume against Asset Backed Securities issued on SME loans (lower-quality assets). The Dutch pension fund thus increases returns on low-risk assets without assuming the credit risks of the lower-quality assets it accepts in return. HSBC, now legal owner of the Dutch bonds, may repo them to Societe Generale to fund some of its own securities. Societe Generale in turn lends the Dutch bonds to a US hedge fund that posts them as collateral for an OTC derivative. But Societe Generale simultaneously borrows the ABS from the Dutch pension fund to cover a short position. It may also use some ABS to substitute other assets held as collateral in an LTRO operation with the ECB. Indeed, the right to substitution - that is, the possibility for repo lenders to constantly shift the composition of collateral pledged - means that collateral may move on a daily basis between repo parties. Such scenarios are not far-fetched. Singh (2012) estimated that a single piece of collateral sustained, on average, more than three different repo transactions before Lehman’s collapse. With this, financial institutions are collectively exposed to the market value of one asset.

Figure 1 Repo-based webs of interconnectedness



Systemic interconnectedness calls into question recent arguments that taxing repos is ‘illogical’ when its close substitute, fx swaps, are not taxed (see Grahl and Lysandrou 2014). Unlike repos, swaps constitute an exchange of cash flows. However, repos and fx swaps rely on similar risk management practices. Fx swap counterparties also make margin calls when exchange rates move significantly (see Barkbu and Ong 2010). Since swap counterparties must post additional cash or securities to meet margin calls, a swap may trigger similar liquidity spirals. Yet fx swaps do not enable leverage (securities financing), nor do sharpen interconnectedness, as repos do. A bank may engage in an fx swap to take advantage of cheaper funding conditions in another currency, but it first needs to obtain the domestic currency that it wants to swap, and it may choose to do so through a repo. Conversely, fx swaps do not connect institutions across asset markets through cyclical leverage, since swaps do not generate a direct relationship between funding levels and fluctuating asset values (see FSB 2012:8).

Table 1 Repos vs fx swaps

	Repos	FX Swaps
Exchange	Cash for collateral	Currencies
Leverage	Pro-cyclicality of system leverage	Not directly
Risk Management	Margin calls; mark-to-market;	Margin threshold and margin

	haircut	calls
margin calls	mark-to-market losses in collateral portfolios	exchange rates
Financial crisis	firesales of collateral securities; liquidity spirals	fire sales, liquidity spirals
Interconnectedness	across asset markets	cross-border FX exposures

The repo-FTT would have two likely consequences for systemic interconnectedness. It would shorten collateral chains by making leverage more expensive. While the tax level determines the extent to which such chains contract, effects would be sizable because assets issued in the FTT11 account for around 50% of European repo collateral (see Table 2). Figures for June 2013 show that EU11 sovereigns provide around 43% of EU repo collateral; a higher share after the ECB introduced Outright Monetary Transactions and thus committed to preserve the collateral acceptability of *any* European government bond (see Gabor, 2013b).

Table 2 Share of EU11 collateral in EU repo markets

	2008	2012	2013
Share_EU11_Sovereign bonds	52%	38%	43%
Share_All_EU11_Assets	62%	48%	52%
Repo_volumes (EUR bn)	6504	5647	6076

Source: computed from ICMA reports

Immediately important, the FTT provides a *transparency fix* to repo markets that regulators have advocated for some time (see FSB 2013; Hauser 2013). Regulators would know which financial institutions depend on repo, the extent to which pension funds engage in the repo/securities lending universe, how much collateral is re-used/re-hypothecated (see FSB, 2013 for the importance of these data). While the Commission did propose a trade repository for repos in January 2014, it may take another three years for these to be implemented.

(Not so) quiet politics: strategies of resisting the repo FTT

Before the crisis, the European repo market was constructed through what Culppepper (2010) termed a ‘quiet politics’ regime. The European Commission and the ECB encouraged private finance to construct the repo market architecture, all interested in aligning national legal frameworks to permit cross-border use of collateral. The Giovannini (1999) report, and the Collateral Directive 2002/47/EC it informed, treated repos as private finance portrayed them in the FTT debates: risk-reducing, liquidity-enhancing financial instruments crucial to financial stability. The ‘low-risk’ narrative thus aligned closely the interests of the repo industry, of Member States, the ECB and the Commission: that rapid growth in repo transactions would dismantle borders between financial markets (Giovannini Report 1999, Gabor and Ban 2013). Member States had little reason to dismiss such promises since increased liquidity is typically associated with

stable - and low - interest rates. The promise quickly became true: by 2008, repo markets made no distinction between Greek and German government bonds (Hordahl and King 2008). Governments, the European Commission and the ECB could afford a hands-off regulatory regime that imposed no restrictions on private repo parties.

Benign views of repo markets changed dramatically after Lehman's collapse. US scholars described the post-Lehman contagion as a run on repo (see Acharya and Oncu 2010; Gorton and Metrick, 2012), introducing a competing narrative of repos as source of systemic risk, terrain for leverage cycles and conduit for liquidity spirals. The FSB then set this narrative on the global regulatory agenda of shadow banking. Yet Eurozone debates on financial reform initially ignored repos as an issue pertaining to Anglo-Saxon financial systems. Most critical commentary on European repos came from the Financial Times Alphaville blog and a few scholars (see Avoyui-Dovi and Idier, 2012; Gabor 2012). The European Commission, through its DG Internal Markets, initiated shadow banking consultations as late as 2012, *after* DG TAXUD had made its repo-FTT proposals public. The ECB took five years to propose a reporting framework for repos at European level (early 2013), let alone consider regulatory proposals, in stark contrast to the US Federal Reserve (see Dudley, 2011).

In Europe it was the FTT debate, rather than the agenda of shadow banking regulation, that brought the repo market under critical scrutiny. It generated so much controversy precisely because the FTT proposals highlighted how pervasive shadow activities were in Europe, including among 'socially useful' finance (pension funds), while simultaneously bringing into the European regulatory debates the narrative that 'repos are risky', that such risks materialize through fire sales that affect collateral markets, and therefore, that the liquidity repos provide to government markets (and other asset markets used as collateral) is 'virtual' and potentially destabilizing.

What strategies did private finance use to challenge the FTT Directive, and re-establish, a la Culpepper, their narrative of repos? First, the repo lobby sought to circumvent the Commission (its Minskyan reading of liquidity) and instead engage the FTT11 governments of the. In its March 2013 meeting, it intimated that it planned to stress the 'need for internal discussions at Ministries of Finance departments as FTT will increase cost of funding of government debt'¹⁷. The strategy paid off immediately. One month later, governments in the FTT Working Group framed repos as low-risk, liquidity enhancing instruments:

The extinction of the market will negatively affect the sovereign bonds market and by consequence will rise the government funding costs. [...] Is there an assessment about the effect of the tax on the repo market and therefore on the funding cost of the central government and the real economy? Non-paper of the FTT Working Group, April 2013.

¹⁷ <http://www.icmagroup.org/About-ICMA/icma-councils-and-committees/European-Repo-Council/minutes/#ICMA>

Indeed, the repo lobby has long argued that repos may be risky for some, but certainly not all, assets used as collateral (Comotto 2012), against Gorton and Metrick's (2012) run on repos. Comotto (2012) pointed to US government bonds, where haircuts moved little in the crisis. This, however, is not the case for Europe. Outside FTT debates, the ECB has linked repos to the sovereign debt crisis. Benoit Courre, member of its Executive Board, described the last months of 2011 (that led to the introduction of the 3 year LTROs) as a crisis of collateral for Italian government bonds:

when the sovereign debt crisis intensified, haircuts on government bonds under stress also went up because the rise in yields reduced their collateral value. For example, when the spread on Italian ten-year government bonds relative to core issuers rose to over 450 basis points in November 2011, the haircut for Italian government bonds was increased by 500 basis points, leading to a posting of intraday margins about 12 times greater than in any other preceding month in 2011. On the day of the increased haircut alone, the spread between Italian and German government bonds rose by 60 basis points.

Courre, 2013¹⁸.

In this quote, Courre recognizes that decisions about haircuts and mark-to-market practices of private repo actors destabilize government bond markets, and implicitly agrees with the Commission that liquidity is no longer an end in itself, particularly if it arises from leveraged financial activity. That not all sovereigns are 'safe', as the repo lobby suggests, becomes immediately clear, but this is not merely a matter of *weak* fundamentals. Take the Irish example: its pre-crisis government finances were in better shape than most 'core' European countries. Yet, once the woes of the Irish banking sector - and its impact on government finances - became apparent, repo markets reacted promptly. Similar to Courre, the Financial Times narrated the 2010 Irish crisis as a crisis of collateral triggered by the haircut policies of a private repo actor, LCH Clearnet, since 2013 on the ECB's list of systemic European financial institutions:

At the heart of volatility in the Eurozone bond market, according to investors, was a decision by one of Europe's biggest clearing houses, LCH Clearnet, to require banks or institutions wanting to use Irish bonds as collateral in the repo market to raise cash to pay an extra margin of 15 percent. *FT, Nov. 10, 2010*¹⁹.

Yet the ECB and national central banks are firmly against the FTT. Central banks see the repo market as the market that would take over its crisis liquidity provision and allocate collateral that banks require to meet new regulatory requirements (Basel III, new European rules on central clearing of derivatives). Without it, it is argued, the ECB would be forced to remain the main intermediary of liquidity and collateral in Eurozone (Weidmann, 2013). Indeed, a leaked document of the FTT Working Group in January

¹⁸ <http://www.ecb.europa.eu/press/key/date/2013/html/sp130116.en.html>

¹⁹ <http://www.ft.com/cms/s/0/41815768-ecfa-11df-9912-00144feab49a.html#axzz2h1j6fisE>

2014 enlists the ECB's view that the repo market 'is a very liquid and efficient market' to put the final nail in the coffin of the repo-FTT²⁰.

It has to be stressed however that the ECB only uses repos to manage individual credit risk. This is not the same as controlling, or even seeking to influence, the private repo market. Rather, the ECB uses repos to set the interest rate on the *un-collateralized* interbank segment (the fed funds rate in the US, EONIA in Eurozone), where banks exchange liquidity with each other without collateral. Indeed, ECB staff dismissed proposals from the US Federal Reserve researchers to target the repo rate instead of the unsecured interbank rate (see Klee and Stebunovs 2011, Perez Quiroz, 2012). While outside the scope of the paper, the ECB appears to prioritize its monetary policy framework - that conceives repos as essential to the transmission mechanism - over financial stability. The answer to this apparent conflict, it holds, is in regulation, by the FSB and by the Europe Commission.

The prospects there are discouraging. The first FSB proposals stressed the importance of setting universal minimum haircuts, including for government bond collateral, to make repo-supported leverage more expensive (FSB, 2012). The focus on *instruments*, Stein (2013) argued, would effectively mitigate the systemic consequences of fire-sales without leaving much room for regulatory arbitrage. Any financial intermediary active in the repo market would have to implement it. However, confronted with vocal opposition from governments concerned by the liquidity implications, the FSB relaxed the minimum haircuts requirement (see FSB, 2013). Its 2013 proposals are an invitation to regulatory arbitrage: applied only to repos between non-regulated and regulated entities with collateral other than government bonds. The same is true of the various other regulatory initiatives with bearing on the repo market, including the Basel III amended capital rules and new liquidity/leverage rules (see Stein, 2013).

Conclusion

This paper explored an on-going episode in the European efforts to re-embed finance: the Financial Transactions Tax proposal by the European Commission in 2011 and its trajectory since. The regulatory dimension of the FTT shows, perhaps surprisingly, the Commission as one of the most radical advocates of measures to transform European finance in general, and repo-based finance in particular. This is important because repos are intimately linked to the creation of risk through leverage and because repo practices sharpen systemic interconnectedness in Europe.

²⁰ As pointed out by BCE, the repo market is currently a very liquid and efficient market, which supports the transmission of monetary policy impulses, represents an important and cheap funding source for banks and helps institutional investors to manage their bond portfolios[...]. In particular, the proposed FTT may exacerbate the dysfunction of the currently fragmented unsecured euro money market with adverse effect on liquidity redistribution and the smooth transmission of monetary policy impulses. Moreover, it might significantly increase banks' dependency from central banks' operations at the expenses of the interbank market and make it harder the phasing out from unconventional measures.

The FTT, by design or accident, first captured the political willingness to ask fundamental questions about the systemic importance of European repo markets. Member States, it is important to stress, remained convinced about the desirability of taxing repos from September 2011 to January 2013, when EU11 Minister of Finance ‘stamped’ the draft directive. Support faded rapidly because governments now believe that manufacturing collateral for repo markets - and for leveraged business models - preserves liquidity while the deleterious consequences can be regulated away through Basel III, FSB recommendations and the European banking union proposals. Whether this will be a missed opportunity for reforming European (shadow) banking remains to be seen.

References

- Acharya, V.V., Oncu, T.S., 2010. The repurchase agreement (repo) market. In: Acharya, V.V., Cooley, T.F., Richardson, M., Walter, I. (Eds.), *Regulating Wall Street: The Dodd-Frank Act and the New Architecture of Global Finance*. Wiley Finance Series. Wiley, Hoboken, NJ
- Adrian, T. and Shin, H. S. 2010. Liquidity and leverage, *Journal of Financial Intermediation*, Elsevier, vol. 19(3), pages 418-437, July.
- Avouyi-Dovi, S. and Idier, J. 2012. The impact of unconventional monetary policy on the market for collateral: The case of the French bond market, *Journal of Banking & Finance*, vol. 36(2), pages 428-438.
- Bank for International Settlements. 1999. *Implications of repo markets for central banks*. Committee on the Global Financial System Paper No 10.
- Barkbu, B. and L. Ong. 2010. FX Swaps: implications for financial and economic stability. IMF Working Paper 55/2010.
- Brunnermeier, M. and L. Pedersen. 2009. Market Liquidity and Funding Liquidity, *Review of Financial Studies* 2201-2238.
- Capelle-Blancard, G. and O. Havrylchick. 2014. The Impact of the French Securities Transaction Tax on Market Liquidity and Volatility. RIETI Discussion Paper Series 14-E-007
- Committee on the Global Financial System (CGFS). 2011. Global liquidity - concept, measurement and policy implications. CGFS Papers no. 45, available at <http://www.bis.org/publ/cgfs45.pdf>
- Comotto, R. 2012. Shadow banking and repo. European Repo Council paper. available at <http://www.icmacentre.ac.uk/images/2011/08/shadow-banking-and-repo.pdf>
- Comotto, R. 2013. The Impact of the Financial Transactions Tax on the European Repo Market. Available at <http://www.icmagroup.org/Regulatory-Policy-and-Market-Practice/short-term-markets/Repo-Markets/icma-european-repo-market-reports-and-white-papers/the-impact-of-the-financial-transaction-tax-on-the-european-repo-market/>
- Courre, B. 2012. The importance of money markets. Speech at the Morgan Stanley 16th Annual Global Investment Seminar. June 16, 2012. Available at <http://www.ecb.europa.eu/press/key/date/2012/html/sp120616.en.html>
- Courre, B. 2013. Ensuring the smooth functioning of money markets. Speech at the 17th Global Securities Financing Summit, Luxembourg, 16 January 2013. Available at <http://www.ecb.europa.eu/press/key/date/2013/html/sp130116.en.html>

Culpepper, P.D. 2011. *Quiet Politics and Business Power: Corporate Control in Europe and Japan*. New York: Cambridge University Press.

Dudley, W. (2013) Key developments in the tri-party repo market, at Workshop on 'Fire sales' as Driver of systemic risk in tri-party and other secured markets. Federal Reserve Bank of New York, Oct. 2013.

EBF (European Banking Federation). 2011. Response to the FTT Consultation.

European Central Bank (2013). Enhancing the monitoring of shadow banking. ECB Monthly Bulletin, February 2013.

European Commission. 2011a, *The Commission Proposal for a Council Directive on a Common System of FTT*, COM 594, 28 September. DG Taxation and Customs Union.

European Commission, 2011b. Consultation Paper, DG Taxation and Customs Union.

European Commission 2012c. Green Paper on Shadow Banking. 19 March 2012, Brussels. [Last accessed 14 Aug 2012.] Available from URL: http://ec.europa.eu/internal_market/bank/docs/shadow/green-paper_en.pdf.

European Commission, 2013a Proposal for a Council Directive implementing enhanced cooperation in the area of Financial Transaction Tax. Available at http://ec.europa.eu/taxation_customs/resources/documents/taxation/com_2013_71_en.pdf

European Commission, 2013b. Impact Assessment. Proposal for a Council Directive implementing enhanced cooperation in the area of Financial Transaction Tax. Available at http://ec.europa.eu/taxation_customs/resources/documents/taxation/swd_2013_28_en.pdf

European Parliament. 2012. Parliament Adopts Ambitious Approach on Financial Transaction Tax, Press Release Reference No:20120523IPR45627.

European Commission. 2013c. How the FTT works in specific cases and other questions and answers. Available at http://ec.europa.eu/taxation_customs/resources/documents/taxation/swd_2013_29_en.pdf

ERC (European Repo Council). 2011. Response submission from the ICMA European Repo Council to Consultation on Financial Sector Taxation. available at https://circabc.europa.eu/faces/jsp/extension/wai/navigation/container.jsp?FormPrincipal:_id cl=FormPrincipal:libraryContentList:pager&page=0&FormPrincipal_SUBMIT=1&org.apache.myfaces.trinidad.faces.STATE=DUMMY

Fisher, P. 2013. Reflection on the meaning of risk free. BIS paper 72, pp. 65-73.

Foucault, T., D. Sraer and D.J. Thesmar. 2011. Individual Investors and Volatility, *Journal of Finance*, 66(4), 1369-1406.

FSB (Financial Stability Board). 2013. Policy Framework for Addressing Shadow Banking Risks in Securities Lending and Repos. Available at http://www.financialstabilityboard.org/publications/r_130829b.pdf

FSB (Financial Stability Board), 2012. Global Shadow Banking Monitoring Report. 18 November 2012. [Last accessed 22 Feb 2013.] Available from URL: http://www.financialstabilityboard.org/publications/r_121118c.pdf.

FSB (Financial Stability Board) 2011. Shadow Banking: Scoping the Issues. A Background Note of the Financial Stability Board. 12 April 2011. [Last accessed 20 Jul 2011.] Available from URL: http://www.financialstabilityboard.org/publications/r_110412a.pdf.

FTT Working Party on Tax Questions-Indirect Taxation (Financial Transactions Tax). 2013. Implementing enhanced cooperation in the area of Financial Transaction Tax Questions to the Commission from the working level. Available at <http://www.openeurope.org.uk/Content/Documents/Pdfs/2013FTTnonpaper.pdf>

Gabor, D. 2012. The Power of Collateral: The ECB and Bank Funding Strategies in Crisis. *SSRN eLibrary* (May 18).

- Gabor, D. 2013a. Shadow interconnectedness: the political economy of European shadow banking. Available at SSRN: <http://ssrn.com/abstract=2326645> or <http://dx.doi.org/10.2139/ssrn.2326645>
- Gabor, D. 2013b. Learning from Japan: the ECB and the sovereign debt crisis. *Review of Political Economy* (forthcoming).
- Gabor, D. and C. Ban (2013) Fiscal Policy in (European) Hard Times: Financialization and Varieties of Capitalism. Available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2201518
- Goldman Sachs. 2013. Financial Transactions Tax: how severe? available at http://www.steuer-gegen-armut.org/fileadmin/Dateien/Kampagnen-Seite/Unterstuetzung_Ausland/EU/2013/2013.05_GS_on_Fin_I_Transaction_tax_FT_T_-_Bottom_Up_Analysis_Europe.pdf
- Giovannini Expert Group. 1999. *EU Repo Markets: Opportunities for Change*. Brussels, October 1999.
- Grahl, J. and Lysandrou, P. 2003, Sand in the Wheels or Spanner in the Works? The Tobin Tax and Global Finance, *Cambridge Journal of Economics*, vol. 27, pp. 597-621.
- 2014. The European Commission's Proposal for a Financial Transactions Tax: A Critical Assessment. *Journal of Common Market Studies*, 52(2):234-249.
- Gorton, Gary and Metrick, Andrew, 2012. Securitized banking and the run on repo, *Journal of Financial Economics*, Elsevier, vol. 104(3), pp. 23-36.
- Gorton, G. and Ordonez, G. 2012. *Collateral crises*. NBER Working Paper No. 17771. Issued in January 2012.
- Griffith-Jones, S. and Persaud, A. 2011. Financial Transaction Taxes, *Mimeo*, Columbia University.
- Hauser, A. 2013. The future of repo: 'too much' or 'too little'? Speech at the ICMA Conference on the Future of the Repo Market, London, June 13.
- Haldane, Andrew. 2009. 'Rethinking the financial network', Speech delivered at the Financial Student Association', Amsterdam.
- Hördahl, P., and M. King. 2008. —Developments in Repo Markets During the Financial Turmoil. *BIS Quarterly*, December.
- ICMA (International Capital Markets Association). 2008-2012. European repo market survey.
- International Monetary Fund. 2010. Understanding Financial Interconnectedness. Available online at <http://www.imf.org/external/np/pp/eng/2010/100410.pdf>.
- International Securities Lending Association (ISLA). 2013. Impact of the Financial Transactions Tax on Europe's Securities Lending Market.
- Landau, J.P. (2013). Global liquidity: public and private. Available at <http://www.kansascityfed.org/publicat/sympos/2013/2013Landau.pdf>
- McCulloch, N. and Pacillo, G. 2010. The Tobin Tax: A Review of the Evidence Economics Department Working Paper Series No. 16-2010, Department of Economics: University of Sussex.
- Mehrling, P. 2012. Three Principles for Market-Based Credit Regulation. *The American Economic Review* 102 (3): 107–112.
- Mügge, D. 2013. The Political Economy of Europeanized Financial Regulation. *Journal of European Public Policy*, 20(3), 458-470.
- Nesvetailova, A. 2008. Three facets of liquidity illusion: financial innovation and the credit crunch, *German Policy Studies*, 4(3).
- Pomeranets, A., and D.G. Weaver, 2011, Securities Transaction Taxes and Market Quality, Bank of Canada, *Working Paper* 2011-26.

- Posner, E. 2009. *The Origins of Europe's New Stock Markets* (Cambridge, MA: Harvard University Press).
- Pozsar, Z., and M. Singh. 2011. The nonbank-bank nexus and the shadow banking system. IMF Working Paper WP/11/289. Washington, DC: IMF, December.
- Pozsar, Z., et al. 2010. Shadow banking. Staff Report no. 458, *Federal Reserve Bank of New York*, July.
- Rueffer, R. and Stracca, L. (2006). What is global excess liquidity, and does it matter? ECB Working Paper, 696.
- Schulmeister, S. 2009. A General Financial Transaction Tax: A Short Cut of the Pros, the Cons and a Proposal, *WIFO Working Paper 344/2009*, Vienna: Osterreichisches Institut Fur Wirtschaftsforschung.
- Schulmeister, S. 2013. Impact of the FTT on the profitability of financial market activities – the assessment of Goldman Sachs Research. Available at http://stephan.schulmeister.wifo.ac.at/fileadmin/homepage_schulmeister/files/GS_FTT_05_13.pdf
- Singh, M. 2011. Velocity of Pledged Collateral: Analysis and Implications, IMF Working Paper 11/256.
- Singh, M., and P. Stella. 2012. Money and Collateral. *SSRN eLibrary* (April). http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2050268.
- Stiglitz, J.E., 1989, Using tax policy to curb speculative short-term trading, *Journal of Financial Services Research*, 3, 101-115.
- Stein, J. 2013. The Fire-Sales Problem and Securities Financing Transactions. Speech at the Federal Reserve Bank of New York Workshop on Fire Sales as a Driver of Systemic Risk in Triparty Repo and other Secured Funding Markets. Oct. 2013.
- Tucker, P. 2012. Shadow banking: thoughts for a possible policy agenda, speech at the European Commission's Shadow Banking Conference, Brussels, 27 April 2012
- Vella, J., Fuest, C. and T. Schmidt-Eisenlohr. 2011. The EU Commission's Proposal for a Financial Transaction Tax (March 19, 2012). *British Tax Review*, No. 6, 2011;