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Introduction

The 2008-09 Financial Crisis drastically revealed the potential consequences for financial stability if important regulatory, financial and policy decisions are made based on a poor information base. To acquire a sufficient degree of relevant information it is inevitable to have suitable, consistent and comparable financial market data - a fact widely accepted among researchers, policymakers and financial market participants. The ongoing G20 data gap initiative, launched in 2009, is thereby only one of many examples that underline the importance of data provision and analysis (IMF & FSB, 2009, 2016). Despite the current progress in closing and identifying data gaps, there is a great consensus that further steps need to be taken to bring the relevant information foundation to a satisfactory level, particular for micro data. For this reason, the second stage of the G20 initiative has a more tangible focus that emphasizes the monitoring of financial risks, as well as the analysis of inter-linkages and spillovers in the financial sector (IMF & FSB, 2016). To achieve these goals and really understand the underlying threats and mechanisms of systemic risk, an accurate and goal-driven analysis of detailed micro data, containing information about single financial market participants and transactions, is key.

Even if there is fundamental consensus on the underlying issue, the provision (particularly to academics) and the use of relevant micro data still diverges largely across different countries. In contrast to the US, relevant European data, despite being collected in most cases, are only available in a very rudimentary way or very costly to acquire. Besides the concentration of top economic journals in the US, as well as the US centric perspective of the economic profession, the resulting lack of relevant EU data constitutes one of the main reasons why most empirical financial market research, even in Europe, solely builds upon the analysis of US data. The bias towards the use of US data leads to the issue that many important policy decisions are based only on, or are at least greatly influenced by, US empirical evidence. Despite being helpful to better understand some important mechanisms of

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financial markets, the regulatory and policy implications of these studies can be misleading as European issues, institutions and markets are different in many ways. Increasing transparency, at least to academics, would thus broaden and improve the basis of decision-making in the EU by availing the service of "free" academic consultants. Furthermore, it also increases the number of people investigating important databases, promotes finance research at European universities and provides additional opportunities for interaction between European policymakers and academics as in the US and other countries.

To improve the current situation, we want to focus on five different types of micro data in the following sections: bank balance sheet data, asset portfolio data, market transaction data, market high frequency data and central bank data. These data are on the one hand crucial for monitoring (systemic) risk in the financial system, identifying and understanding inter-linkages in financial markets and thus having important implications for policymakers and regulatory authorities. On the other hand, there is still a large discrepancy between the US and Europe for these areas and enhancements can be achieved at comparably low costs and without harming the data privacy of financial market players. For all types of data we outline: i) why this type of data is important; ii) how the data can be used to improve our understanding of financial markets and assist policymakers and regulation authorities; iii) what kind of data is currently available in the EU and; iv) how the situation can be improved in a straightforward and cheap way, taking account for confidentiality concerns.

Bank balance sheet data

In a world with strong interconnectedness of financial institutions, liquidity risk is one of the major perils to financial stability and therefore it is one of the main objectives of regulators worldwide to assure the liquidity of financial institutions in times of a crisis. For this purpose, it is however inevitable to not only consider the liquidity capacity of a single bank (funding liquidity risk) but also the inter-linkages throughout the entire financial sector, as these interdependencies may exacerbate potential contagion effects and increase the systemic (or market) liquidity risks. Take for example the latest financial crisis, at the beginning of the crisis most banks were heavily exposed to the rather illiquid housing market in the USA. The burst of the US housing bubble led to significant losses for banks and heavily increased the demand for liquidity. However, as most banks were affected in the same way the usual inter-banking market channel, such as the repurchase agreement (repo) market, to provide short-term liquidity broke down, as nearly no bank was willing to lend to other banks anymore. This market illiquidity in turn discouraged investors and prices, particularly those of illiquid assets, dropped further. A downward liquidity spiral was triggered. As a consequence, governments around the world

had to step in to reinstall the trust of bank clients and investors and prevent further damage to the global economy.

In addition to engaging in the inter-banking markets, there are, from a bank perspective, mainly two further possibilities to insure oneself against liquidity shocks: holding liquidity reserves or increasing bank capital. However, all of these insurance possibilities involve some costs. A large buffer of liquidity reserves hinder banks to invest in more profitable illiquid assets. Participation in the inter-banking market cannot insure the institutions against systematic liquidity risk and depends on pre-established bank connections. And raising additional capital is costly per se. Misjudgments of the downside risk of liquidity shortages, may thus incentivize banks to not insure themselves appropriately, in particular if banks can expect to be bailed out after a default (Hett & Schmidt, 2016). To account for these issues, tougher liquidity regulations were implemented, such as the revision of the liquidity coverage ratio as part of Basel III.

Having this in mind, it seems quite clear that detailed bank balance sheet data is needed to understand the exposures and interconnections of banks, which is crucial to clarify idiosyncratic as well as the systematic liquidity risks in financial markets and the consequences of different liquidity shocks. Therefore, regulators, policymakers, rating agencies and researchers all around the world heavily rely on bank balance sheet data. The most popular and commonly used database in that respect is the Statistics on Depository Institutions (SDI) database, which includes call reports of all US banks and is collected, updated and stored by the Federal Deposit Insurance Corporation (FDIC). A good example for a policy-relevant study using these datasets is the work by Castiglionesi, Feriozzi, Lóránth and Pelizzon (2014) who analyze the interplay between bank capital, interbank market activity and banks' portfolio choice. The authors conclude that the diversifiability of liquidity risk is an important factor for banks that influences banks' capital structures and is negatively connected to interbank market activity. For European commercial banks comparable bank balance sheet data is provided by bank and financial data providers, such as SNL or Bankscope. However, the available data is by far not as detailed as the FDIC data, for example the data set does not distinguish between unsecured interbank lending and repos. Furthermore, it is not reliable and clean enough to really draw robust policy implications. Given that comparable European data is collected in principle, it seems surprising that this data is not made available to academics and raises the question for the reasons why the call reports are not published as in the US. The usual referral to "legal issues" seems pleaded and we are certain that the benefits of more transparency clearly offset potential costs.

Asset portfolio data

Not only banks but also non-bank financial institutions (NBFIs), such as insurances, asset management companies, broker-dealers and other financial institutions may constitute a source of systemic risk. Due to a rather indirect financial market involvement of single institutions, the interconnectedness of these financial players play an even larger role to assess their respective systemic relevance. As a consequence, researchers, policymakers and regulators widely agree that solely identifying and dealing with non-bank systemically important financial institutions (SIFIs) in isolation is merely sufficient to address systemic risk accurately. Moreover, one need to identify "collective behavior" and examine the resulting correlation of nonbank financial institutions balance sheets, involving both the asset and liability side.

In this respect, insurance companies, both life and property & casualty (P&G), received heightened attention from researchers, policymakers and regulators as the biggest group of NBFIs. Identified channels of insurers' interconnectedness that may contribute to systemic risk include operational risks, reinsurance, non-traditional investments and financing. Extending this list, Getmansky, Girardi, Hanley, Nikolova & Pelizzon (2016) examine whether similarity of insurers' investment portfolios can propagate systemic risk through the so-called asset liquidation channel. The logic is as follows: an insurance company is forced to "fire sell" some of its assets, either because of asset valuation shocks, capital constraints or the sale of collateral. Because of these liquidations the market price of these assets drops and thereby disrupt trading. As a consequence other firms with a similar portfolio will also suffer from significant losses and may get problems to raise funds through the usual channels, triggering a downward spiral. This mechanism is aggravated if the assets are illiquid and if several insurers experience the same financial shock and hence want to fire sell the same assets at the same time.

By means of a cosine similarity measure, the authors are able to identify portfolio similarity among different insurers and provide evidence for a strong relation between portfolio similarity (and similar regulatory profiles) and the portfolio rebalancing decisions of insurers. This work helps regulators to predict asset liquidation vulnerabilities at both the security issuer and at the asset class levels by providing a straightforward method to measure and monitor the interconnectedness of insurers' portfolios. To construct the measure and conduct the analysis the authors use US data by the National Association of Insurance Commissioners (NAIC) containing detailed information on insurers' portfolio holdings and transactions at the individual security level, which allows to determine not only the annual portfolio composition but also its development over time.

Unfortunately, a similar evaluation in Europe is currently not feasible, as the available data is not as detailed as needed. We want to outline that the EIOPA started an initiative to collect comparable data.

However, up to this point this data has not been made available to academics, also referring to "legal issues" for transparency. Similar to bank balance sheet data, we have problems to identify unique features of the European system compared to the US that prohibits data transparency. In our opinion, potential benefits again clearly outweighs potential transparency issues.

Market transaction data

As outlined above, market liquidity is crucial for the functioning of financial markets. If the liquidity of a market dries up, the usual market mechanisms do not work anymore and the stability of financial markets is at risk – again the recent financial crisis offers a wide range of examples. For this reason, it is essential to measure, monitor and analyze the liquidity of different markets, including over-the-counter (OTC) fixed income markets. Addressing the dynamics of market liquidity, researchers and other parties usually refer to market transaction data, in most cases to the respective bid-ask spread - the wider the bid-ask spread the less liquid a market.

For trades that are executed via official exchanges this information is necessarily public and historical data can be attained via Bloomberg, Reuters or similar platforms. For data on over-the-counter (OTC) trades, at least equally important for financial stability, it gets more complicated though. Nevertheless, through the digitalization of these markets OTC (fixed income) trades became more transparent and there are a number of private providers that offer reliable OTC transaction data. Examples include FINRA's Trade Reporting and Compliance Engine (TRACE) database that contains real-time OTC Corporate Bond transaction data; MTS that mainly provides OTC data on European government bonds; and Tradeweb or Brokertec that offers data on a wide range of fixed income products.

The availability of this data triggered several studies in this area that greatly increased our knowledge about the underlying dynamics of market liquidity important to policymakers, regulators and market participants. Pelizzon, Subrahmanyam, Tomio & Uno (2016), for instance, examine the dynamic interrelation between credit risk and liquidity in European sovereign bond markets, particularly important in the light of the European Central Bank's (ECB) Long-Term Refinancing Operations (LTRO). They find a strong relation between credit risk and market liquidity that is negatively affected by the ECB's LTRO.

Thanks to good data availability on Italian sovereign bond markets, researchers were able to conduct several studies that greatly increased the understanding of the underlying liquidity dynamics in these markets, building a good information base for policymakers and regulators. For European corporate bond markets this is not true though. There is still no available data set for EU corporate bonds comparable to TRACE that covers this kind of data for the US. However, the Markets in Financial Instruments directive (MiFID) II aims to close this gap by increasing transparency of market

transactions considerably. Since its start in the beginning of 2018, the implementation is still in great need of improvement though. Furthermore, the fragmentation of this data is still a large issue. Many European authorities, such as the German Federal Financial Authority (BaFin), already collect relevant data, but its provision and storage are organized detached from each other. Hence, one can only look at transactions made in one specific country, only covering a small portion of transactions. Particularly in a world of multinational financial intermediaries that act on highly internationalized financial markets this data can only provide an incomplete picture. Merging these data sets on a European level would greatly improve the foundation of regulatory decision making for corporate bond markets.

Market high frequency data

The fourth area of microdata that we want to focus on is a rather new area that got increasingly relevant due to the emergence of algorithm based high-frequency trading (HFT) in which computers automatically execute trades as fast as within milli- or even microseconds. HFT is a very controversial topic that is lively debated in public and fueled the discussion on financial transaction taxes. In normal times, HFT strategies are usually beneficial to financial stability, as prices on financial markets may adopt quicker and more accurate to shocks (price discovery) and market liquidity increases. In this respect, Bellia, Pelizzon, Subrahmanyam, Uno & Yuferova (2016) use millisecond data from the Tokyo stock exchange in the pre-opening and opening periods to assess the effect of HFT on price discovery and market liquidity, finding positive effects for both price discovery and market liquidity . In turbulent times the effects of HFT may reverse though and exaggerate negative shocks or trading mistakes, which in turn increases market volatility and fragility. The logic behind that claim is that algorithms just exploit mechanical trading patterns and do not take into account important fundamentals, crucial to determine the actual price.

Despite the lively debate, empirical evidence is rather limited though and more research is needed to really understand the mechanisms and effects of HFT. This lack of empirical studies is partly attributable to data limitations and requirements, as well as to the high costs of relevant data. Relevant data needs to be available at the millisecond level, ideally capturing trade size, trade direction, quotes and the initiator of the trade. For the Nasdaq such data is already freely available to academics. For the largest exchanges in Europe the available data is even more detailed as in the US. However, the cost of this data is very high, making its use very difficult for academics. Providing a free or at least cheaper alternative to the current commercially used data sets, would allow researchers and regulators to better assess the potential and the risk of high frequency trading.

Central bank data

At first, central bank data seems mainly important from a macro perspective. However, when a central bank engages in quantitative easing (QE) it usually acts as a large but a more or less regular market participant, making respective QE transactions important micro data to consider. Focusing on Europe, the recent unconventional monetary policy measures of the ECB constitute a large market intervention that have crucial implications not only for the respective bond yields but also for the liquidity of different European bond markets. Naturally, this may also affect the systemic risk of the financial system, particularly when the central bank eventually scales back its purchase program.

To assess how central bank interventions influence the liquidity of, and prices on, different bond markets, detailed data on the development of central bank exposures are needed. Pelizzon, Subrahmanyam, Tobe and Uno (2017) provide a good example of a study that exploits such data from the Bank of Japan. In the paper, the authors examine scarcity effects, arising from an increased public demand for certain bonds, and spotlight effects, resulting from a shifted investor focus on certain bond markets, of quantitative easing on market liquidity for Japanese government bonds (JGBs). The authors conclude that "overall, the prices of JGBs rise by reflecting only the strong demand from the QE, despite the deterioration in liquidity".

Providing respective data, the Bank of Japan and the Federal Reserve System are very transparent, whereby the ECB only provides a snapshot of the current situation without itemizing the single positions. In the light of the ongoing discussion about scaling back quantitative easing measures in Europe, transparent QE data gets even more relevant, providing good reasons why the ECB should adopt QE data transparency standards from other developed countries, such as Japan and the US.

Conclusion

Clarifying risk exposures for regulators and the public; increasing the number of "investigators" of central regulatory databases; utilizing the perspective and knowledge of distinguished scholars; shifting the economic research focus on European issues, institutions and markets; enhancing the information basis of European policy and regulatory decision making; improving the quality and policy-focus of finance research in Europe; providing more opportunities for interaction between European academics and policymakers; facilitating financial stability. The list of potential benefits of increased financial market transparency to academics is long. Nevertheless, an increased provision of micro data also raises several reasonable concerns about confidentiality, particular in an industry in which intellectual property is not patentable, business plans heavily rely on trade secrecy and that is subject to specific secrecy stipulations, such as the bank secrecy. For this reason, it is important to make only data available that does not harm financial market players and preserve privacy wherever it is

necessary. In this respect, digitalization not only facilitates data collection but also offers possibilities to preserve privacy without losing important information of transparent micro data. Abbe, Khandani & Lo (2012), for instance, build upon insights from cryptography and propose a method to share and aggregate important risk measures without jeopardizing the privacy of financial parties and the need for a trusted third party .

Notwithstanding the potential risks of increased transparency, we are certain that for all five areas of micro data outlined in this Policy Letter, the benefits of increased transparency greatly offset potential downsides. For this reason, European policymakers would do well to follow the US example and promote micro data transparency in the areas mentioned above. For most cases, relevant data is already collected (at least on the national level), but just not made available to academics. In an attempt to find the underlying reasons, we fail to identify unique characteristics of European financial markets compared to the US that would prohibit a similar micro data transparency. It rather seems that bureaucratic inertia, lacking cross-border communication and collaboration, as well as a subliminal skepticism towards academics are among the main factors that contribute to the current micro data non-transparency. Overcoming these obstacles could foster financial stability in Europe and assure level playing fields with US regulators and policymakers.

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