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As a consequence of aging, I have had the privilege to attend many occasions honouring distinguished persons. The lesson I took home from this experience is that all attempts by the dignitary to play down the merits are doomed to fail and often deliver an implicit message that the laudation was overdue and narrowly missed the "lower bound". Discounting in times of negative interest rates would worsen the case. In short, the only decent thing to do is humbly accept – anything else would insult those who were generous enough to express their appreciation.

On the occasion of my farewell, the ECB published a book with the title: A Journey from Theory to Practice. Many colleagues and friends have accompanied my long professional career from academia to central banking and, I would like to add, back to academia. I feel a deep gratitude to them. Today I want to thank my colleagues from the Center for Financial Studies who have initiated and organised this event: Jürgen Fitschen, Volker Brühl, Andreas Hackethal and Rainer Klump. The CFS has become my academic home. Isn't it a privilege for a man of my age to look forward to a continued fruitful cooperation?

Three related associations are co-hosts of today's event. The Leibniz Institute SAFE is now an institution of international reputation. I have invested a great deal of effort in SAFE, from the first steps in its creation to the final establishment. I can also claim to have contributed to the Goethe University's selection as the location for the Institute for Monetary and Financial Stability, which has become an important player in this field. And, finally, I have a long history of cooperation with the Institute for Banking and Financial History. To their leaders, Jan Krahnen, Volker Wieland and Bernd Rudolph, I am grateful for innumerable discussions and personal friendship.

It is more than a nice surprise to hear Doris Fischer, the Vice President of my Alma Mater, to bring back memories of my extended period at the University of Würzburg – thank you so much.

I spent eight years at the Bundesbank, followed by an equal period at the ECB. I am honoured by the presence of two Central Bank Presidents. Thank you Jens for this message, which I see as an expression of our ongoing friendship and stimulating discussions.

Jean Claude, I will never forget the time we spent working closely together at the ECB. However, our acquaintance began much earlier and, in the course of time, has developed into an enduring friendship. Thank you so much for your kind words, which go deep to my heart.

Ladies and Gentlemen,

These messages are very moving for me, but they cannot explain the large number of friends and colleagues from all over the world attending this event. The explanation is straightforward. It is due to the announcement of your lecture, Markus. Markus Brunnermeier is the leading expert in the field of money and finance. In a number of pioneering contributions, he has built the bridge between money and finance. "Money in a Theory of Finance" is a book published in 1976 by Gurley and Shaw. Marcus` work demonstrates the tremendous progress in this field. I also very much like Markus' Baffi-Lecture on Financial Dominance (2016), which now seems even more important than some years ago. It is a pity that we do not have time to discuss your fascinating contribution. We all hope there will be another occasion to have you here at the CFS.

The title of this event is "Money and Prices: A Permanent Puzzle". The organizers chose this headline without my input. But the title strikes at a focal point of my professional life – both as an academic and as a central banker. At first I regarded this problem as anything but a puzzle. Hadn't Milton Friedman given the final answer: Inflation is always and everywhere a monetary phenomenon and the quantity theory of money provided the solution? Initially I hailed Friedman's k–per cent rule, not least because its adoption would remove

the power of discretion from the hands of central bankers. However, doubts in this simple message already arose at a time when I would have called the notion that I would someday become a central banker a bad joke.

Constant money growth, but for which monetary aggregate: M0, M1, M2 ... Mx? I have published a number of articles showing how financial innovations can substantially change the economic content of any statistical aggregate.

When it became known that I would join the Executive Board of the ECB, a journalist described me as the monetarist cuckoo's egg. At that time I had already strictly ruled out that the ECB should adopt a monetary target. However, money should play a prominent role and, applying the method of best fit, we chose M3 as a reference value – not as a target but as an indicator for medium-to longer-term inflation risks. This should ensure that the central bank constantly is reminded of the need to analyse and explain various financial indicators.

To identify which M is relevant is a never-ending challenge. In the meantime, crypto currencies issued privately or by central banks will make the puzzle of the relation between money and prices even more difficult.

Have we now reached the point where we should just ignore monetary and credit aggregates? This attitude is anything but new. I have, for instance, attended a number of meetings where Alan Greenspan gave a speech under the title "The monetary policy of the Fed". And believe me, neither the word money nor any other financial variable was mentioned. The Fed seems to follow in this tradition.

Money has disappeared as an active factor from models explaining inflation. No wonder that exploding figures for money growth seem to be of no concern to central banks and many economists. These days, however, it is not only central bank money that is rising at breathtaking rates: this is true for all monetary aggregates. In one of his comedies, Johann Nepomuk Nestroy complained: the Phoenicians have invented money, but why so little? A modern writer might say even a lot of money is not enough.

The Quantity Theory claims that the causality runs from money to prices. Empirical evidence seems to have largely undermined this hypothesis for times of moderate inflation. But what about Mervyn King's dictum: No money – no inflation? The quantity <u>equation</u> as a tautology confirms this message – velocity (alone) will not do the job. Nominal wages, prices of goods and services cannot keep on rising without a corresponding expansion of money. And what about asset prices and financial stability? Time constraints will not allow me to extend the permanent puzzle in this direction today.

After more than a decade of an environment in which a number of factors such as globalisation or demographics have exerted downward pressure on prices, the world might be confronted with a regime shift. Charles Goodhart and others have identified factors which, in the future, could work in the direction of inflationary pressure. When such a change in the real sector is accompanied by an attitude of central banks almost yearning for higher inflation rates and ignoring the strongest money growth for decades, we should indeed expect a new regime. Quite a number of developments remind us of the situation in the 1960s/1970s. Should we expect a new period of stagflation?

The world has undergone dramatic structural changes: in politics, in economies and in societies. On top of these changes, the pandemic might have consequences that we cannot currently foresee. In short, we are experiencing an exceptionally high degree of uncertainty, uncertainty in the form described by Frank Knight. And here I come to another focal point of my professional life. I have internalised the warning by Bob Lucas about the consequences of a regime shift and have always been sceptical of relying too much on specific models, which are not taking into account key elements of the reality which policy makers are facing.

What is currently conceptually alarming is the fact that central banks seem to still be relying on models which had probably already lost much of their forecasting capacity years ago. These models lack an appropriate finance based theoretical explanation of the simultaneous determination of financial flows, risk premia and asset prices. It is surprising that more than a decade after the financial crisis the main general equilibrium models used in central banks mostly seem to lack any meaningful consideration of the large heterogeneity among households in terms of wealth, outstanding *long-term* debt positions, uninsured risks and, expectation formation - and thus cannot reflect the complex impact of systematic policies or shocks on wealth distribution and inequality. Without that knowledge it seems impossible to understand whether strong monetary growth reflects increasing precautionary saving due to increased inequality and/or an inflationary fiscal-monetary shock. This is particularly problematic in a world where central banks are massively expanding base money by purchasing assets at high prices from a small group of relatively wealthy and well informed investors. My point here is that central banks should not underestimate or even ignore the risk of relying on these narrow "old" models.

Expectations play the key role in forecasting future inflation, and for the time being seem firmly anchored at low levels. But, what about the possibility that, after so many years of very low inflation, expectations are more backward-than forward- looking? Fear of inflation has disappeared from most radar screens and the present higher numbers are seen as a purely temporary factor. Considering the long and variable time-lags of monetary policy isn't it very risky to wait with restrictive measures until it turns out that higher inflation has become a permant feature? What will be the impact on the credibility of the central bank? Will inflation expectations have lost their anchor? However, in an environment of extreme uncertainty it is risky to rely on the longer-term stability of inflation expectations.

In times of a potential regime shift it is simply impossible to form reliable rational inflation expectations. Besides strong money growth,_- not to talk about a new round of expansionary fiscal policy above all in the US - the extraordinarily high level of private and public debt presents another incalculable risk. Confidence in the sustainability of public finances in highly indebted countries rests on shaky ground and is exposed to shocks that might come from a number of sources, from economic to geopolitical risks. And yet, why be concerned when central banks are standing ready to stop any rise in nominal interest rates by buying government bonds without any limit, thereby creating expectations of a central bank put which privileges large financial investors? And since money apparently does not matter; without posing any inflation risks from a new round of excessive liquidity? This is sure to draw a healthy round of applause from a number of financial investors.

As you will guess, I am not predicting the return of high inflation, but I am concerned about strong monetary growth and its determinants, above all massive purchases of government bonds by central banks. The main risk, from my perspective, is that central banks seem to be rather relaxed about this risk and ignoring the high degree of uncertainty, not least by promising extremely low central bank interest rates and continued asset purchases for quite a long time to come in their forward guidance.

It is an alarming signal of the high degree of uncertainty that quite a number of observers predict not high inflation for the euro area but a kind of Japanification with very low inflation and nominal interest rates, high public deficits and increasing fiscal and financial dominance. However, such a situation might not prove politically sustainable in Europe because of the rapid increase in wealth inequality and eventually a lack of confidence of financial investors in the sustainability of public finances. This episode might end in a delayed but strong outburst of inflation.

When writing these sentences I was reminded of Keynes' warning that – in this case – central bankers should not follow the advice of defunct economists with rather absurd ideas. Yet I am still alive and kicking, and the risk that central banks would heed my concerns seems to be rather limited. I will leave open the question of whether I shall be vindicated already in my lifetime. Talking about the consequences of strong money growth, one might quote Rudi Dornbusch's observation: things take longer to happen than you think they will, and then they happen faster than you thought they could.

Taking an historically rather long view let me close with these thoughts of Joseph Schumpeter (Das Sozialprodukt und die Rechenpfennige 1913, own translation):

"And all the principal shortcomings of metallism and quantity theory, which, as the reader will attest, I have certainly not defended, do not alter the fact that the theories so often condemned under these names contain a great deal of sound insight, a great deal of practical wisdom – which even today is a more reliable guide than is offered in much of today's writing. Above all, however, they carry gravity and sincerity, which we so urgently need."

I thank you for having attended this event, I hope you found some points to ponder, and I look forward to continuing this fascinating discussion in the years to come.