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| **WORKINGTITLE  The impact of Monetary Policy on the Stock Market** | |
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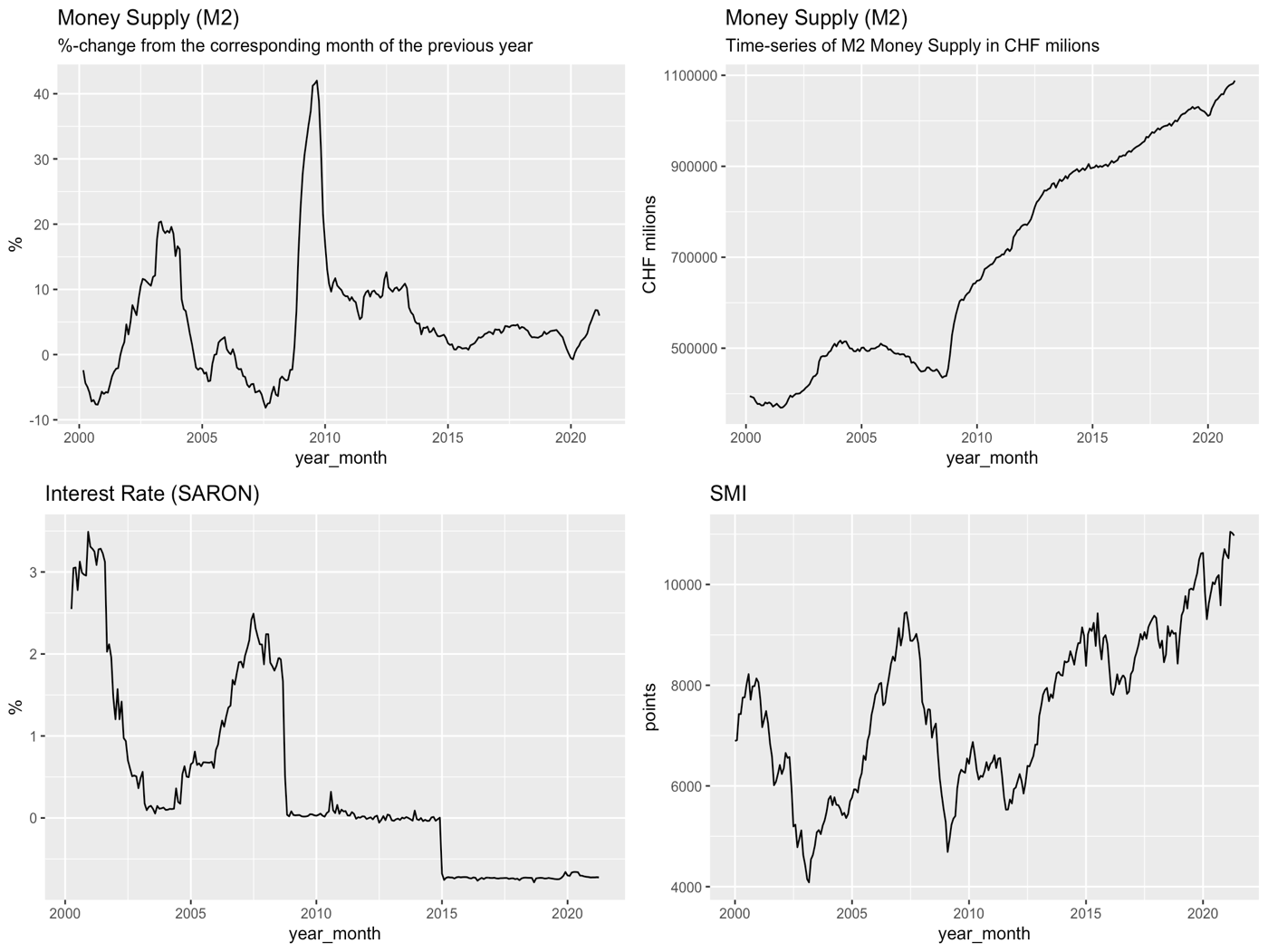
**Es konnten keine Einträge für ein Abbildungsverzeichnis gefunden werden.**

**List of Abbreviations**

|  |  |
| --- | --- |
| DCF | Discounted Cash Flow |
|  |  |
|  |  |
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# Background

Crisis 2008 🡪 central bank interventions 🡪 stock market boom



﻿Efficient market hypothesis: the current price of assets incorporates all relevant information

“Broader financial markets though, for example the stock market, government and corporate bond markets, mortgage markets, foreign exchange markets, are quick to incorporate new information. Therefore, a more direct and immediate effect of changes in the monetary policy instruments may be identified using financial data. Identifying the link between monetary policy and financial asset prices is highly important to gain a better insight in the transmission mechanism of monetary policy, since changes in asset prices play a key role in several channels. “ (PARAPRHASING AND CITATION)

<https://www.gla.ac.uk/media/Media_219105_smxx.pdf>

WHAT IS THE IMPACT OF MONETARY POLICY ON STOCK MARKET?  
We are going to investigate the relationship between  
-interest rate and smi  
-money supply and smi

# Literature Review

The discounted cashflow (DCF) model shows that there is a direct relationship between interest rates and stock prices. In the DCF Model the stock price ( is the present value of expected future dividends . (Ioannidis & Kontonikas, 2006). We use the simplified DCF-model:

Where is conditional expectation at time *t, R* is the rate of return used to discount future cashflows and *K* is the time horizon. The formula implies a direct effect of changing interest rate on the stock price. If the interest rate is increasing, future cashflows are discounted with a higher rate and thus the present value of the stock price lower.

Accordingly, monetary policy is linked to stock prices by altering expected future cash flows. (Ioannidis & Kontonikas, 2006). Thorbecke (1997) found that expansionary monetary policy exerts a large significant positive effect on stock returns. He also provides support for the hypothesis that monetary policy, at least in the short run, has real and quantitatively important effects on the economy. This indicates and indirect effect on stock prices, since an increase in economic output means higher profits and thus dividends of the individual firms.

Kohout (2010) found that in the long-term money supply is the most significant variable, out of all macroeconomic variables, in influencing the development of stock prices. This aligns with the previous statements concerning the interest rate, since a higher money supply lowers interest rate and vice versa. Additionally, money supply can also affect stock prices directly, when the greater supply of money is allocated in stock market investments. (Sirucek, 2012).

# Main Research Questions

The following research questions will be tried to answer.

1. *Is there granger causality between the interest rate (SARON) and SMI?*

Null hypothesis: The interest rate (SARON) does not Granger Cause SMI.

1. *Is there granger causality between the money supply (M2) and SMI?*

Null hypothesis: The money supply (M2) does not Granger Cause SMI.

# Methodology

Visual & Residual anlysis (LITERATURE??)

Dicky Fuller (LITERATURE??)

Granger causality (LITERATURE??)

# Visual Analysis

VISUAL Analysis: Looking for decisions by SNB that had an effect on SMI.

<https://www.snb.ch/en/iabout/snb/hist/id/hist_wpc#t14>

random example:



RESIDUAL Analysis

# Granger / Results

By looking at the figure X it is already clear, that there are strong correlations between some variables. Figure X confirms this notion. Both M2 and SARON are strongly correlated with the SMI.   
However, since strong deterministic trends are present, these correlations could be spurious.

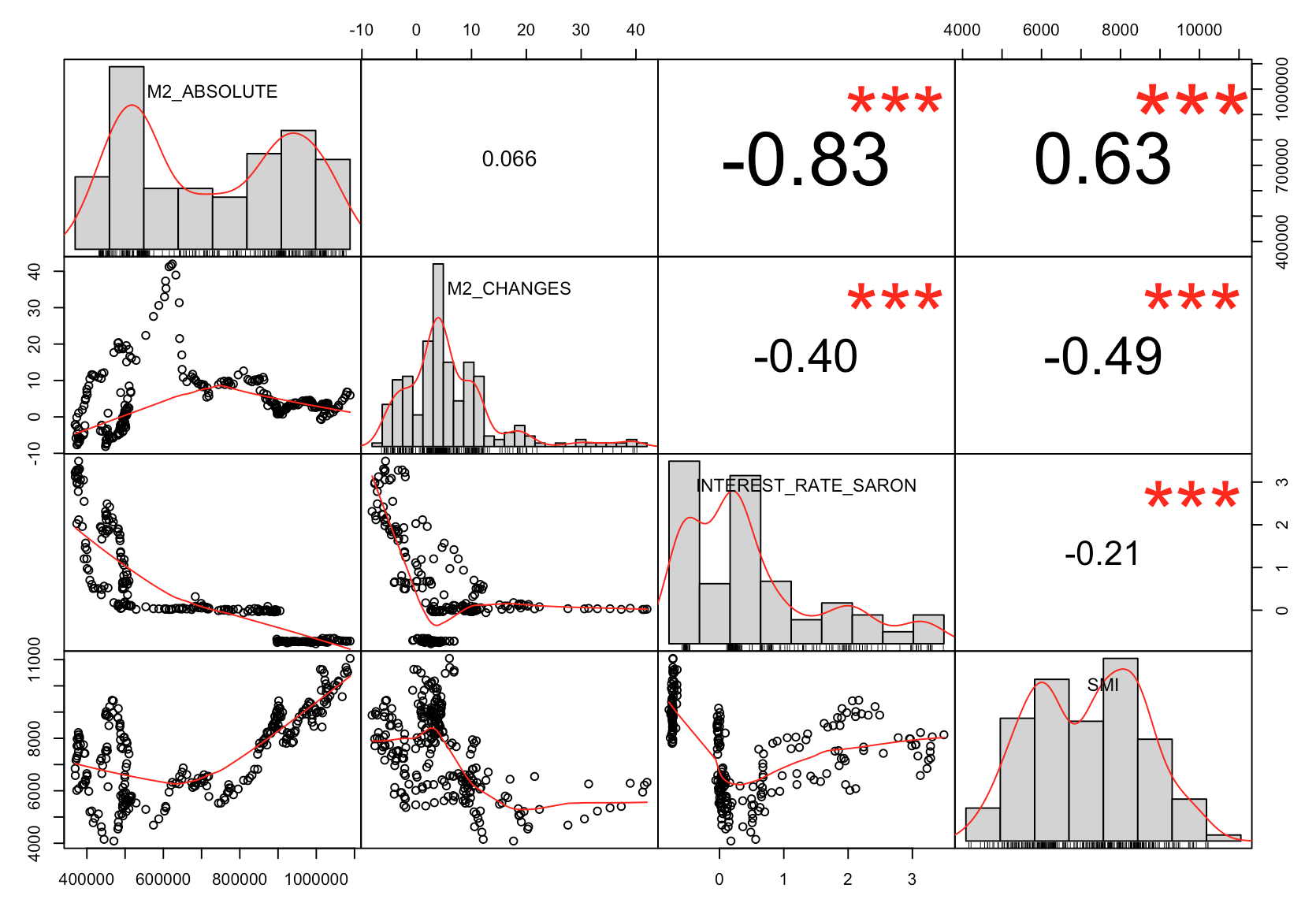


Figure 1 Correlations of SMI, M2 and Interest Rate

To avoid wrong conclusion by statistically deviated results, we are testing for stationarity by applying the augmented Dickey-Fuller test. After taking the first difference of M2 and SARON, both tests yield p-values below 0.01, indicating stationarity for the two time-series.

Testing for Granger causality between lagged SARON with lag 1 and SMI leads to a p-value of 0.00134 and thus strong evidence to reject the 0-hypothesis of no granger causality.

Applying the test with lagged M2 with lag 8 and SMI leads to a p-value of 0.00745 and thus to the same conclusion of rejecting the 0-hypothesis of no granger causality. Figure X shows the p-values for the a range of lags for both M2 and SARON. The latter is the most significant at lag 1 with increasing p-values at higher lags. Contrary, Granger Test M2’s p-values elbow (sharp decrease) at lag 5 and are lowest at lag 8.



The results confirm the assumption provided by previous literature that the interest rate and money supply are important variables for determining stock prices. More precisely, the granger tests suggest that it is useful to include M2 and SARON for predicting SMI when the SMI’s own history is already used for prediction.

# Structured and Annotated List of Sources and Literature

Ioannidis, C. & Kontonikas, A. (2006). Monetary Policy and the Stock Market: Some International evidence.   
<https://www.gla.ac.uk/media/Media_219105_smxx.pdf>  
**=> Citation for DCF-Model**

Thorbecke, W. (1997). On Stock Market Returns and Monetary Policy. ECONSTOR. <https://www.econstor.eu/bitstream/10419/186821/1/wp139.pdf>.   
**=> Citation for monetary policy and stock returns**

Kohout, P. (2010) Investiční strategie pro třetí tisíciletí. 6. vyd. Praha: Grada Publishing 2010. ISBN: 978-80-247-3315-9.  
**=> Citation for money supply and stock returns**

Sirucek, S. (2012). The impact of money supply on stock prices and stock bubbles. MPRA.   
<https://mpra.ub.uni-muenchen.de/40919/1/MPRA_paper_40919.pdf>.   
**=> Citation for money supply and stock returns**

# Appendix

## Declaration of Originality

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The undersigned hereby declares that he or she

- wrote the work in question independently and without the help of any third party,

- has provided all the sources and cited the literature used,

- will protect the confidentiality interests of the client and respect the copyright regulations of  
 Lucerne University of Applied Sciences and Arts.

Date and signature