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VALUATIONS OF EQUITY MARKETS UNDER UNCONVENTIONAL MONETARY POLICY

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Central banks are frequently accused of pushing up the valuation of financial assets, including equities, with their unconventional monetary policy. The dissertation attempts to answer the question is this really the case and if so, to what extent the unconventional monetary policy impacted equity markets and what were the main transmission channels. The period of analysis covers 12.2008 - 2021 and all major stock markets: USA, Eurozone, Japan and the UK.

The impact of central banks on the equity market's valuation materialized mainly via lowering the discount rate and at the same time breaking the link between the long-term treasury yields and expected economic growth. The central banks managed to lower long-term rates, which were also used as a proxy of long-term (nominal) economic growth by practitioners. Before the advent of unconventional monetary policy, this relationship was clear – a fall/rise in yields was followed by the fall/rise in economic growth expectations. A fall in interest rates should therefore lower expectations of long-term economic growth. These two opposite forces would balance each other out and the final impact on valuations would be muted (unless there was a move of equity risk premium). Unconventional monetary policy broke this relationship. Economic growth forecasts did not follow falling yields and the difference between them grew over time what can be associated with the prolonged period of application of unconventional monetary policy. Before the Lehman Brothers collapse the long term yields in all analysed countries were around one percentage point lower than the economic growth expectations. By the end of 2021 the difference grew to around three percentage points in the US and Eurozone and almost five percentage points in the UK. The only market where this difference did not change materially was Japan. All in all it pushed the valuations upward. The fall of risk free rate could in theory be compensated by the rise of equity risk premium what was suggested by some previous research. The valuations could have been also increased further if monetary police had lowered also this parameter of equity valuation models. The analysis of the implied equity risk premium provided ambiguous results though. The equity risk premium rose in Japan and Great Britain, almost didn't change in the Eurozone and fell in the US. The response to the conducted unconventional monetary policy was therefore different in different markets. The levels of risk premium in these markets, also don't allow to draw the conclusion, often cited by the press, that central banks pushed the markets to the verge of a speculative bubble. It does not change the fact though, that even in the markets where the equity risk premium was rising, like Great Britain, the discount rate fell more than the expected earnings growth.

The analysis refuted the claim that low interest rates contributed to debt-driven increase in share-buybacks increasing valuations and stock performance at the cost of future growth. In fact, the total payout ratio (dividend yield + share buy-buyback yield) was lower than before the Lehman Brothers collapse everywhere but Japan. What's more the net debt to EBIDTA was significantly lowered during the analysed period in all the markets and the companies accumulated abundant amounts of cash. Finally, it's worth pointing out that the high share of buy-backs in the total payout ratio was mostly limited to the US market, therefore it's hard to draw the conclusion that the unconventional monetary policy was the main contributor to this phenomenon.

The possible normalization of monetary policy will most likely decrease valuations, lowering the annual rates of return between 0.7 - 2.3 ppt per year in the baseline scenario. The equity risk premium may be too low to neutralize the increase of risk free rate. One of the main risk factors for the equity markets is de-anchoring of inflation expectations due to rising inflation followed by quick monetary policy normalization. A quick transition from negative to positive real rates would be particularly troublesome from the valuation standpoint. Under such circumstances, apart from the impact of narrowing the gap between the yields and projected long-term earnings growth, some risk premium would likely emerge in the treasury yields (risk premium was negative for all the analysed markets). It would increase the discount rate within both parameters: risk free rate and the equity risk premium via decreasing relative attractiveness of the equities compared to bonds. In addition, the shock tightening of monetary policy and positive real interest rates could clearly reduce the growth rate of corporate profits. This would have a negative impact on the numerator and denominator of the model affecting the valuations in a significant, negative way. A more optimistic scenario would be the normalization of monetary policy in response to solid economic growth, which would be followed by investors' optimism. In such circumstances, the risk premium could fall, neutralizing the increase in the risk-free rate to a greater extent. The third scenario is a long period of financial repression where negative real yields are maintained at the short and long end of the curve, in order to enable the heavily indebted economies to deleverage. It would bring its own set of risks consisting mainly of higher, more volatile inflation and other macro parameters, which may hit companies' profits and increase the risk premium. This is a naturally unfavourable scenario from the valuation perspective.

The conducted study contributed to a better understanding of the transmission mechanism of unconventional monetary policy to stock market valuations. Previous research

has often focused on selected countries, the short-term horizon, or the equity risk premium. This study analysed in detail the transmission channels of monetary policy both on the revenue and the discount rate side of the valuation models.

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