The Great Inflation of the 1970s: A Comparative Review of Developed Countries' Outcomes

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The Great Inflation of the 1970s was a world-wide phenomenon that began around 1965 and continued until 1982. This study aims to capture and analyze the policy responses of the US, Japan, Germany and the UK during this period. It poses research questions such as how different policy approaches influenced inflation rates and economic stability during this period. Utilizing a comparative historical analysis approach, incorporating primary sources, economic literature, and policy documents, the paper evaluates the effectiveness of the policies and their impact on inflation and economic stability. The paper considers the effects of central bank independence and when policymakers in each country shifted from a Keynesian approach, which assumed a tradeoff between unemployment and inflation, to a monetarist approach. We find that the earlier policymakers recognized that inflation was primarily a monetary phenomenon and stopped trying to exploit short-run Phillips curve trade-offs, the better were their outcomes. Greater central bank independence also led to a significantly faster response to inflation and improved results. The conclusions have direct implications for how policy-makers should respond in the current post-Covid inflationary surge.

Introduction

The 1970s Great Inflation represented the first major world-wide economic challenge since World War II and the end of the Post-War Expansion. The era was characterized by high inflation and high unemployment. The primary objective of this research is to critically evaluate and compare the policy responses of the US, Japan, Germany and the UK during the Great Inflation of the 1970s. This study seeks to analyze the effectiveness of these policies in controlling inflation and fostering economic stability. By establishing a clear theoretical framework based on historical context and economic literature, this research aims to provide valuable insights into the relevance of historical policy responses in the contemporary economic context. Utilizing comparative historical analysis, incorporating primary sources, economic literature, and policy documents, the paper evaluates the effectiveness of the policies and their impact on inflation and economic stability.

We conduct a literature review to try and rule out different proposed explanations for inflation in this period. Much of the evidence is qualitative in nature, reflecting public policy discussions at the time or subsequent memoirs of officials involved. Different authors have attributed different explanations for the inflation of this era, many of which mirror current explanations by commentators and central bankers for the post-Covid inflationary episode. By carefully reviewing the changing policy responses between and within countries, we can determine which policies ultimately proved most effective at controlling inflation.

We find that central banks who were more independent, who concluded earlier on that monetary policy tightening (especially intermediate targeting of monetary aggregates) could control inflation, and who abandoned ideas of cost-push inflation, income policies and an exploitable Phillips curve trade-off, had far better policy outcomes. Control of inflation was much less successful in countries where governments attempted to intervene with wage and price controls or incomes policies (income policies incorporate so-called "voluntary" wage and price controls), where central banks were less independent of political influence, or where central bankers believed that monetary policy would be ineffective at containing supply shocks or have too great an impact on economic growth. In the current post-Covid inflation, many of the lessons of the 1970s appear to have been forgotten, once again leading to suboptimal outcomes. Indeed, since the current inflationary episode is not yet over, we can use the Great Inflation of the 1970s to evaluate some of the risks being taken by today's generation of central bankers.

In Section 1 of this paper, we introduce the historical background and developments in the field of economics in the run up to the Great Inflation. In Section 2, we analyze the policy responses of four economies, the United States, the Federal Republic of Germany, Japan, and the United Kingdom, and evaluate their performance. Then, in Section 3, we present our findings of which general policies were most effective at ensuring macroeconomic stability and sustainable growth. Finally, in Section 4, we explore the implications of the 1970s experience for the present day.

Historical Background

A series of events led to the prolonged inflationary impulse in the 1970s. The fixed exchange rate system established at the Bretton Woods Conference meant that monetary and, to some extent, fiscal policy outside the United States until 1973 was primarily concerned with avoiding a balance of payments crisis. With the exception of the US Federal Reserve, other central banks did not have scope for an independent monetary policy in the absence of strong capital controls. When large supply shocks in food and energy markets occurred in 1973, central banks had just entered a floating exchange rate regime and did not have a well-articulated monetary policy. While the Federal Reserve had established its independence from the government with the 1951 Fed-Treasury accord, many central banks were under the control of their respective governments including the Bank of Japan and the Bank of England[1] Fiscal dominance of most central banks in developed countries was the norm. Only later would studies find that independent central banks tended to have better policy outcomes[1]. Even for the Federal Reserve, political interference in the Fed was considered much more acceptable.

War-Related Inflationary Episodes

Prior major inflationary episodes in the 20th century were the direct or indirect result of major wars: World War I (1916-1920), World War II(1941-1947), and the Korean War (1950-1953), as seen in Figure 1. After World War I, countries such as the United Kingdom and France attempted to return to the gold standard that characterized the international monetary system before World War I. As Peter Temin (1989)[2] argues, the fixed exchange rates embodied in the gold standard meant that central banks, rather than trying to achieve a stable price level, set monetary policy to limit the outflow of gold. This led to central banks, during the Great Depression, raising interest rates and contracting their money supply as their economies came under stress. In the Keynesian view, wage and price rigidities led to a prolonged downturn until wages and prices were reduced sufficiently to restore equilibrium. As countries abandoned the gold standard and allowed floating exchange rates, they quickly began to recover from the Great Depression. However, each country had an incentive to adopt a "Beggar thy neighbor" policy, devaluing their own exchange rate to gain an advantage in exports while reducing its imports[3]. That contributed to greater foreign exchange volatility during the interwar period.

The Bretton Woods System

Near the end of World War II, in July 1944, Allied nations met at the Bretton Woods Conference in New Hampshire to establish a new international monetary system governing the post-War world. The United States, as the dominant global power, insisted on arrangements that placed gold and the US dollar at the center of the new system. The conference led to the creation of the International Monetary Fund (IMF) and the International Bank for Reconstruction and Development (IBRD, popularly referred to as the World Bank) (See Bordo (1993)[3] for a more comprehensive overview of Bretton Woods). Effectively all participating nations, which included all major non-communist countries, agreed to maintain their currencies within a 1% band to a central parity with the US dollar. Each country needed to manage its economic and monetary affairs to limit any balance of payment outflows. They could, however, call on the IMF for assistance (devaluations for countries running balance of payments deficits also occurred from time to time, although countries with surpluses were resistant to revaluing their currencies). During this period, once countries allowed convertibility of their currencies, their short-term interest rates closely mirrored those of the US Federal Reserve.

The Breakdown of Bretton Woods

During the 1960s, Bretton Woods struggled to contend with a series of foreign exchange crises. The system had originally sought to fix foreign exchange rates with the US dollar. As the world economy grew, however, the system's dollar-centric framework would cause problems, as the supply of dollars would have to increase accordingly to finance global growth. That would require the US to run a balance of payments deficit and for dollars to flow out of the US. As a result, the persistent deficits called into question the currency's credibility and backing to gold. These two outcomes created a phenomenon referred to as the Triffin Dilemma[4]. In 1968, the US removed the requirement that the dollar be backed by gold to relieve pressure on the dollar and allow the Federal Reserve to pursue an expansionary monetary policy without restraint, and it seemed as if the US would soon close dollar-gold convertibility. On August 15, 1971, in a surprise announcement, President Richard Nixon closed the gold window and suspended gold convertibility. The Smithsonian agreement of December 18, 1971, temporarily patched up the system with a significant devaluation of the US Dollar. However, in the spring of 1973, the major economic powers decided to float their currencies. After Bretton Woods' collapse, governments started pursuing monetary and fiscal regimes that varied greatly in performance.

The Keynesian View of Macroeconomic Stabilization Policies: The 1960s were the heyday of Keynesian influence including the view that government fine-tuning could conquer the business cycle[5]. In the US, these views gained prominence during the Kennedy and Johnson administrations (they were also prevalent in the UK). In the view of Keynesian economists, the inability of monetary policy to revive the

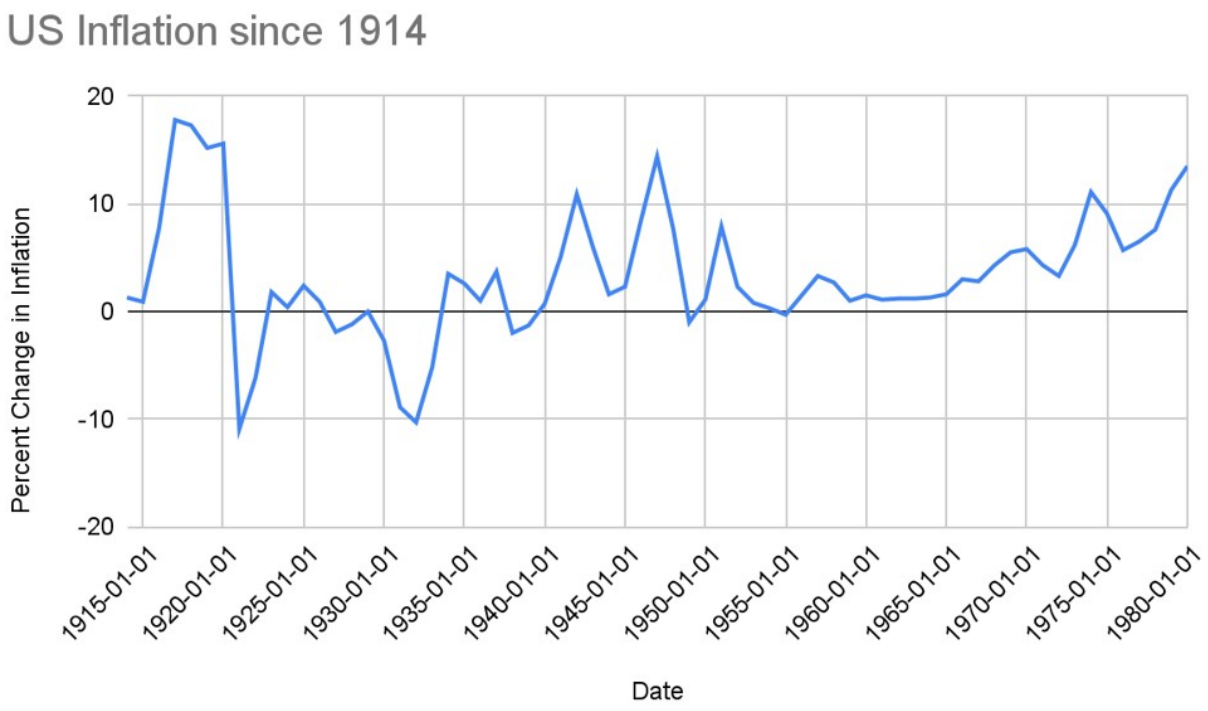

Fig. 1 US Inflation since 1914 (U.S. Bureau of Labor Statistics, n.d.)

economy in the Great Depression was the result of a liquidity trap that central banks were powerless to affect. Keynesian pedagogy analogized this as pushing on a string, or that monetary was assymetric, bending towards slower growth[6]. The Keynesian analysis of the Great Depression downplayed the effectiveness of monetary theory and stressed fiscal policy "fine-tuning" to smooth out business cycle fluctuations.

The Phillips Curve Tradeoff

In 1958, A.W. Phillips (1958)[7] established an empirical relationship between wage inflation and unemployment over a 100-year period in the United Kingdom. This empirical relationship, which was without a theoretical foundation, seemed to offer an attractive tradeoff between unemployment and inflation. In 1960, Samuelson and Solow (1960)[8] popularized this finding and suggested that it could be exploited. While they did allow that this tradeoff might shift over time, this paper, from two of the most celebrated economists of their time, had a strong influence over the economics profession and those guiding policy in Washington, D.C.

The Unobservable Output Gap

By the mid-1960s, mainstream economists, both in the US administration and at the Federal Reserve, viewed full employment as an unemployment rate of 4% with fiscal fine-tuning as the main macroeconomic stabilization policy tool. In the US as well as other countries, the estimated policy gap was often overly optimistic as policymakers persisted in trying to push unemployment down too much and growth up. Monetary policy, while not viewed as completely ineffective, was definitely considered a secondary policy tool. Inflation was viewed as either cost-push or demand-pull inflation. Because the government had too low an unemployment target (below what we would now call the "natural rate" of unemployment), they viewed the output gap as being negative (i.e., the economy was not viewed as overheated), and therefore inflation was considered to be of the cost-push variety. In this case, there was little that monetary policy could do without a significant cost to unemployment, due to the Keynesian view of downward rigidity in wages and prices. Instead, cost-push inflation necessitated an incomes policy (a policy of voluntary wage and price restraint) or explicit wage-price controls. Cost-push inflation was not viewed as a monetary phenomenon but rather as a problem arising from supply side issues, corporate concentration and labor union power. Similar views were also held by other central banks including in the UK and Japan[9,10].

The Development of Large Scale Macroeconometric Models

The Federal Reserve had traditionally looked at a whole array of different indicators in setting policy. They adjusted policy to affect short-term forecast horizons of 4 to 6 weeks between Federal Open Market Committee meetings, viewing the Phillips curve as an exploitable regularity, and began increasingly relying on simulations of policy settings from large-scale macroeconometric models such as the FRB-MIT model. Developed by a team of economists led by Franco Modigliani at MIT and Albert Ando at Penn from 1964 to 1970, it built upon the models by Brookings and Wharton. At their heart, these models had a Hicksian IS-LM model [11]. These were viewed as a "big science" approach that let policymakers simulate different policies and view their effects on not only major economic variables like unemployment and GNP but also various sectors of the economy.

The Revival of the Quantity Theory of Money and Monetarism

Monetarism, which had been expounded by Iriving Fisher and which Milton Friedman claimed as part of the oral tradition of the Old Chicago school based on the Quantity Theory of Money, was a theory that was repopularized and expanded upon by a small group of conservative economists led by Milton Friedman along with Karl Brunner, Alan Meltzer, Anna Schwartz and a few others starting from the late 1940's through the 1970's [12]. In 1960, Friedman [12] wrote A Program for Monetary Stability, in which he recommended the Fed increase the money supply, M1, at a constant 4% growth rate. He argued that due to long and variable lags, monetary policy could not successfully be used to stabilize short-run fluctuations in the business cycle. Such stabilization effects were more likely to increase business cycle volatility.

In 1963, in an influential paper, Friedman and Meiselman (1963) [12] used a simple reduced-form econometric study to demonstrate that lagged changes in money supply growth were statistically significant in explaining changes in private consumption while lagged changes in fiscal policy were insignificant. As its title implies, the theory behind monetarism relied on a stable money demand function (velocity of money had to be predictable based on policy settings like the level of interest rates). This allowed for money supply growth, through the use of an intermediate monetary target, to control future inflation. The paper was a frontal assault on the Keynesian consensus that fiscal policy was a more effective tool for macroeconomic stabilization. This paper set off a series of hotly contested papers between Albert Ando and Franco Modigliani (AM) and Friedman and Meiselman (FM), the so-called AM/FM debate [13]. Ando and Modigliani touted the superiority of large-scale econometric models and disputed the results of Friedman and Meiselman. Nevertheless, this paper did begin to shift the debate toward monetarism.

Within the Federal Reserve system, the Keynesian orthodoxy was adhered to throughout the 1970s, except for the Federal Reserve Bank of St Louis, which published a series of empirical studies advocating for the monetarist approach. Outside the Fed, the rational expectations revolution in economics began to become more influential (although it remained a minority view) demonstrating the inability to carry out policy simulations with large scale econometric models (see Lucas, 1976) [14]. Other papers explored time inconsistency of monetary policy (see Kydland and Prescott, 1977) [15]. By the end of the 1970s, after a real-time experiment of rising inflation rates, it was apparent that the short-run Phillips curve shifted as Friedman had predicted and that no long-term tradeoff exists between unemployment and inflation.

Supply Shocks: The 1970s was an era of geopolitical volatility which directly affected economic performance, particularly in commodity markets. In 1973, the Organization of Petroleum Exporting Countries (OPEC) banned exports to Western countries supporting Israel in the Yom Kippur War and subsequently cut oil production [16] (Corbett, 2013), causing energy prices to jump 300% in six months, as shown in Figure 2. Also, a series of failed harvests in the Soviet Union led to a global food shortage and the US-Soviet Grain Deal. In the deal, the United States effectively subsidized Soviet grain imports (Powers, 2015) [17], further tightening agricultural markets and causing a 30% hike in global food prices. Another oil shock from the Iranian Revolution of 1979 raised oil prices again by 100% (Graefe, 2013) [18] and they remained elevated into the early 1980s.

These supply shocks were global in nature which is why some point to the collapse of Bretton Woods and food and energy shocks as the primary culprits for the Great Inflation (Blinder, 1982) [19]. Those holding this view would conclude that governments could only wait until commodity prices fell and had to accept price increases temporarily. However, this explanation does not account for inflation's broad-based nature and why it stayed elevated even after commodity prices started to decline. It also does not account for differences in severity; if commodity prices are international, then why did the US, in 1980 for example, have an inflation rate double that of Germany? These differences indicate that domestic economic conditions and policy responses also affected inflation outcomes. A series of events led to the Great Inflation, starting with the popularization of the New Economics, dating from the influencial Samuelson and Solow paper (1960) [8], which encouraged countercyclical pump priming using fiscal policy. The gradual breakdown of Bretton Woods in the late 1960s allowed for greater independence in monetary policy and made central banks less preoccupied with exchange rates, now focusing on large scale macroeconomic model to control

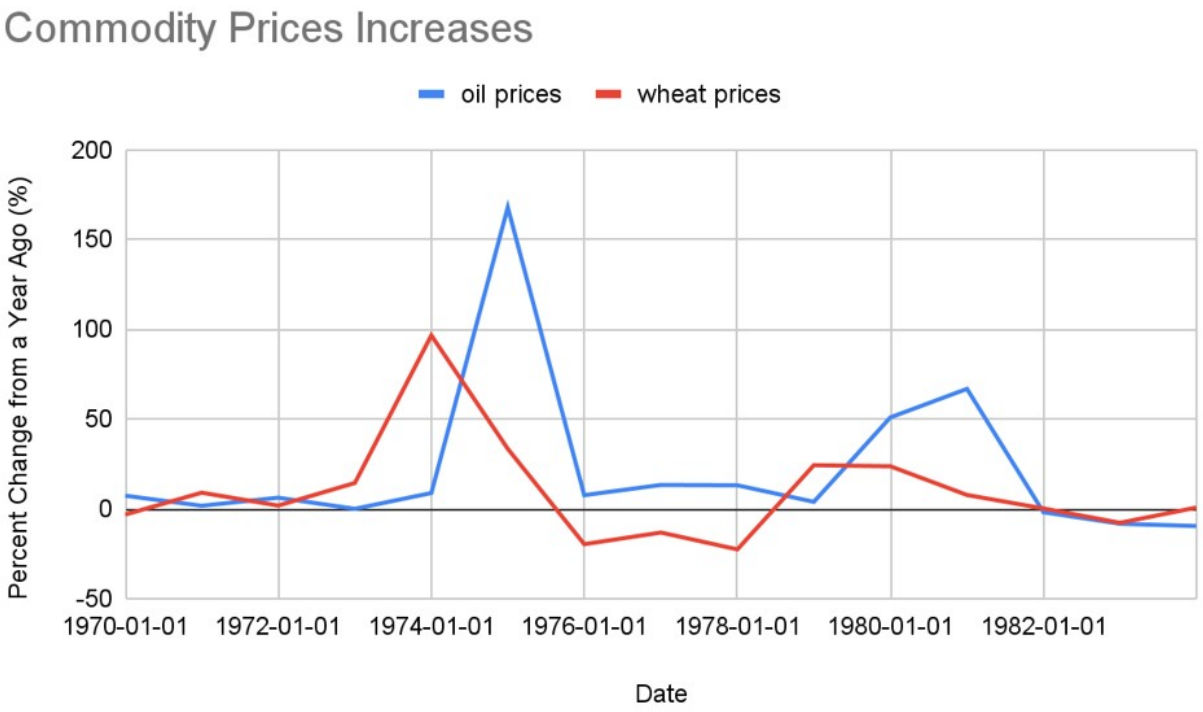

Fig. 2 Commodity Proces (Dow Jones Company, n.d.), (U.S. Bureau of Labor Statistics, n.d.).

the economy. Although it was still viewed as secondary to fiscal policy, central banks were still seen as capable of permenantly raising unemployment by the assymetric nature of monetary policy, further favoring overly lax interest rates.

Case Studies

United States

The United States was the dominant economic power post-World War II. Its geographic isolation enabled it to escape the war relatively unscathed, and acting as the Allies' "arsenal of democracy" generated the demand to revive the economy from the Great Depression. Growth remained strong, averaging 3.5% between the late 1950s and 1965. From 1953 (the end of the Korean War) through 1965 inflation ranged from 0 to 4%, averaging around 2% per year. Despite the revival of the quantity theory of money and monetarism, these theories remained a minority view and were often looked upon with scorn by most leading academic macroeconomists. As money supply growth picked up starting in 1966, inflation also began to creep up. A review of the contemporary debate during the 1960s and 1970s by Hafer and Wheelock (2001)[22] both in the US administration, the Federal Reserve, and academia illustrates the strong belief that inflation was primarily of the cost-push variety and not demand-pull driven.

The Kennedy and Johnson administrations viewed the natural rate of unemployment as resting around 4%. Given that unemployment was not well below these levels, excess aggregate demand in the economy was not viewed as the problem. During the late 1960's and into the 1970's, with baby boomers and women entering the labor force in large numbers, the natural rate of unemployment rose. Government officials and economists would have used data from the post-war expansion years, where the natural rate was lower, and believed they could continue pushing unemployment down without inflation, so they attributed much of the price increases to cost-push factors. However, with the new natural rate having risen, 4% unemployment would have equated to an overheated economy.

Inflation could be brought down by tightening monetary policy, but given the presumed downward rigidity of wages and prices, only with severe costs in terms of unemployment. Moreover, the Phillips' curve tradeoff was one viewed as highly persistent, meaning any increase in unemployment brought about by tighter monetary policy would be permanent. Numerous annual Economic Reports of the President point to addressing inflation through incomes policy (voluntary wage and price controls) to reduce the market power of large corporations and labor unions as well as increasing the productivity

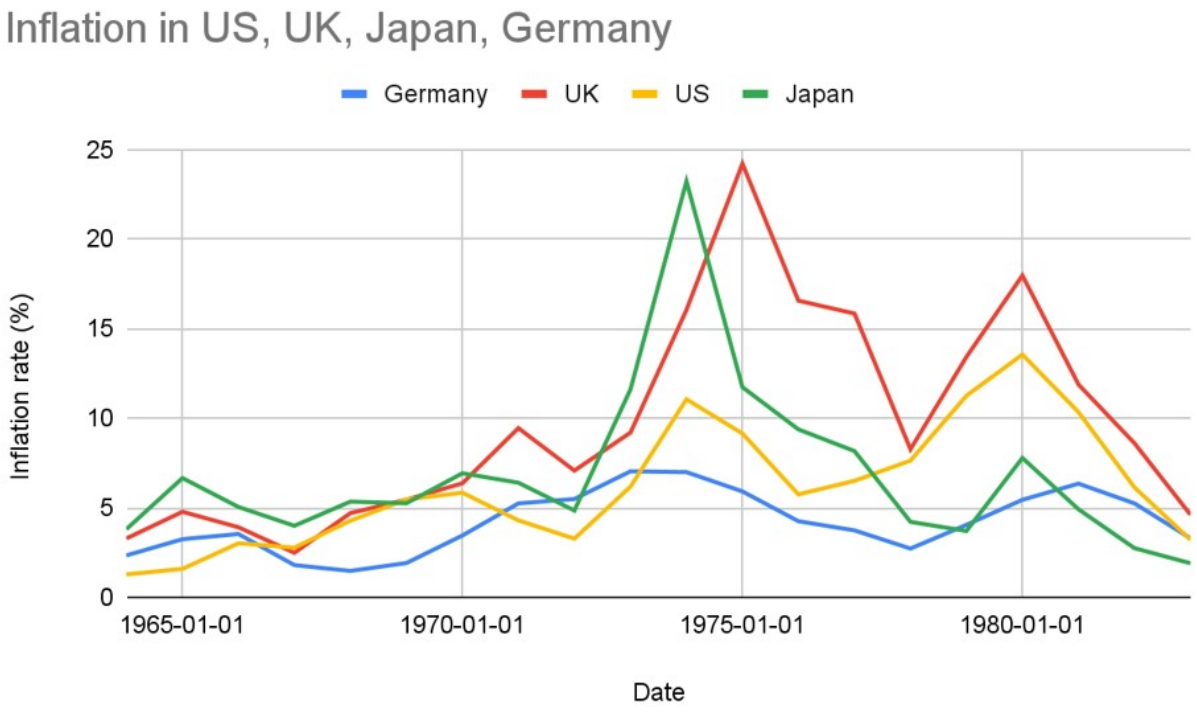

Fig. 3 Inflation in US, UK, Japan and Germany[20]

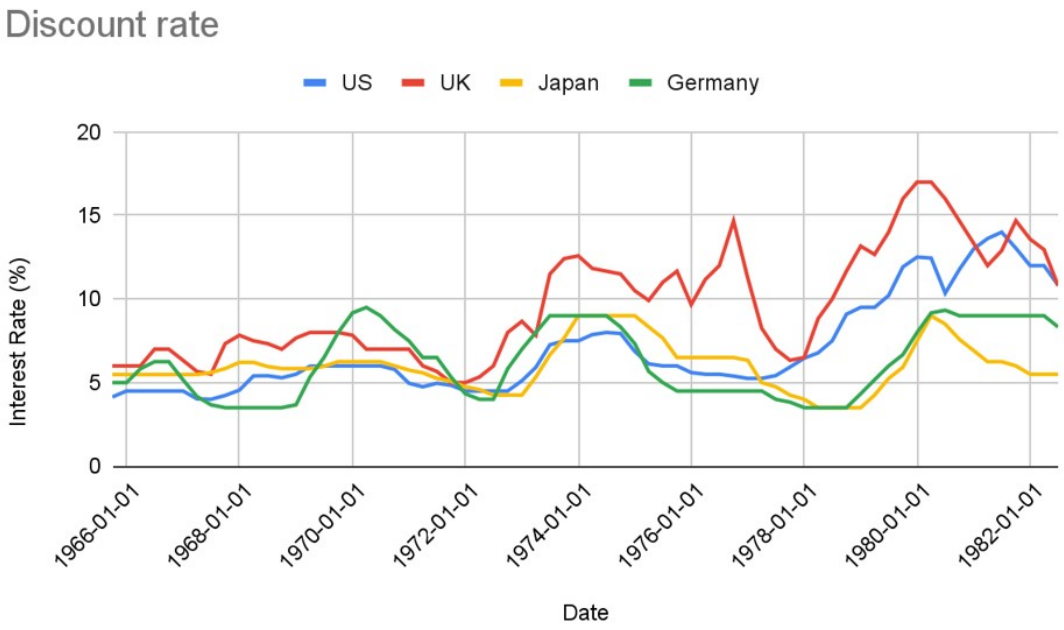

Fig. 4 Discount rate[21]

of the economy. Indeed, during the Nixon administration, actual wage and price controls were imposed on the American economy.

Federal Reserve System minutes also make clear that the

Federal Reserve was focused on short-term stabilization efforts between Federal Open Market Committee meetings (every seix weeks or so). The Central Bank would set multiple macroeconomic target ranges for unemployment, money supply growth, and interest rates each year (Bernanke, & Mishkin, 1992)[23]. However, it inconsistently prioritized these targets, often focusing on smoothing interest rate fluctuations. Increasingly, from the mid-1960s, the Federal Reserve staff began to rely on large-scale macroeconometric simulations of different policy responses and their short-term stabilization effects. The fact that increases in money supply growth were followed in short order by increasing inflation was dismissed. William McChesney Martin, the long-serving Federal Reserve chairman, was dismissive of monetary policy arguments and claimed that rising inflation was due to "transitory" factors (Romer Romer, 2004)[24]. After Nixon appointed Arthur Burns as chairman of the Federal Reserve in 1970, Burns expressed a belief that monetary policy was not the correct response to rising inflation (De Long, 1996)[25]. When the large supply-side shocks of 1973 (both in food prices and oil) hit the economy, the Federal Reserve viewed this as reducing aggregate demand and believed the Fed was largely powerless to offset such supply shocks.

Another influence on policy was the political limits on the Federal Reserve's independence. For example, in 1969, after President Nixon clashed with Martin over interest rates, Nixon refused to renominate him. Martin, who had served under four previous Presidents, represented Fed independence and an apolitical force. Burns, his replacement, did not and was easily bullied into, for example, pursuing expansionary policy during 1972 to help Nixon's reelection (De Long, 1996)[25]. The new political aspect in Fed decision-making further complicated policy formation.

The view by academics at most leading universities who followed what Samuelson called the "New Economics" (a mix of Keynesian prescriptions, exploitation of the Phillips curve, and over-confidence in the ability to "fine-tune" macroeconomic fluctuations) led to a refusal to consider the mounting evidence in favor of viewing inflation as a primarily monetary phenomenon. Exemplified in President Gerald Ford's "Whip Inflation Now" and Jimmy Carter's "Crisis of Confidence" speech, the government urged ordinary citizens to save more and reduce spending to bring down inflation, blaming supply-side factors.

This delay in adopting a view of inflation as a monetary problem meant that for most of the 1970's, the Fed's response to inflation was woefully inadequate. The Fed's overly expansionary response did not lower unemployment either. Instead, unemployment rates rose for most of the decade. Only after public pressure to get inflation under control, no matter the cost, did President Carter appoint Paul Volcker as Fed chairman. When Volcker took office in October 1979, the Federal Reserve began a policy of targeting non-borrowed reserves as its monetary aggregate. This led to a very sharp rise in interest rates, eventually reaching 19%[26], but within four years, inflation was finally brought under control.

Overall, supply shocks, policy errors, and political pressures brought on the Great Inflation. The 1970s were a new pessimistic era, and the general public felt like the country was in decline, a feeling captured in Ronald Reagan's 1979 campaign question "Are you better off than you were four years ago?" This dissatisfaction led to backlash against the government and the election of Reagan, who would change the US economy with his pledge to shrink the government. Abandoning the old policy ways was a theme for the US after 1980. Many tools such as price and wage controls were abandoned. The Fed has adopted a formal inflation target, although it still looks to maintain full employment as part of its dual mandate[26]. There also have been only four Fed Chairs in the last 37 years, reflecting not only the Fed's increased political independence but also stability in leadership that has bettered decision-making, as the Fed's performance has greatly improved and the US has never again seen such a severe prolonged bout of inflation.

Japan

The future of the Japanese economy going into 1970 looked bright. Growth was hovering around 10% per year for the foreseeable future and there were no signs of overheating[27] (Brown, & Helou, 1984). Japan had a high household savings rate that stayed around 20% and strong export growth, which meant that there was plenty of room for consumption to increase and business to expand. In the 1960s, the economy centered around heavy manufacturing industries like steel, shipbuilding, industrial chemicals, and automobiles. The economy was oriented toward its export sector. Until 1966, the government general ran a budget surplus. Spending centered around investment and public works, with very low spending on social services and defense (Brown & Helou, 1984)[27].

Because the Japanese economy was high-growth and export-oriented, it was very vulnerable to shocks. Japan consistently ran trade surpluses under the Brettons Wood system and its exchange rate was undervalued to the US dollar, as it was set in the immediate aftermath of WWII, when its economy had a lower productive capacity. Under the Smithsonian Agreement of December 1971, the Japanese Yen was revalued from 360 to 308 Yen per dollar. Despite this revaluation, the Yen at times in 1972 strengthened far above this level, and, despite the economy performing well, Japanese politicians and exporters were very vocal that the Bank of Japan (BOJ) should prevent an appreciation of the Yen. The Bank of Japan was not an independent central bank and had to take policy direction from the Prime Minister or Finance Minister. It was a

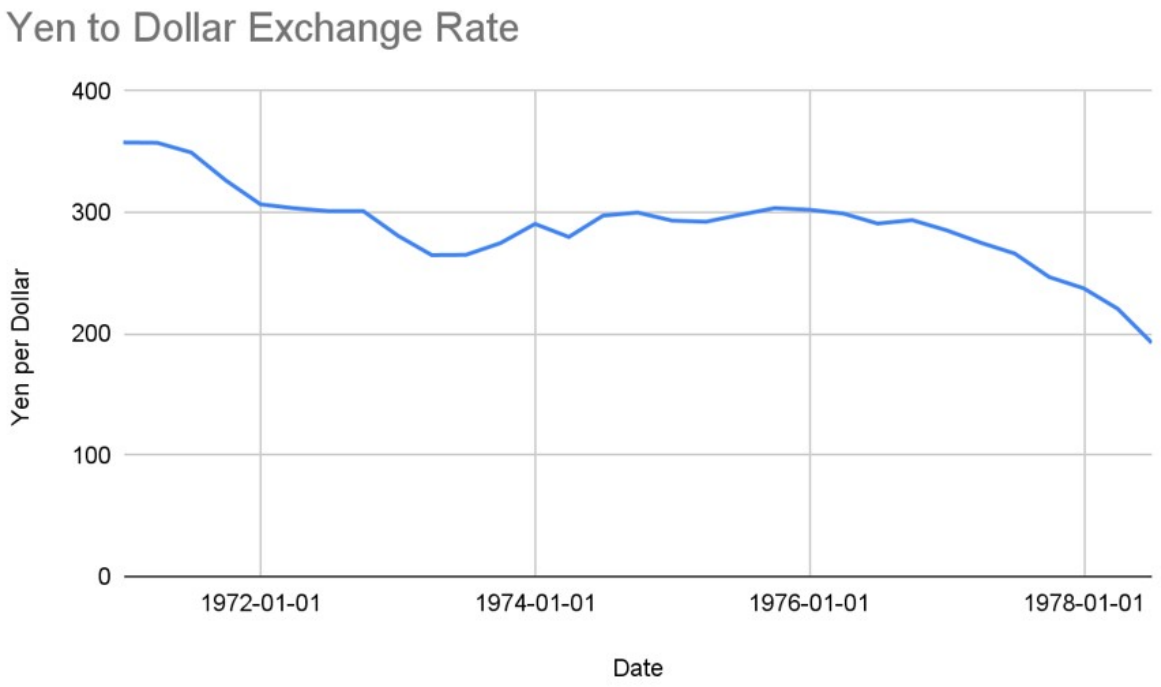

Fig. 5 Yen to Dollar Exchange Rate [26]

regular practice in the 1960s and 1970s that policy changes by the BOJ Policy Board required consultation and approval by the Government and the Prime Minister. As a result, the BOJ, which underestimated the strength of the economy, made an ill-considered interest rate cut to weaken the Yen in June 1972, setting the lowest discount rate in 24 years, as shown in Figure 4. The Bank of Japan also intervened in the foreign exchange market frequently from the Smithsonian agreement until February 1973 to prevent Yen appreciation. Because the intervention was unsterilized, it added large amounts of liquidity to the economy that fueled future inflation. In addition, in July 1972, the new Prime Minister, Kakuei Tanaka, decided on a policy of large-scale fiscal stimulus. The combination of large liquidity injections, expansive fiscal policy, and an interest rate cut led to increasing price pressures. By April 1973, with inflation already at 9%, an interest rate hike proved too small and by October 1973 inflation had already risen to 10%. By the end of 1973, inflation had risen to 12%. While interest rates were raised in 1973 five times from a discount rate of 4.25% to 9%, the real interest rate (CPI less Official Discount rate) averaged -5.6% in 1973 and -14.1% in 1974. The BOJ was slow to respond to the increase in money supply and inflation partly due to considerations of when the government would present and debate its budget when it would hold elections, and due to political opposition from the government (see Ito, "Great Inflation and Central Bank Independence," 2010 for an extensive discussion of this period) [28]. It was not until two days before the April 1973 rate hike that the BOJ received government approval.

Part of the resistance from the Japanese government to the BOJ tightening monetary policy, besides political concerns about the appreciation of the Yen, is that the government did not see monetary policy as the primary source of its inflation; it saw higher wage demands as the cause and therefore underestimated the power of the BOJ to control inflation (Nelson, 2007) [10]. Because of this, the BOJ failed to take forceful action. The BOJ saw monetary policy as a way to regulate demand and to fill the output gap. So if inflation was not demand-driven, but supply-driven, as were the food and energy shocks of 1973, the view was that there was no point in controlling it using monetary policy. Interestingly enough, this view of the effectiveness, or lack thereof, of monetary policy when faced with supply shocks has been one of the factors that deterred central banks from quickly acting to control inflation in the post-Covid era.

The shock from the First Oil Crisis in 1973 lowered the productive capacity of the Japanese economy, as energy prices forced businesses to scale back production, simply amplifying already existing trends of higher inflation and lower growth. The BOJ raised interest rates but that was one of a number anti-inflationary measures set by the government that included freezes on rice prices and rail fares (Nelson, 2007) [10].

The Japanese government was willing to use whatever measures possible to lower inflation, which hit 24% in 1974. The economy fell into recession and only started growing again at the beginning of 1975. However, inflation began falling quickly, halving to 12% that year, reflecting the lower aggregate demand during the recession. The results of this disinflation changed the consensus in the Japanese government about the role of the central bank in price stability. For example, the Bank of Tokyo President, in 1975, stated that the "policy of restraining aggregate demand, especially on the monetary front...has resulted in a pronounced slowing in price advances" (Nelson, 2007)[10]. By the end of 1975, the BOJ started lowering interest rates and inflation continued falling, albeit at a slower pace.

In 1975, the BOJ started studying the importance of M2 + CD growth as important for predicting inflation. By designing a monetary aggregate targeting strategy, it could argue to the government that it needed the de facto independence to control the growth of its monetary aggregate on a timely basis to prevent another inflation spike like the one that occurred in 1973 and 1974. In effect, the BOJ became a monetarist central bank. As Nelson (2007)[10] documents from press articles and quotes from business leaders and politicians of the time, a widespread view in Japan was that inflation was not demand driven, but cost-push inflation and could be controlled by an incomes policy (i.e., wage and price restraint). The experience of the monetary tightening by the BOJ in 1973 and 1974 that finally brought inflation down in 1975 demonstrated the efficacy of monetarism to control inflation and bolstered the credibility of the BOJ in Japanese society and politics. In effect, the Keynesian augmented expectational Phillips curve that was designed to take account of cost-push inflation was found to be inferior to the monetarist expectational Phillips curve as a model of the inflation process.

After the inflation episode of 1973 and 1974, the Bank of Japan gained de facto independence from the government if not de jure. Hence when the Second Oil Crisis occurred in late 1978, the BOJ's change in philosophy was apparent. They responded quickly to the first sign of rising inflation with restrictive monetary policy, bent on keeping it under control, and by 1980, rates had doubled, as shown in Figure 3. Because of their aggressive response, the Japanese economy performed well compared to the rest of the world, with inflation only peaking at 8%.

Japan would grow quickly throughout the 1980s until 1991, when financial and demographic crises created economic stagnation that continues to this day (Callen & Ostray, 2003)[29]. However, the legacy of the Japanese Great Inflation was a realization of where the economy needed to be strengthened. After the First Oil Crisis in 1973, the government believed they needed more public investments in places like infrastructure, education, and social spending, and they pursued policies to help diversify the economy into more knowledge-based industries (Brown, & Helou, 1984)[27]. The Great Inflation also marked an end to the era of double-digit growth. Economic growth slowed to around 5% growth per year, which was still extremely high but also reflected Japan's transition to a more advanced economy.

In terms of monetary policy, the BOJ was very successful after the 1974-75 disinflation. Part of its success was viewing inflation as the primary focus of policy, something they learned in the First Oil Crisis. Other tools they used were announcing targets, which reduced political pressure to act reactionarily to economic events, and also to focus on intermediate monetary aggregates (Fischer, 1987)[30]. With those methodologies guiding them, they were moderately successful at navigating the shocks of the Great Inflation.

Germany

It is often asserted that the Bundesbank's strict monetarism and aversion to inflation arises out of Germany's experience with hyperinflation after the First World War. At the outset of the Great War, the German government decided that it could pay for the war from annexation of heavily industrialized regions and reparations from its defeated adversaries as Chancellor Otto Von Bismark had done after the Franco-Prussian War of 1870 when he imposed the so-called French indemnity on the French nation. During the Great War, Germany suspended the convertibility of the German mark for gold (this was now termed the Papiermark). Through the course of the war, the German Papiermark steadily depreciated. After Germany's defeat, the Treaty of Versailles imposed on Germany war reparations to be paid in gold or other hard currencies.

Germany's industrial capacity was largely intact following the war unlike that of France or Belgium (so Germany was fully capable of paying the reparations). However, rather than pay the reparations to which it had agreed, the Reichsbank, under its president Rudolf Havenstein, decided to issue Papiermarks to purchase hard currency and pay the reparations. It did not take long before this rapid expansion of the money supply led to hyperinflation. In the end, Germany was unable to purchase hard currency with the nearly worthless Papiermarks, leading France and Belgium to occupy the heavily industrialized and resource-rich Ruhr Valley, to extract coal and manufactured products like steel in-kind. However, the German government encouraged workers in the Ruhr to not work, leading to a general strike. The Reichsbank printed additional Papiermarks to pay the salaries of the striking workers. This led to even more inflation.

When Havenstein died in November 1923, the Papiermark was replaced by the new Rentenmark with a parity of 4.2 to one US dollar, exactly the pre-war rate and the hyperinflation

came to an end. For an excellent description and theoretical framework, see Laidler and Stalder (1998)[31].

In the Post-War period, Germany experienced rapid expansion. Part of this was catch-up growth; rebuilding infrastructure like roads, bridges, and hospitals that had been destroyed supported a lot of new jobs and spurred economic recovery. Other factors included the Marshall Plan funding government projects, Germany's high human capital resources, and European trade integration (Eichengreen, 2007)[32]. By the 1960s, German economic growth was high. In terms of policy, it had high taxation that supported a strong social safety net; this was part of an agreement between organized labor, capital, and the government that would ensure social stability and prevent strikes and disruption. However, fiscal policy was not used to stimulate the economy and Germany ran a budget surplus until the late 1960s, when they pivoted to more demand management under the new Social Democratic Party (SPD) government (Meyer, 1990)[33]. By 1970, the economy was strong, with inflation sitting at 3% and unemployment at 1% (Franz, 1990)[34].

Towards the end of the Bretton Woods system, Germany, with an undervalued exchange rate that persistently led to a trade surplus, experienced unwanted inflation. To deal with this problem, the Bundesbank increased interest rates and tightened liquidity. It was able to do so through the institution of capital controls from 1969 onward, penalizing inflows like the rate of interest that foreign capital could receive on deposits, to prevent the currency from appreciating.

As Nelson (2007)[10] discusses, the initial approach of the Bundesbank to the inflationary impulses of the collapse of the Bretton Woods system and the food and oil supply shocks of 1973 was not a strict monetarist approach. Despite Germany's experience with hyperinflation in the 1920s, the resistance to monetarism as the primary approach to controlling inflation was quite similar in Germany as it was in the US, UK, and Japan. Helmut Schmidt, the German finance minister declared, in December 1972, that Germany could tolerate 5% inflation better than 5% unemployment. Karl Klasen, the president of the Bundesbank during the early 1970s, endorsed a cost-push view of inflation, one that could be better controlled by an incomes policy (wage and price controls), one that monetary policy would be difficult to control. Other commentators of the time had a similar view. In this sense, Germany was much like other major countries.

However, Germany was faster in adopting a monetarist view of inflation. Schmidt, for example, was more sympathetic to a free market solution than previous officials and did not back interventionist policies like wage and price controls. The Bundesbank began to tighten policy in 1973, despite President Klasen still supporting an incomes policy approach. By 1974, Germany had adopted an intermediate monetary aggregate, designed to have a high correlation with future inflation, although it did not publicly announce this until December 1974. Other directors of the Bundesbank had started to adopt a monetarist framework (interestingly, they cited US research on monetarism). Germany began a policy of acting preemptively to limit inflation starting in 1975 by controlling its monetary aggregate, Central Bank Money Stock, which was a weighted sum of the money supply. The clear articulation of Bundesbank decisions made them more predictable, reducing volatility, and also giving the bank credibility that they would fight inflation. Contributing to the faster adoption of monetarism, the German Bundesbank and government never adopted the view that the Phillips curve could lead to a permanent tradeoff of unemployment and inflation. Only in 1977, with the retirement of President Klasen, did the Bundesbank, under President Otmar Emminger, fully subscribe to a monetarist approach. Still, it was the earlier adoption of monetarism, in practice, and the pre-emptive policy it prescribed that led to better outcomes for Germany throughout the 1970s.

The Bundesbank's approach did not escape from criticism unscathed, however. With its aggressive tightening in 1979, during the Second Oil Crisis, it was blamed for bringing on a recession that would continue to last until 1983, with unemployment rising to nearly 8%. However, Fischer (1987)[30] argues the root of this high unemployment rate was the rise in real wages from aggressive trade union bargaining agreements. Higher labor costs made companies more reluctant to hire workers and encouraged them to improve economic efficiency. A portion of the labor force became outsiders, as their jobs simply would not return, which contributed to the hysteresis in unemployment that persisted throughout the 1980s.

In terms of inflation expectations, the Bundesbank excelled at clearly communicating the reasoning for their decision-making and was one of the most credible anti-inflationary central banks in the world. Their reputation enabled them to anchor expectations, particularly in the second half of the decade.

Overall, the legacy of the early 1980s recession was the collapse of the SPD government and a return to a more fiscally liberal regime with a greater reliance on market forces (Meyer, 1990)[33]. The German economy would slowly recover after 1983 and would remain the most productive and dynamic in Europe. The recession also proved that the Bundesbank would do whatever it took to ensure currency stability and that Germany was the economic leader in Europe, which is still the case presently.

United Kingdom

The UK economy faced considerable issues entering the 1970s. Unemployment was low at 3.6%, but the economy suffered from 6% inflation and slower growth. The UK differentiates itself from the US, Japan, and Germany because

of its mixed economy. It had heavy state intervention, with nationalized rail, mining, health insurance, and a strong social safety net. It subsidized certain international commodities like food, and, in effect, subsidized essential products through its state-owned industries, which did not run at a profit. Britain suffered from an efficiency issue and it seemed inevitable for problems to manifest themselves, as industry was actively sheltered from international competition.

A major challenge for the government was political; unions, with their enormous power in Britain through interest groups like the Trade Union Congress, were part of the Labour Party base (Hatton & Boyer, 2005)[35]. Unemployment was considered unacceptable to these unions and any layoffs or attempts at reforms to state-owned industry, union power, or austerity would cause social unrest, which often made it politically and socially infeasible to solve many of these economic issues.

The British government was preoccupied with incomes policies. There was the Cripps wage freeze of 1948-50, Selwyn Lloyd Pause of 1961, the Heath pay controls of 1972-74, and the Labor government's 1975-78 Social Contract. The pervasive use incomes policies was due to the belief that inflation was primarily driven by union wage demands. Before the breakdown of Bretton Woods, Britain was constrained by balance of payment crises to keep inflation under check irrespective of any incomes policy. This meant that British governments had to restrain fiscal spending and the Bank of England had to raise interest rates and tighten monetary policy to maintain its balance of payments and prevent an outflow of gold and US dollars. During this period, Britain had an inflation rate similar to the rest of the world.

Jefferson, Sams, and Swann (1968)[36] describe the wage and price controls under the Labor government from 1964 until the devaluation of the Pound in 1967. The British government had been faced with a "stop-go" situation where each time growth was prioritized, a balance of payments crisis arose. The Labor government believed there was a large amount of unused capacity in the economy. In an effort to grow the economy, while keeping the inflation rate under control and Sterling stable, the Labor government instituted a series of income policies. Ultimately these proved ineffective and Sterling was forced to devalue by 14% in 1967.

The UK's sharp devaluation in 1967 and the substantial drop in the value of the Pound Sterling after it floated its exchange rate in 1972 largely explain the difference in inflation between Britain and other countries. In 1972, the new conservative government under Edward Heath tried to stimulate the economy through large borrowing and monetary injections while imposing pay controls. In the face of widespread strikes in 1974 and the fall of the conservative government, the incomes policies were abandoned, leading to a very large increase in inflation. Samuel Brittan (1979)[37] presents evidence that while these income policies had a short term effect on wages and prices, they did so at the cost of distorting the UK economy, and whatever benefits were achieved were quickly reversed as soon as the policies were removed. Another study by Hendry and Ormerod (1978)[38], using econometric techniques, estimates the effects of the various incomes' policies. The conclusion they draw is that while there is some evidence indicating some success in holding down inflation at first, as soon as the policies were removed, wages corrected higher, as did inflation. Hence, these policies had no lasting effect on British inflation.

Indeed, because of the expansive fiscal and monetary policies of the Heath administration, an attempt to raise the growth rate back up to and the unemployment rate back down to the so-called golden era of the 1950s through early 1960s, the British economy was significantly overheated when the food and oil price shocks occurred in 1973-74. Indeed, in 1973 the British economy was rapidly expanding, unemployment was falling at an unprecedented rate, and money supply, M3, expanded by 25% in both 1972 and 1973 (Hunter, 1975)[39]. This, combined with the end of wage controls, union strikes, and pent-up wage hikes, led to a spike in inflation to over 24% by 1975, by far the worst outcome of any developed country.

When the government did not agree to national pay rises, this often culminated in periods of massive labor unrest, like in 1978 with the "Winter of Discontent". The government tried to establish a 5% pay raise, which would, with the 8.2% inflation rate, actually lower workers' purchasing power (Martin López & Rowbotham, 2014)[40]. Truck drivers, gravediggers, trash collectors, and hospital workers all walked out. These strikes demonstrated to the general public how price and wage controls were ineffective in holding down inflation and created a choice between a wage-price spiral, or plunging the country into chaos. A result of this was the election of the conservative Thatcher government.

Nelson and Nikolov (2004)[41] also find that inaccurate estimates of the degree of excess demand contributed to the stagflation of the 1970s. Policymakers mistakenly believed that aggregate demand was too low and tried to boost growth, while failing to recognize the importance of monetary policy in controlling inflation, instead focusing on non-monetary policies such as wage and price controls. Besides looking at a New Keynesian model to judge aggregate demand, the authors compare the UK T-Bill rate with that predicted by a standard application of the Taylor rule. They show that the Taylor rule would have predicted interest rates as between 20% and 40% from 1974 through 1978 yet the UK T-Bill rate never exceeded 14% and for most of this period was below 10%. Based on comments from policymakers at the time, inflation was perceived as cost-push inflation (not driven by the output gap) and were skeptical about the effect of monetary policy to affect aggregate demand. This view was first enunciated in the 1959 Radcliffe Committee report which reflected the post-

War British Keynesian economic view of cost-push inflation (Kaldor, 1960)[42].

As in the US, the delay in recognizing inflation as a monetary phenomenon, the influence of Keynesian thinking regarding cost-push inflation and the mis-estimation of the output gap led to a period of stagflation. Only once Margaret Thatcher came to power did this view begin to change. Her government set out to reform the economy's structure with a three-pronged approach: a gradual decline in money supply growth, elimination of economic controls (including state-owned industries), and lower spending (Bernanke & Mishkin, 1992)[23]. The results were mixed; inflation fell, reaching 4.6% by 1983, which was low for Britain at the time. However, unemployment doubled to a rate of 11.5% and would stay elevated throughout the 1980s[43].

This high unemployment rate, however, was not necessarily an indicator of a depressed economy, as, after 1982, growth averaged 3% for the rest of the decade[44]. Unemployment was heavily concentrated in losses from state-owned industries that were shrunk during the Conservative government's privatization measures, so the high natural rate of unemployment was a reflection of how inefficient the economy was earlier.

The UK experience was different from other case studies because of its incomes policies and heavy state intervention. Monetary policy was less active and seen only as a tool of demand management, a major error as it is one of the most effective methods of controlling inflation. Fiscal policy and direct government negotiation with unions characterized the government's response. One perspective on what went wrong was that expansionary policies with price and wage controls would create upward pressure on prices and wages because it expanded the money supply too rapidly. That increased demand and produced shortages as businesses could not raise prices. Another viewpoint is that the government gradually overstimulated the economy over many years. The emphasis on holding down unemployment did not account for the fact that the NAIRU had risen over the years as the economy had become less efficient. Incomes policy would only be a short-term fix but there could not be solutions to the UK economy without structural reforms. The long-term effects on Britain would be a shift from manufacturing to services, as, in the Thatcher years, state-owned industries were shrunk and subsidies withdrawn. The state would also play a smaller role, providing the social safety net and only stimulating the economy during downturns. It would take a long time for the country to adjust, as the UK only returned to 1979 levels of unemployment in 2000.

Findings

The Great Inflation of the 1970's was a real time experiment to see which economic theories succeeded at accommodating external crises. New Economics and its emphasis on fiscal policy fine-tuning failed abysmally. Use of large-scale macroeconometric models for policy simulations performed poorly. Wage and price controls (and their close cousin incomes policies) temporarily reduced inflation, but once they were relaxed, wages and prices immediately caught up to what they would have been in the absence of those controls. Notions that inflation was due to the Keynesian cost-push type and that monetary policy would be ineffective and lead to lasting unemployment were proved to be incorrect. In fact, theories about the output gap of major economies almost always assumed a negative output gap that was overly optimistic and implied inflation was not demand-pull but cost-push. The economies of the US and the UK were already overheated by the time the commodity shocks of 1973 and 1974 hit.

None of the central banks immediately recognized that inflation was primarily a monetary phenomenon. The Bundesbank was the first to research the use of an intermediate monetary aggregate and then announce a formal target for the growth of money. The Bundesbank had the great advantage that it was an independent central bank tasked with safeguarding the currency, a role considered very important in Germany, where the memory of the interwar hyperinflation was seared into the consciousness of ordinary Germans. Japan took longer, delayed by the lack of independence of the Bank of Japan and by the focus hitherto of avoiding an appreciation of its currency as opposed to fighting inflation. By 1975, the BOJ began targeting an intermediate monetary target (even if it was less transparent than the Bundesbank about its policy). After the high inflation of 1973 and 1974, the BOJ was able to assert its independence from the government so that when the next large oil shock of 1979 occurred, it was able to take immediate action.

The US and UK, whose policymakers and academics, had been most influenced with the Phillips curve tradeoff and Keynesian economics were the slowest to react. In the US, where monetarist economics began to achieve some level of influence in the 1960's, members of the Fed staff and academics at major research universities (with a few exceptions like the University of Chicago and Carnegie Mellon) were solidly in the Keynesian camp and dismissed the monetarist claims. It took the better part of the 1970's for policymakers to recognize that inflation was a monetary policy problem and for the Federal Reserve to take seriously the money neutrality critique of a long term trade-off of unemployment and inflation. While the Federal Reserve had achieved its independence from the US Treasury with the 1951 Fed-Treasury accord, the Fed was still subject to political pressure. The new chairman of the Federal Reserve, Arthur Burns, bowed to pressure from President Nixon in 1972 to not raise interest rates before the election. The Federal Reserve was reluctant to tackle inflation due to the perceived costs to US economic growth and the per-

ceived political pressure. Only when the political cost of inflation became unbearable, was Paul Volcker appointed Fed chair and monetary targeting taken seriously.

In the UK, inflation had run above levels in other countries during the Bretton Woods era. However, both Conservative and Labor party governments attributed inflation to excessive demands from rather militant labor unions. As the Conservatives in the early 1970's tried to recapture the golden years of the post-war period of the 1950's and early 1960's, they embarked on a fiscal and monetary expansion that could only temporarily be suppressed by wage and price controls. Once these wage and price controls were removed in 1974, suppressed inflation ran out of control. Throughout the 1970's, the British did not seem to recognize that inflation was primarily a monetary phenomenon. Moreover, the Bank of England was firmly under the control of the UK Treasury.

After our analysis of these four case studies during the Great Inflation, we argue that successful policies that promoted a healthy economy share certain characteristics. In terms of monetary policy, a restrictive approach to monetary policy was the most effective method for controlling inflation, and those who pushed it aside, like the UK, had the worst performance. And, within central bank operations, the most successful ones shared some common traits. The first was transparency, which enhances central banks' credibility in controlling inflation. Countries such as Germany and Japan that clearly explained their reasoning for interest rate changes performed better. In a similar vein, having a clear, consistent methodology makes policy more predictable and credible, and reassures the public that a central bank is serious about taming inflation. The UK and US, who acted seemingly arbitrarily, were extremely unpredictable and their reactionary decision-making created bad performance. Another aspect was political independence. In the US, the Fed was often under political pressure in election years, like 1972, and in the UK, the BOE faced trade union pressures, limiting their ability to pursue restrictive policy, and was subordinate to the UK Treasury. Meanwhile, the Bundesbank, which had the backing of the public to protect the currency and political independence, had better policy outcomes. The final trait of successful central banks was intermediate targeting of a monetary aggregate (in recent decades replaced by inflation targeting) which every country eventually pursued. It provides an easy, consistent variable to follow and avoids the pitfalls of overly-expansionary or restrictive policies.

While fiscal policy may have had some room for success, the fundamental message of the 1970's was that inflation was a monetary phenomenon and could only be conquered using monetary policy.

Conclusion

In this paper, we conducted a literature review of four major economies and their policy responses to the Great Inflation of the 1970s. In the United States, overly expansionary policies and the Fed's lack of seriousness in dealing with inflation deanchored expectations and made it difficult to control. Only after the Fed, in October 1979, switch to a monetary targeting policy, which led to aggressive increases in interest rates and a deep recession, did inflation come under control and expectations become re-anchored. In Japan, the BOJ demonstrated to the government to efficacy of monetary targeting after the high inflation of 1973-75. The subsequent reduction in inflation that was achieved from monetary tightening raised the stature of the BOJ, and allowed it a freehand going forward in conducting policy. When the Second Oil Crisis occurred, they aggressively pursued restrictive policy and avoided another major bout of price hikes. Germany was the most successful of the four, being the first to adopt monetary aggregates. Their anti-inflation focus led to the aggressive restriction of monetary growth, and they avoided any large price increases in both Oil Crises. They did have to accept higher unemployment and lower growth to do so. The UK government insisted on pushing unemployment below its natural rate, overheating the economy, and then used incomes policies in a futile attempt to hold down inflationary pressures. This measure did not work and they were forced to choose between higher inflation, strikes, or higher unemployment. The British people chose higher unemployment, electing a new conservative government that emphasized efficiency, liberalized the economy, and tightened monetary policy. Comparing these case studies, we find that central banks that used inflation targeting, clearly communicated systematic policy, and were politically independent performed better, and with fiscal policy, governments that focused on long-term productivity growth and liberalization of the economy had better outcomes. One measure I did not incorporate into this paper was any empirical analysis, so that is one area that could reveal more conclusions. For example, which specific policies were most impactful? What was the size of a policy's impact? How much did supply shock affect inflation versus demand or domestic factors? These are questions which are beyond the scope of this study, but which could serve as fruitful areas of future research. After the COVID-19 pandemic, global inflation surged for the first time since the Great Inflation. Like in the 1970s, supply shocks were the catalyst and debate raged over whether inflation was transitory (cost-push) or persistent (demand-pull). In the wake of the COVID-19 pandemic and the decision to shut down whole economies, governments and central banks around the world engaged in an unprecedented round of fiscal and monetary expansion. This occurred at a time when the productive ability of major economies were impaired. Once

again, claims were made that monetary policy would be ineffective against supply side shocks and would only cause harm to the economy. Economists similarly underestimated the severity and duration of these supply-side shocks. During the 1980's, the predictability of the money demand function (or monetary velocity) greatly deteriorated. The instability in monetary velocity is likely attributable to a variety of financial innovations in banking. The monetarist use of intermediate inflation targeting requires a stable money demand function (or at least a predictable one) to function well. Hence, just when monetarism had proven its worth, central banks around the world began to drop an intermediate monetary targeting approach and now announce an inflation target. The first central bank to announce an inflation target was the Reserve Bank of New Zealand in 1990. However, the advantage of intermediate monetary aggregate targeting was that it was a leading indicator of future inflation. Under inflation targeting, each central bank has to predict inflation across a policy horizon (generally two to three years). If the forecast model does not work, then the central bank will not see inflation coming in advance. The forecast models in use are mostly of the large-scale macroeconometric models that did not work in the 1970's or so-called DSGE (Dynamic Stochastic General Equilibrium) models that performed very poorly during the Global Financial Crisis as opposed to a simple reduced form times series model. For example, the European Central Bank uses a large-scale macroeconometric model for policy simulations. Those simulations show that a nominal interest of 3.75% to 4% will bring inflation down to 2% by the end of 2025 (their forecast horizon) despite core inflation in the Eurozone being above 4% (European Central Bank, 2023)[45]. The Bank of England forecasts have been indicating a significant undershoot of inflation by the end of their forecast horizon even as the Monetary Policy Committee (MPC) has continued to hike rates. This is because the MPC does not have confidence in their staff's own models. The Federal Reserve still uses the FRB-MIT model (with some updates to try to account for expectations) for its forecasts and policy simulations. The Federal Reserve in the most current episode was at least 12 months late in tightening policy. Forward guidance, where central banks made promises about future policy (often unconditional promises), to tie their hands and prevent intermediate yields from rising, also led to a policy conundrum. As inflationary forces accelerated, they had to choose to harm their future credibility by abandoning their forward guidance or tightening policy. This is an example of the Time-Inconsistency problem outlined by Kydland and Prescott (1977)[15]. For example, in mid-2022, when the European Central Bank voted for its first interest rate increase, this was accompanied by a pledge to keep reinvesting their PEPP portfolio until at least the end of 2024. Now several ECB members want to end the reinvestment of PEPP early.

Central banks were slow to tighten policy in the post-Covid era because of forward guidance commitments and complex models that have forecast inflation poorly. They have been reluctant to raise real interest rates to the levels required in the 1970's to get inflation under control. Frequent statements by members of the Federal Open Market Committee refer to not wanting to make rates overly restrictive and hurt the strong labor market. Similar statements have been made around the world including by the Reserve Bank of Australia, the Bank of England, and the European Central Bank. These statements imply a belief in a long-term tradeoff between inflation and unemployment, something that was demonstrably disproven during the 1970s inflation episode.

So in many ways, from the use of the description of inflation as being transitory, the reluctance to tighten policy sufficiently due to worries about its effects on economic growth and unemployment, political pressure from Congress, the UK Parliament, and various governments in the Eurozone, and perhaps the Japanese government, and the use of large scale macroeconometric models that have not worked well in the past, it seems that very little has been retained about what was learned at great cost in the 1970s. However, one thing that was learned is that no one doubts that inflation is primarily a monetary phenomenon that is largely in the realm of central banks to solve.

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