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Changes in the Financial Regulatory Environment of Commercial Papers in the United States and Europe

SUMMARY: Owing to their liquid nature and their presumed lack of risk, commercial papers have always played a key role in the portfolio of money-market funds. The latter perception was largely fuelled by the fixed NAV calculation method (USD 1) widely employed by market participants for the calculation of the daily net asset value of money market funds' shares.[1] The economic crisis of 2007–2009 and the European sovereign debt crisis in 2010–2011, however, demonstrated that – in the lack of adequate regulation – commercial papers carry inherent macroeconomic threats in the course of the operation of international money and capital markets. The aim of the study is to give an overview of the regulatory changes affecting commercial papers and money market funds in the period of 2011–2016, with special regard to the possible effects of the changes on the state budget via money market funds in the United States. With the proliferation of asset-backed commercial papers, commercial papers lost not only their low-risk status, but also their unsecured nature. Indeed, in the absence of proper regulation money market funds built an enormous portfolio of such toxic assets during the crisis of 2007–2009, particularly in the United States. With the re-regulation of money market funds – by abolishing the fixed net asset value calculation method and by restricting investments to truly short-term and low-risk money market assets, the Securities and Exchange Commission (SEC) followed this process, and restored the status of money market funds as low-risk and high-liquidity investment vehicles. In the study the author uses quantitative analysis and comparative analysis to gauge the effect of the regulatory changes.*

KEYWORDS: money and capital market, money market fund, commercial paper, financial regulation
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Commercial papers play a major role in the portfolio of money market funds. The popularity of commercial papers was established by the features that securities can be introduced to the market based on a system of rules that are favourable and flexible for the issuers, which will facilitate the companies' access to capital. Compared to deposits, commercial papers were more appealing for investors due to their more liquid and flexible maturity structure which ensures more choices and an almost automatic renewal option. In the United States it was matched with the idea that, similar to deposits, commercial papers were also considered as safe financial assets, making the daily fixed (USD 1) net asset value[2] calculation method easily applicable to money market funds. The financial crisis

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of 2007–2009 refuted this notion once and for all when investors were forced to sustain severe losses on money market fund investments which had been deemed safe theretofore. However, due to the perception that the safety level of commercial papers is similar to that of deposits, the risks to the state budget inherent in commercial papers pointed far beyond the already significant market segment of the security. This is why a comprehensive regulatory reform by the SEC became necessary in the United States.

As for the regulation of money market funds, 14 October 2016 was a milestone in the United States.[3] It was then that the former fixed (USD 1) net asset value calculation system was cancelled and the mandatory flexible (floating) net asset value calculation was introduced for prime institutional[4] and tax-exempt municipal[5] money market funds. The reform[6] spurred significant cash movements between the money market funds.

In order to avoid the critical contraction of liquidity at macroeconomic level, the regulatory changes[7] included a provision on the imposition of a mandatory, 1 per cent redemption (liquidity) fee on the aforementioned non-government money market funds if the fund's weekly liquidity level falls below 10 per cent of the average weekly total assets of the money market fund, unless the fund's board determines that imposing such a fee is not in the best interests of the fund. In addition, within this framework, the funds can also set the liquidity fee at a higher level (but only up to 2 per cent) or alternatively, impose a lower fee if they consider either solution to be more in line with the best interests of the money market fund. In this situation, the board of directors may, at its discretion, suspend the redemption of shares temporarily (SEC, 2014).

The rise of money market funds quickly made this financial asset one of the most dominant assets of corporate cash flow management[8] (*Lukács et al.,* 2012). Thus, the significant change affecting money market funds will also influence the money market as a whole and its individual participants. The operating mechanism of this impact was so difficult to identify that although shadow banking system mechanisms had been at work since as early as 1905, they were only defined much later, at the beginning of the 21st century.[9] The effects of the shadow banking system may pose a threat not only to the national economy as a whole but also to public finances due to their complexity and their ability to paralyse the money market as well as the economy.

However, in view of the new regulation the question arose whether money market funds could continue to maintain their dominant role in the future or other money market instruments would gain momentum instead. Another important issue is how the changes in the regulation of money market funds will affect money markets, in particular, the market of commercial papers, which represent the second biggest share in the portfolio of the funds. It is also important to review the effects of the regulation with regard to the financial risks to public finances, as potential (shadow) banking rushes may put a significant burden on the public finances of a given national economy if the given shadow banking player or form was to be rescued, in part or in full, from the state budget as was the case in the United States in 2008–2009.

Due to the double role they play in the money market, commercial papers also carry significant inherent risks. It is primarily owing to asset-backed commercial papers (ABCP) that they perform this role.[10] It was the liquidity problems arising in the market of these types of commercial papers that were responsible for transforming the 2007–2009 subprime mortgage crisis into an international financial crisis. Thus, in their role as shadow banking players, these types of commercial

papers carried clearly identifiable macroprudential risks. Therefore, it is particularly important for the regulatory authorities to carry out appropriate, gradual, thoroughly prepared and clearly communicated regulation changes in the money and capital markets.[11]

In the remaining part of the paper, we will first analyse the market of commercial papers, then proceed to describe the changes in the regulation of money market funds in the United States, reviewing the expected effects of the changes in relation to the commercial paper market. Indeed, these two money market papers developed in close interaction, each becoming a highly influential money market instrument on its own right. Thus, regulatory changes affecting one vehicle (the money market fund), made a significant impact on the market of the other instrument (the commercial paper).

In this regard, the important question is what kind of role commercial papers may play in the future as the tools of corporate cash flow management. Will commercial paper issues remain suitable for large corporations to access funds in the future?

DEFINITION OF COMMERCIAL PAPERS

Commercial papers are short-term,[12] typically uncovered papers issued by economic entities and municipalities. Commercial paper issues are intended to finance short-term asset portfolios – typically on a temporary basis – in the case of non-financial corporations, and to refinance outstanding loan portfolios – typically over the long term – in the case of financial corporations. Moreover, certain forms of commercial papers are secured by collateral, such as asset-backed commercial papers. These securities are issued by special purpose entities (SPE) or special purpose vehicles (SPV) established specifically for this purpose. Commercial papers serve the continuous and profitable refinancing of purchased accounts receivable portfolios even in this case, similar to the offering of commercial papers by financial companies.

The size of the commercial paper market is aptly illustrated by the fact that by 2007, the value of commercial papers outstanding reached USD 2 billion in the United States (*Kacperczyk – Schnabbl,* 2010). Thus they pushed treasury bills back to the second place within money market papers as the traded volume of the latter accounted for only USD 940 billion outstanding in the same year.

Commercial papers as investments have two significant money market alternatives: certificates of deposit and repurchase transactions.[13] Certificates of deposit are popular targets for the temporary fund surplus of enterprises and wealthy private individuals. This form of savings differs from traditional bank deposits in that high-value certificates of deposit[14] are fit for circulation in the money market independently.

Commercial papers are priced depending on their risks and they have higher yields than those of treasury bills. This is because they typically carry higher inherent risks compared to the government; thus their issuers offer a risk premium to the investors relative to the yield available on investments in government securities. At the same time, the yield on commercial papers is lower than interbank market interest rates (e. g. federal funds rate,[15] LIBOR).[16] Owing to their lower interest rate, commercial papers are cheaper forms of borrowing compared to bank loans.

For the majority of the subscriptions, the investment service provider participating in the execution also purchases from the issued securities for its own account. If the investor subscribes securities again in the same volume from the new offering upon maturity, the commercial paper as a financial asset will be an investment for ever increasing periods.

However, if the investor does not renew the maturing security upon maturity, it will represent a liquidity risk for the issuer. On a market characterised by scarce liquidity, the lack of renewals will lead to a situation where the issuing companies will be forced to liquidate other assets in order to ensure the funds necessary for the repayment of the maturing commercial papers. This process may lead to the systemic contraction of the funds available on the money market. Since then the commercial paper market can no longer ensure the necessary financial funds, the issuers may turn to other instruments on the credit market in the course of their cash flow management.

COMMERCIAL PAPERS AS THE DOMINANT PLAYERS ON THE US MONEY MARKET

Brief history of commercial papers and their features in the US

Modern commercial papers appeared in the United States from the 1920's. These were corporate commercial papers which were only issued by reputable large corporations in big denominations, typically USD 250,000 or higher, where the denominations grew by USD 1,000 individually. These commitments were embodied in securities and they were launched onto the money market as short-term bonds as an alternative to bank loans.[17]

In this period, the change in the regulation facilitated the growth of the market of commercial papers as a result of which from 1914 – that is, nearly since its formation – the Fed accepted some of the commercial papers for discounting. This paved the way for commercial papers to fulfil the role of primary liquidity reserves[18] in the two-tier banking system. This process was accomplished despite the fact that, as discussed above, the secondary market of commercial papers is still very narrow as the owners typically hold the securities until maturity. This fact may reduce the activity of the issuers on the commercial papers market.

In the United States, the appeal of commercial papers is precisely in the fact that the issuer can request the SEC to approve issuance and the announcement of a bond programme of a fixed limit amount suitable for the issuer's changing liquidity. Thus, within the approved limit, offerings can be flexible, i.e. in line with the issuer's needs. However, if the issuer meets three conditions,[19] no permission will be necessary from the Supervisory Authority, and the issuer can issue securities individually, almost completely flexibly with any maturity between 1 and 270 days as needed.

In the United States 80 per cent of the issuers of commercial papers rely on the expertise of investment service providers during the pricing procedure. Familiarity with the market and a broad customer relationship system are indispensable for the placement of commercial papers with variable maturities. This is also important because investors hold a significant portion of the commercial papers until maturity. Therefore, investment service providers participating in the issuance will also act as *de facto* market makers during the offering. By purchasing the commercial papers that remained unsubscribed during the issue, even in the absence of market demand they absorb the commercial papers issued. Investment service providers purchase the papers that investors intend to sell before maturity for their own account, thus they ensure demand for the sellers' securities on the secondary market as well. If there is demand for commercial papers among the clients of the investment service provider, it can satisfy the demand from its own stock, selling the commercial papers previously purchased for their own trading accounts.

From the end of the 1960s, two additional

market processes strengthened the development of the commercial paper market. The interest rates paid on certificates of deposit – which were not subject to the interest rate restrictions imposed by Regulation Q[20] in the USA in the second half of the 1960s and thus appeared as an alternative thereto – had already exceeded the statutory interest rate cap in the last three quarters of 1966 (*Abken,* 1981). Therefore, commercial banks themselves advised strongly capitalised companies to enter the commercial paper market. They supported their clients' willingness to purchase papers so actively that they provided a credit line for the subscription. This becomes fairly important when the issuer is unable to pay the commercial paper's principal and the pertaining interest rates upon maturity. This solution proved to be useful especially when the investor, for lack of funds, could have only partially renewed its commercial paper investments at the given issuer whereby the latter would have lost a certain portion of the liquidity.

With these tools, which ensured issuers' solvency and established a sufficiently liquid secondary market, investment service providers enabled American large corporations to definitively include commercial papers in the toolkit of cash flow management. Thus large corporations gained access to commercial bank funds more inexpensively, but participating commercial banks also benefited from the process (*Lentner et al.,* 2015). The commission paid for the provision of the credit line ensured higher revenues for the latter in the case of lower interest rates compared to the extremely low interest margin available on loans. Thus the banks' credit risk did not increase since the best debtors appeared on the commercial papers market as issuers.

The two oil crises of the 1970s directed both issuers and bond purchasers to commercial papers with shorter maturities. The underlying reasons for this development included high inflation, market interest rates and an interest rate trend that was difficult to predict in the long run. On the demand side, the appearance of money market funds[21] and heightened interest in commercial papers gave a significant boost to the issue of commercial papers from the 1970s.

The role of financial institutions and their interests in the issue of commercial papers

Besides corporate bonds, financial institutions financing consumer durable goods and car sales appeared in the commercial paper market as early as the 1920s. These issuers created a new type of commercial papers, the financial commercial paper. From the start, commercial papers issued by financial institutions (and their interests) accounted for 20 per cent of all issues persistently (Abken, 1981). The commercial paper issues of the financial sector are special because they offer an advantageous alternative to borrowing even for financial institutions.

The issue of financial commercial papers ensures the most extensive and cheapest fund raising possibility for the subsidiaries of foreign banks. They needed increasing dollar funds for their growing loan disbursements because they had a shortage of these funds compared to US-based financial institutions (*Borzán et al.,* 2011). The rise of LIBOR – the interest rate determining the loan transactions concluded between financial institutions in the international money markets – resulted in an ever-increasing cost of funds. The situation of foreign banks was rendered even more difficult by the withholding tax[22] in the United States, which entailed an extra cost for foreign issuers as they had to assume this burden from the holders of the securities to ensure the competitiveness of the pricing of the issuance.

Issuing commercial papers appealed to foreign banks intending to expand in the United States for two reasons. On the one hand, they were able to borrow funds at a price lower by at least 25 basis points (Abken, 1981) compared to interbank loans. On the other hand, it meant further advantages for foreign banks that, in preparation for these issues, one of the three large credit rating agencies (Moody's, Standard & Poor's, Fitch Ratings) performed a rating procedure, which allowed the participants of the American money market to obtain information on new issuers coming from the European or the Asian market. As a result, not only the reputation of the issuing financial institution grew significantly but also its potential client base. The only risk that the issuer had to face was not getting the best rating because in that case, it had no access to funds cheaper than those available in the interbank market. In this case, the commercial paper issuer lost its interest rate advantage relative to the interbank loan.

It meant an advantage both for foreign and domestic banks that the surety and guarantee fees and the arranger fees of the issues offered a more profitable opportunity compared to the otherwise less profitable lending to large corporations, which was extremely competitive and hence, offered low margins. Through the offering of commercial papers, bank holdings are able to turn toward new segments of trade financing through their subsidiaries. Later, the issue of commercial papers also gained momentum during the financing of the leasing transactions of financial institutions.

Despite the tightening of the 1971 Fed regulation (under which the Fed imposed a minimum reserve requirement on banks also for funds raised in the commercial paper market through their subsidiaries, similar to the case of deposits), the number of commercial paper offerings grew dynamically. This contradiction is explained by the large number of acquisitions (598) by bank holdings in 1973–74, which targeted smaller financial institutions typically involved in trade financing, factoring and leasing (Abken, 1981). The growing liquidity needs of bank holdings enlarged by the new acquisitions were covered by commercial paper issuance.

As the subsidiaries of domestic financial institutions involved in consumer lending started to finance themselves in the United States from the commercial paper market and the American subsidiaries of foreign banks started to borrow from the same securities market segment, the commercial paper market gained a new character. Accordingly, the commercial paper market obtained such a large share in money markets that would have forced regulatory authorities to consider it a systemic risk factor in the international money markets. Indeed, based on the domino effect, this process of embedding may pose (through the link between the American and the European money markets) liquidity risks to individual sub-markets of the money market. This impact mechanism is manifested in the series of events of the 2007–2009 financial crisis, the negative effects of which could only be halted by the Fed's aforementioned intervention affecting the market segments concerned.

By the 1980s the commercial paper market of the USA reached its golden age. Simultaneously, in the United States commercial papers became an extremely important monetary policy instrument over the long term. The strength of the market is demonstrated by the fact that a significant portfolio has been exchanged despite turbulent changes in the oil market and the tightening regulatory environment, ensuring the persistently dominant market role of commercial papers as opposed to the competitors: discount treasury bills and corporate loans granted to the best debtors.

In the 1980s two additional factors contributed to the expansion of commercial pa-

pers. These factors pushed issuers toward instruments (including commercial papers) that provide short-term borrowing. The first factor – on the demand side – was the significant growth of petrodollar markets,[23] which supported the appearance of new issuers in the aftermath of the oil crisis. The second factor – on the supply side – was the increasing interest of foreign issuers. The latter financed not only their USD-denominated but also other FX-based liquidity needs from the competitive (and thus relatively cheap) American market. Issuers were also supported in this endeavour by the increasingly widespread use of swap transactions.[24]

The first asset-backed commercial paper also appeared in this market environment in 1983.[25] In light of its role in the 2007–2009 financial crisis, this security would merit a separate analysis; however, it is outside the scope of this study. However, in respect of its widespread use it is important to note that it represents a serious systemic risk, both individually and in relation to other market factors.[26]

COMMERCIAL PAPERS IN THE MONEY MARKET OF THE EUROPEAN UNION

The features of commercial papers in the European Union

The commercial paper market is smaller in Europe than in the United States where – as a result of the process described above – it achieved a market leader role, even outpacing treasury bills.[27] This difference is partly due to the fact that they appeared in Europe about a century later, in the middle of the 1980s, which marked the launch of the operation of the eurocommercial paper market. But since the European system is a universal banking system and direct commercial bank financing plays a significant role in satisfying the liquidity need of large corporations, the volume of commercial paper issues is smaller in Europe.

The major feature of the European commercial paper market is that the securities are issued on the single European market instead of the individual markets of Member States. Longer terms are also a special feature of the European market. While in the United States the aforementioned 270-day term is the statutory limit, in the European Union, companies and municipalities can issue commercial papers with a term of even 1 year (365 days). Nevertheless, in the American market commercial papers programmes provide issuers with the option of medium-term financing (typically with 3 to 5-year maturities). Bond programmes spanning several years are not possible in Europe; the competent supervisory authority approves the offering programme with a validity of up to 12 months.[28]

The currency of issue is typically USD in Europe as well, although some issues are denominated in EUR and GBP. The choice between various currencies significantly increases the leeway of corporate cash flow management.

The important difference between the two big markets is that while intraday clearing is typical in the United States through a clearing house named the *Depository Trust Company*, it takes two days for the European clearing houses (e.g. *Euroclear, Clearstream*) (*Treasury Today,* 2002). This is important because during liquidity management, companies in Europe need to reckon with a lag of several days.

In addition to the differences, it is important to point out an important similarity in respect of the two markets: the possibility of exemption from the obligation to provide information on the issue. In Europe, issuers can only utilise this opportunity if the security is only subscribed by qualified investors[29] and the denomination of the commercial paper reaches or exceeds fifty thousand euros.[30]

Commercial papers appeared in Europe as an alternative to bank loans for the issuer international corporations because, compared to long-term bank loans with fixed interest rates it is better adjusted to the cash flow management of companies.

As a result, the commercial paper market carved out a significant share in corporate cash flow management in Europe as well. It is an additional advantage for issuer companies that the offering of commercial papers in the single European market contributes to their widespread recognition which, during the subsequent capital market transactions, may offer significant advantages to them by increasing the likelihood of the success of the issues as well as the possibility of a more favourable pricing.

In addition to their role as issuers, European banks also began to show interest in commercial papers as investors. Therefore, in addition to large corporations, commercial papers were also added to the tools of banks' liquidity management.

At the level of the European Union, the year of 2001 represented a breakthrough for the European commercial papers market with the amendment of the UCITS (Undertaking of Collective Investments in Transferable Securities) Directive of 1985 on 4 December 2001 (Treasury Today, 2002). Under the first point of the amendment, enterprises managing collective investment instruments can invest their clients' savings in short-term money market instruments in addition to quoted shares and bonds. Besides certificates of deposit, bank deposits and investment funds, these money market instruments also include commercial papers. As a result of stable growth, between 2003 and 2007, the commercial paper portfolio surged to USD 450 billion from USD 250 billion in Europe (*Brace,* 2014).

Owing to the 2007–2009 financial crisis, the volume of commercial paper issues decreased continuously in Europe as well, but not nearly to the extent seen in the United States. The fall in the commercial papers exceeded 50 per cent after the crisis in the United States. Although there was a significant drop in Europe as well, it took place in 2010 only, and net issuance was down only 30 per cent (EUR 150 billion) compared to the previous level (Brace, 2014).

THE TEST OF MONEY MARKET FUNDS FOLLOWING CHANGES IN LEGAL REGULATIONS IN 2010

The 2011 sovereign debt crisis of the affected Member States of the euro area was the first test of the SEC's regulatory tightening of 23 February 2010 affecting money market funds in the United States. The legislative changes applicable to money market funds entered into force in five phases between May 2010 and October 2011, the most important of which were portfolio management and liquidity rules, effective from as early as June 2010. Consequently, the new regulation was put to the test by the European sovereign debt crisis in the summer of 2011 already. Since money market funds managed to keep net asset value at USD 1 without "breaking the buck" (SEC, 2014), the new system proved to be viable. Risks to public finance did not reach even the level at which intervention is contemplated, thus the new regulation also performed well in this regard. All this despite the fact that there was a significant capital outflow amounting to USD 100 billion.

However, in 2012 the analysis of the SEC's Division of Economic and Risk Analysis (DERA)[31] detected a number of additional liquidity risks in the money markets, in view of which they recommended further tightening for money market funds not investing in government securities. Additional reforms, however, were not implemented until 2016.

Although the next test did not take long to materialise, the new rules for money market funds effective from 2010 passed it successfully. In 2013, the challenge was manifested in the general uncertainty around the debt ceiling[32] of the United States, which sorely affected the liquidity of money markets and hence, money market funds. This is aptly illustrated by the 6.1 per cent (USD 54.1 billion) outflow of the money market fund portfolio in the first and most intensive two weeks of the mini-crisis (of 3–16 October 2013). Even in this case, however, there was no need for the intervention of the SEC that represents public finances in this regard, thus the risks to public finances decreased further in the United States after the second successful regulatory test.

THE MONEY MARKET REGULATION EFFECTIVE FROM 2016 AND ITS IMPACT ON COMMERCIAL PAPERS AND ON THE MARKET OF MONEY MARKET FUNDS IN THE UNITED STATES AND EUROPE

In response to the DERA analysis mentioned above, the SEC imposed further restrictions on the money market funds of institutional investors operating in the United States (*Pozen,* 2016) on 14 October 2016 (*Powell,* 2015). The most important element of the tightening is the cancellation of the fixed daily USD 1 net asset value system and the introduction of the floating net asset value calculation. Simultaneously, the rules governing the liquidity management of money market funds were tightened further.

This solution is laudable, considering that the fixed asset value regime appeared as a deposit-like operation but in reality it was about the issuance of securities. Although there was definitely no deposit insurance-type guarantee element behind the issues, investors considered the one dollar asset value as a capital guarantee. When this perception was rebutted by the 2007–2008 financial crisis, the Fed created a temporary guarantee system in response to the panic, but it was only similar to deposit insurance because, due to its temporary nature and the exclusive goal of stifling the panic, the similarity was only in form rather than content.

However, several aspects need to be considered when reviewing the effects of the 2016 regulatory decision regarding money market funds. For example, during the 2007–2009 crisis the portfolio of money market funds decreased by 60 per cent in France despite the fact that French money market funds had applied variable pricing even before the capital outflow (Pozen, 2016). Thus, in and of itself, the application of floating net asset values was a necessary but not sufficient solution in the United States.

In addition to the new system of the net asset value, the simultaneous introduction of several liquidity rules also formed a part of the changes. The part of the new American regulation of money market funds focusing on portfolio composition and liquidity conditions is also relevant from this aspect (*Lewis,* 2013). The latter two may subsequently have the disadvantage that money market funds may not be able to pump sufficient surplus liquidity into the financial system in the event of a severe contraction in liquidity. Since money market funds adjusted to the regulation in a crisis-free period, the true test of this assumption can only be a liquidity crisis commensurate to the default of Lehman Brothers in 2008. The adjustment to the new rules did not cause any particular trouble either for large corporations or for financial institutions. This adjustment process may have had a significantly different result if it took place in a liquidity crisis period in response to an instant regulatory change.

In the third quarter of 2016, in anticipa-

tion of the new, flexible asset value regulation interbank interest rates surged from 60 basis points (USD 3-month LIBOR interest rate level) to above 85 basis points. Therefore, access to funds temporarily became more expansive both for large corporations and medium- and small-sized companies, indeed, even for federal states and municipalities. The market activity of commercial papers dropped significantly, and outstanding volumes nearly halved due to the loss in demand. Even after 14 October 2016, interbank interest rates were unable to approach their former levels and stabilised permanently at a higher level. This can only be partly attributed to the regulation change as the primary cause of the increase was the rise in inflation expectations. In other words, the start of the inflationary trend accidentally overlapped with the period of preparation for the regulation, thus temporarily, these two effects may have randomly strengthened each other.

Therefore, the effect of the 2016 regulation that steered the liquidity boosting portfolio composition toward a lower risk level can only be deemed unfavourable in the short term. Indeed, this is only partly supported by the temporary – but truly significant – increase in interbank interest rates, which can also be attributed to other reasons. However, the long-term effects can be far more favourable to the commercial paper market in view of the fact that the risks concentrated on the money markets can be brought more in line with the investment yield level. This may help prevent a new financial crisis or at least mitigate its effects. Thus, money market funds that do not invest their clients' savings in government securities exclusively can be now classified in the global system of corporate cash flow management in accordance with their risk level.

The systemic risks of money market funds will be significantly mitigated when the collateral for the redemption of the investment units are continuously available for the investors of the money market funds in the future due to the higher ratio of liquid assets. It is also true for individual money market funds that in case of a significant fall in liquidity, they will be able to manage these risks with the legal institution of suspension ensured by the new regulation. The resulting effects will not be unpredictable for money market participants, as any action on the part of money market mutual funds will be taken within the framework of a predictable and transparent regulation. This serves the long-term interests of investors specifically, and presumably, the measures will be restricted to a temporary period only. Indeed, uncertainty is the biggest threat to money and capital markets, but with this option the new regulation may significantly reduce the level of uncertainty. Ultimately, this may help investors in avoiding panic-induced decisions and implement more well-founded investment strategies (*Bárczi – Zémán,* 2015).

Monetary authorities, in turn, can use commercial paper markets more efficiently to influence interest rates in a market that is typically focused on institutional investors.

CONCLUSIONS

We may conclude that the new American rules on money market funds go far beyond their own market segments and may affect both US and international commercial paper markets significantly. Although the tightening of liquidity rules temporarily affected developments in the commercial paper market unfavourably, this effect is dwarfed by the advantages of a more predictable and sustainable operation. The risks to public finances practically fell to a minimum in this market of money market instruments. When financial and asset-backed commercial papers only acquire a large portfolio share in long-

term investments, the liquidity of these two securities market segments becomes more transparent and the pricing of financial assets on the risk-yield scale becomes more accurate.

This eliminates the risk of a spillover of the shadow banking activity, which prompted the Fed in 2008 to intervene with unconventional tools to protect the public finances of the United States and to enable the SEC to prevent the collapse of the money market. Consequently, any panic in the market can be avoided if investors (even institutional investors) stop treating financial and asset-backed commercial papers as money market instruments like they did prior to 2008 under the fixed USD 1 net asset value regime. In fact, these are true capital market instruments because, due to their continually renewing nature, they behave as *de facto* long-term financial assets. And the latter is a special feature of capital market instruments. Thus, they are classified into the right category among the instruments of corporate cash flow management, but it is only true for short-term (unsecured) commercial papers and money market funds. Funds containing asset-backed commercial papers secured by long-term assets will be typically removed from the short-term cash flow management instruments of large corporations. Although the latter assets are likely to remain among the investments of the financial sector – albeit presumably in a smaller ratio –, typically in the portfolios of investment banks and the investment banking departments of universal banks.

Consequently, even the market of extremely short-term (1–14 days) commercial papers will cease to function as a *de facto* money market in the future because, due to the short time horizon, issuers strive to ensure greater liquidity in regards to these financial assets by allocating funds that may become necessary in the absence of renewals. Having said that, with the renewal of the issues, the term of such an investment may be as long as a year. Therefore, in this case the commercial paper is right on the border of a money market investment, but what is even more important is that liquidity risk may also increase if investors fail to renew a large number of securities amid scarce money market liquidity. It should also be considered that these short-term money market instruments – money market funds – do not enter the market individually only (as individual investments) but may also appear indirectly, as a portfolio element, or as part of repo transactions as security collateral. The latter role carries further liquidity risks for the money market. For all these reasons, this market segment is expected to cease to operate as an instrument in the liquidity and cash flow management[33] of company groups either as a direct investment on the investor's side, or as a portfolio investment in the case of real money market funds.

As a result of the new regulation, money market funds can thus fulfil their classical role in money markets once again. In essence, they ensure higher yields than deposits with higher liquidity, expressly for the short term, which may be reduced even further in the case of money market instruments to the safe placement of cash flows available within three months. Parallel to this, their risk level barely exceeds the risks assumed by deposit holders, practically only by the amount of the deposit insurance guarantee. Thus the limited, risk-commensurate yield surplus relative to deposits will be realised which, naturally, was an important goal for the money market funds affected by the regulation in any event. Indeed, these money market funds will be purchased by the right investors, whereas investors seeking higher yields and assuming larger risks will turn to money market funds investing in bonds or not exclusively in government securities. As a result, money market funds that do not invest exclusively in government securities

will also reduce the weight of the previously dominating commercial papers in the portfolio and simultaneously increase the share of risk-free government securities. Consequently, even the funds that also invest in non-government securities will build up a portfolio with a progressively decreasing average duration in the periods that require higher liquidity, and the share of commercial papers will necessarily decline in these portfolios. However, thanks to the regulation, risks should not increase even in the case of relatively scarce liquidity compared to the previous situation, where asset-backed commercial papers represented a far greater share in the portfolio of money market funds. Thus, the primary goal of maintaining liquidity and continuous solvency can be upheld (apart from extreme cases such as a sovereign default, public deficit, or reaching a threshold), while a minimum yield surplus can be ensured throughout most of the operation with changes in the average duration of the portfolio and a prudent fund management activity.

Last but not least, it should be emphasised that the multi-step changes in the regulation of money market funds could be successful also because the regulatory authority (SEC) took into account the macroprudential risks surrounding money market funds and the assets within their portfolios, including the individual types of commercial papers. Consequently, the first step of the gradual and well-communicated change in the regulations successfully passed the test of the 2011 European sovereign debt crisis and the uncertainty around the US debt ceiling in 2013, and the adjustment of the market concluded without any significant money market turbulence in 2016 for the market players concerned. The regulatory authority's intervention alleviated the risks to public finances. This process can serve as a good example – or perhaps even as best practice – in the future for all other shadow banking participants and activities, with resolute regulation changes that are gradual, yet precisely and clearly communicated to stakeholders. Money markets and the commercial paper market were stabilised in the United States amid smaller portfolios and lower interest rate levels than before.

The effects of the regulatory changes are enforced indirectly and to a limited degree in the European money markets as well, through the borrowing opportunities of European banks' American subsidiaries. The European effects were limited by the smaller volume of the European commercial paper market and the variable net asset value calculation method from which European money market funds did not deviate even when the fixed net asset value calculation was applied in the American money market.

In summary, the regulation changes affecting money market funds between 2011 and 2016 steered the operation of money market funds to the right path in the United States. As a result of the regulation, riskier asset-backed types of commercial papers were crowded out of money market funds investing in short-term instruments. This not only synchronised the yield-to-risk ratio of money market funds but also dissipated the macroeconomic risks associated with asset-backed commercial papers as shadow banking factors (in the case of money market funds). This, in turn, significantly reduced the vulnerability of the financial management of the general government. Consequently, the impact of the 2007–2009 liquidity crisis has become preventable in the case of money market funds. Thanks to the regulation, the cash flow management of large corporations has become more prudent: provided that they act in a sufficiently prudent manner, large corporations now invest their liquid assets in money market funds that invest exclusively in government securities and are intended to absorb truly temporary cash surpluses.

Notes

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[1] The basis of the fixed net asset value calculation per one USD was the assumption that the market value of the securities included in the portfolio of money market funds increases continuously, thus by distributing costs at a daily level, the value of one investment unit can never fall below the initial one dollar value.

[2] The net asset value shows the difference between the total receivables and liabilities of a portfolio at a given point in time. This net asset value can be defined for one share (i.e. an investment unit) if we divide the portfolio's net asset value by the number of total outstanding investment units.

[3] See: http://www.bloomberg.com/news/articles/2016–09–13/there-s-a–300-billion-exodus-ahead-as-new-money-fund-era-dawns (21/04/2017)

[4] Money market funds in the United States that can invest their accumulated savings in assets issued by banks and enterprises, in addition to short-term government securities. Thus, they can also invest in commercial papers and repurchase transactions.

[5] Municipal money market funds are money market funds in the United States that primarily invest the assets managed by them in short-term instruments issued by municipalities and federal states, in addition to short-term government securities.

[6] The SEC regulation adopted on 23 July 2014 amended Section 270.2a–1 of 17 CFR Ch. II of the Investment Company Act of 1940, see https://www.sec.gov/rules/final/2014/33–9616.pdf (05/04/2017).

[7] With the regulation amendment dated 27 January 2010, the SEC tightened the regulation of money market funds in order to prevent the negative role they played in the 2008 money market crisis. The tightening affected the quality of money market funds' portfolios, the liquidity of the funds and the maturity structure of the assets held in the portfolio as well as the periodic stress tests and the disclosure of portfolio information. The Supervisory Authority indicated even then that further restrictions were to be expected which may include the termination of the fixed net asset value. Thus, money market funds had almost 6 years to prepare for this in the United States. See: http://documents.jdsupra.com/5dc2edc1–8f78–4ebb–9b4b–5c1fe072ae59.pdf (06/04/2017).

[8] Cash flow management is the liquidity management activity of companies and company groups. In the context of liquidity management, the company executive responsible for finances and/or liquidity decides, on a daily basis, on the level of assets and liabilities (including cash and account money) available and, if necessary, on the drawdown of credit lines in light of the company's liabilities and expected revenues. The goal is to ensure continuous liquidity while maximising the company's profit.

[9] Paul McCulley (1957) is a Keynesian economist in the United States. McCulley was the first to use the phrase "shadow banking" in 2007 at a conference organised by the Federal Reserve System (Fed).

[10] An asset-backed commercial paper is a shadow banking security implementing a maturity transformation. There is a financial vehicle as an issuer behind the securities: a company created exclusively for this purpose, which, in the lack of a financial institution licence, performs its activity "disguised" in securitisation.

[11] The decision of the Swiss central bank's Monetary Council dated 15 January 2015 is the counter-

example of a well-prepared and calculated decision. On that day, utterly unexpectedly, the Swiss central bank announced that it would no longer hold the EUR/CHF exchange rate fixed at 1.15. The failure to prepare the market caused significant macro market threats in foreign exchange markets, including, for example, the aggrieved depositors affected by the Hungarian broker scandal.

[12] Upon roll-over (repayment and re-issuance) or renewal, the issuer can make several offerings up to a term of 270 days within the maximum maturity without a new approval from the Supervisory Authority.

[13] In securities repurchase agreement (repo) transactions the party holding the security (typically government securities) receives a short-term loan against the security collateral. In this transaction settlement between the parties does not involve an interest; the parties settle the price difference of the security between two pre-specified points in time. Thus, in terms of form, this is a securities lending transaction instead of a loan transaction but in terms of content, it is a loan backed by security collateral. Securities repo transactions are conducted daily on the money market in significant volumes and transaction numbers by commercial banks and investment service providers.

[14] High-denomination certificates of deposit are called jumbo certificates of deposit (jumbo CDs).

[15] Federal funds rate: in the market of the United States, the interest rate at which commercial banks grant overnight loans to each other.

[16] LIBOR *(London Interbank Offered Rate)*: The London interbank interest rate, the interest rate level at which banks lend to each other on the money market. However, due to the fraud scandals of recent years, the use of LIBOR as a reference rate will be phased out by the end of December 2021.

[17] The money market is the market of financial assets with a maturity of up to one year, while the capital market is the market of long-term financial assets.

[18] The liquidity reserve at production companies and service providers is the quantity of money that is no longer necessary for the operation of the company and for the financing of the working capital but its use for projects or long-term financial investments is yet to be scheduled. In the case of financial institutions, this reserve is the temporary free cash available between the closure and re-opening of own account transactions. In both cases, the temporary nature is important: it justifies investment only in short-term and low-risk assets.

[19] Under Section 3(a)3 of the Securities Act, the three conditions for exemption from registration are as follows: firstly, the maturity of the commercial paper may not exceed 270 days. Secondly, the issue of the paper can only be private. The issue of securities with a denomination of USD 100,000 typically facilitates the fulfilment of the latter condition which, in light of the high denomination, will only enable access to a limited number of investors. The third condition is that the amount collected from the issue can only be used for the financing of the company's current assets.

[20] As part of the 1933 Glass-Steagall Act, Regulation Q prohibited commercial banks from paying interest rates on deposits and demand deposit accounts.

[21] The first money market fund – known as "The Reserve Fund" – was established in the United States in 1971. It was subject to the Investment Company Act of 1940 and the supervision of the Securities and Exchange Commission (SEC). Evading Regulation Q, it was specifically intended to enable interest rate payment on on-demand savings accounts in the form of securities instead of deposits.

[22] Diverging rates of withholding tax are imposed on both domestic and foreign investors after the interest rate and capital gain on securities. Based on the double taxation treaties of individual states, the

taxation of foreign securities in both countries can be prevented.

[23] "Petrodollar" refers to the revenues of oil exporting countries that were recognised in USD and appeared in the international money markets. As a result of the two oil crises (1973 and 1978), oil exporters generated collected substantial extra revenues that, for the time being, they did not wish to use in their own countries.

[24] In swap transactions the diverging cash flows of two financial instruments are exchanged – swapped – between the holders of the financial instruments.

[25] For the details of asset-backed commercial papers see Zsolt Bujtár: Az eszközalapú kereskedelmi kötvény Egyesült Államokbeli tündöklésének és bukásának okai. (The reasons for the glory and fall of asset-based commercial papers in the United States). *Jura*, 2016, Vol. 22, pp. 214–224.

[26] It is because of this systemic risk that the Financial Stability Board specifically identified asset-backed commercial papers as shadow banking players. The Financial Stability Board (FSB) – which was established in 2009 as a successor of the Financial Stability Forum (FSF) – operates with the participation of the financial heads of the G20 and the leaders of their monetary authorities. For the correlation between the shadow banking system and the traditional banking system, see András Kecskés – Zsolt Bujtár: „Sárkányok tánca": a hagyományos- és az árnyékbankrendszer küzdelme a pénzügyi dominanciáért Kínában. (A dance with dragons: The fight for dominance between the traditional and shadow banking systems in China). *Jura,* 2016, Vol. 22 (1), pp. 229–238.

[27] At the end of 2013, the value of commercial papers traded on the market fell below USD 1 billion in the United States, while at the end of the same year, the commercial papers marketed in Europe amounted to USD 455.4 billion. See: http://www.euromoney.com/Article/3300800/Signs-of-life-in-European-commercial-paper-market-as-corporates-return (23/04/2017).

[28] Directive 2003/71/EC of 4 November 2003 on the prospectus to be published when securities are offered to the public or admitted to trading, Article 9(2).

[29] Directive 2003/71/EC of 4 November 2003 on the prospectus to be published when securities are offered to the public or admitted to trading, Article 2(1) e) and f).

[30] Directive 2003/71/EC of 4 November 2003 on the prospectus to be published when securities are offered to the public or admitted to trading, Article 3(2) a) and d).

[31] *Response to Questions Posed by Commissioners Aguilar, Paredes, and Gallagher Division of Risk, Strategy, and Financial Innovation U.S. Securities and Exchange Commission.* 30 November 2012, p. 32, see: http://www.sec.gov/news/studies/2012/money-market-funds-memo–2012.pdf (07/06/2017).

[32] The fiscal barrier – debt ceiling – is the amount up to which the American Treasury can become indebted in the course of financing public sector spending without the permission of Congress. On 7 September 2017, US President Donald Trump reached an agreement with the Democratic leaders of the House of Representatives and the Senate on the suspension of the current fiscal barrier (USD 19.8 billion) as of December 2017. See: https://www.washingtonpost.com/graphics/2017/national/debt-ceiling/?utm_term=.dafdfb0fdc60 (10/09/2017).

[33] In financial practice, cash management is a full set of instruments in money management. It includes the collection, management and use of cash. While continuously maintaining the company's solvency, cash management is intended to continuously ensure the current assets and liquid assets necessary for the implementation of projects by maximising the available interest rate revenues and minimising costs.

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