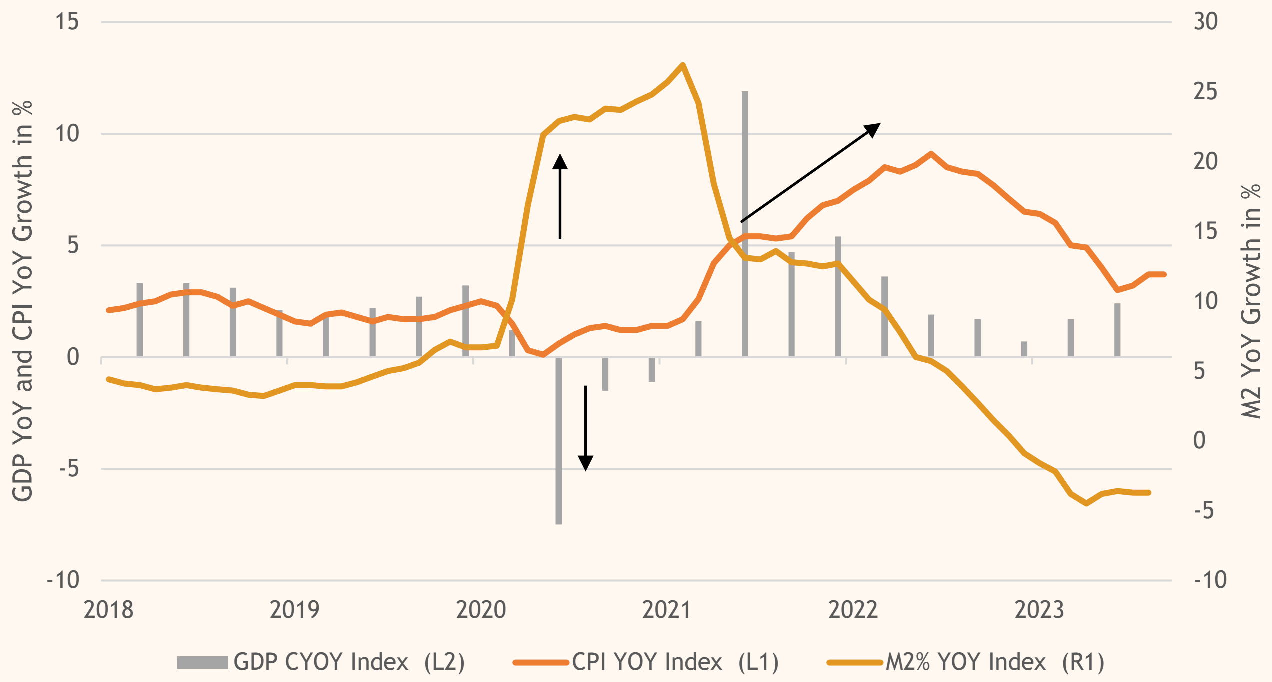
We Know Everything About Inflation

Inflation is typically defined as a persistent increase in the general price level of the economy. Recent couple of years have seen a resurgence of inflation, a phenomenon not seen for the past decade. Despite the seemingly endless battle, inflation is one of the most understood phenomenon in economics, the causes of which have been known since the year 1517, originally described by the renaissance mathematician Nicolaus Copernicus. The identity defining inflation, was originally derived by Copernicus, known as the quantity theory of money, was defined to be MV=PY. Where M is defined to be supply of money in the economy, V is defined as the velocity of money, P is defined as the general price level, and Y is defined as the real output of the economy. Velocity of money is essentially a measure of how fast money changes hands in a given period of time. It is important to mention that by definition this identity holds true. However, in order to truly understand the causes of inflation, we must rewrite this equation in terms of growth rates and set it equal to inflation. This yields the following result: $\%\Delta P = \%\Delta M + \%\Delta V - \%\Delta Y$. This equation is critical to understanding the causes of inflation, as it defines changes in price levels to be a function of changes in monetary supply, changes in velocity of money, and changes in real output.

If we assume velocity of money to be more or less constant, a standard assumption in macroeconomics, we can clearly see how inflation was caused by largely two variables: An expansion in monetary supply, and a

CPI % Growth Versus GDP and M2 % Growth



contraction in real output. It follows that the weakness in growth experienced during the Corona pandemic and at the start of the Ukraine conflict, as well as the expansion in monetary supply in the previouse years, all contributed to the inflationary pressures experienced today. It is also important to note that there tends to be significant lags that can last years between changes in the determinants of price levels and changes in price levels themselves.

But GDP Growth is Inflationary Isn't It?

No, no it isn't. On the contrary, real GDP growth is inherently deflationary, as an increase in output means that there is an equivalent amount of money chasing a larger sum of goods. In fact, if the US Federal Reserve were to keep the money supply constant, under the conditions of a growing economy, we would most definitely experience deflation. Note that this is clearly stated in the previously mentioned equation of $\%\Delta P = \%\Delta M + \%\Delta V - \%\Delta$, where the percentage change in real output is subtracted from the entire function.

The only reason why GDP growth and inflation tend to be often positively correlated is because changes in money supply tend to follow the business cycle. In simple terms, a contraction in money supply can have short term negative impacts on GDP, while an increase in money supply can have short term positive impacts on GDP. But over the long run, one cannot print their way to growth. Ergo, in the long run, changes in money supply should not and do not have any causal relationship with GDP growth, rather, it has a causal relationship with price levels. It therefore can be said that growth in prices are caused by an **expanding money supply** and **not a growing economy.**

31 October 2023

Diangelo Alexandre,

Assistant in

Investment Department

We hope you will find this information useful and we will be glad to answer your questions

AXIOMA Wealth Management AG
Bleicherweg 50, CH-8002 Zurich
Tel.: + 41 43 305 07 10
info@axiomag.ch
www.axiomag.ch

Disclaimer

Scope of this Disclaimer. This disclaimer applies to the entire content of this presentation and any supplemental material that has been distributed with it. Furthermore, this disclaimer covers any statement made by all persons and legal entities involved in the presentation.

Confidentiality. This presentation is provided on a strictly confidential basis for informational purposes only. The presentation is confidential to the recipient and must not be reproduced or distributed to any other person without the prior written consent of AXIOMA Wealth Management AG.

Access Subject to Local Restrictions. This presentation and all information (including in respect of any product or service) contained within it are not directed at or intended for use by any person resident or located in any jurisdiction where (1) the distribution/provision of such information, product or service is contrary to the laws of such jurisdiction or (2) the distribution/provision of such information or product, or service is prohibited without obtaining the necessary licenses or authorizations by AXIOMA Wealth Management AG and such licenses or authorizations have not been obtained.

No Offer. The information contained in this presentation is for marketing and informational purposes only and should not form the basis of an investment decision. For the sake of clarity, no information contained in this presentation constitutes a solicitation, an offer, or a recommendation to buy or sell any investment instruments, to effect any transactions, or to conclude any legal act of any kind whatsoever. This presentation does not take into account the financial position or particular needs or investment objectives of any individual or entity, does not intend to provide investment, legal or tax advice through this presentation and does not represent that any products or services discussed are suitable for any existing or potential investor. When making a decision about investing with AXIOMA Wealth Management AG, you should seek the advice of your tax, legal, accounting or other advisors.

Forward Looking Statements. This presentation may contain statements that constitute "forward looking statements". While these forward-looking statements may represent AXIOMA Wealth Management AG’s judgment and future expectations, a number of risks, uncertainties and other important factors could cause actual developments and results to differ materially from AXIOMA Wealth Management AG expectations. An investment with AXIOMA Wealth Management AG may entail a high degree of risk, including the possible loss of a substantial part, or even the entire amount, of such investment. Investment with AXIOMA Wealth Management AG requires the financial ability and willingness to accept the high risks of the investment.

No Warranty. Past Performance is not necessarily indicative of future results. The information and materials contained in this presentation are provided "as is" and "as available AXIOMA Wealth Management AG makes no representations or warranties of any kind, either express or implied, with respect to the accuracy or completeness of this presentation and nothing contained herein shall be relied upon as a promise or representation whether as to past or future performance.

There can be no assurance that AXIOMA Wealth Management AG will achieve comparable result or that AXIOMA Wealth Management AG will be able to implement its investment strategy or achieve its investment objectives.

AXIOMA Wealth Management AG is under no obligation to (and expressly disclaims any such obligation to) update or alter its forward-looking statements whether as a result of new information, future events, or otherwise.

No Liability. To the fullest extent permitted by law, in no event shall AXIOMA Wealth Management AG or any of its directors, employees or agents have any liability whatsoever to any person for any direct, indirect or consequential loss, liability, cost, claim, expense or damage of any kind, whether in contract or in tort, including negligence, or otherwise, arising out of or related to the use of all or part of this presentation, even if AXIOMA Wealth Management AG has been advised of the possibility of the same.

Intellectual Property Rights. AXIOMA Wealth Management AG or the applicable third-party owner, retains all right, title and interest (including copyrights, trademarks, patents, as well as any other intellectual property or other right) in all information and content (including all text, data, graphics and logos) in this presentation. Individual pages and/or sections in this presentation may be printed for personal or internal use only, and provided that such print outs retain all applicable copyright or other proprietary notices. The material is freely usable for information purposes only and requires express mention of AXIOMA Wealth Management AG in the event the material or any part thereof is reproduced in any form, written or electronic. All recipients/addressees of this presentation are prohibited to, without limitation, modify, copy, transmit, distribute, display, perform, reproduce, publish, license, frame, create derivative works from, transfer or otherwise use for any reason whatsoever in whole or in part any information, text, graphics, images, directories, databases, listings obtained from this presentation without the prior written consent of AXIOMA Wealth Management AG. AXIOMA Wealth Management AG and its corporate symbol are among the registered and unregistered trademarks of AXIOMA Wealth Management AG.

Other marks may be trademarks of their respective owners. Except as noted above, you may not use any trademarks of AXIOMA Wealth Management AG for any purpose without the prior written consent of AXIOMA Wealth Management AG.