

The relations between European capital market and ECB monetary policy

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Եվրոպական կապիտալի շուկայի և ԵԿԲ դրամավարկային քաղաքականության հարաբերությունները

Տերյան Դիանա Գ.

Փինանսների ամբիոնի ասպիրանտ,

Հայաստանի պետական տնտեսագիտական համալսարան (Երևան, ՀՀ)

Ամփոփագիր. Եվրոգոտու դրամավարկային քաղաքականությունը և կապիտալի շուկաները փոխադարձաբար ազդում են միմյանց ցուցանիշների վրա: Այս հետազոտության շրջանակներում մենք նպատակ ունենք վերլուծել և կանխատեսել Եվրոպական կենտրոնական բանկի դրամավարկային քաղաքականության ազդեցությունը կապիտալի շուկայի տարբեր հատվածների վրա: Կատարված ուսումնասիրության ընթացքում հիմնվել ենք կառուցվածքային վեկտորային ավտոռեգրեսիոն մոդելի մեթոդաբանության վրա: Օգտագործելով տարբեր սցենարներ՝ մենք կանխատեսել ենք պետական պարտատոմսերի, կորպորատիվ պարտատոմսերի և բաժնետոմսերի շուկայի ցուցանիշների արժեքները Եվրոգոտում ի պատասխան ԵԿԲ դրամավարկային քաղաքականության փոփոխությունների: Կանխատեսումների էմպիրիկ արդյունքները ցույց են տվել, որ մոդելը, ընդհանուր առմամբ, կարողացել է կանխորոշել դիտարկվող շուկաների հիմնական միտումները կանխատեսման հորիզոնի ընթացքում: Բազային և ավելի ագրեսիվ այլընտրանքային կանխատեսումների ուսումնասիրությունը և փաստացի արժեքների հետ համեմատությունը ընդգծել են, որ ավելի խիստ դրամավարկային քաղաքականությունը հանգեցնում է պետական և կորպորատիվ պարտատոմսերի շուկաներում ավելի մեծ տատանողականության:

Հանգուցարաններ՝ կապիտալի շուկա, դրամավարկային քաղաքականություն, ԵԿԲ, SVAR, կանխատեսումային սցենարներ

Отношения между европейским рынком капитала и денежно-кредитной политикой ЕЦБ

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Аннотация. Денежно-кредитная политика Еврозоны и рынки капитала взаимно влияют на показатели друг друга. В рамках данного исследования мы стремились проанализировать и спрогнозировать влияние денежно-кредитной политики Европейского центрального банка на сегменты рынка капитала. Наше исследование основано на методологии структурной векторной авторегрессионной модели. Используя различные сценарии, мы спрогнозировали значения показателей государственных облигаций, корпоративных облигаций и фондового рынка в Еврозоне в ответ на изменения денежно-кредитной политики ЕЦБ. Эмпирические результаты прогнозов показали, что модель в целом способна уловить основные тенденции наблюдаемых рынков в период прогнозирования. Изучение базовых и более агрессивных альтернативных прогнозов, а также сравнение с фактическими показателями показало, что ужесточение денежно-кредитной политики приведет к повышению волатильности на рынках государственных и корпоративных облигаций.

Ключевые слова: рынок капитала, денежно-кредитная политика, ЕЦБ, SVAR, сценарии прогнозирования

Euro Area monetary policy and capital markets mutually affect each other's indicators. In the frame of this research, we aimed to analyse and forecast the European Central Bank's monetary policy influence on capital market segments. We based our study on structural vector autoregressive model

methodology. Employing different scenarios, we forecasted the values of the government bond, corporate bond and stock market indicators in Euro Area, in response to the ECB monetary policy changes.

We constructed a standard structural vector autoregressive model (SVAR) utilizing monthly data of six European variables to evaluate monetary and capital market relations. The sample period was from January 2000 to December 2023. We forecasted government, corporate bond yields and the stock index changes from January 2022 to December 2023 using static-stochastic forecast solution to compare with the actual values and to assess the model’s capability to predict market movements’ directions in the short run. Also, we plotted more aggressive alternative forecasting scenario raising the interest rate by one percent over the projection horizon. We used static-deterministic solution to compare actual values, baseline and alternative forecasts.

The order of monthly variables included in our model is the following: ECB key interest rate imported to the model as R, M2 monetary aggregate

as M2, EU Harmonised Index of Consumer Prices as HICP, 10-year government benchmark bond yields as GB10, Euro denominated corporate bond yields as CB and EuroStoxx 50 index changes as stoxx50_change.

We conducted necessary model stability and stationarity analyses to improve model specification. According to various diagnostics, we designed our SVAR model based on 12 lags.

We solved our model to be able to make short-term forecasts. The forecasting horizon was from January 2022 to December 2023. This horizon was set to make it possible to compare actual figures with the forecasted values of the variables. To evaluate the forecast performance of the model, we chose static-stochastic forecast solution to take into consideration the uncertainty. Figure 1 represents the dynamics of 10-year government bond yields’ actual and forecasted values.

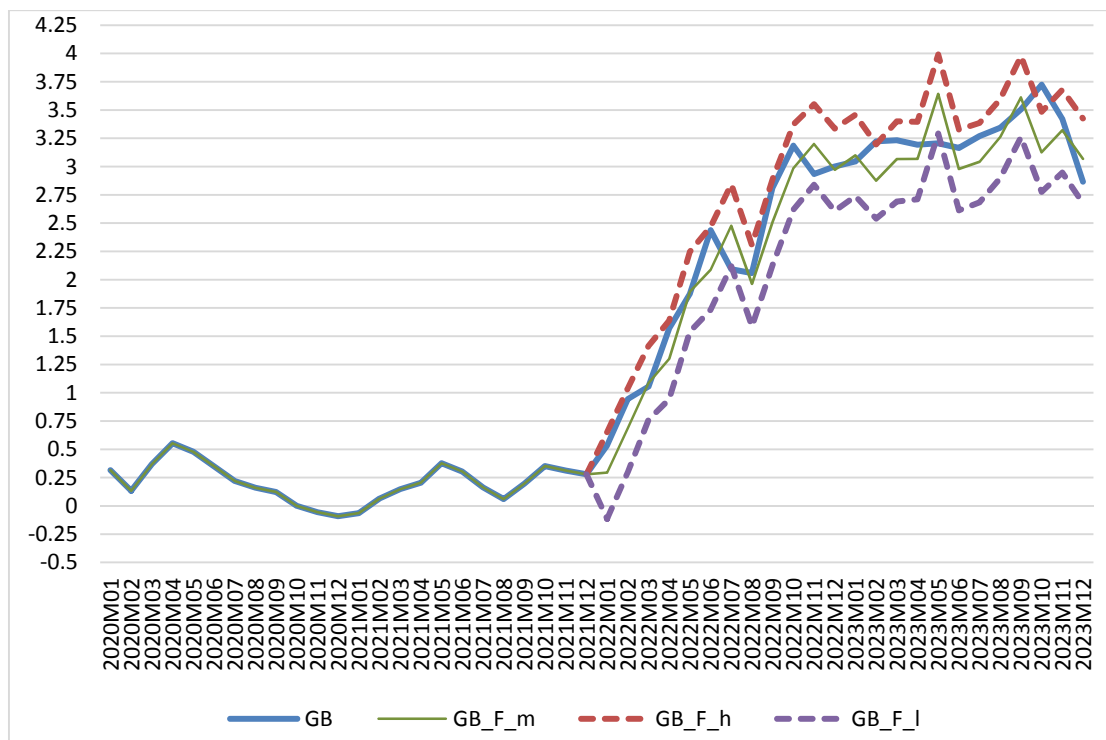


Figure 1. Euro area government bond actual yields and SVAR forecasted values with confidence bounds January 2020 – December 2023 (%) [1]

The government bond forecasted yields’ means (GB_F_m) were close to actual values, especially at the beginning of the projection period. In the majority of cases the forecasts based on our model were able to predict main trends in the government bond market for the observed horizon. Forecast results can be considered of good quality, as the actual values of the yields were mainly between the higher (GB_F_h) and the lower (GB_F_l) confidence bounds.

Figure 2 shows the Euro area corporate bond actual and forecasted yields. As can be seen from

the graph, the forecasted (CB_F_m) and the actual (CB) values’ deviation was quite inconsiderable since the beginning to nearly the half of the projection period. However, over time, the values started deteriorating. Despite this, the model forecasts were able to illustrate the main directions of corporate bond market movements. During the plotting horizon, the actual corporate bond yields were mostly within the 95% confidence interval (CB_F_h and CB_F_l).

According to the forecasting results for the Euro area stock market (Figure 3), all actual values

of the stock index changes were located within the upper and lower confidence bounds, so the results of the forecast were not bad. In most cases, during the projection period, the forecasted and actual values

moved in the same direction. The observed deviations can be explained by the fact, that the model forecast was not able to evaluate other factors affecting the financial market movements.

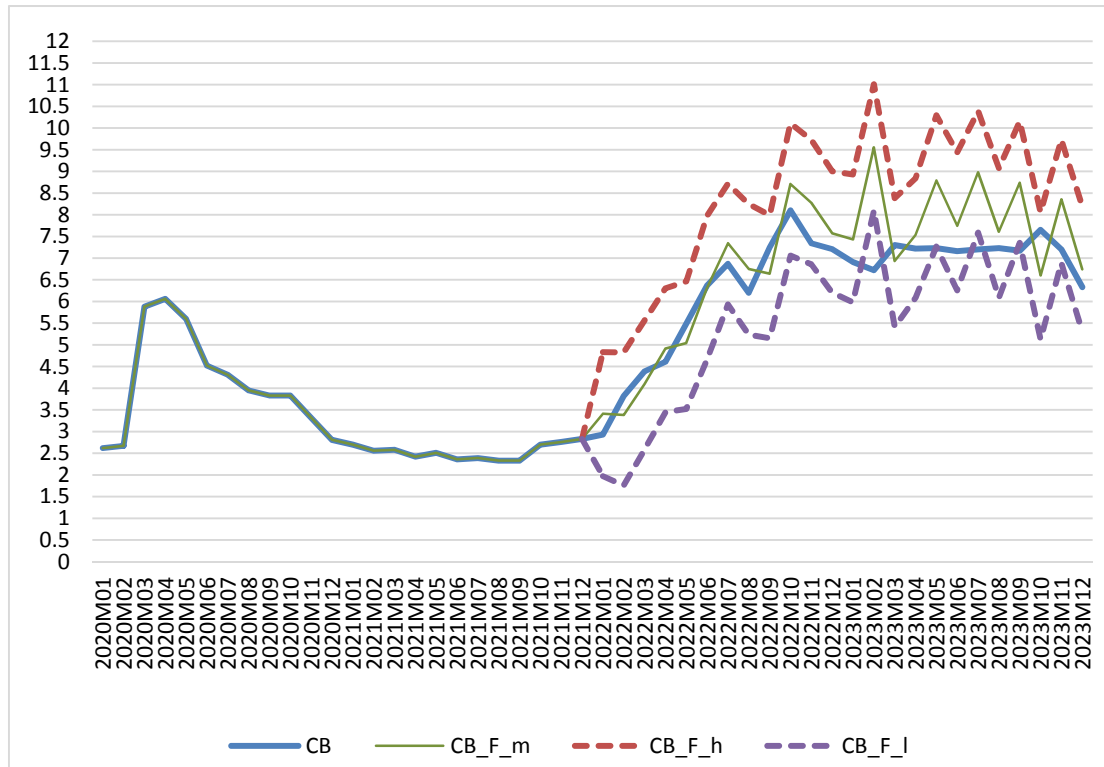


Figure 2. Euro area corporate bond actual yields and SVAR forecasted values with confidence bounds January 2020 – December 2023 (%) [2]

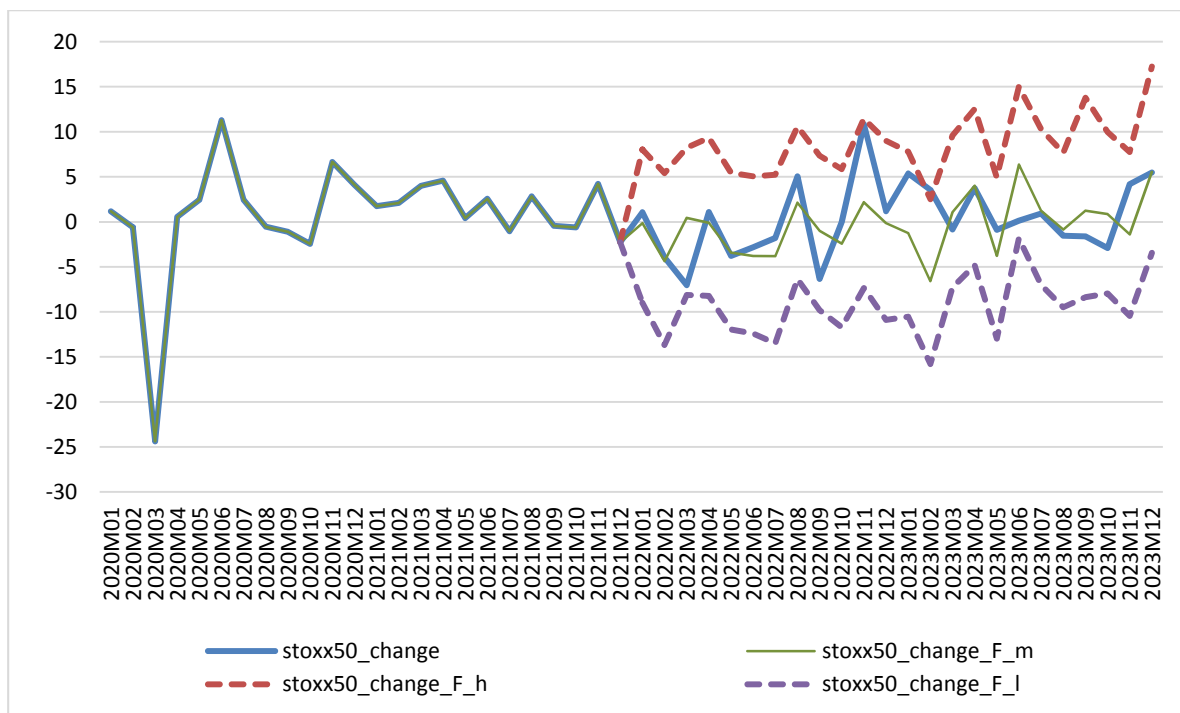


Figure 3. EuroStoxx 50 actual and forecasted monthly changes with confidence bounds January 2020 – December 2023 (%) [3]

Based on the obtained forecast results, we plotted an alternative forecasting scenario to investigate how bond and stock markets would have

behaved if the ECB had adopted a more aggressive monetary policy path. According to our more aggressive alternative scenario, which was based on

static-deterministic simulation, the interest rate increased to a greater extent and at a faster pace compared to the baseline scenario from January 2022-December 2023.

Figure 4 helps to compare Euro area government bond yields' actual values, baseline and alternative scenario forecasts. Because of more aggressive interest rate hikes, government bond yields' alternative forecast values (GB_Alt) acted

more sharply compared to the baseline forecasts (GB_B) for the same period. Though there were some deviations from actual values, the forecasts were able to predict the directions of government bond market movements. It can be concluded that more contractionary monetary policy of the ECB would lead to higher volatility of Euro area government bond yields.

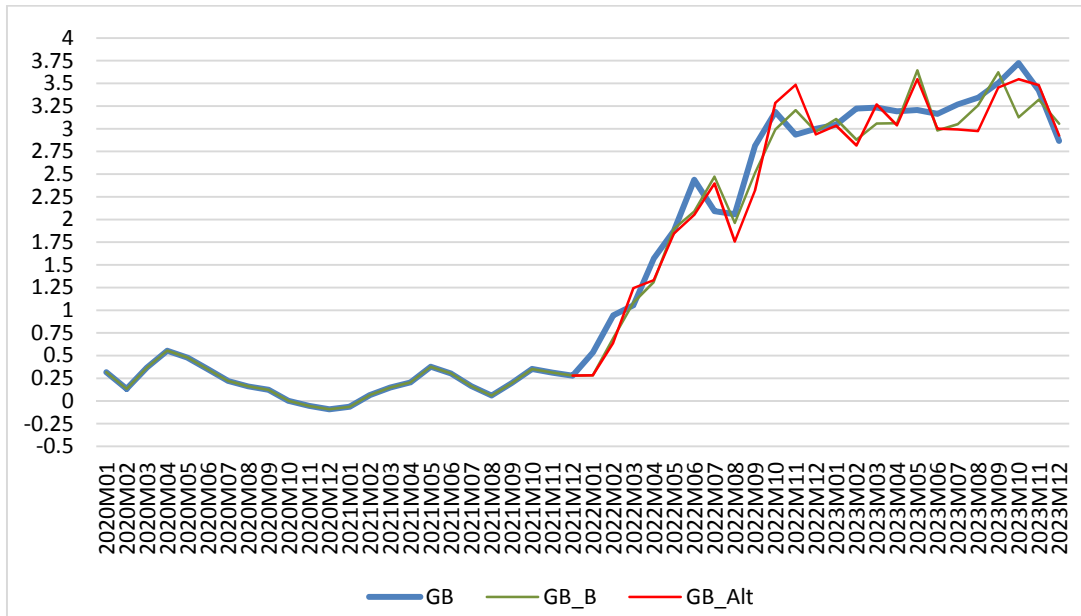


Figure 4. Euro area government bond actual yields, baseline and alternative forecasted values January 2020 – December 2023 (%) [1]

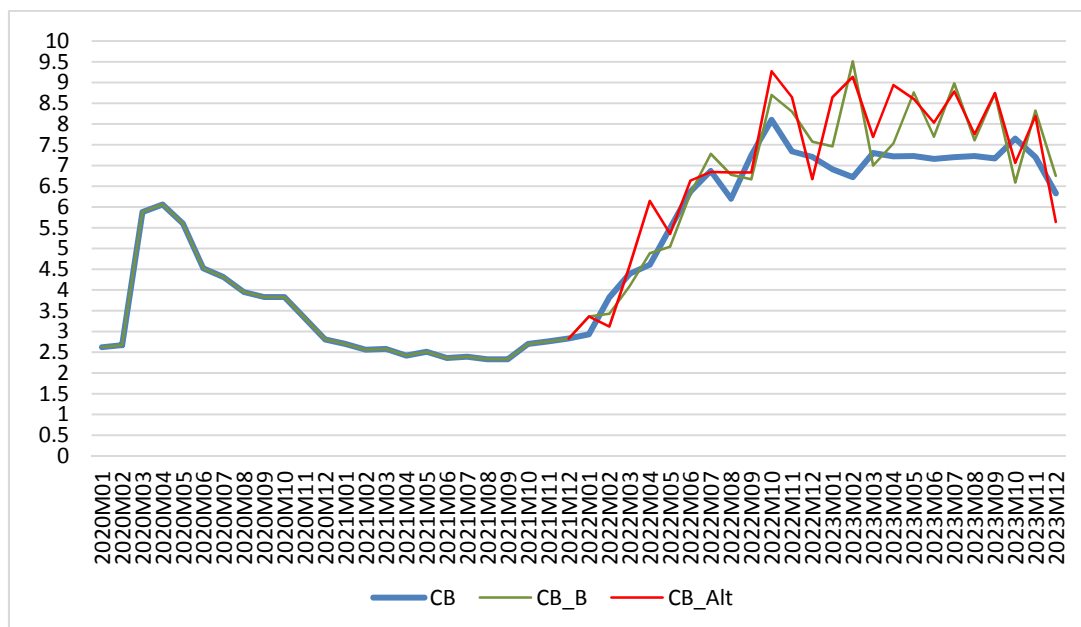


Figure 5. Euro area corporate bond actual yields, baseline and alternative forecasted values January 2020 – December 2023 (%) [2]

In case of corporate bond yields (Figure 5), alternative forecast scenario (CB_Alt) showed worse results than the baseline forecast (CB_B) during the whole projection horizon, but they were able to catch main upward and downward trends in

the market, especially at the beginning of the timeline. Again, it can be noted, that more aggressive interest rate hike, that is tighter monetary policy, would result in higher volatility in the corporate bond market, according to the model estimations.

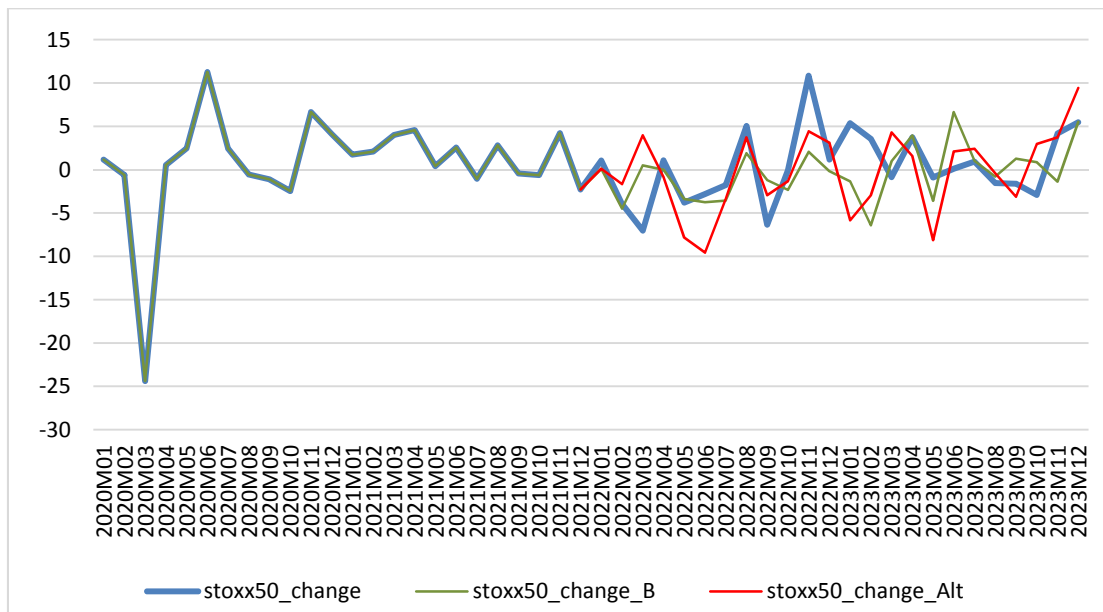


Figure 6. EuroStoxx 50 actual, baseline and alternative forecasted values January 2020 – December 2023 (%) [3]

Figure 6 presents the baseline and alternative forecasts, and actual values of stock market monthly changes. During a couple of months there were significant differences between observed three indicators, because sometimes the forecasts were not able to consider the information, that affected the market, but was not included in the model variables. At the same time, there were periods when the alternative forecasts, based on higher interest rates, were closer to the actual dynamics of the stock market, compared to the baseline scenario.

Conclusion

In order to evaluate the relations between the ECB monetary policy and different segments of European capital market, we made a standard structural vector autoregressive model that included monthly dataset of six variables from January 2000 to December 2023.

Based on our model, we forecasted government and corporate bond yields and stock index changes to compare with the actual values of the variables from January 2022 to December 2023. Our forecasting results highlighted that almost all actual values of government bond and corporate bond yields, and EuroStoxx 50 changes were placed within the upper and lower confidence bounds of the model forecast solution. This suggested that the model was able to predict main directions of the fluctuations in the observed markets for the projection horizon. The deviations between actual and forecasted values of the variables could be explained by the fact, that the model did not contain information on other factors affecting the segments of the capital market in the Euro area.

Along with the baseline forecast, we plotted alternative forecasting scenario to investigate how

bond and stock markets would have responded if the ECB had adopted more aggressive contractionary monetary policy. For the projection period we raised the key interest rate by greater extent compared to the actual values. The comparisons between baseline, alternative forecasts, and the actuals suggested that tighter monetary policy, would result in higher volatility in bond markets. According to the model estimations, for some periods in the stock market the alternative forecasts with higher interest rates, were closer to the actual dynamics, compared to the baseline scenario.

References

1. The actual values are from the European Central Bank, ECB Data Portal, https://data.ecb.europa.eu/data/datasets/FM/FM.M.U2_EUR.4F.BB.U2_10Y.YLD. The forecasted values are based on our model estimations and extracted from EViews software.
2. The actual values are from FRED, ICE BofA Euro High Yield Index Effective Yield, <https://fred.stlouisfed.org/series/BAMLHE00EHYIEY#0>. The forecasted values are based on our model estimations and extracted from EViews software.
3. The actual values are from the European Central Bank, ECB Data Portal, https://data.ecb.europa.eu/data/datasets/FM/FM.M.U2_EUR.DS.EI.DJES50I.HSTA. The forecasted values are based on our model estimations and extracted from EViews software.

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