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CONNECTIONS BETWEEN CAPITAL MARKET AND FORWARD GUIDANCE OF THE MONETARY POLICY

Monetary policy is the main instrument of the central bank and it uses a number of tools to achieve its monetary policy targets. In economic situations, when the traditional toolset of the central bank is no longer effective and does not allow to achieve the given targets, the non-traditional instruments of monetary policy are applied. The high degree of interrelations between the capital market and one of the main unconventional monetary policy tools called forward guidance is of key importance. Analysing this linkage helps to understand how forward guidance shapes the public's expectations through which the central bank can affect financial markets and general economic situation. Also, in their turn, expectations and actions of the market participants provide the policymakers with the valuable information, which is helpful in designing effective forward guidance and overall monetary policy.

Keyword: *capital market, central bank's monetary policy, unconventional tools, forward guidance, short-term reaction, connection*

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Introduction. The central bank uses a number of instruments to achieve its monetary policy targets, which simultaneously affect both the activities of financial market participants and the overall economic situation. Obviously, there are strong interrelations between central bank's monetary policy framework and different parts of financial markets. Many studies conducted by researchers in recent years show that there is a high degree of interaction between capital market and one of the main unconventional monetary policy tools called forward guidance.

The linkage between forward guidance and capital market and how it functions is of key importance for policymakers and researchers, because monetary policy can have an impact on the capital market mainly by forming certain expectations within the public and at the same time public's interpretations of monetary policy communication are a very important source of information for the policymakers.

The aim of this research is to reveal the existing current connections between forward guidance and capital market, to analyse how they are interrelated, what influence they can have on each other during shorter period of time. Also, the goal is to understand how market participants' reactions to monetary policy announcements can differ depending on the sentiments and projections used by central bank.

Literature Review. Numerous studies conducted by researchers from different countries in recent years show that there is a high degree of interaction between the capital market and the forward guidance of the central banks. This bond continues to strengthen in current conditions.

Conor Parle in his research paper concludes that the central bank communication to some extent provides evidence of the "information channel" of monetary policy and it can have market impacts beyond that of merely guiding future interest rate expectations[1]. He believes that in optimal conditions, the ECB (European Central Bank) can use the language in its press conferences or communication documents to have a real impact on financial markets. His research results also highlight the importance of selecting the right language to use in given scenarios, since the informational content contained in the ECB press conference can have a material impact on markets[2].

Pennings, Ramayandi and Tang held an analysis to estimate the monetary policy shocks' effects on stock markets and exchange rates for small open economies (OECD[3] and non-OECD). They found out that an anticipated 100 bps increase in the policy rate causes the exchange rate to an unanticipated 100 bps increase in the policy rate causes the exchange rate to appreciate by about 1%, and stock prices to fall by 1%. The effect on exchange rates is notably weaker in the non-OECD countries examined here, all of which have a managed float as against a free-float regime in the OECD countries[4].

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1 **Conor, Parle** (2021). The financial market impact of ECB monetary policy press conferences – a text based approach, *Research Technical Paper,* No. 04, Central Bank of Ireland, p. 37-38. https://www.centralbank.ie/docs/default-source/publications/research-technical-papers/the-financial-market-impact-of-ecb-monetary-policy-press-conferences.pdf, as of 24/11/202.

2 Ibid.

3 OECD - The Organisation for Economic Co-operation and Development.

4 **Pennings, Steven, Ramayandi, Arief, Chink Tang, Hsiao** (2011).The impact of monetary policy on financial markets in small open economies: More or less effective during the global financial crisis?, *ADB Working Paper Series on Regional Economic Integration*, No. 72, Asian Development Bank, January, p. 21. https://www.adb.org/sites/default/files/publication/28560/wp72-pennings-impact-monetary-policy.pdf, as of 24/11/2021.

The report prepared by a working group of the Committee on the Global Financial System concludes that most unconventional monetary policy tools, including forward guidance, operate through the expectations of financial market participants and of private sector decision-makers. The study identifies that expectations management is a key consideration in the design, as well as in the actual implementation of monetary policy at all times, and even more in times of crisis[5].

Research Methodology. In order to reveal the existing connections between the capital market and one of the widely used non-conventional instruments of the monetary policy of the central bank, a number of different researches have been conducted in this paper's framework. From this perspective mostly qualitative methods are used.

To have a wider knowledge about the central bank's forward guidance and the capital market cross-effects, we have examined the indicators mainly connected to the US financial markets. We have analysed and compared the short-term reactions of the capital market participants to the monetary policy statements in a shorter period of time. Our study is based on the four United States Federal Reserve monetary policy meetings held in 2021 and also intraday fluctuations of S&P 500 index. S&P 500 index is usually considered as one of the best indicators of the capital market situation. In order to avoid capturing the changes of capital market's indicator caused not by central banks statements, to the greatest extent possible, we have taken market data with high frequency. High-frequency data is considered as information obtained at different times throughout the same trading day. The mentioned method is used widely for analysing the short-term reactions of public to central bank's forward guidance.

The theoretical and practical parts of this research are based on the works, scientific papers, etc. of local and foreign scientists and researchers which are related to the capital market and monetary policy relationship. The sources of information for the study were the official publications and other materials of the US Federal Reserve, the European Central Bank, also data provided by the websites presenting movements of stock market indexes, bond yields, etc.

The analysis and introduced conclusions are based on general economic patterns, as well as the assessments formed as a result of our research.

Analysis. Monetary policy, which is a part of the general macroeconomic policy, is the main instrument of the central bank and, consequently, is under its direct control. The central bank uses a number of tools to achieve its monetary policy targets, which simultaneously affect both the activities of individual commercial banks and the overall economic situation in the country. Central banks are usually faced with the task of achieving certain goals: price stability, high economic growth, low unemployment, and so on. However, they do not directly control the mentioned indicators. Instead, the central banks have a set of specific

[5] Committee on the Global Financial System Working group chaired by Simon M Potter (Federal Reserve Bank of New York) and Frank Smets (European Central Bank), "Unconventional monetary policy tools: a cross-country analysis", CGFS Papers, No 63, Bank for International Settlements (BIS), October 2019, p. 56. https://www.bis.org/publ/cgfs63.pdf, as of 24/11/2021.

tools, such as open market operations, base rate setting, etc. through which they can meet their goals after a certain period of time. All central banks target different final indicators and choose different monetary policy strategies to achieve them.

In such economic situations, when the traditional toolset of the central bank is no longer effective and does not allow to achieve the given targets, the non-traditional instruments of monetary policy are applied. Non-conventional tools have become more popular and widespread especially after 2008, as the financial crisis and the aftermath made the central banks face new challenges. The abovementioned toolkit mainly includes the following: forward guidance, credit easing and quantitative easing (QE).

Understanding and estimation of the effects of these unconventional monetary policy tools on financial markets and, ultimately, the overall economic situation of the country is very important. Obviously, there are strong interrelations between central bank's monetary policy framework and different parts of financial markets. Monetary policy and financial markets are intrinsically linked[6]. The central bank designs its monetary policy and reaches the given final goals by both directly and indirectly having an impact on financial markets, because, actually, only through the financial markets, and especially the capital market, the monetary policy tools can influence the real economic indicators. The capital market plays a crucial role in the monetary policy transmission mechanism from the central bank to the real economy. That is why the linkage between different policy tools (both conventional and unconventional) and the capital market and how it functions in reality is of key importance for policymakers, market participants and researchers.

Monetary policy can have an impact on the capital market mainly by forming certain expectations amongst the market participants. By controlling or at least closely monitoring the expectations that overweigh in the markets, the central banks can achieve their final objectives. The most important reasons for disclosures about monetary policy were increasing the understanding of market participants and the public about the objectives of monetary policy and guiding the market's and the public's expectations[7].

From this perspective, the central bank's communication with the public has started to play a role of greater importance as part of the monetary policy non-conventional framework in recent years. The monetary policy instrument, which is responsible for the communication with the market participants, is known as forward guidance. Forward guidance, as one of the main unconventional monetary policy tools, is used to provide relevant information regarding future policy measures, possible actions by the policymakers, upcoming economic conditions and fundamentals, different forecasts, etc. It can take various forms: statements, minutes following the policy meeting, regularly published economic

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[6] **Hildebrand, Ph.M.** (2006). Monetary Policy and Financial Markets, Bank for International Settlements (BIS), *BIS Review* 30/2006, p. 1. https://www.bis.org/review/r060418d.pdf, as of 24/11/2021.

[7] **William, N.** (2008). Monetary policy decisions: preparing the inputs and communicating the outcomes, Monetary and economic department, *BIS Papers,* No 37, Bank for International Settlements, February 2008, p. 16. https://www.bis.org/publ/bppdf/bispap37.pdf, as of 24/11/2021.

reports or bulletins, official announcements, central bank's officials' interviews and so on. This tool also can contain both quantitative and qualitative information depending on the specific occasion. It can entail more concrete conditionality in terms of timing (date-dependent), e.g. "Interest rates are expected to remain at present levels at least through the summer of next year"; or in terms of economic developments (state-dependent), e.g. "Current policy is anticipated to be appropriate at least as long as the unemployment rate remains above 6.5%"[8].

Different central banks can choose different forms and timing for their communication with public that mostly consists of explanation of their policy decisions, assessments, forecasts and future possible actions. For example, the central bank of the United States of America Federal Reserve System (Fed) releases its monetary policy decisions and the statements explaining the latters simultaneously. European Central Bank (ECB), on the contrary, makes public the press release which contains the decisions, then usually a press conference in held with the ECB president, who is responsible for announcing the statement. And obviously, market participants can express different reactions to the different forms of forward guidance and the language central banks use in their statements.

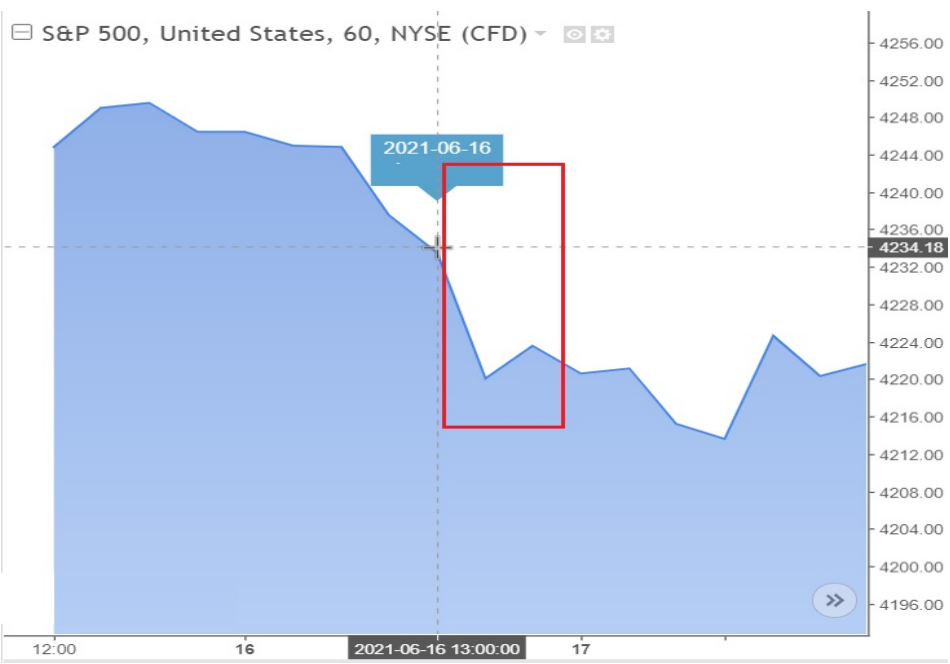

Figure 1. ***S&P index reaction to Fed's monetary policy meeting on June 16, 2021***[9]

To have a deeper understanding of how the central bank's forward guidance affects the capital market, we analysed and compared the short-term reactions of the financial market participants to the monetary policy statements

[8] **Moessner, R., Rungcharoenkitkul, Ph.** (2019). The zero lower bound, forward guidance and how markets respond to news, *BIS Quarterly Review*, Bank for International Settlements, March 2019, p. 85. https://www.bis.org/publ/qtrpdf/r_qt1903h.pdf, as of 24/11/2021.

[9] Source: www.investing.com, https://www.investing.com/indices/us-spx-500-chart, as of 24/11/2021. The highlights on the figure were made by the author.

in a shorter period of time. The study is based on some of the United States Federal Reserve monetary policy meetings held in current year from June to November and intraday fluctuations of S&P 500 index on the meetings' days, which can be considered as one of the best indicators of the capital market situation. In order to avoid capturing the changes in index value caused not by central bank's meetings as much as possible, we use market data with high frequency. High-frequency data can be considered as information collected at different hours throughout the same day. This is essential especially for analysing the short-term reactions to central bank's communication in the frame of forward guidance. During the observed period no quantitative monetary policy indicators were changed, only textual content in the central bank's statements.

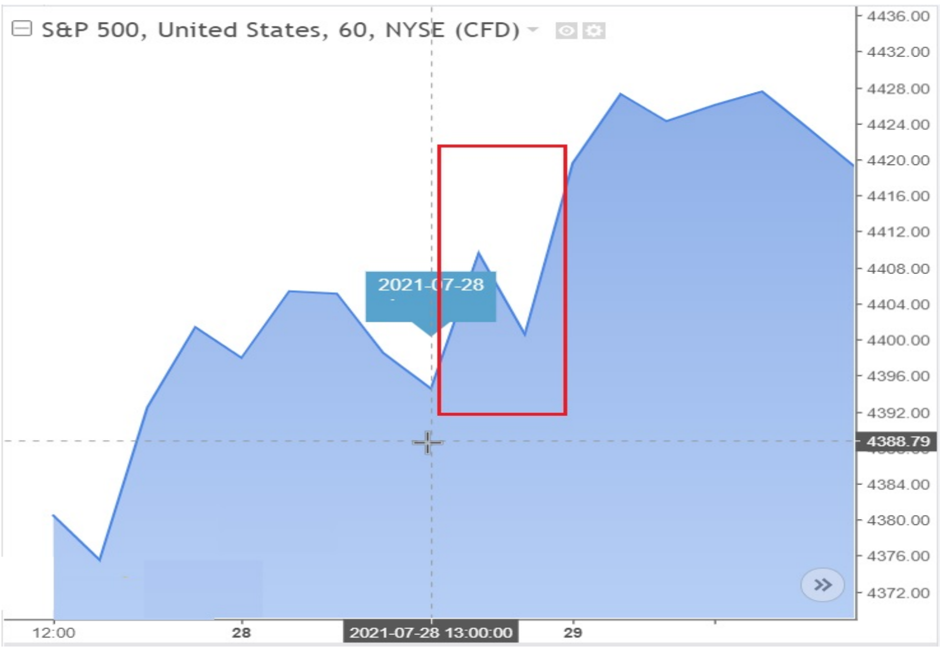

Figure 2. ***S&P index reaction to Fed's monetary policy meeting on July 28, 2021***[10]

The red rectangle on Figure 1 indicates the time period we are interested in. The reaction to the monetary policy meeting on 16/06/2021 amongst the capital market participants was mainly negative. The Federal Reserve kept the key interest rates steady in the range of 0% to 0.25%, but hinted that it could hike rates sooner than previously expected, most probably by 2023. In June 15-16 FOMC (Federal Open Market Committee) meeting's statement, it is stated that the Federal Reserve will continue to increase its holdings of Treasury securities by at least $80 billion per month and of agency mortgage-backed securities by at least $40 billion per month until substantial further progress has been made toward the Committee's maximum employment and price stability goals[11]. At the same time, Fed Chairman Jerome Powell at a news conference said that the

[10] Source: www.investing.com, https://www.investing.com/indices/us-spx-500-chart, as of 24/11/2021. The highlights on the figure were made by the author.

[11] Source: Federal Reserve press release, June 16, 2021, p. 2, https://www.federalreserve.gov/monetarypolicy/files/monetary20210616a1.pdf, as of 12/12/2021.

officials started “talking about” reducing bond purchases rates. The market was not expecting that the Federal Reserve would raise its inflation expectations and signal an earlier interest rate hike. The expectations of future rising rates drove investors to sold bonds, which in its turn made treasury yields jump sharply. As a consequence, the stock market, including S&P 500 index, declined and closed in red.

Figure 2 presents the short-term reaction to the monetary policy meeting held on the 28th of July 2021. As a result of the meeting, the main conventional tool of the monetary policy was held at the same level again. In the meeting’s press release, it is mentioned that last December, the Committee indicated that it would continue to increase its holdings of Treasury securities by at least $80 billion per month and of agency mortgage-backed securities by at least $40 billion per month until substantial further progress has been made toward its maximum employment and price stability goals. Since then, the economy has made progress toward these goals, and the Committee will continue to assess progress in coming meetings[12]. As it can be noticed, the language of the statement has changed since the previous meeting, and the Fed stated that it would consider certain amendments to its bond buying program, but did not provide concrete dates and volumes. And because the Federal Reserve failed to provide the specific timeline for its asset tapering program during this release, investors became little “worried”. The S&P registered rises and falls after the communication, but finally ended up slightly changed, although in the positive direction. S&P managed to go up off the session lows, because the central bank language was mostly positive, and the Chairman Powell did not appear extremely concerned about the pace of the pandemic.

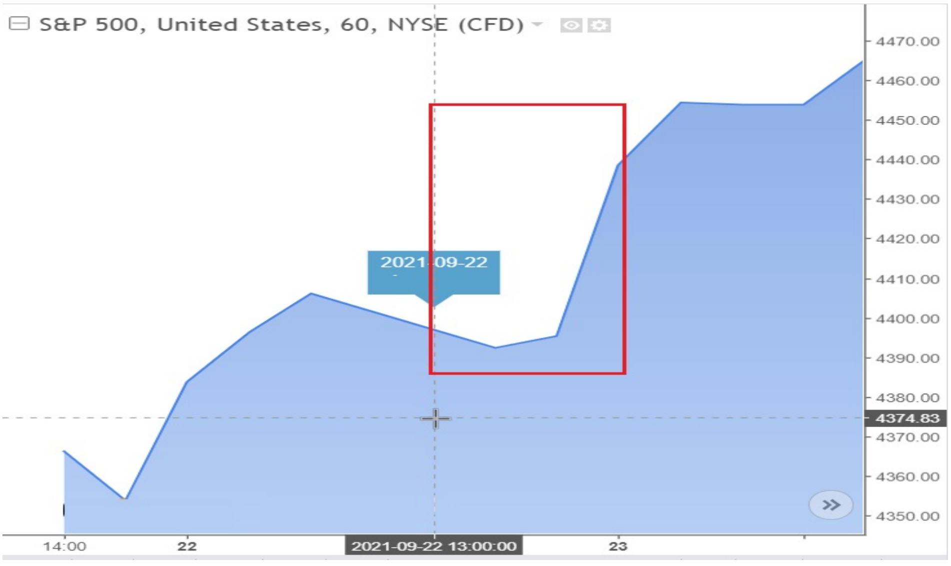

Figure 3. ***S&P index reaction to Fed’s monetary policy meeting on September 22, 2021[13]***

[12] Source: www.investing.com, https://www.investing.com/indices/us-spx-500-chart, as of 24/11/2021. The highlights on the figure were made by the author.
[13] Ibid.

Figure 3 makes clear the response of the capital market to the Federal Reserve meeting on September 22, 2021. The index registered a rise in the upcoming hours after the meeting's results had been announced, not as drastic as in November though (see Figure 4). The base interest rate was kept in the same range 0-0.25%. The Fed policymakers added a sentence to their previous statement's text: If progress continues broadly as expected, the Committee judges that a moderation in the pace of asset purchases may soon be warranted[14]. According to the meeting and afterward press conference, the asset taper could be announced as soon as November meeting and the overall program might end mid-2022. Since US Federal Reserve signaled that asset tapering process could probably begin within 2021 and that interest rates hikes could happen faster-than-expected, it drove markets higher. The capital market participants' expectations were positive, because the central bank's announcement contained encouraging plans.

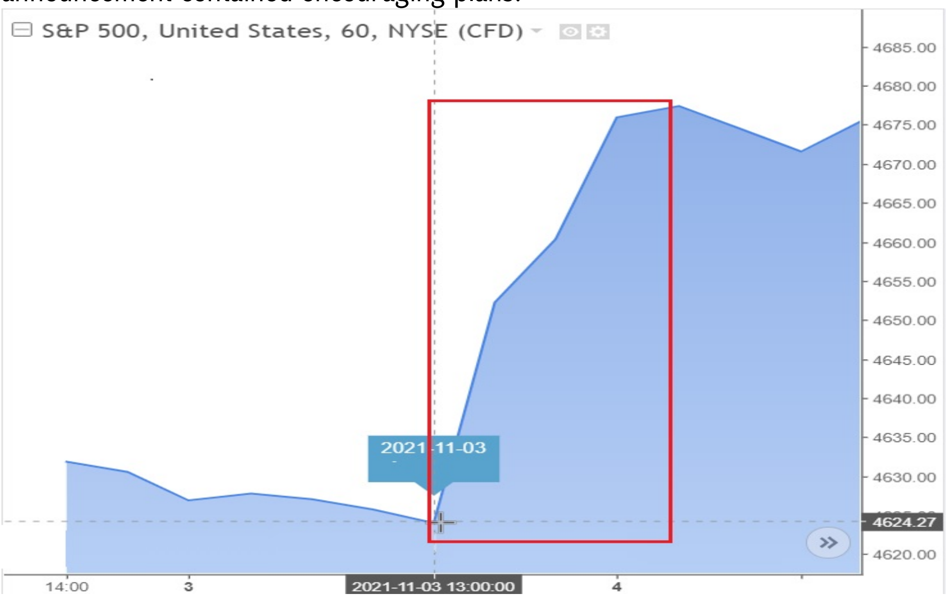

Figure 4. ***S&P index reaction to Fed's monetary policy meeting on November 03, 2021[15]***

Figure 4 shows S&P index movements after Fed monetary policy decision announcement made at 13:00 (GMT -5:00), November 03, 2021. As can be seen from the chart, once again the index value has risen in the following hours after the release. As a conclusion of the Federal Open Market Committee meeting, the central bank left its benchmark interest rate unchanged in a range of 0% to 0.25%. Finally, the Fed officially stated an exact plan of the taper in the meeting's press release: In light of the substantial further progress, the economy has made toward the Committee's goals since last December, the Committee decided to

[14] Source: Federal Reserve press release, September 22, 2021, p. 2, https://www.federalreserve.gov/monetarypolicy/files/monetary20210922a1.pdf, as of 12/12/2021.

[15] Source: www.investing.com, https://www.investing.com/indices/us-spx-500-chart, as of 24/11/2021. The highlights on the figure were made by the author.

begin reducing the monthly pace of its net asset purchases by $10 billion for Treasury securities and $5 billion for agency mortgage-backed securities. Beginning later this month, the Committee will increase its holdings of Treasury securities by at least $70 billion per month and of agency mortgage-backed securities by at least $35 billion per month. Beginning in December, the Committee will increase its holdings of Treasury securities by at least $60 billion per month and of agency mortgage-backed securities by at least $30 billion per month. The Committee judges that similar reductions in the pace of net asset purchases will likely be appropriate each month, but it is prepared to adjust the pace of purchases if warranted by changes in the economic outlook[16]. Although Fed maintained its patient and cautious view, investors digested the news that the central bank would begin its asset tapering program in November and interest rates hikes would be highly possible in 2022. This announcement eventually gave stock indices a boost, as it is shown in Figure 4 highlighted area.

As we can see from the aforementioned figures, the public expectations and actions in the market formed after the monetary policy meetings greatly differ depending on the language provided by the central bank. Even an additional sentence in the statements or a word in the press conference can form absolutely different opinions in the market. In reality, none of the main quantitative indicators of the monetary policy, e.g. key interest rate, monthly bond buying level, were changed during the observed period. However, simultaneously the projections, forecasts, words, opinions, sentiments, timetables, concreteness, which were very different during these four meetings, resulted in the different behaviours within the capital market.

As we have already mentioned, the monetary policy and the capital market are strongly interrelated. Monetary policy impacts the performance in different parts of the financial market. At the same time the capital market helps to shape the monetary policy fundamentals, which is highly valuable for the policymakers. Market expectations provide the central bank with the information about future possible macroeconomic developments. The volatility in capital market indicators can indicate the uncertainty connected to public expectations. The information obtained from the market behaviour and expectations is broadly used in the setting the monetary policy directions.

However, the central bank cannot totally rely on the market expectations or price movements while shaping its monetary policy. Financial markets look for guidance from the central bank, the central bank looks for guidance from financial markets, and both parties temporarily lose sight of the underlying factors determining inflation, namely the output gap in the short to medium-run, and money growth in the long-run[17]. In order to avoid inaccuracies and circularity, the information provided by the capital market should be double-checked. Market expectations or price data must be accompanied by central

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[16] Source: Federal Reserve press release, November 3, 2021, p. 2, https://www.federalreserve.gov/monetarypolicy/files/monetary20211103a1.pdf, as of 12/12/2021.

[17] **Philipp M. Hildebrand,** "Monetary Policy and Financial Markets", Bank for International Settlements (BIS), BIS Review 30/2006, p. 6. https://www.bis.org/review/r060418d.pdf, as of 24/11/2021.

bank's policymakers' independent evaluations and analyses of the current economic situation and upcoming possible developments to design clear and competent forward guidance.

Conclusions. The connections between the monetary policy and the capital market are important phenomena. The interrelations between these two play a key role in ensuring well-functioning monetary policy transfer mechanism. Non-conventional toolkit of the central bank has become more popular in recent years and understanding of the effects of these unconventional monetary policy instruments on financial markets and, ultimately, the overall economic situation of the country is of great importance.

Monetary policy can have an impact on the capital market mainly by forming certain expectations amongst the market participants. From this perspective, the central bank's communication with the public has started to be an essential part of the monetary policy non-conventional framework lately. Forward guidance is used to provide relevant information regarding future policy measures, possible actions by the policymakers, upcoming economic conditions and fundamentals, different forecasts, etc.

Based on this research results, it is clear that released monetary policy statements can have different influence on the public's expectations of future economic fundamentals, although the key monetary policy indicators e.g. base interest rate, monthly bond buying level, are kept unchanged. These different short-term attitudes towards monetary policy announcements happen because of the language and sentiment the central bank uses in its releases. Even an additional sentence in the statements or a word in the press conference can form different opinions in the market. Forward guidance different interpretations form the opposite expectation. For example, if forward guidance is considered as a policy commitment, investors believe that the economy will have a higher growth rate in the future. In this case, the optimistic expectations overweigh in the capital market. But if the forward guidance is more a policy projection, financial market participants' expectations will be more pessimistic. And finally, if the public's optimistic and pessimistic expectations are almost equal in the market, forward guidance might not have visible short-term impact on investors behaviour.

At the same time, the capital market helps to shape the monetary policy fundamentals which is highly valuable for the policymakers. Market expectations provide the central bank with the information about future possible macroeconomic developments. However, the central bank cannot only rely on the market expectations or price movements. Central bank policymakers should conduct their own evaluations of the current economic situation and upcoming developments to shape clear and effective forward guidance.

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ԴԻԱՆԱ ՏԵՐՅԱՆ
Հայաստանի պետական տնտեսագիտական համալսարանի ֆինանսների ամբիոնի ասպիրանտ

Կապիտալի շուկայի և դրամավարկային քաղաքականության ապագային միտված ուղղորդման միջև առկա կապերը.– Դրամավարկային քաղաքականությունը կենտրոնական բանկի հիմնական գործիքն է, որն օգտագործում է մի շարք միջոցներ իր դրամավարկային քաղաքականության նպատակներին հասնելու համար: Այնպիսի տնտեսական իրավիճակներում, երբ կենտրոնական բանկի ավանդական գործիքակազմն այլևս արդյունավետ չէ և թույլ չի տալիս հասնել սահմանված նպատակներին, կիրառվում են դրամավարկային քաղաքականության ոչ ավանդական գործիքները: Առանցքային նշանակություն ունի կապիտալի շուկայի և դրամավարկային քաղաքականության հիմնական ոչ ավանդական գործիքներից մեկի, այսպես կոչված՝ ապագային միտված ուղղորդման (forward guidance) միջև փոխկապակցվածության բարձր աստիճանը: Այս կապի ուսումնասիրությունն օգնում է հասկանալ, թե ինչպես է ապագային միտված ուղղորդումը ձևավորում հանրության ակնկալիքները, որոնց միջոցով կենտրոնական բանկը կարողանում է ազդել ֆինանսական շուկաների և ընդհանուր տնտեսական իրավիճակի վրա: Բացի այդ, իրենց հերթին, շուկայի մասնակիցների ակնկալիքներն ու գործողությունները քաղաքականություն մշակողներին տալիս են արժեքավոր տեղեկատվություն, որն օգտակար է արդյունավետ ապագային միտված ուղղորդման և ընդհանուր դրամավարկային քաղաքականության սահմանման համար:

Հիմնաբառեր. *կապիտալի շուկա, կենտրոնական բանկի դրամավարկային քաղաքականություն, ոչ ավանդական գործիքներ, ապագային միտված ուղղորդում, կարճաժամկետ արձագանք, կապեր*
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ДИАНА ТЕРЯН
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Связь между рынком капитала и руководством денежно-кредитной политики направленным на будущее.– Денежно-кредитная политика является основным инструментом центрального банка, который использует ряд средств для достижения целей своей денежно-кредитной политики. В таких экономических ситуациях, когда традиционный инструментарий центрального банка перестает быть эффективным и не позволяет достичь поставленных целей, применяются нетрадиционные инструменты денежно-кредитной политики. Ключевое значение имеет высокая степень взаимосвязи между рынком капитала и одним из основных нетрадиционных инструментов денежно-кредитной политики, так называемой «публикацией прогнозов по процентным ставкам (forward guidance)». Анализ этой связи помогает понять, как публикация прогнозов по процентным ставкам (forward guidance) формирует ожидания общественности, посредством которых центральный банк может влиять на финансовые рынки и общую экономическую ситуацию. Кроме того, в свою очередь, ожидания и действия участников рынка предоставляют центральному банку ценную информацию, которая помогает при разработке эффективной публикации прогнозов по процентным ставкам (forward guidance) и общей денежно-кредитной политики.

Ключевые слова: *рынок капитала, денежно-кредитная политика центрального банка, нетрадиционные инструменты, публикация прогнозов по процентным ставкам, краткосрочная реакция, связи*
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