

UDC 33

Monetary and macroeconomic factors of lagged inflation

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Abstract

Main purpose of present paper rests in the subject of inflation its key factors from both monetary and macroeconomic outlooks. Despite considerable interest from academia, its practical implications can be even greater. In terms of research methodology, it is a concise meta-analysis of the existing body of work on the matter, summarizing the prevailing sentiment among researchers and the threats of lagged inflation following rapid money supply expansion. Both theoretical frameworks as well as empirical observations are considered, and make for a compelling case that the ballooning broad money supply may indeed overflow at least into select asset classes, or their isolated “pockets” (commonly referred to as liquidity traps) – and may indeed pose spillover effects into other asset classes, ultimately pushing CPI inflation upwards. As such, it appears to pose moderate threat to modern economies, including but not limited to the Eurozone, the United States and Japan, in the foreseeable future. In view of the aforementioned theories and observations, it becomes apparent that a host of factors, from credit expansion and money velocity to interest rates and per-capita income, can (and indeed do) have inflationary impact. As such, the risk of inflation breakout is entirely real, and programs such as UBI may very well kickstart the process – despite good intentions.

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Keywords

Monetary policy, quantitative easing, interest rates, savings, spending, money velocity, liquidity traps.

Introduction

Taking a brief look at monetary history of the past century, it’s hard to overlook the perils of hyperinflation. From Weimar Republic (1921-1922) to Soviet Union (same period) and Venezuela (2016-present), it takes little guessing that inevitably, untamed expansion of broad money supply crawls up the ladder of inflationary flood gates – until overflowing, if not outright breaking – boundaries of normal CPI range into twilight zone.

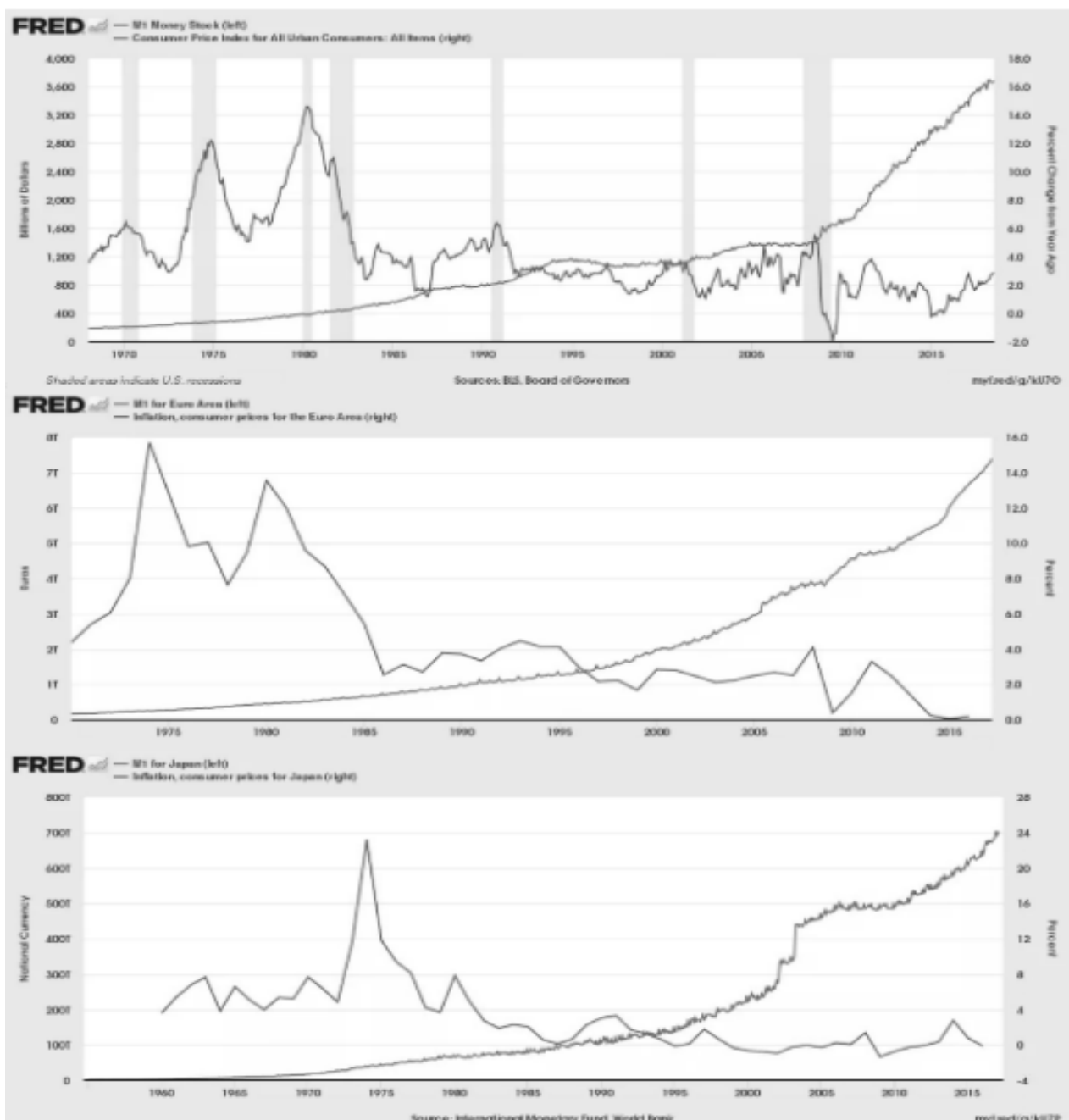


Illustration 1

Conventional logic suggests – and indeed lines up – with Milton Friedman’s famous quote that “inflation is always and everywhere a monetary phenomenon” (Friedman, 1970). Similarly, linear

regressions based on the empirical data between 1960 until 2007 suggest that for each 1 percent increase in monetary base M_0 , inflation increases by 0.54 percent (Arias & Wen, 2014). Ten years since, however, M_1 money supply has more than doubled in the USA, Eurozone and Japan, as seen in the illustration 1 (blue line). That said, rapid growth of broad money supply across world's top economies paints a rather unsettling picture.

Despite the largely declining CPI inflation in the USA, Eurozone and Japan, as seen in illustration 1, it occurs just as M_1 money supply maintains its upward course since the first days of post-global financial crisis (GFC) quantitative easing (QE) program in 2009 – with no end in sight.

The trend has held up rather well in most industrialized economies over the last decade – and yet, one would may wonder: a) “where did all the money go?” and b) “when, if ever, will the levee break?” This paper aims at answering these questions, based on the existing research and relevant theories in monetary economics.

Velocity Factor

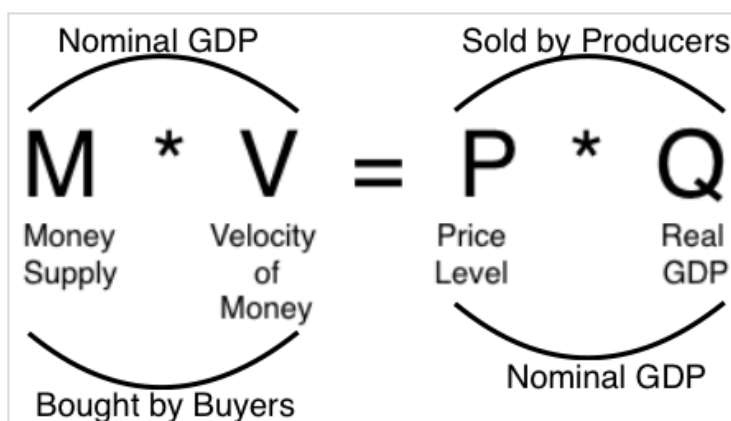


Illustration 2

The odd phenomenon described above is not exactly new to classical economists – at least to proponents of the Austrian School, such as Hayek, Hazlitt or Paul. The latter contends that “*any bank credit inflation sets up conditions for boom-and-bust; there is no need for prices to actually rise*” (Ron Paul, 1983).

Indeed, by focusing on money supply expansion alone, we are missing a major ingredient of CPI inflation, namely: money velocity – as seen in Irving Fisher’s Exchange Equation (illustration #2) above. Assuming we fix real GDP (Q^2) as a control variable, aggregate price level P would then depend on both money supply M and the velocity of money V .

Any increase in M , therefore, would have to be proportionally offset by a decrease in V – which is precisely what is happening today – as indeed, the slope of GDP growth of Eurozone and the United States has remained similar over the past decades (illustration #3).

¹ At a glance, it may seem like comparing apples to oranges. However, due to the pending transition towards cashless payments worldwide, ignoring funds parked in depository institutions (M_1) can underrepresent total liquid mass in the economy.

² Represented in QTM as the aggregate volume of transactions (T) in the economy instead – which may be more accurate, albeit harder to measure.

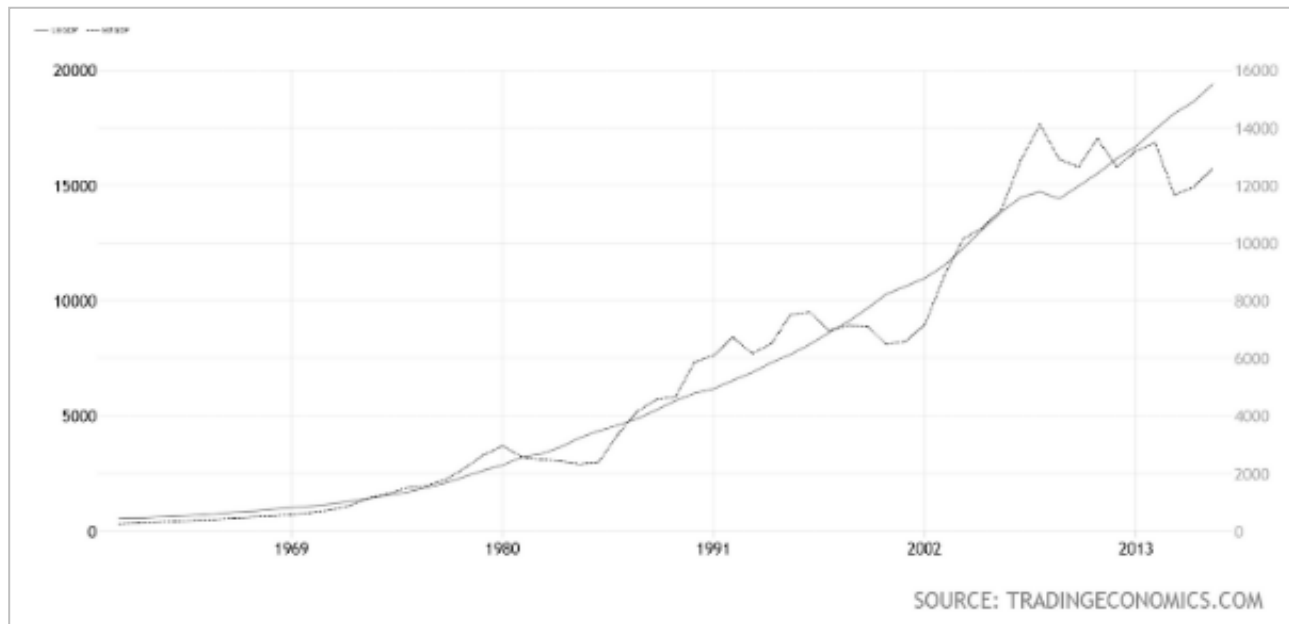


Illustration 3

Keynesian Factor

Having singled out the factor of money velocity, and its unique role, akin to a “titan holding up” (technically down) the massive weight of swelling money supply and consequent inflation – it then begs the question, why the slowdown? As noted by researchers at Hoover Institution, Stanford, and the Federal Reserve Bank of St Louis, “sharp increases in risk premia [...] and decreases in M2’s velocity were signatures of the onset of the Great Depression and the Great Recession.” (Anderson, Bordo, Duca, & Anderson, 2015). Again, we have seen both factors play out in the aftermath of the GFC until 2013-2018, whereby first Federal Reserve, and now ECB, had both suspended QE policies, in favor of a somewhat hawkish stance towards interest rates and money printing.

Loosely speaking, the speed of money changing hands on goods and services has slowed down. In turn, this leads us to the second question – namely, “when, if ever, will the levee break?” While there is no honest way to put dates on said question, it is worth asking instead, “what can break it?” Simply put, which factors are likely to boost money velocity – and how likely is it to cause CPI inflation?

The question itself, as you have likely noticed, treats money velocity V as a variable, rather than constant. Which is fair, granted it is represented thus in the Exchange Equation itself – and yet, Keynesian take on Quantity Theory of Money (QTM) deems V , along with volume of transactions T , to be constants in the short run [Barone, 2019].

A host of economists, however, have challenged said assumption both theoretically and empirically [Thornton, 1983] – correctly pointing out that in effect, the former depends on consumer confidence and spending which, unsurprisingly, tend to fluctuate. Keynes did, however, treat money as a commodity – supply expansion of which should, in theory, proportionally decrease its marginal utility [Barone, 2019]. In his overview of QTM, Adam Barone also highlights the popular – albeit disputed – assumption of Keynesian economists, which treats economic activity (or its proxy, V) as a function of money supply M . Known commonly as “wealth effect”, it is arguably the reason behind quantitative easing efforts on behalf of the ECB and Fed. Years on, however, we are yet to see V spike across the US, Eurozone and/or Japan. Or are we?

External Factors

In an empirical analysis, conducted by A.E. Akinlo, it was discovered that current exchange rate had an inverse impact on money velocity (V) in Nigeria. Per capita income was shown to yield significantly positive impact on V in the country (Akinlo, 2012). The author highlights long-term nature of the said phenomena, which reaffirm the fundamental tenets of the QTM, and serve as a warning sign, if not restraining factor, for Nigerian Naira (NGN) money supply expansion.

Another factor which, by its very definition, has direct impact on V , or the speed of money changing hands, is the consumers' willingness to spend (rather than hoard) their money. In the US, it is commonly tracked via Consumer Confidence Index.

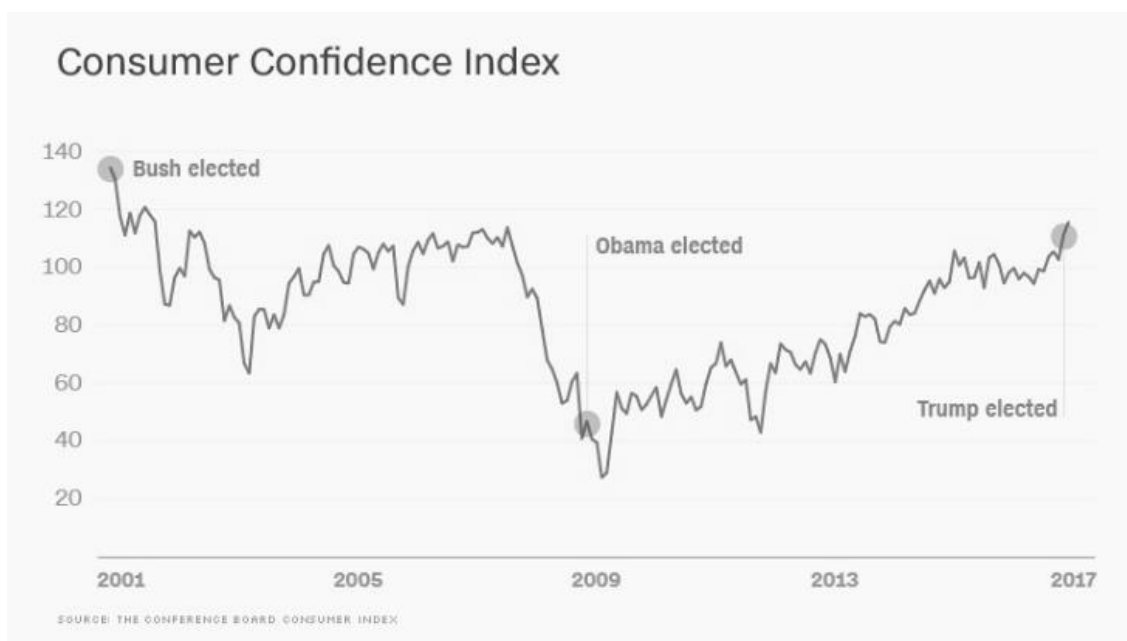


Illustration 4

As seen in Illustration 4, the latter has nearly recovered from the GFC, and points towards the possibility of the increase of V in the near future. Paired with the former Fed chair's comment about using "helicopter money" as a stimulus of last resort [Bernanke, 2016] the possibility becomes more plausible. In fact, a candidate for the 2020 US Presidential elections, Andrew Yang, has already converted that into his campaign's focal point – in his case, a universal basic income (UBI) proposition³, offering a \$1000 payout per citizen per month [Clifford, 2018].

Liquidity traps

It also appears that certain asset classes have absorbed much of the inflationary shock from QE. As seen in the following examples (illustrations 5 and 6) from the USA, tech equities and housing, albeit to a lesser degree, have appreciated greatly on the wave of freshly "printed" money – that may reflect the investment choices that financial institutions made as beneficiaries of QE stateside within the last

³ For citizens aged 18 and above, partly funded by a proposed automation tax

10 years. As such, they are sometimes referred to as liquidity traps, due to their large impact on the economy in the event of massive selloff(s).



Illustration 5

Fractional reserve lending

Last but not least, it helps to address the elephant in the room: fractional reserve lending: the process, that allows private banks to loan out the entrusted funds, up to the level not exceeding 1 minus reserve ratio (typically set between 10-20%), while actually extending credit for the funds they no longer possess [McLeay, Radia, Thomas, 2014] on hand. From monetary implications to systematic fragility (e.g. possibility of bank runs), it gained much criticism from academia including prominent economists such as Hayek, Fisher, Simons and Minsky [Turner, 2013] and even policymakers, such as former US congressman Ron Paul – but remains ubiquitous today. *Ceteris paribus*, it exerts further inflationary pressure – at least from Fisher’s perspective.

Conclusion

In view of the aforementioned theories and observations, it becomes apparent that a host of factors, from credit expansion and money velocity to interest rates and per-capita income, can (and indeed do) have inflationary impact. As such, the risk of inflation breakout is entirely real, and programs such as UBI may very well kickstart the process – despite good intentions.

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Денежно-макроэкономические факторы латентной инфляции

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Аннотация

Основная цель данной статьи – освещение предмета инфляции и ее ключевых факторов с монетарной и макроэкономических точек зрения. Несмотря на значительный интерес к вопросу в академических кругах, его практические последствия могут быть значительными для всех экономических субъектов. Касательно методологии исследования это сжатый метаанализ доступных работ по данному вопросу, обобщающий преобладающие настроения среди исследователей и угроз латентной инфляции, следующей вслед за скорым расширением денежной массы. Рассматривая как теоретические принципы, так и эмпирические наблюдения, статья приходит к ряду заключений, в том числе к возможности инфляционного роста, вызванного расширением широкой денежной массы, в отдельные классы активов или в их изолированные «карманы» (обычно называемые ловушками ликвидности) – впоследствии двигая за собой прочие классы активов, в конечном итоге подталкивая инфляцию ИПЦ вверх. Таким образом, в обозримом будущем он представляет умеренную угрозу для современной экономики, включая, но не ограничиваясь, Еврозоной, Соединенными Штатами и Японией.

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Ключевые слова

Денежно-кредитная политика, количественное смягчение, процентные ставки, сбережения, расходы, скорость обращения денег, ловушки ликвидности.

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