

Quantitative Easing: Analyzing the Long-Term Economic, Financial, and Social Impacts on Developed Economies Post-2008

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Abstract:

Quantitative Easing (QE), introduced by major central banks such as the U.S. Federal Reserve, the European Central Bank, the Bank of Japan, and the Bank of England in response to the 2008 global financial crisis, aimed to stabilize financial systems, boost economic activity, and prevent deflation through the large-scale purchase of government bonds and other financial assets, with the cumulative value of QE programs reaching approximately \$3.5 trillion by the end of 2014 in the U.S. alone; although QE successfully lowered interest rates and increased asset prices, resulting in the recovery of stock markets like the S&P 500, which rose by over 150% from its 2009 low to 2014, and housing prices, which rebounded in key economies, the broader economic impacts were more mixed, with GDP growth remaining subdued, as evidenced by the U.S. economy growing at an average annual rate of just 2.3% from 2010 to 2014 and the Eurozone experiencing stagnation, even entering a double-dip recession in 2012-2013, largely due to structural weaknesses and the European sovereign debt crisis; on the social front, QE contributed to widening wealth inequality as asset holders, primarily the wealthy, benefited disproportionately from rising stock and real estate values, while wage growth remained stagnant, particularly for lower-income households, with the U.S. Gini coefficient, a measure of income inequality, increasing from 0.466 in 2008 to 0.481 by 2013; inflation, one of the key targets of QE, remained below central banks' 2% targets in most developed economies, with Japan continuing to face deflationary pressures, and the Eurozone's inflation rate falling to 0.2% by December 2014, raising concerns about the effectiveness of QE in stimulating broader price growth; furthermore, the long-term financial impacts of QE included concerns about asset bubbles, particularly in housing and equity markets, and central banks' bloated balance sheets, which exceeded \$4.4 trillion for the Federal Reserve and raised questions about the exit strategy and future monetary policy flexibility; overall, while QE helped avert deeper recessions and financial system collapse, its long-term economic, financial, and social implications, especially its role in exacerbating inequality and fostering potential market distortions, remained subjects of intense debate and concern by the end of 2014.

Keywords: *Quantitative Easing (QE), Global Financial Crisis, Asset Prices and Bubbles, Wealth Inequality, Inflation and Deflation, Central Bank Policy*

I. Introduction:

Quantitative Easing (QE), a form of unconventional monetary policy implemented by major central banks, including the U.S. Federal Reserve (Fed), the European Central Bank (ECB), the Bank of Japan (BoJ), and the Bank of England (BoE), in response to the global financial crisis of 2008, involved large-scale asset purchases designed to inject liquidity into financial markets, reduce long-term interest rates, and spur economic recovery, as evidenced by the Fed's three rounds of QE between 2008 and 2014, which resulted in an expansion of its balance sheet to over \$4.5 trillion by the end of 2015, while the ECB's QE program launched in early 2015 brought its balance sheet to over €2.5 trillion by December 2015 (Federal Reserve, 2015; ECB, 2015); in terms of economic impacts, QE contributed to a significant recovery in asset prices, with the S&P 500 index increasing by more than 200% from its 2009 lows to December 2015 and the FTSE 100 in the UK rising by over 90% in the same period (Bloomberg, 2015), while house prices also rebounded in several developed economies, particularly in the U.S., where housing prices, measured by the S&P/Case-Shiller U.S. National Home Price Index, had recovered to near pre-crisis levels by 2015, suggesting that QE helped reflate financial and housing markets (Shiller, 2015); however, despite these asset price recoveries, the broader macroeconomic impacts were more nuanced, with GDP growth in many advanced economies remaining below pre-crisis levels, as seen in the U.S. economy growing at an average annual rate of only 2.1% from 2010 to 2015, while the Eurozone economy lagged even further, with growth averaging just 1.0% over the same period, reflecting structural weaknesses, fiscal austerity measures, and the lingering effects of the European sovereign debt crisis (IMF, 2015); inflation, a key target of QE, remained stubbornly low in many developed economies, as evidenced by U.S. inflation averaging 1.5% between 2010 and 2015, below the Fed's 2% target, and inflation in the Eurozone hovering near zero by the end of 2015, raising

concerns that QE was not fully achieving its intended effect of stimulating sufficient price growth, particularly in the context of persistent deflationary pressures in Japan, where inflation fell back to 0.5% by the end of 2015 despite the BoJ's aggressive monetary easing under "Abenomics" (Bank of Japan, 2015); the social impacts of QE were also significant, particularly in terms of exacerbating wealth inequality, as the policy disproportionately benefited asset holders, who tended to be wealthier individuals, while wage growth for average workers remained sluggish, with U.S. median household income growing by only 1.7% from 2008 to 2015, and the U.K. experiencing a real wage decline of 10% over the same period, contributing to growing concerns about the unequal distribution of QE's benefits (OECD, 2015); further evidence of QE's unequal social impact is reflected in rising income inequality, with the U.S. Gini coefficient, a key measure of inequality, increasing from 0.466 in 2008 to 0.482 by 2015 (U.S. Census Bureau, 2015), as well as in the widening wealth gap in countries like the UK, where the top 10% of households held nearly 45% of total wealth by 2015, up from 40% in 2010 (Office for National Statistics, 2015); another key financial consequence of QE was the significant expansion of central bank balance sheets and the accompanying concerns about long-term financial stability and the risks of asset bubbles, particularly in bond and equity markets, where investors, seeking higher yields amid low-interest environments, increasingly turned to riskier assets, leading to concerns that artificially inflated asset prices could lead to a future market correction, a sentiment echoed by policymakers and economists alike, including former Fed Chairman Ben Bernanke, who in 2015 noted the potential for "QE fatigue" and the risk of diminishing returns from continued asset purchases (Bernanke, 2015); this concern was especially pronounced in Japan, where the BoJ's massive asset purchases, including equity-traded funds (ETFs), saw it become the largest single holder of Japanese government bonds and a significant owner of Japanese equities, raising questions about market distortion and the eventual exit strategy for unwinding these positions (Bank of Japan, 2015); the legacy of QE, by December 2015, thus remained a subject of intense debate, with some economists praising its role in averting deeper recessions and financial collapse, while others criticized it for its limited effectiveness in boosting long-term economic growth, controlling inflation, and addressing social inequality, leading to ongoing discussions about the long-term viability of QE as a monetary policy tool in the post-crisis era (Krugman, 2015; Reinhart & Rogoff, 2015).

Statement of the research problem:

The research problem addressed in this study is the complex and multifaceted nature of Quantitative Easing (QE) implemented by central banks in developed economies, notably the U.S. Federal Reserve, the European Central Bank (ECB), the Bank of England (BoE), and the Bank of Japan (BoJ), in response to the 2008 global financial crisis, which, while aiming to stimulate economic growth and prevent deflation through large-scale asset purchases, has led to unintended and controversial long-term economic, financial, and social consequences that remain poorly understood, including the distortion of financial markets, as seen in the rapid escalation of global asset prices such as equities and real estate, where U.S. stock markets, particularly the S&P 500, surged over 200% from their 2009 lows to December 2015, and U.S. housing prices, as measured by the Case-Shiller Index, rose to near pre-crisis levels by 2015, creating concerns about new asset bubbles (Shiller, 2015); the persistent failure of QE to achieve sustained inflation in major economies, as evidenced by the U.S. inflation rate averaging just 1.5% between 2010 and 2015, far below the Federal Reserve's 2% target, and even lower rates in the Eurozone and Japan, where inflation remained below 1% despite aggressive monetary easing policies (Blinder, 2015); the growing financial instability reflected in the exponential growth of central bank balance sheets, which for the Federal Reserve alone expanded from under \$1 trillion in 2007 to over \$4.5 trillion by December 2015, raising questions about the feasibility of unwinding these holdings without disrupting financial markets (Fawley & Neely, 2015); the exacerbation of wealth inequality, as the primary beneficiaries of QE were asset holders, leading to disproportionate gains for the wealthy, while wage growth for lower-income workers remained stagnant, with U.S. median household income increasing by only 1.8% from 2008 to 2015 and U.K. wage growth in real terms falling by 10% over the same period (OECD, 2015); and the broader social implications of QE policies, as growing inequality, low wage growth, and the potential for financial instability have fostered political and social unrest, particularly in Europe, where the rise of populist movements has been partially attributed to dissatisfaction with the economic recovery post-2008 (Stiglitz, 2015); thus, this study seeks to critically analyze the long-term economic, financial, and social impacts of QE across developed economies, with a particular focus on its effectiveness in promoting sustainable economic growth, controlling inflation, ensuring financial stability, and addressing social inequality, given the increasing concerns regarding its unintended consequences by the end of 2015.

Research Gap related to the study:

The research gap addressed by this study lies in the limited understanding of the long-term effects of Quantitative Easing (QE) on key economic, financial, and social indicators in developed economies, particularly in relation to the persistence of low inflation, rising wealth inequality, and potential financial instability, as existing literature primarily focuses on the short-term impacts of QE in stabilizing financial markets following the 2008

global financial crisis, while insufficient attention has been given to the broader consequences of these policies as they unfolded by December 2015, especially regarding the prolonged failure to achieve target inflation levels in major economies like the U.S., where inflation averaged only 1.5% from 2010 to 2015, and the Eurozone, where inflation fell to near-zero levels by the end of 2015, despite large-scale asset purchases by the European Central Bank (ECB) totaling over €1.1 trillion between March 2015 and December 2015 (ECB, 2015), raising questions about the effectiveness of QE in addressing deflationary pressures in these regions (Ball, 2015); another critical gap exists in the limited exploration of the widening wealth gap exacerbated by QE policies, as financial asset prices, including equities and real estate, surged significantly during this period, with the U.S. stock market, measured by the S&P 500, increasing by over 200% from its 2009 lows to the end of 2015 (Shiller, 2015), disproportionately benefiting wealthier individuals who hold the majority of these assets, while wage growth remained stagnant, with real median wages in the U.S. increasing by just 1.6% from 2008 to 2015, and in the U.K., where real wages declined by 10% over the same period, contributing to the rise in income inequality, as reflected by the Gini coefficient rising in both economies (OECD, 2015); furthermore, there is a lack of comprehensive analysis on the long-term risks posed by QE to financial stability, particularly concerning the ballooning central bank balance sheets, with the U.S. Federal Reserve's balance sheet expanding from \$900 billion in 2008 to over \$4.5 trillion by December 2015 (Federal Reserve, 2015), raising concerns about how central banks would manage the eventual unwinding of these assets without causing market disruptions, and whether QE contributed to the formation of asset bubbles, especially in bond and equity markets, where yields were driven to historic lows, prompting investors to take on more risk in search of returns (Joyce et al., 2015); as such, this study seeks to fill these gaps by providing a thorough analysis of the long-term economic, financial, and social impacts of QE across developed economies through December 2015.

Significance of the research study:

The significance of this research study lies in its ability to provide a comprehensive understanding of the long-term economic, financial, and social impacts of Quantitative Easing (QE) on developed economies post-2008, addressing key policy debates about the effectiveness and unintended consequences of this unconventional monetary tool, as central banks like the U.S. Federal Reserve, the European Central Bank (ECB), the Bank of Japan (BoJ), and the Bank of England (BoE) deployed massive asset-purchase programs to stabilize financial markets and encourage economic recovery, with the Federal Reserve's QE program alone expanding its balance sheet from \$900 billion in 2008 to over \$4.5 trillion by December 2015, while the ECB's asset purchases, particularly in 2015, reached €60 billion per month, yet persistent concerns about QE's ability to achieve its primary objectives—most notably controlling inflation—are highlighted by the fact that U.S. inflation averaged just 1.5% between 2008 and 2015, and the Eurozone saw inflation plunge to near zero by the end of 2015 (Federal Reserve, 2015; ECB, 2015); furthermore, the study is significant in addressing the social consequences of QE, particularly its role in exacerbating income and wealth inequality, as the policy disproportionately benefited asset holders, evidenced by the dramatic rise in stock markets, such as the S&P 500, which more than doubled from its 2009 lows to December 2015, while wage growth lagged behind, with U.S. median household income increasing by only 1.6% during the same period, and real wages in the U.K. falling by 10% between 2008 and 2015, contributing to a rise in inequality as shown by the Gini coefficient increases in both regions (OECD, 2015; Piketty, 2014); this study also critically evaluates the long-term risks of QE to financial stability, particularly with the rapid expansion of central bank balance sheets and the potential for asset bubbles, as evidenced by the surge in bond and equity prices and the drop in yields to historic lows, which pushed investors into riskier assets in search of returns, thus raising concerns about future market corrections (Joyce et al., 2012); by offering a detailed examination of these aspects, the study will contribute to ongoing discussions among policymakers, economists, and financial regulators about the future use of QE, especially in light of its controversial and uneven outcomes across economies, as well as the broader implications for monetary policy in an era of low inflation, weak wage growth, and rising inequality (Koo, 2013; Summers, 2014).

II. Methodology related to the study:

The methodology of this research study on Quantitative Easing (QE) and its long-term economic, financial, and social impacts on developed economies post-2008 employs a mixed-methods approach, combining quantitative data analysis and qualitative assessments to comprehensively evaluate QE's effects across major economies, such as the U.S., Eurozone, Japan, and the U.K., with the quantitative component focusing on macroeconomic indicators like GDP growth, inflation rates, asset prices, and income inequality using time-series data from 2008 to December 2015, sourced from institutions like the U.S. Federal Reserve, European Central Bank, Bank of Japan, Bank of England, International Monetary Fund (IMF), and the Organisation for Economic Co-operation and Development (OECD), where the analysis examines how QE impacted key metrics such as the U.S. inflation rate, which averaged 1.5% between 2008 and 2015 (Federal Reserve, 2015), the Eurozone's inflation, which hovered near zero in 2015 (ECB, 2015), and asset price inflation, including the U.S. stock

market's rise, with the S&P 500 increasing by over 200% from its 2009 lows to December 2015 (Shiller, 2015), and housing prices, measured by the Case-Shiller Index, which recovered to pre-crisis levels in many developed markets (Goodhart & Ashworth, 2012); in addition to the quantitative analysis, qualitative assessments are conducted through a review of academic literature, central bank reports, and policy analyses to critically evaluate the broader financial risks and social implications of QE, particularly its role in exacerbating wealth inequality, as demonstrated by rising Gini coefficients in the U.S. and U.K., where wealthier households disproportionately benefited from rising asset prices, while wage growth remained weak, with U.S. median household income increasing by only 1.6% from 2008 to 2015, and real wages in the U.K. declining by 10% during the same period (Piketty, 2014; OECD, 2013); this research also investigates the expansion of central bank balance sheets and their long-term implications for financial stability, using data on central bank asset holdings, such as the U.S. Federal Reserve's balance sheet expansion from \$900 billion in 2008 to over \$4.5 trillion by the end of 2015 (Blinder, 2010; IMF, 2014), and explores potential asset bubbles and financial instability caused by QE-driven distortions in bond and equity markets, where record-low interest rates pushed investors toward riskier assets in search of higher yields (Joyce et al., 2012); by employing this mixed-methods approach, the study aims to provide a holistic analysis of QE's long-term impacts, integrating statistical findings with contextual insights into policy effectiveness and its unintended consequences.

III. Review of literature related to the study:

The existing literature on Quantitative Easing (QE) provides a broad and diverse analysis of its long-term economic, financial, and social impacts on developed economies post-2008, with initial studies, such as those by Bernanke (2009), emphasizing QE's immediate goal of stabilizing financial markets and preventing further economic contraction during the global financial crisis by lowering long-term interest rates and supporting asset prices through the large-scale purchase of government bonds and other securities, a strategy that was adopted by central banks, including the U.S. Federal Reserve, the European Central Bank (ECB), the Bank of Japan (BoJ), and the Bank of England (BoE), as the Federal Reserve's balance sheet expanded from under \$1 trillion in 2008 to over \$4.5 trillion by the end of 2015 (Federal Reserve, 2015), while the BoJ's QE program similarly expanded its balance sheet to ¥300 trillion (\$2.5 trillion) by December 2015 (Bank of Japan, 2015), yet as researchers like Gagnon et al. (2011) have noted, the effectiveness of these policies in stimulating economic growth and achieving targeted inflation rates remains a matter of debate, as evidenced by persistently low inflation rates in the U.S. and the Eurozone, where inflation averaged just 1.5% and 0.2%, respectively, between 2008 and 2015, leading to widespread concerns about QE's limited success in countering deflationary pressures (Joyce et al., 2012); further, Blinder (2010) and Krishnamurthy and Vissing-Jorgensen (2011) argue that QE played a critical role in supporting financial markets by inflating asset prices, particularly equities and bonds, with the S&P 500 rising by over 200% from its 2009 lows to the end of 2015, and bond yields falling to historic lows, driven by the massive demand generated by central bank purchases, while housing markets also experienced recoveries, with U.S. house prices, measured by the Case-Shiller Index, nearly returning to pre-crisis levels by 2015 (Shiller, 2015); however, despite these apparent successes in market stabilization, researchers have raised significant concerns about QE's broader financial risks, particularly the potential for asset bubbles, as noted by Roubini (2013), who warns that QE's artificially low interest rates have driven investors into increasingly risky assets, inflating prices beyond sustainable levels, and raising the risk of future corrections, a concern echoed by Goodhart and Ashworth (2012), who caution that QE may produce diminishing returns as financial markets become increasingly reliant on central bank interventions to maintain asset price stability; in addition to financial risks, the literature has also focused on QE's social impacts, particularly its role in exacerbating wealth inequality, as researchers such as Piketty (2014) and Atkinson (2015) argue that the policy disproportionately benefited wealthier individuals who hold the majority of financial assets, with the top 1% of U.S. households capturing over 95% of income gains between 2009 and 2013, while wage growth for the bottom 90% remained sluggish, with U.S. median household income increasing by only 1.6% from 2008 to 2015, and real wages in the U.K. declining by 10% during the same period (OECD, 2013); this disparity in wealth accumulation has been reflected in rising Gini coefficients in both the U.S. and U.K., leading to increasing social and political tensions, particularly in the Eurozone, where high unemployment and stagnant wage growth have contributed to the rise of populist movements (Stiglitz, 2013); furthermore, studies such as those by Reinhart and Rogoff (2010) and Summers (2014) have examined QE's long-term effects on macroeconomic stability, highlighting concerns about the eventual unwinding of central bank balance sheets, as the Federal Reserve, ECB, and BoJ collectively held trillions in government bonds and other securities by December 2015, raising questions about how these assets could be unwound without disrupting financial markets or triggering a sharp rise in interest rates, a problem that has been magnified by QE's global nature, as central banks across the world have followed similar policies, leading to a highly interconnected and leveraged global financial system (Koo, 2013); in contrast, some researchers, such as Eggertsson and Woodford (2008), argue that QE has been essential in averting deeper economic recessions and has provided central banks with a valuable tool for combating deflationary pressures in a low-interest-rate environment, but even proponents of QE acknowledge

that its long-term success depends on structural reforms and fiscal policies to complement monetary easing, as seen in the U.S., where fiscal stimulus and bank recapitalization efforts helped support recovery, while the Eurozone's focus on austerity measures limited QE's effectiveness in promoting economic growth (Draghi, 2015); overall, the literature on QE reveals a complex picture, with studies emphasizing its critical role in stabilizing financial markets and preventing economic collapse, but also highlighting significant concerns about its long-term effectiveness in addressing structural economic weaknesses, promoting sustainable growth, and mitigating social inequalities, leaving open important questions about the future use of QE as a central bank policy tool.

Major objectives related to the study:

1. To analyze whether QE was effective in combating deflation and raising inflation to target levels in developed economies, with particular focus on cases like the Eurozone and Japan, where inflation remained persistently low.
2. To assess how QE influenced key macroeconomic indicators such as GDP growth, employment, and inflation in developed economies like the U.S., Eurozone, Japan, and the U.K. between 2008 and 2015.
3. To examine the extent to which QE drove increases in asset prices, particularly in equity and housing markets, and explore the potential risks of asset bubbles or market distortions caused by central bank interventions.
4. To investigate how QE contributed to rising wealth and income inequality, particularly by disproportionately benefiting asset holders while wage growth stagnated for lower-income households.

QE was effective in combating deflation and raising inflation to target levels in developed economies, with particular focus on cases like the Eurozone and Japan, where inflation remained persistently low:

Quantitative Easing (QE) was introduced as a key monetary policy tool by major central banks, including the U.S. Federal Reserve, the European Central Bank (ECB), and the Bank of Japan (BoJ), with the primary aim of combating deflation and raising inflation to target levels in the aftermath of the 2008 financial crisis, yet despite its aggressive implementation, especially in the Eurozone and Japan, where inflation remained persistently low, the overall effectiveness of QE in achieving its inflationary goals remained questionable by December 2015, with data from these economies showing that while QE helped prevent deflationary spirals and supported financial markets, it fell short of raising inflation to the desired 2% target in both regions; for example, the Eurozone, which initiated its large-scale QE program in March 2015, aimed at purchasing €60 billion worth of assets per month, struggled to lift inflation significantly, as its inflation rate hovered around 0.2% by the end of 2015, well below the ECB's target, reflecting the deep structural challenges and weak demand that persisted within the bloc, particularly following the European sovereign debt crisis and subsequent austerity measures (Draghi, 2015), while Japan's experience with QE under the BoJ's aggressive monetary policy, known as "Abenomics," similarly faced challenges, as the BoJ's balance sheet expanded to ¥300 trillion by December 2015 (Bank of Japan, 2015) through the purchase of government bonds and other assets in a bid to overcome nearly two decades of deflation, yet inflation in Japan peaked at only 2.4% in 2014, largely due to a temporary rise in consumption tax, and subsequently fell back to 0.5% by the end of 2015, demonstrating that despite BoJ Governor Haruhiko Kuroda's commitment to achieving a 2% inflation target, Japan continued to struggle with deflationary pressures, exacerbated by weak domestic demand and stagnant wage growth (Koo, 2013); furthermore, in the U.S., where the Federal Reserve's QE program was more aggressive and implemented earlier, starting in late 2008 and lasting through three rounds of asset purchases that expanded the Fed's balance sheet to over \$4.5 trillion by the end of 2014, inflation remained subdued, with the U.S. inflation rate averaging just 1.5% from 2010 to 2015, below the Fed's 2% target, despite the recovery in asset prices and employment (Federal Reserve, 2015), and as noted by Blinder (2010), the muted inflationary response in these economies can be attributed to factors such as weak demand, sluggish wage growth, and a global savings glut that dampened inflationary pressures, raising questions about the broader effectiveness of QE in addressing deflation in the long run; moreover, researchers such as Krugman (2014) and Summers (2014) have argued that while QE successfully prevented deeper deflation and helped stabilize financial markets, it was not sufficient to generate sustained inflation without complementary fiscal policies, as evidenced by the Eurozone's continued economic stagnation under fiscal austerity, and Japan's reliance on short-term tax increases to stimulate inflation rather than sustained domestic consumption, highlighting the limitations of monetary policy alone in achieving inflation targets; overall, the data and evidence until December 2015 suggest that while QE played a critical role in preventing deflation and providing liquidity to financial markets, its impact on raising inflation to target levels in the Eurozone and Japan remained limited, necessitating further research into the combined use of fiscal and structural policies alongside monetary interventions to effectively combat deflation and achieve sustainable inflationary growth.

QE influenced key macroeconomic indicators such as GDP growth, employment, and inflation in developed economies like the U.S., Eurozone, Japan, and the U.K. between 2008 and 2015:

Quantitative Easing (QE) significantly influenced key macroeconomic indicators such as GDP growth, employment, and inflation in developed economies like the U.S., Eurozone, Japan, and the U.K. between 2008 and 2015, as central banks employed this unconventional monetary policy to mitigate the effects of the global financial crisis by injecting liquidity into financial markets through large-scale asset purchases, with the U.S. Federal Reserve implementing three rounds of QE from 2008 to 2014, during which it expanded its balance sheet from \$900 billion to over \$4.5 trillion by the end of 2014 (Federal Reserve, 2015), helping stabilize U.S. financial markets and contributing to a modest GDP growth rate, which averaged around 2.1% annually from 2010 to 2015, although this was still below pre-crisis levels (IMF, 2015); in the U.K., where the Bank of England (BoE) launched its own QE program in 2009, purchasing over £375 billion worth of assets by 2015, the policy similarly helped prevent a deeper recession, with GDP growth recovering to 2.9% in 2014, although inflation remained subdued, falling to 0.5% by the end of 2015 (Bank of England, 2015), while in the Eurozone, the European Central Bank (ECB) was slower to adopt QE, only beginning large-scale purchases in early 2015, but despite an asset purchase program amounting to €60 billion per month, Eurozone GDP growth remained weak, averaging just 1.3% annually from 2010 to 2015, largely due to structural issues and fiscal austerity measures across member states, with inflation hovering near zero, far below the ECB's 2% target (Draghi, 2015); in Japan, the Bank of Japan (BoJ) pursued an even more aggressive QE strategy under "Abenomics," with its balance sheet expanding to ¥300 trillion (\$2.5 trillion) by the end of 2015, contributing to modest GDP growth, which averaged 1.2% between 2010 and 2015, although inflation peaked at 2.4% in 2014 before falling back to 0.5% by the end of 2015, indicating that Japan continued to struggle with deflationary pressures and weak domestic demand despite massive monetary easing (Bank of Japan, 2015); in terms of employment, QE had a mixed impact across these economies, as the U.S. unemployment rate fell significantly from its peak of 10% in 2009 to 5% by December 2015, largely due to the recovery in financial markets and housing sectors spurred by QE (Blinder, 2010), while in the U.K., the unemployment rate similarly dropped from 8% in 2009 to 5.1% by the end of 2015, reflecting the positive effects of QE on labor markets (Joyce et al., 2012); however, in the Eurozone, unemployment remained stubbornly high, averaging 11% from 2010 to 2015, with peripheral countries like Spain and Greece facing much higher rates, underscoring the limited effectiveness of QE in addressing structural unemployment and fostering broad-based economic recovery in the region (OECD, 2013); likewise, Japan's unemployment rate remained low, at around 3.5% in 2015, but this was more due to demographic factors and a shrinking labor force rather than the direct effects of QE (Koo, 2013), and while QE helped stabilize financial markets and supported asset prices across developed economies, its impact on GDP growth, inflation, and employment was uneven, with inflation targets remaining elusive and structural challenges in the labor market persisting, particularly in the Eurozone and Japan, where QE alone proved insufficient to generate sustainable economic growth without complementary fiscal and structural reforms.

QE drove increases in asset prices, particularly in equity and housing markets, and explore the potential risks of asset bubbles or market distortions caused by central bank interventions:

Quantitative Easing (QE) drove significant increases in asset prices, particularly in equity and housing markets, as central bank interventions, including large-scale asset purchases by the U.S. Federal Reserve, European Central Bank (ECB), Bank of Japan (BoJ), and Bank of England (BoE), led to a substantial injection of liquidity into financial markets, pushing investors toward higher-yielding assets in a low-interest-rate environment, which in turn inflated asset prices, as seen in the U.S., where the Federal Reserve's QE program helped propel the S&P 500 index to a 200% gain from its 2009 lows to the end of 2015, with similar upward trends in European and Japanese equity markets, where the Euro Stoxx 50 and Nikkei 225 saw increases of over 60% and 150%, respectively, during the same period, driven by increased investor demand and central bank bond purchases that lowered yields on government securities, prompting a reallocation of capital into riskier assets like equities (Shiller, 2015); alongside the equity markets, QE also spurred growth in housing prices, particularly in the U.S., where the S&P/Case-Shiller U.S. National Home Price Index rose by 35% from its 2012 low to December 2015, approaching pre-crisis levels, reflecting the combined effects of lower mortgage rates and increased credit availability, which led to a revival in housing demand (Goodhart & Ashworth, 2012), while similar patterns were observed in the U.K., where house prices rose by over 30% from their 2009 trough to 2015, largely fueled by BoE's asset purchase program that reduced borrowing costs and encouraged investment in real estate (Bank of England, 2015); however, while QE effectively boosted asset prices, concerns emerged about the risks of asset bubbles and market distortions, as artificially suppressed interest rates and a prolonged low-yield environment drove investors into increasingly speculative investments, inflating asset prices beyond their fundamental values, with Roubini (2013) warning that these central bank interventions could lead to financial imbalances, particularly in bond and equity markets, where yields fell to historic lows and valuations reached levels that were difficult to justify based on traditional measures like price-to-earnings (P/E) ratios, which saw the

S&P 500's P/E ratio rise to over 20 by the end of 2015, above its historical average, suggesting potential overvaluation (Joyce et al., 2012); in addition, QE's impact on housing markets raised similar concerns, as housing affordability declined in many regions, including London and New York, where rapid price increases outpaced wage growth, prompting fears of a housing bubble reminiscent of the pre-2008 financial crisis, with policymakers like Shiller (2015) noting that the disconnect between rising house prices and stagnant incomes could pose long-term risks to financial stability if market corrections occurred; furthermore, the dramatic expansion of central bank balance sheets, which saw the Federal Reserve's balance sheet grow from \$900 billion in 2008 to over \$4.5 trillion by the end of 2015, and the ECB's expand to over €2.5 trillion during the same period, raised additional concerns about how central banks would eventually unwind these positions without triggering sharp market corrections or spikes in interest rates, as highlighted by Blinder (2010), who cautioned that the sheer scale of QE programs created significant challenges for future monetary policy normalization and the potential for financial market volatility if asset prices adjusted abruptly to changing monetary conditions; thus, while QE was effective in driving increases in equity and housing markets, its long-term consequences, particularly the risks of asset bubbles and market distortions, remained a critical issue of concern as developed economies entered 2016.

QE contributed to rising wealth and income inequality, particularly by disproportionately benefiting asset holders while wage growth stagnated for lower-income households:

Quantitative Easing (QE) significantly contributed to rising wealth and income inequality in developed economies, particularly by disproportionately benefiting asset holders while wage growth stagnated for lower-income households, as central bank interventions aimed at stabilizing financial markets and spurring economic recovery following the 2008 financial crisis primarily boosted asset prices, including equities and real estate, which are predominantly owned by wealthier individuals, with the U.S. Federal Reserve's QE program, spanning from 2008 to 2014, causing the S&P 500 index to rise over 200% by December 2015 and housing prices, measured by the Case-Shiller U.S. National Home Price Index, increasing by over 30% from their post-crisis low (Shiller, 2015), while the U.K. saw a similar trend as the FTSE 100 increased by more than 80% and house prices surged due to the Bank of England's £375 billion asset purchase program (Bank of England, 2015); however, these gains primarily accrued to wealthier households, who held a disproportionate share of financial assets, exacerbating wealth inequality, with studies showing that in the U.S., the top 1% captured over 95% of income gains between 2009 and 2013, as evidenced by the U.S. Gini coefficient rising from 0.466 in 2008 to 0.482 in 2015 (U.S. Census Bureau, 2015), while the U.K. experienced a similar rise in inequality, with the wealthiest 10% of households holding nearly 45% of total wealth by 2015 (OECD, 2013); in contrast, wage growth for lower-income households remained stagnant, as median household income in the U.S. grew by only 1.6% between 2008 and 2015, and real wages in the U.K. actually declined by 10% during the same period, indicating that while QE boosted asset prices, it failed to translate into broad-based wage growth, particularly for lower-income workers, contributing to the widening gap between the wealthy and the rest of the population (Joyce et al., 2012); further exacerbating the inequality, QE's impact on housing affordability widened disparities, particularly in major metropolitan areas like London, New York, and San Francisco, where housing price increases outpaced income growth, making home ownership more difficult for lower-income families and further concentrating wealth in the hands of those already holding real estate assets (Piketty, 2014); additionally, the ultra-low interest rates that accompanied QE led to reduced returns on savings, which disproportionately affected middle- and lower-income households who rely more heavily on traditional savings instruments, while wealthier individuals benefited from rising stock and bond prices, as well as increased risk-taking in financial markets (Blinder, 2010); this divergence in asset appreciation versus wage stagnation contributed to growing social and political tensions, as inequality became a more prominent issue, particularly in the Eurozone, where the combination of austerity policies and sluggish wage growth compounded the effects of QE, leading to rising inequality, especially in countries like Spain and Greece, where unemployment remained high and the benefits of asset price inflation were concentrated among the wealthiest segments of society (Stiglitz, 2013); thus, while QE was successful in stabilizing financial markets and boosting asset prices, its broader social impact, particularly the exacerbation of wealth and income inequality, raised significant concerns about the long-term consequences of such policies in addressing the needs of lower-income households and fostering inclusive economic growth.

IV. Discussion related to the study:

Quantitative Easing (QE) has been a cornerstone of monetary policy in developed economies following the 2008 financial crisis, with central banks like the U.S. Federal Reserve, the European Central Bank (ECB), the Bank of Japan (BoJ), and the Bank of England (BoE) implementing large-scale asset purchase programs to stabilize financial markets and prevent deflation, but while QE helped avert deeper recessions and bolstered asset prices, its long-term economic, financial, and social impacts have sparked extensive debate, particularly regarding its effectiveness in fostering sustainable economic growth, stimulating inflation, and addressing rising inequality, as evidence from the period until June 2016 suggests that although QE significantly impacted financial markets

by inflating asset prices, particularly in equities and housing markets, with the U.S. stock market, as measured by the S&P 500, rising over 200% from its 2009 lows to the end of 2015, and housing prices in the U.S., U.K., and parts of the Eurozone returning to or surpassing pre-crisis levels (Shiller, 2015), its impact on broader economic indicators such as GDP growth, employment, and inflation remained mixed, as the U.S. economy grew at an average rate of 2.1% from 2010 to 2015, below pre-crisis norms, and inflation remained below the Federal Reserve's 2% target, averaging just 1.5% during the same period (Federal Reserve, 2015); similarly, in the Eurozone, where the ECB initiated QE in 2015 with monthly asset purchases of €60 billion, growth remained tepid, averaging 1.3% between 2010 and 2015, while inflation was nearly flat, reflecting the region's deep structural challenges and the ongoing effects of fiscal austerity policies (Draghi, 2015), and Japan, despite the BoJ's aggressive asset purchase program that saw its balance sheet expand to ¥300 trillion by the end of 2015, struggled with persistent deflationary pressures, as inflation peaked at 2.4% in 2014, driven largely by a temporary consumption tax increase, but fell back to 0.5% by the end of 2015, illustrating the limitations of QE in reversing decades of stagnation in Japan's economy (Bank of Japan, 2015); in terms of employment, QE had a more positive impact in the U.S. and U.K., where unemployment fell from its post-crisis highs to 5% and 5.1%, respectively, by the end of 2015, but the Eurozone's unemployment remained stubbornly high, at 11%, highlighting the uneven recovery across the region (IMF, 2015), and although QE provided significant liquidity to financial markets, it raised concerns about asset bubbles and financial instability, particularly in the housing and equity markets, as the artificial suppression of interest rates led to a surge in investor demand for riskier assets, inflating asset prices beyond their fundamental values, with the U.S. housing market, for instance, experiencing rapid price increases that far outpaced wage growth, contributing to a decline in housing affordability and raising fears of a new bubble (Goodhart & Ashworth, 2012); further complicating the picture is the fact that QE disproportionately benefited wealthier individuals, who hold the majority of financial assets, thus exacerbating wealth inequality, as evidenced by the top 1% of U.S. households capturing over 95% of income gains between 2009 and 2013, while wage growth for the bottom 90% remained stagnant, with U.S. median household income increasing by only 1.6% between 2008 and 2015 (Piketty, 2014), and similar patterns were observed in the U.K., where real wages fell by 10% during the same period, widening the gap between asset holders and wage earners (OECD, 2013); moreover, the rapid expansion of central bank balance sheets, which saw the Federal Reserve's grow from \$900 billion in 2008 to over \$4.5 trillion by 2015, and the ECB's surpass €2.5 trillion during the same period, raised questions about the long-term sustainability of QE, particularly how central banks would unwind these massive asset holdings without triggering sharp corrections in financial markets or steep rises in interest rates, as noted by Blinder (2010), who warned that the sheer scale of QE posed significant risks to financial stability in the future; in conclusion, while QE was effective in stabilizing financial markets and preventing deflation, its broader impacts on economic growth, inflation, inequality, and financial stability were more uneven, revealing the limits of monetary policy in addressing deep structural issues in developed economies, particularly without complementary fiscal and structural reforms.

Empirical evidence related to the study:

Empirical evidence regarding the long-term economic, financial, and social impacts of Quantitative Easing (QE) on developed economies post-2008 reveals a mixed but insightful picture, as central banks such as the U.S. Federal Reserve, the European Central Bank (ECB), the Bank of Japan (BoJ), and the Bank of England (BoE) implemented QE programs that injected massive liquidity into financial markets, yet while QE effectively stabilized financial systems and prevented deeper recessions, its broader impacts on inflation, growth, inequality, and financial stability have been subjects of ongoing debate, with the U.S. Federal Reserve's QE program, initiated in 2008 and continuing through three rounds of asset purchases, expanding the Fed's balance sheet from \$900 billion in 2008 to over \$4.5 trillion by 2015, helping drive U.S. GDP growth to an average of 2.1% annually between 2010 and 2015, though this growth rate remained below pre-crisis trends (Federal Reserve, 2015); further empirical evidence suggests that QE was moderately successful in lowering unemployment in the U.S., where the unemployment rate fell from its peak of 10% in 2009 to 5% by December 2015, but its impact on inflation was more muted, as inflation averaged only 1.5% during this period, well below the Federal Reserve's 2% target (Blinder, 2010); similar results were observed in the U.K., where the Bank of England's £375 billion asset purchase program helped reduce the unemployment rate to 5.1% by 2015, though inflation remained persistently low at 0.5% by the end of 2015 (Bank of England, 2015), while in the Eurozone, the ECB's delayed QE efforts, initiated in 2015, injected €60 billion per month into the economy but had limited success in fostering inflation, which hovered near zero, and the region's GDP growth remained sluggish, averaging just 1.3% between 2010 and 2015, highlighting the structural weaknesses and the adverse effects of fiscal austerity policies within the bloc (Draghi, 2015); Japan's experience with QE provides additional empirical insights, as the BoJ's aggressive asset purchases, which expanded its balance sheet to ¥300 trillion by the end of 2015, contributed to modest GDP growth, which averaged 1.2% from 2010 to 2015, yet inflation peaked at 2.4% in 2014 before falling back to 0.5% by December 2015, reflecting Japan's persistent deflationary pressures and highlighting the limitations of QE in

spurring inflation in deeply stagnant economies (Bank of Japan, 2015); empirical evidence also underscores the role of QE in driving asset prices higher, with the S&P 500 in the U.S. gaining over 200% from its 2009 lows to the end of 2015 and housing prices, as measured by the S&P/Case-Shiller U.S. National Home Price Index, increasing by more than 30% from their post-crisis lows, while in the U.K., housing prices increased by over 30% from their 2009 trough, further demonstrating QE's influence on asset markets (Shiller, 2015); however, the rise in asset prices disproportionately benefited wealthier individuals, exacerbating wealth inequality, as empirical data shows that the top 1% of U.S. households captured more than 95% of income gains from 2009 to 2013, while median household income increased by only 1.6% between 2008 and 2015, and in the U.K., real wages fell by 10% over the same period, indicating that while QE boosted financial assets, its benefits were unevenly distributed (Piketty, 2014); moreover, there is growing empirical concern about the long-term financial stability risks posed by QE, as the rapid expansion of central bank balance sheets, which in the U.S., Eurozone, and Japan collectively surpassed \$10 trillion by 2015, raised concerns about how these central banks would eventually unwind their positions without triggering sharp corrections in asset prices or surges in interest rates, as noted by Goodhart and Ashworth (2012), who argue that QE's prolonged suppression of interest rates distorted financial markets by encouraging excessive risk-taking, particularly in bonds and equities, where historically low yields pushed investors toward increasingly speculative investments; overall, the empirical evidence demonstrates that while QE was effective in averting financial collapse and stabilizing asset prices, its impacts on inflation, growth, inequality, and financial stability were more complex, revealing both its strengths and limitations as a policy tool in the post-crisis recovery.

V. Conclusion:

The conclusion of the study on Quantitative Easing (QE) and its long-term economic, financial, and social impacts on developed economies post-2008 highlights that while QE was crucial in preventing deeper recessions and stabilizing financial markets in the immediate aftermath of the global financial crisis, its broader and more enduring effects were mixed and uneven across economies like the U.S., Eurozone, Japan, and the U.K., with the most notable positive outcome being the significant rise in asset prices, as seen in the U.S. stock market's S&P 500 increasing by over 200% from its 2009 lows to the end of 2015 and housing prices in both the U.S. and the U.K. rebounding strongly, with the U.S. Case-Shiller National Home Price Index rising by more than 30% from its post-crisis low and U.K. house prices increasing by over 30% from 2009 to 2015; however, these gains in financial and real estate markets primarily benefited wealthier households, which exacerbated wealth inequality, as the top 1% of U.S. households captured over 95% of income gains from 2009 to 2013, while U.S. median household income grew by only 1.6% between 2008 and 2015, and real wages in the U.K. fell by 10% over the same period, highlighting the uneven distribution of QE's benefits; despite QE's significant influence on asset prices, its effectiveness in achieving broader macroeconomic objectives such as boosting GDP growth and stimulating inflation was more limited, as GDP growth in the U.S. averaged just 2.1% from 2010 to 2015, below pre-crisis trends, while inflation remained subdued, averaging only 1.5%, well below the Federal Reserve's 2% target, and in the Eurozone, where the ECB launched QE later in 2015, the region's GDP growth averaged just 1.3% between 2010 and 2015, with inflation hovering near zero, reflecting the deep structural challenges and persistent deflationary pressures across member states, while Japan, despite the BoJ's aggressive QE policy that expanded its balance sheet to ¥300 trillion by the end of 2015, continued to struggle with deflation, as inflation peaked at 2.4% in 2014, driven by a temporary consumption tax increase, before falling back to 0.5% by the end of 2015; in terms of employment, QE had a more positive impact in the U.S. and U.K., where unemployment fell significantly from its post-crisis highs to 5% and 5.1%, respectively, by the end of 2015, but its impact was less pronounced in the Eurozone, where unemployment remained elevated at 11%, particularly in peripheral economies like Greece and Spain, underscoring the uneven economic recovery across the region; moreover, while QE's suppression of interest rates helped reduce borrowing costs and support financial markets, it also raised concerns about long-term financial stability, as the dramatic expansion of central bank balance sheets, with the Federal Reserve's growing from \$900 billion in 2008 to over \$4.5 trillion by 2015, and the ECB's surpassing €2.5 trillion during the same period, left policymakers facing the complex challenge of unwinding these massive asset holdings without triggering sharp corrections in financial markets or a surge in interest rates, which could potentially destabilize the economic recovery; another key concern raised by the long-term use of QE is the potential distortion of financial markets, as the artificially low interest rates encouraged excessive risk-taking by investors seeking higher yields, contributing to inflated asset prices and raising fears of asset bubbles, particularly in the bond and equity markets, where historically low yields led to a surge in demand for riskier assets, and in the housing markets, where rapid price increases outpaced wage growth, making home ownership increasingly unaffordable for lower-income households, particularly in major metropolitan areas like London, New York, and San Francisco; ultimately, while QE played an essential role in stabilizing financial systems and preventing deflation in the short term, its long-term impacts, particularly its contributions to rising inequality, market distortions, and financial stability risks, as well as its limited success in achieving sustained inflation and robust

economic growth, reveal the policy's inherent limitations and underscore the need for complementary fiscal policies and structural reforms to address the deeper economic challenges facing developed economies in the post-crisis period.

Scope for further research and limitations of the study:

The scope for further research in the study of Quantitative Easing (QE) and its long-term economic, financial, and social impacts on developed economies post-2008 lies in exploring the evolving dynamics of QE as central banks begin unwinding their asset purchases, which remained a critical challenge by the end of 2015, particularly in understanding the effects of balance sheet normalization on interest rates, inflation, and financial market stability, as future research could investigate how central banks, including the U.S. Federal Reserve and the European Central Bank (ECB), manage the delicate process of tapering their QE programs without triggering market disruptions or a surge in borrowing costs, while further exploration is also needed on the interplay between QE and fiscal policies, especially in regions like the Eurozone, where the combination of monetary easing and fiscal austerity may have limited QE's effectiveness in promoting sustainable economic growth and inflation, providing an important area for future studies to assess how more coordinated monetary and fiscal strategies might enhance policy outcomes in the context of stagnant growth and low inflation; another promising avenue for research is the social implications of QE, particularly in examining the long-term effects of rising wealth and income inequality driven by the disproportionate benefits of QE accruing to asset holders, as future studies could analyze the broader societal impacts of this inequality, such as its influence on political instability, social mobility, and the growing polarization in income and wealth distribution, particularly in advanced economies like the U.S. and U.K., where the top 1% of households captured the majority of income gains post-2008, further research could provide valuable insights into the policy measures required to mitigate these inequalities and promote more inclusive growth; regarding the limitations of this study, one key constraint is the time frame, as the analysis is restricted to data and events up to December 2015, and thus does not capture the full effects of central banks' subsequent actions, such as the Federal Reserve's decision to begin raising interest rates in late 2015 or the ECB's continued asset purchases beyond 2015, meaning that some of the longer-term consequences of QE on inflation, economic growth, and financial stability remain uncertain and could evolve differently than projected in this study, and another limitation is the reliance on aggregate macroeconomic data, which may obscure important variations across different sectors, regions, or demographic groups within the studied economies, leaving room for future research to adopt more granular approaches that can uncover the heterogeneous effects of QE on specific industries or population segments, as well as its interaction with global economic trends, such as the rise of digital currencies, which could further complicate the transmission of monetary policy in the coming years.

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