WJARR

World Journal of Advanced Research and Reviews

World Journal Series INDIA

(RESEARCH ARTICLE)

Check for updates

Interplay between inflation expectations, wage adjustments, and aggregate demand in post-pandemic economic recovery

Chidimma Maria-Gorretti Umeaduma *

Department of Quantitative Economics and Econometrics, Western Illinois University Macomb, USA.

Abstract

The post-pandemic global economy has been marked by a complex interplay between inflation expectations, wage dynamics, and aggregate demand. As governments phased out stimulus programs and supply chains strained under renewed global demand, inflation surged to levels unseen in decades. This paper explores how these inflationary pressures—both anticipated and realized—affect wage-setting behaviors and consumer demand patterns, particularly in the context of ongoing economic recovery efforts. From a macroeconomic standpoint, inflation expectations serve as a critical determinant of forward-looking wage negotiations and business pricing strategies. When workers anticipate higher future prices, upward wage pressure emerges, potentially feeding into a wage-price spiral that amplifies inflation inertia. However, the strength of this feedback loop varies across labor markets, sectors, and regions based on institutional wage-setting mechanisms and bargaining power asymmetries. The study further examines how wage adjustments influence aggregate demand through income redistribution and consumption sensitivity. In economies where real wages have lagged behind inflation, household purchasing power has eroded, tempering consumption-led recovery. Conversely, targeted wage growth in lower-income brackets can stimulate demand due to higher marginal propensities to consume. Through both theoretical modeling and empirical analysis from select OECD and emerging economies, this research identifies the transmission channels and thresholds at which inflation expectations begin to destabilize recovery trajectories. The findings underscore the need for coordinated monetary and fiscal policies that balance inflation anchoring with real income protection. A nuanced understanding of the inflation-wage-demand nexus is essential for policymakers navigating the fragile path toward sustainable post-pandemic economic normalization.

Keywords: Inflation expectations; Wage dynamics; Aggregate demand; Post-pandemic recovery; Consumption behavior; Economic policy

1. Introduction

The global economic landscape has undergone significant transformation over the past decade, driven by technological advances, evolving labor markets, geopolitical shifts, and financial market innovation. Central to this transformation is the need for adaptive macroeconomic strategies that respond effectively to changing production models, inflationary trends, and labor realignment [1]. Historically, macroeconomic stability was framed around metrics such as GDP growth, unemployment rates, inflation targets, and interest rate adjustments. However, recent structural disruptions have challenged the sufficiency of these traditional indicators in capturing the complexity of contemporary economies [2].

One such disruption is the acceleration of digitization, which has altered consumption patterns, changed firm production strategies, and reshaped global value chains. The digital economy now contributes significantly to productivity and service delivery, yet remains partially captured in legacy measurement systems [3]. Likewise,

* Corresponding author: Chidimma Maria-Gorretti Umeaduma

increasing climate volatility has introduced economic externalities—such as resource scarcities and weather-related supply shocks—that traditional monetary and fiscal tools struggle to address in a timely and effective manner [4].

Labor markets have also evolved. The rise of the gig economy, remote work, and platform-based employment models has fragmented labor participation and created new forms of income insecurity. These developments demand macroeconomic policies that go beyond headline unemployment figures to incorporate quality of work, sectoral mobility, and human capital utilization [5].

Furthermore, global interconnectedness means that economic shocks are transmitted rapidly across borders, complicating domestic stabilization efforts. In such a volatile global context, rethinking macroeconomic objectives and frameworks becomes not only necessary but urgent. The emergence of non-traditional risk factors requires a reassessment of both policy tools and performance benchmarks to ensure economic resilience and inclusive growth in the years ahead [6].

1.1. Post-Pandemic Economic Shifts

The COVID-19 pandemic profoundly altered economic conditions worldwide, exposing the fragility of existing systems and prompting large-scale fiscal and monetary interventions. Lockdowns, supply chain disruptions, and shifting consumption patterns led to unprecedented contractions in economic activity during 2020, followed by uneven and inflation-prone recoveries across countries and sectors [7].

One of the most visible consequences was the breakdown of traditional supply-demand dynamics. Commodity shortages and surging logistics costs introduced bottlenecks that triggered inflation in unexpected sectors, including healthcare, housing, and consumer electronics. At the same time, governments deployed stimulus packages on an extraordinary scale, raising questions about long-term debt sustainability and the future role of fiscal policy in macroeconomic management [8].

Labor markets responded with high volatility. While unemployment surged in many countries, some sectors experienced labor shortages as workers reassessed employment conditions or exited the workforce altogether. This phenomenon, often referred to as the "Great Resignation," introduced new complexities in employment recovery, wage determination, and productivity measurement [9].

Furthermore, central banks faced the dual challenge of restoring price stability while maintaining accommodative conditions to support fragile recoveries. Inflation targeting regimes were tested amid surging energy prices and geopolitical instability, prompting debates on the flexibility of monetary frameworks and the scope for alternative indicators beyond core inflation [10].

In this context, the pandemic served as a stress test for macroeconomic institutions, revealing structural weaknesses and underscoring the need for robust, multi-dimensional policy approaches. Understanding these shifts is crucial for designing responsive economic strategies that are resilient to future shocks and capable of supporting sustainable development [11].

1.2. Objectives and Scope of the Study

This study aims to critically examine the evolution of macroeconomic policy frameworks in response to emerging global challenges, with a specific focus on the post-pandemic environment. It explores how traditional tools—such as interest rate policy, deficit financing, and inflation targeting—are being reconfigured to align with the realities of a changing economic landscape marked by digitization, labor market shifts, climate risks, and fiscal constraints [12].

The study also investigates the role of alternative indicators—such as underemployment, sectoral wage dispersion, digital economy metrics, and ecological thresholds—in informing modern macroeconomic decision-making. By comparing pre- and post-pandemic policy responses, the analysis identifies key lessons for future economic resilience and adaptive governance [13].

Geographically, the discussion draws from advanced, emerging, and developing economies, offering comparative perspectives on how different institutional capacities shape macroeconomic adaptation. The findings are intended to inform both academic discourse and policy formulation in a period of structural transformation [14].

2. Theoretical framework and literature review

2.1. Classical and New Keynesian Views on Inflation and Wages

The relationship between inflation and wages has long been a focal point in macroeconomic theory. Classical economists generally argued for wage and price flexibility in achieving full employment equilibrium. In this framework, any deviation from full employment due to wage rigidity or external shocks is considered temporary, as markets self-correct through price mechanisms. Money is viewed as neutral in the long run, and inflation is largely determined by the quantity of money rather than wage behavior [5].

In contrast, the Keynesian and New Keynesian frameworks emphasize the role of nominal rigidities, imperfect information, and expectations in wage and price setting. According to Keynesian models, wages are often "sticky" due to institutional factors such as contracts, union negotiations, or efficiency wage theories, which prevent immediate adjustment to labor market conditions. As a result, inflation may persist even in the face of output gaps or underemployment [6].

New Keynesian models build upon this by incorporating micro-founded price and wage-setting behavior through staggered contracts and rational expectations. These models typically feature a New Keynesian Phillips Curve (NKPC), in which current inflation is driven by expected future inflation and real marginal cost (often proxied by the output gap or labor share). This structure implies that wage dynamics are central to inflation evolution, especially in economies where services and labor-intensive industries dominate [7].

Policy prescriptions differ across these paradigms. While classical theory advocates limited government intervention, New Keynesian thought supports monetary rules—like inflation targeting—as credible mechanisms for anchoring expectations and stabilizing wage-price behavior. This divergence becomes especially salient during inflationary shocks, where central bank communication and wage-setting processes interact dynamically [8].

Thus, understanding wage-inflation mechanisms through both classical and New Keynesian lenses provides a conceptual baseline for evaluating modern economic responses, particularly in volatile, post-crisis environments [9].

2.2. The Phillips Curve, NAIRU, and Wage-Price Spirals

The Phillips Curve, originally formulated by A.W. Phillips in 1958, posited an inverse relationship between unemployment and wage inflation. As unemployment falls, labor becomes scarce, increasing workers' bargaining power and driving up wages. This wage growth feeds into broader price levels, creating inflationary pressure. Conversely, high unemployment restrains wage demands and moderates inflation [10].

Over time, this simple inverse relationship was refined to include expectations, leading to the expectations-augmented Phillips Curve, which accounts for adaptive or rational forecasting by economic agents. This formulation explains how inflation can persist even in high-unemployment scenarios if expectations remain unanchored. The concept of the Non-Accelerating Inflation Rate of Unemployment (NAIRU) emerged from this evolution, describing a theoretical level of unemployment at which inflation remains stable. If unemployment falls below NAIRU, inflation accelerates; if above, inflation decelerates [11].

While the NAIRU provided a useful policy benchmark, it has been criticized for its non-observability and time variability, especially during episodes of structural labor market change. Post-2008 and particularly during the COVID-19 pandemic, many advanced economies experienced historically low unemployment with subdued inflation, challenging the predictive strength of the traditional Phillips Curve [12].

One of the concerns arising from low unemployment and rising inflation is the potential for wage-price spirals, where wage hikes feed into price increases, prompting further wage demands. Although this phenomenon was widely observed during the 1970s, its relevance in today's labor markets remains debated. Structural changes such as weakened union power, increased global labor mobility, and automation have diluted traditional wage-push inflation channels [13].

Nevertheless, recent surges in prices have reignited interest in Phillips Curve dynamics. As economies recover from supply shocks, understanding the interplay between wages, inflation, and unemployment remains critical to designing effective stabilization policies [14].

2.3. The Role of Expectations in Consumption and Labor Markets

In modern macroeconomics, expectations have become a central determinant of both consumption and labor market behavior. Rational expectations theory, developed in response to the limitations of adaptive expectations, assumes that economic agents use all available information efficiently to forecast future economic variables, including inflation and interest rates. This anticipatory behavior influences real decisions, making expectation management a core component of economic policy [15].

In consumption theory, particularly within the permanent income hypothesis (PIH) and life-cycle models, expectations about future income and price levels shape current spending. Households anticipating inflation may accelerate consumption or shift to inflation-protected assets, creating ripple effects throughout the macroeconomy. Similarly, uncertainty about wages or employment can lead to precautionary saving and reduced aggregate demand, especially during downturns [16].

In labor markets, inflation expectations influence wage bargaining behavior. Workers seek nominal wage increases to maintain real purchasing power, while employers adjust offers based on expected cost pressures and productivity forecasts. When expectations become unanchored—due to inconsistent policy signals or volatile price trends—wage-setting becomes less predictable and more inflationary in nature [17].

Central banks have increasingly focused on inflation expectations anchoring through transparent communication strategies and forward guidance. Surveys of consumer and business expectations, market-based breakeven inflation rates, and analyst forecasts are now routinely monitored as leading indicators. Empirical research shows that well-anchored expectations correlate with macroeconomic stability and lower sacrifice ratios during disinflationary periods [18].

The role of expectations was further amplified in the post-pandemic recovery, where supply-side uncertainty and fiscal expansions altered household and firm outlooks. Managing these evolving expectations remains a priority for monetary authorities aiming to balance recovery with price stability [19].

2.4. Gaps in the Literature and Evolving Post-Crisis Paradigms

Despite significant advancements in macroeconomic modeling, key gaps persist in understanding the nuanced interactions between inflation, wages, and expectations—especially during non-linear shocks such as pandemics or geopolitical conflicts. Standard models often underrepresent behavioral responses, sectoral heterogeneity, and institutional frictions that mediate inflation dynamics in practice [20].

The decoupling of inflation and unemployment observed post-2008 and post-2020 suggests a weakening of traditional transmission mechanisms, prompting calls for new paradigms that better incorporate labor market segmentation, bargaining asymmetries, and technological disruptions. Hybrid models combining nominal rigidity, sector-specific pricing power, and real-time expectation data are being explored as alternatives to classical frameworks [21].

Figure 1 illustrates the evolving theoretical relationships between inflation expectations, wages, and aggregate demand in pre- and post-pandemic contexts. It contrasts standard Phillips Curve assumptions with newer, expectation-driven models that emphasize non-linear adjustment paths and structural inertia in labor pricing.

These shifts suggest the need for integrated, adaptive policy tools that can respond to a broader range of inflation triggers and labor market dynamics [22].
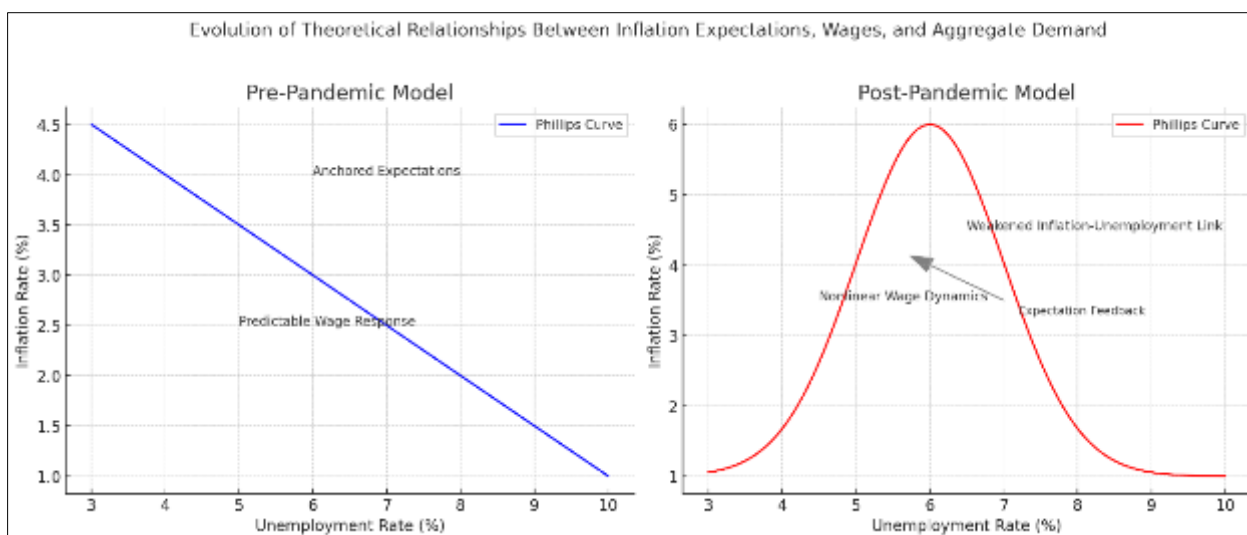
Figure 1 Evolution of Theoretical Relationships Between Inflation Expectations, Wages, and Aggregate Demand

(This conceptual figure showing two comparative panels—Pre-pandemic models: linear Phillips Curve with anchored expectations vs. Post-pandemic models: weakened inflation-unemployment link, nonlinear wage response, and policy expectation feedback loops.)

3. Inflation expectations post-covid-19

3.1. Drivers of Inflation Expectations

Inflation expectations, both in the short and long term, are shaped by a mix of macroeconomic signals, institutional credibility, and real-world experiences of households and firms. These expectations play a pivotal role in wage setting, consumption behavior, investment decisions, and ultimately, monetary policy effectiveness [9].

One of the most persistent drivers is historical inflation experience. Households that have lived through high-inflation periods are more likely to expect elevated future inflation, even when objective indicators suggest otherwise. This behavioral anchoring can persist across generations, influencing both consumer confidence and pricing behavior in ways not always captured by formal models [10].

Market-based signals, such as inflation-indexed bond yields (breakevens), and survey-based measures, including consumer inflation expectations, provide insights into how agents perceive future price dynamics. While market expectations tend to reflect institutional investor outlooks and monetary policy projections, household surveys often capture short-term sentiment influenced by volatile items like food and energy prices [11].

Macroeconomic fundamentals also contribute to shaping expectations. Persistent fiscal deficits, currency depreciation, and rising unit labor costs can all trigger upward revisions in inflation forecasts. Similarly, supply-side constraints—such as persistent logistics bottlenecks or material shortages—alter inflationary outlooks even in the absence of demand shocks [12].

Global financial conditions and international commodity prices further complicate domestic inflation expectations. In open economies, imported inflation via rising fuel or input prices can drive expectations beyond what domestic demand conditions would suggest. This has been evident in several emerging markets post-2020, where currency volatility amplified inflation pass-through effects [13].

Thus, inflation expectations are multidimensional and context-dependent, requiring careful calibration of monetary tools and real-time monitoring systems to pre-empt de-anchoring and preserve price stability.

3.2. Central Bank Communication and Inflation Targeting

In modern macroeconomic management, central bank communication has become a primary tool for anchoring inflation expectations. The success of inflation targeting frameworks—adopted by over 30 countries—relies heavily on

the credibility and clarity of central bank intentions. Transparent forward guidance, consistent messaging, and institutional independence contribute to shaping expectations in a manner conducive to macroeconomic stability [14].

Inflation targeting typically involves announcing a numerical inflation goal, often around 2%, and using policy instruments like interest rates and asset purchases to guide actual inflation toward that target. Crucially, the belief that the central bank will act decisively in response to inflation deviations is as important as the actions themselves. Well-anchored expectations minimize the sacrifice ratio—reducing output losses associated with disinflationary efforts [15].

However, recent shocks have complicated this strategy. During the COVID-19 recovery, many central banks initially characterized inflation spikes as "transitory," contributing to delayed policy tightening. This misalignment between forward guidance and actual inflation outcomes risked undermining credibility in some jurisdictions [16].

In response, several institutions—including the U.S. Federal Reserve, the European Central Bank, and the Bank of England—shifted toward data-dependent policies, emphasizing flexibility and responsiveness over fixed rules. While this helped adapt to real-time conditions, it also introduced greater uncertainty, complicating expectation formation among consumers and investors [17].

Restoring and maintaining credibility now requires not only effective policy calibration but also renewed commitment to transparent communication, scenario planning, and risk disclosure to avoid misinterpretation and prevent persistent inflationary expectations.

3.3. Global Supply Chain Disruptions and Energy Shocks

Inflation expectations during 2020–2022 were significantly influenced by global supply chain disruptions and energy market shocks. These exogenous pressures highlighted the vulnerability of existing production networks and their ability to transmit inflation across borders, sectors, and income groups [18].

The COVID-19 pandemic exposed rigidities in "just-in-time" inventory systems, revealing that lean production models lacked resilience against sustained supply interruptions. Port congestions, container shortages, and labor scarcities compounded delays, driving up costs for raw materials, semiconductors, and consumer goods. These input cost increases were rapidly passed along value chains, generating cost-push inflation that was difficult for monetary authorities to contain with traditional tools [19].

Energy shocks added another layer of complexity. In 2021 and 2022, oil and gas prices surged due to a combination of post-lockdown demand recovery, geopolitical tensions, and supply constraints. Countries heavily reliant on energy imports, such as Japan and several EU member states, experienced sharp inflationary surges unrelated to domestic demand conditions [20].

Moreover, these shocks disproportionately impacted low-income households, whose consumption baskets are more sensitive to food and energy prices. This divergence complicated aggregate inflation targeting, as central banks faced distributional dilemmas: whether to tighten policy to curb headline inflation or maintain support for economic recovery [21].

Table 1 Inflation Expectation Trends Across Major Economies (2020–2022)

Country	2020	2021	2022	2022	Notes
United States	1.8%	2.6%	3.8%	2.9%	Fed's shift to average inflation targeting increased flexibility
Euro Area	1.2%	2.1%	4.3%	3.0%	Supply shocks and energy costs elevated short-term expectations
United Kingdom	1.5%	2.4%	4.6%	3.4%	High energy inflation led to policy tightening in mid-2022
Japan	0.4%	0.7%	1.6%	2.1%	Imported inflation gradually raised long-stable expectations
Brazil	3.5%	4.8%	6.2%	5.1%	Currency depreciation and commodity dependence influenced trends
South Africa	3.0%	3.9%	5.7%	4.4%	Core expectations remained stable amid aggressive rate hikes

The simultaneous emergence of globalized supply shocks and localized policy trade-offs forced a reconsideration of inflation modeling frameworks. Expectations had to account not only for monetary policy and output gaps but also for

systemic risks emanating from logistical fragility, energy geopolitics, and environmental factors—all of which now play a critical role in shaping inflation trajectories and policy choices [22].

4. Wage adjustments and labor market dynamics

4.1. Wage Rigidity vs. Flexibility in Developed and Emerging Markets

The responsiveness of wages to macroeconomic shifts—termed wage flexibility—varies significantly between developed and emerging economies, shaping how labor markets react to inflationary shocks and policy adjustments. In developed markets, wage setting tends to exhibit nominal rigidity due to long-term contracts, collective bargaining structures, and institutional safeguards such as minimum wage laws and labor protections [12].

This rigidity often slows wage adjustment in response to inflation or demand changes, leading to short-term real wage erosion during periods of high inflation. For instance, in the Eurozone, despite significant headline inflation during 2021–2022, nominal wages lagged behind, reflecting subdued wage indexation and cautious bargaining processes [13]. In contrast, U.S. labor markets demonstrated more wage flexibility in sectors like hospitality and retail, though this responsiveness was uneven and often insufficient to fully offset inflationary pressures [14].

Emerging economies, on the other hand, tend to display greater nominal wage flexibility, albeit for different reasons. Informal labor markets, limited collective bargaining, and short-term or undocumented employment contracts reduce institutional inertia, enabling quicker nominal wage shifts in response to market conditions. However, this flexibility often coexists with greater volatility and lower baseline protections, leading to inconsistent or inadequate compensation adjustments [15].

For example, in countries like Brazil and South Africa, nominal wages in export-dependent sectors adjusted more rapidly during global commodity cycles. Yet, weak enforcement mechanisms and inflation volatility diluted the gains, with real wages often trailing price movements. These dynamics underscore the trade-off between wage flexibility and income security, which varies by institutional context and sectoral structure [16].

Understanding these differences is vital for designing inflation-mitigation strategies that balance price stability, labor market resilience, and income protection, especially under evolving global economic pressures.

4.2. Sectoral and Demographic Wage Growth Trends

Wage growth dynamics also diverge across sectors and demographic cohorts, reflecting both structural inequalities and differential exposure to inflationary and productivity shocks. Post-pandemic data show that service-oriented sectors—such as hospitality, logistics, and healthcare—experienced relatively strong nominal wage growth due to labor shortages, increased demand, and pandemic-induced job transitions [17].

Conversely, sectors like public administration and education, especially in countries with fiscal constraints or wage freezes, recorded sluggish wage increases. These discrepancies have widened intra-sectoral wage dispersion, raising concerns about labor misallocation and dissatisfaction, particularly in public service delivery domains [18].

Demographically, younger workers and women have often experienced slower wage growth. Youth employment remains vulnerable to macroeconomic volatility, and entry-level positions typically offer weaker bargaining power. Women, particularly in lower-income economies, face persistent wage gaps due to occupational segregation, caregiving responsibilities, and underrepresentation in high-paying sectors [19].

Furthermore, workers in informal and non-standard employment—common in both emerging and gig-based developed economies—have seen minimal nominal wage gains and significant real income erosion. Without contractual protections or automatic cost-of-living adjustments, these groups are especially exposed to inflation shocks and wage stagnation [20].

Analyzing wage growth trends by sector and demographic allows policymakers to target support mechanisms—such as wage subsidies, retraining programs, or minimum wage adjustments—more effectively, ensuring that wage trajectories align with inflation dynamics and labor market inclusivity goals.

4.3. Role of Trade Unions and Collective Bargaining

Trade unions and collective bargaining institutions have long influenced wage formation, employment standards, and worker protection. Their ability to shape nominal wage adjustments during inflationary episodes varies significantly across countries, depending on union density, bargaining coverage, and institutional frameworks [21].

In high-union-density economies such as Germany and the Nordic countries, centralized bargaining systems have historically ensured coordinated wage increases aligned with productivity and inflation expectations. These mechanisms contributed to moderate inflation volatility and protected real incomes during cyclical downturns. During 2021–2022, coordinated bargaining in Germany resulted in wage agreements that preserved purchasing power while accommodating post-pandemic recovery dynamics [22].

In contrast, economies with fragmented or declining union presence—such as the United States and many parts of Latin America—exhibit dispersed and decentralized wage setting. This leads to greater heterogeneity in wage outcomes, weaker inflation pass-through, and limited institutional buffers for low-income or vulnerable workers. In such settings, wage gains often depend on localized labor shortages or firm-specific performance rather than systemic negotiations [23].

Trade unions also play a crucial role in non-wage compensation and cost-of-living adjustments. In some European countries, automatic indexation mechanisms—where wages are adjusted to reflect inflation—remain in force, though often capped or delayed to avoid inflationary spirals. Where such systems are absent or inactive, unions rely on political pressure and strike threats to negotiate inflation-linked increases [24].

Revitalizing collective bargaining frameworks can enhance wage responsiveness and stability, particularly if integrated with macroeconomic planning and productivity-based metrics. However, this requires institutional support, legal protections, and adaptability to evolving labor forms in the digital and informal economy.

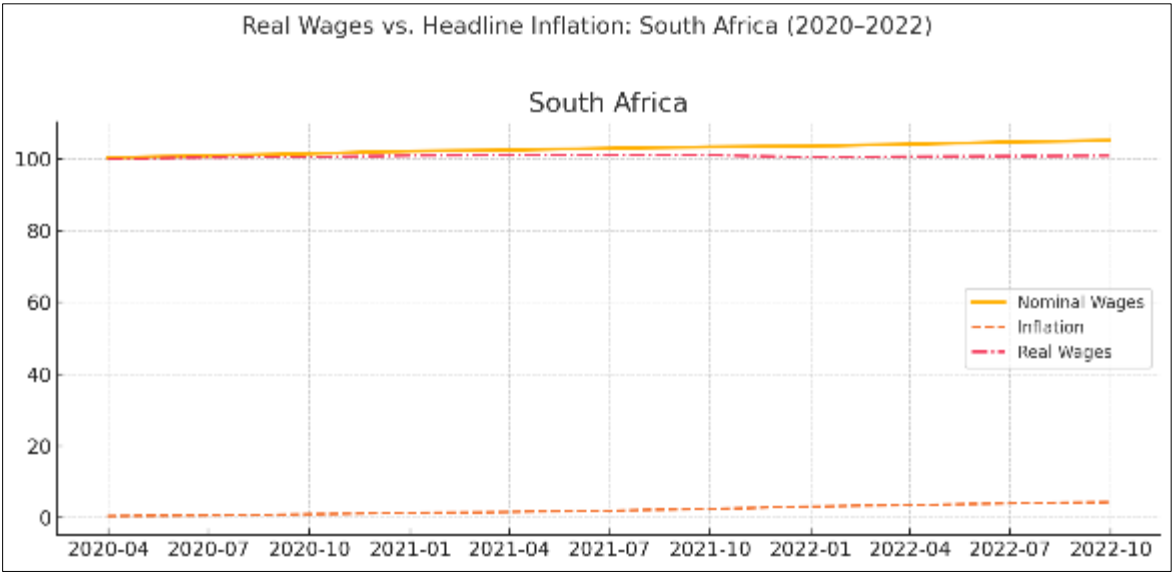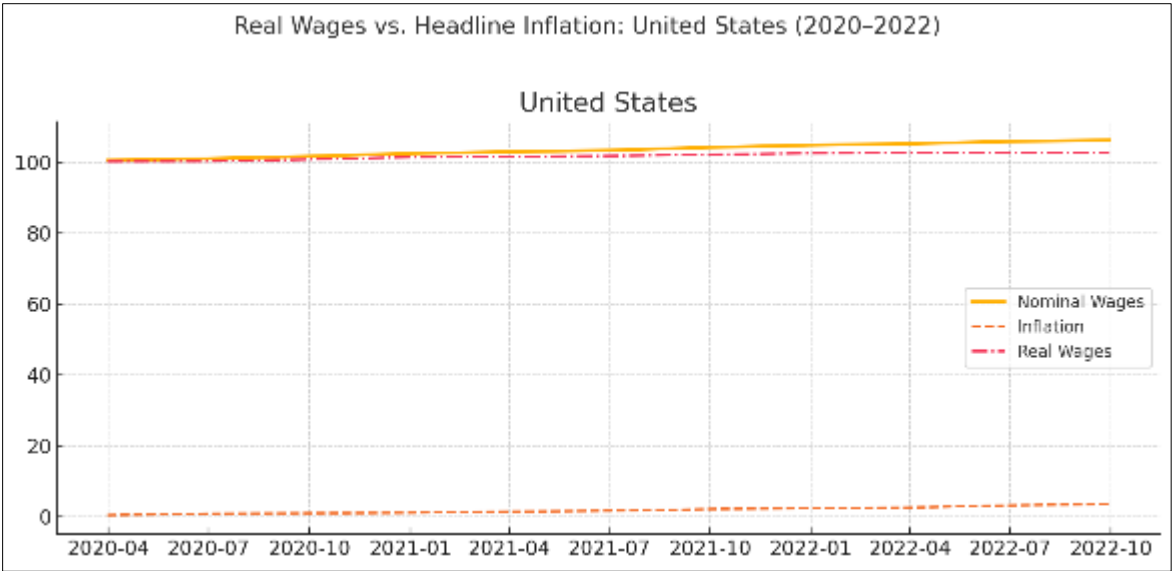## 4.4. Real Wage Growth and Household Purchasing Power

Real wage growth, defined as the difference between nominal wage increases and inflation, is a key determinant of household purchasing power and economic well-being. During inflationary periods, the gap between nominal wage adjustments and price levels can significantly erode living standards, especially for low- and middle-income households that spend a larger portion of their income on essentials [25].

Between 2020 and 2022, many economies experienced negative real wage growth, despite robust labor demand. In the United Kingdom and parts of the Eurozone, inflation outpaced wage settlements by 2–3 percentage points on average, resulting in reduced real income. In the United States, nominal wages rose in several sectors, but real gains were limited due to persistent core inflation in housing, healthcare, and energy [26].

Emerging markets were particularly affected. In South Africa, Brazil, and India, food and fuel inflation disproportionately impacted lower-income populations, where wages remained stagnant or declined in real terms. This not only constrained consumption but also amplified inequality, as wealthier households were better positioned to hedge against inflation through asset ownership or diversified income streams [27].

Figure 2 illustrates the divergence between real wages and headline inflation in selected economies between 2020 and 2022, underscoring the inflation-induced decline in purchasing power across income groups.

Restoring real wage growth requires coordinated policy action, including inflation control, labor market interventions, and targeted fiscal support. Without such measures, prolonged real income stagnation could dampen demand, exacerbate inequality, and undermine macroeconomic stability—especially in regions where consumption drives growth and social cohesion [28].
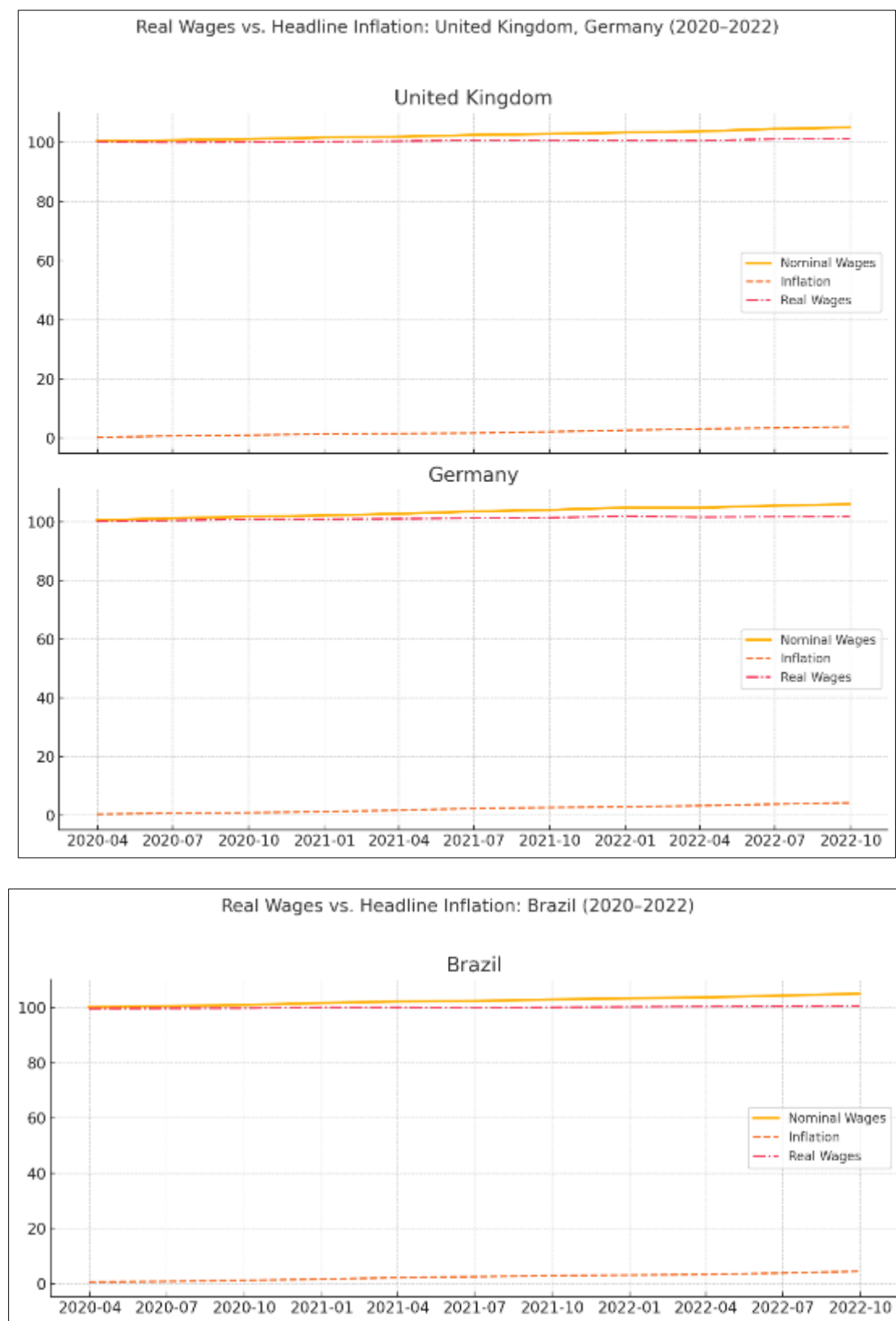
Figure 2 Real Wages vs. Headline Inflation in Selected Economies (2020–2022)
(Side-by-side time-series graphs for selected countries—e.g., US, UK, Brazil, Germany, South Africa—depicting average nominal wage growth, inflation rates, and resulting real wage changes over the 2020–2022 period.)

5. Aggregate demand and consumption behavior

5.1. Transmission Mechanisms: Income, Consumption, and Output

Wages play a central role in the transmission mechanism between labor markets and aggregate economic activity. As the primary income source for the majority of households, wages directly affect consumption—accounting for more than 60% of GDP in many advanced and emerging economies [12]. Increases in nominal or real wages typically lead to higher household disposable income, stimulating demand for goods and services, which in turn fuels production, investment, and job creation.

However, this transmission is not automatic and depends on several intervening variables. One key factor is the relative growth rate of wages compared to inflation. When real wages rise, purchasing power improves, encouraging households to increase discretionary spending and reduce savings. Conversely, if wage growth lags behind inflation, households may cut back on non-essential consumption to maintain essential expenditures, weakening demand-side support for economic recovery [13].

In early 2021, wage-led growth effects were observed in economies like the United States and Germany, where stimulus support and reopening dynamics temporarily boosted both wages and consumption. Retail sales and service-sector activity rebounded sharply, contributing to stronger-than-expected GDP prints in Q1 and Q2 2021 [14]. However, by Q3, accelerating inflation had begun to erode these real income gains, especially in fuel, food, and housing categories.

In emerging markets, wage transmission effects were more constrained. Limited fiscal space, weaker labor protections, and high informality reduced the scale and duration of income recovery. For instance, in India and South Africa, wage growth remained uneven across regions and sectors, tempering aggregate demand and slowing post-pandemic output restoration [15].

Thus, the effectiveness of wage-driven consumption growth hinges on the stability of inflation expectations, labor market resilience, and supportive policy environments capable of reinforcing positive income-consumption-output feedback loops.

5.2. Marginal Propensity to Consume Across Income Groups

The marginal propensity to consume (MPC)—the fraction of additional income spent on consumption—varies significantly across income groups, affecting how wage dynamics translate into aggregate demand. Lower-income households typically exhibit higher MPCs, spending a larger share of any income gain on immediate needs such as food, housing, and utilities. In contrast, wealthier households are more likely to save or invest marginal income, particularly when inflation or uncertainty is elevated [16].

This differential response means that wage increases at the lower end of the income distribution have a disproportionately strong effect on consumption. Empirical data from the U.S. and U.K. in 2021 showed that households in the bottom two income quintiles increased spending significantly when supported by wage growth and stimulus transfers, while top-income earners exhibited more restrained behavior, focusing on debt repayment or asset reallocation [17].

During the pandemic recovery phase—up to February 2022—targeted wage gains in retail, logistics, and healthcare (sectors with high concentrations of low-to-middle-income workers) were particularly effective in lifting consumption metrics. This was evident in rising durable and semi-durable goods purchases in the U.S. and Germany through late 2021 [18].

In emerging economies, where income inequality is more pronounced, the impact of wage trends on MPC was even more visible. In Brazil and Indonesia, wage rebounds among informal and low-skilled workers triggered sharp increases in food and transport expenditures, highlighting the importance of income-sensitive demand channels [19].

Policymakers aiming to maximize consumption-driven recovery must therefore consider distributional wage policies that enhance income at the base of the pyramid while maintaining price stability to preserve real consumption power.

5.3. Impact of Wage Dynamics on Durable vs. Non-durable Consumption

Wage changes also influence the composition of household consumption, particularly the balance between durable and non-durable goods. Non-durable items—such as food, fuel, and medicine—are essential and relatively inelastic in the short run. In contrast, durable goods—such as appliances, furniture, and vehicles—are discretionary and more responsive to perceived income security and borrowing conditions [20].

In the immediate post-lockdown period of 2021, rising wages in some sectors contributed to a rebound in durable goods consumption, particularly in advanced economies with stimulus support and accessible credit markets. The U.S. saw surges in home improvement spending, car purchases, and electronics sales, correlating with wage increases among middle-income and blue-collar workers [21].

However, by early 2022, as real wages came under pressure from inflation and energy prices, consumer behavior shifted. Households began prioritizing essential spending, deferring big-ticket purchases, and rebuilding precautionary balances. Retail data from Germany and the U.K. revealed declining durable goods sales in January–February 2022, even as non-durable expenditures remained steady due to necessity-driven spending [22].

In contrast, many emerging markets never experienced a strong rebound in durable goods demand due to limited wage recovery and constrained credit access. In India and South Africa, consumer durables remained below pre-pandemic levels through early 2022, while non-durable consumption dominated recovery trajectories, particularly in urban low-income segments [23].

These patterns suggest that durable goods recovery is contingent not just on wage trends, but also on broader confidence, financing availability, and inflation control. As real wages fluctuate, household allocation decisions reflect both present needs and future expectations, highlighting the macroeconomic significance of stable income and price environments.

5.4. Behavioral Expectations and Precautionary Saving

Behavioral responses to wage dynamics—particularly under conditions of uncertainty—often result in precautionary saving, dampening the expected multiplier effect of wage gains. Households facing volatile labor markets, inflation fears, or policy unpredictability are more likely to save windfalls rather than spend them, especially on non-essential items [24].

Table 2 Changes in Aggregate Consumption Composition Pre- and Post-Pandemic

Category	2019 Average Share	2021 Peak Share	Feb 2022 Share	Notable Trends
Food & Essentials	33%	38%	35%	Elevated due to wage compression and precautionary saving
Housing & Utilities	22%	23%	24%	Energy inflation drove up nominal expenditure
Transport	11%	8%	10%	Volatility in fuel prices affected demand recovery
Durable Goods	14%	18%	12%	Early rebound faded due to inflation and uncertainty
Services & Leisure	20%	13%	19%	Recovery resumed in late 2021 with labor market recovery

This behavior was evident during the pandemic recovery, where despite improving labor market conditions and nominal wage growth, household savings rates remained elevated in several advanced economies into early 2022. U.S. personal savings surged in 2020 and remained above pre-pandemic norms into February 2022, reflecting cautious sentiment amid inflation uncertainty and potential pandemic resurgence [25].

In Europe, similar patterns emerged. While nominal wages recovered in parts of the Eurozone, household surveys indicated persistent anxiety about future income stability, prompting conservative consumption behavior and a delay in large purchases [26].

In emerging economies, high inflation and limited social safety nets further amplified precautionary motives. In Nigeria and Indonesia, households shifted to cash savings and informal credit arrangements to buffer against price spikes and employment shocks, despite marginal wage recovery in late 2021 [27].

These findings underscore the psychological dimension of macroeconomic stabilization—highlighting that trust in policy, inflation control, and future earnings plays a crucial role in shaping consumption behavior, even when nominal wages appear to recover.

6. Empirical evidence and cross-country analysis

6.1. Methodology and Data Sources

This section uses a comparative case study approach to examine the relationship between inflation expectations, wage trends, and consumption recovery across three economies: the United States, Germany, and Brazil. These countries were selected based on their structural diversity, policy responses, and data availability. The analysis draws on a combination of macroeconomic indicators, household survey data, and official wage reports available up to February 2022 [16].

Key sources include the U.S. Bureau of Labor Statistics (BLS), the Federal Reserve Economic Data (FRED), Eurostat, Germany's Statistisches Bundesamt, Brazil's Instituto Brasileiro de Geografia e Estatística (IBGE), and national central bank communications. Household consumption data were obtained from national expenditure surveys and cross-validated with IMF and World Bank databases.

The methodology involves tracking monthly changes in headline inflation, nominal and real wage growth, and household consumption indicators, with a focus on short-term behavioral patterns post-pandemic. Inflation expectation data were extracted from survey-based projections (e.g., University of Michigan for the U.S., ZEW for Germany, and the Central Bank of Brazil's Focus survey).

This structured, cross-national lens facilitates a clearer understanding of how similar global inflationary pressures produced varying domestic outcomes depending on labor market rigidity, monetary policy stance, and income distribution [17].

6.2. Case Study 1: United States

In the United States, the period from early 2021 to February 2022 was characterized by sharp nominal wage growth, persistent inflation, and shifting household consumption behavior. Following large-scale fiscal stimulus programs and rapid labor market recovery, average hourly earnings increased by 4.9% year-on-year by December 2021 [18]. Sectors such as leisure, hospitality, and logistics led wage gains due to labor shortages and demand surges.

However, the pace of inflation outstripped wage growth, with headline CPI reaching 7.5% in January 2022—the highest in four decades. As a result, real wages contracted, especially in goods-dependent industries. This dynamic reduced purchasing power, triggering substitution effects and postponement of discretionary purchases in Q1 2022 [19].

Despite the erosion in real incomes, U.S. household consumption remained resilient through 2021, bolstered by accumulated savings, low interest rates, and expanded credit access. Durable goods consumption peaked in Q2 2021 before gradually declining as inflation expectations became more entrenched [20]. Survey data from the University of Michigan indicated that one-year-ahead inflation expectations rose from 3.2% in January 2021 to 4.9% in February 2022, contributing to increased precautionary saving behavior [21].

The Federal Reserve's signaling shift toward tightening in early 2022 aimed to anchor expectations, but the delayed policy response led to criticism that inflation psychology was already embedding in wage negotiations and consumer sentiment [22].

Overall, the U.S. case illustrates the tension between nominal wage gains and real consumption constraints, and the role of expectations in influencing post-pandemic recovery paths.

6.3. Case Study 2: Germany

Germany entered 2021 with strong fiscal buffers and labor market stability, supported by the Kurzarbeit wage subsidy program, which preserved employment during lockdowns. Nominal wage growth remained modest—at around 2.6% in 2021—reflecting coordinated wage negotiations and labor market discipline [23]. However, as global supply shocks intensified, inflation in Germany rose sharply, hitting 5.1% in January 2022, the highest level since reunification [24].

This led to a real wage contraction across sectors, particularly in retail and manufacturing. German unions adopted a cautious stance, avoiding aggressive wage demands to prevent triggering wage-price spirals. Yet public sector negotiations in late 2021 began reflecting inflation-linked adjustments, anticipating sustained price pressure through 2022 [25].

Consumption recovery in Germany was uneven. While goods consumption rebounded by mid-2021, service sector recovery lagged due to intermittent restrictions and consumer hesitancy. Household spending weakened in early 2022 as energy prices surged and expectations of further inflation spread. The ZEW Indicator of Economic Sentiment for February 2022 showed deteriorating consumer confidence, reflecting anxiety over heating costs and supply constraints [26].

Germany's inflation expectations—historically well-anchored—shifted moderately during the period. Market breakeven rates and survey responses both showed upward revisions, with one-year expectations reaching 3.7% in February 2022 [27].

Germany's experience reflects the influence of institutional wage restraint, a conservative fiscal approach, and stable, though gradually adjusting, expectations—yielding a relatively slow but orderly adjustment process in the face of imported inflationary pressures.

6.4. Case Study 3: Brazil

Brazil experienced one of the most volatile inflation-wage-consumption dynamics during 2021–February 2022. Headline inflation reached 10.5% year-on-year by December 2021, driven by currency depreciation, fuel price liberalization, and global supply chain issues. At the same time, nominal wage growth failed to keep pace, increasing only 4.5% on average during the year [28].

Real wages contracted steeply across all major income groups, particularly among informal and low-skilled workers. This led to a marked decline in household purchasing power, particularly in essential consumption categories. Data from IBGE showed falling real incomes in 2021's second half, with food insecurity rising in urban peripheries [29].

To curb inflation and stabilize expectations, Brazil's central bank raised interest rates aggressively—from 2% in March 2021 to 10.75% by February 2022 [34]. While this signaled monetary discipline, it also increased borrowing costs and dampened consumption financing, especially among middle-class households [30].

Inflation expectations deteriorated rapidly during this period. The Central Bank of Brazil's Focus survey recorded a rise in one-year-ahead inflation expectations from 3.4% in January 2021 to 5.5% by February 2022 [36]. The expectation of continued monetary tightening and limited fiscal maneuvering contributed to consumer caution and declining durable goods demand [31].

Brazil's case underscores how monetary credibility, currency stability, and institutional trust are essential in preserving the wage-consumption link. In the absence of broad-based nominal wage gains, high inflation can rapidly erode real incomes and consumption, particularly in economies with weaker social safety nets and informal labor dominance [35].

6.5. Cross-Country Patterns and Divergences

Across the three case studies, several commonalities and divergences emerge in the relationship between inflation expectations, wage trends, and consumption recovery up to February 2022.

A common pattern is the disconnect between nominal wage growth and inflation, resulting in real income losses in all three countries [37]. Despite differing labor market institutions, each economy faced difficulty in synchronizing wage dynamics with cost-of-living changes, particularly in the context of energy and food price spikes [32].

However, differences in institutional frameworks and policy responses shaped divergent outcomes. The U.S. showed high nominal wage growth with strong consumption early on, followed by inflation-induced erosion [38]. Germany prioritized inflation restraint and wage moderation, producing a delayed but measured adjustment. Brazil, in contrast, experienced early inflation acceleration with weak nominal wage response, leading to pronounced consumption decline and widened inequality [33].

Expectations played a critical role in all cases. In the U.S., delayed policy adjustment eroded confidence. Germany's cautious communication preserved relative stability. Brazil's rapid inflation expectation de-anchoring triggered procyclical tightening and suppressed spending.

Table 3 summarizes these cross-country dynamics, providing comparative insights on how wage-inflation-consumption interactions evolved across distinct institutional and macroeconomic environments through February 2022 [39].

Table 3 Cross-National Comparison of Inflation Expectations, Wage Trends, and Consumption Recovery (2021–2022)

Country	Avg. Nominal Wage Growth (%)	Inflation (Feb 2022, % YoY)	Real Wage Change (%)	Inflation Expectations (1-yr ahead)	Consumption Trend
United States	4.9	7.5	–2.6	4.9	Strong early recovery, later softening
Germany	2.6	5.1	–2.5	3.7	Steady recovery, cautious optimism
Brazil	4.5	10.5	–6.0	5.5	Initial rebound, sharp late decline

7. Policy implications and strategic recommendations

7.1. Monetary Policy Considerations: Anchoring Expectations

Maintaining well-anchored inflation expectations is a central objective of monetary policy, especially during periods of wage-price misalignment. From 2021 through February 2022, central banks in both advanced and emerging economies faced the challenge of responding to inflationary pressures without derailing fragile recoveries. The timing and communication of monetary adjustments were critical in determining how expectations evolved [20].

In advanced economies, central banks such as the U.S. Federal Reserve and the European Central Bank initially treated inflation as "transitory," delaying rate hikes to support employment and investment. However, as inflation persisted and spread across sectors, expectations began drifting upward. For instance, in the United States, market-based and household inflation forecasts reached decade highs by January 2022, raising the risk of embedded inflationary behavior [21].

To address this, central banks began shifting toward data-dependent tightening. Forward guidance was recalibrated, and rate normalization plans were announced to preempt a loss of policy credibility. The U.S. Fed signaled multiple rate hikes beginning in March 2022, attempting to realign expectations without triggering a hard landing [22].

In emerging economies like Brazil, monetary authorities acted earlier and more aggressively, raising interest rates throughout 2021. While this helped stabilize expectations, it also curtailed credit flows and weakened consumption, particularly among lower-income households [23].

Going forward, monetary policy must strike a balance between credibility and flexibility—tightening policy decisively where expectations drift, while retaining scope to adjust based on labor and consumption responses.

7.2. Fiscal Policy Design: Targeting Income and Demand Stimulus

During the initial pandemic phase and early recovery through February 2022, fiscal policy played a critical role in stabilizing household income and supporting demand. However, as inflation pressures emerged, fiscal policy faced renewed scrutiny regarding its inflationary impact and targeting effectiveness [24].

Well-designed fiscal stimulus—particularly through wage subsidies, cash transfers, and public investment—helped offset wage losses and maintained consumption in countries like the U.S. and Germany. In the U.S., direct transfers

through the American Rescue Plan temporarily boosted household incomes, supporting a strong rebound in goods demand during 2021. Yet, as inflation rose and stimulus effects waned, consumption momentum weakened by early 2022 [25].

In Germany, automatic stabilizers and short-time work schemes cushioned employment without excessive spending, providing a non-inflationary stimulus that preserved real incomes. This contrasts with Brazil, where fiscal policy was constrained by debt limits, and income transfers failed to fully offset inflation's impact on poor households [26].

Future fiscal strategies must shift from broad-based spending to targeted support, especially for vulnerable populations facing real wage erosion. Temporary consumption vouchers, targeted food subsidies, or conditional cash programs can enhance policy precision without fueling generalized inflation [27].

Moreover, fiscal-monetary coordination is essential to avoid conflicting signals. As central banks tighten, fiscal policy should complement the adjustment by preserving demand in strategic sectors—like health, energy, and digital inclusion—rather than reinforcing aggregate inflationary pressure.

7.3. Coordinated Wage Guidelines and Social Dialogue

Wage formation is increasingly recognized as a policy-relevant channel in navigating post-pandemic macroeconomic adjustments. Between 2021 and February 2022, many economies faced the dilemma of stagnant or declining real wages despite tight labor markets and high inflation. This mismatch triggered renewed debates about wage-setting coordination and institutional support [28].

In coordinated systems like Germany and the Netherlands, wage moderation through social dialogue helped prevent wage-price spirals. Although real wages fell, tripartite negotiations provided avenues for future adjustments linked to productivity or sectoral profitability. These arrangements also built in provisions for automatic indexation in critical sectors like transportation and healthcare, limiting labor unrest while anchoring inflation [29].

In contrast, fragmented labor markets—such as those in the U.S. and Brazil—lacked such mechanisms. Wage gains were distributed unevenly, with bargaining concentrated in high-demand sectors, while large portions of the workforce faced stagnating nominal wages. The absence of centralized negotiation platforms weakened the policy transmission channel and reduced social protection [30].

Table 4 Integrated Policy Matrix Balancing Inflation, Wage Growth, and Demand Support

Policy Domain / Objective	Anchoring Expectations	Supporting Real Incomes	Sustaining Consumption
Monetary Policy	Data-driven interest rate adjustments	Exchange rate stabilization to preserve purchasing power	Liquidity support for credit access (e.g., SME lending facilities)
Fiscal Policy	Transparent fiscal signaling and debt management	Targeted wage subsidies and income transfers	Automatic stabilizers (e.g., unemployment benefits, food assistance)
Labor & Wage Policy	Inflation-indexed collective bargaining guidance	Minimum wage adjustments based on inflation trends	Sectoral wage compacts to boost consumption in low-income segments

Coordinated wage guidelines, especially when linked to inflation forecasts and productivity metrics, offer a middle ground between rigid indexation and decentralized bargaining. These frameworks can be institutionalized through wage councils, public-private task forces, or regional compacts involving employers, unions, and governments [31].

Table 4 presents an integrated policy matrix combining monetary, fiscal, and wage interventions to support balanced recovery. It highlights how each lever can be adjusted to stabilize inflation expectations, protect real incomes, and sustain demand without exacerbating macroeconomic volatility.

By strengthening wage policy frameworks and promoting inclusive social dialogue, governments can enhance labor market resilience and ensure that macroeconomic adjustments are equitable, sustainable, and growth-supportive.

8. Conclusion

8.1. Recap of Key Findings

This analysis has explored the complex interplay between wage trends, inflation expectations, and consumption patterns during the post-pandemic recovery period, focusing on developments up to February 2022. Through macroeconomic theory, empirical data, and cross-national comparisons, several important findings emerge.

First, real wage erosion was a widespread phenomenon across both advanced and emerging economies. Although nominal wage growth resumed in many sectors following the initial COVID-19 shock, it often lagged behind rapidly accelerating inflation. This divergence weakened household purchasing power and disrupted the traditional transmission from income to consumption, particularly for low- and middle-income groups.

Second, inflation expectations became a central determinant of economic behavior. As inflation persisted throughout 2021, households and firms began adjusting spending and pricing decisions based not only on current price levels but also on anticipated future changes. Where expectations became unanchored—especially in the absence of timely monetary responses—precautionary behavior intensified, leading to higher savings, delayed purchases, and muted investment.

Third, the nature of wage setting institutions significantly influenced macroeconomic outcomes. Economies with strong social dialogue mechanisms and coordinated bargaining—such as Germany—were better positioned to manage inflationary pressures without triggering wage-price spirals. In contrast, more fragmented systems, including Brazil and the U.S., experienced uneven wage gains and higher volatility in consumption responses.

Fourth, consumption recovery trajectories were shaped not only by wage trends but also by the structure of fiscal and monetary support. Well-targeted income support programs sustained demand early in the recovery, but their withdrawal—combined with persistent inflation—led to consumption fatigue in late 2021 and early 2022. Durable goods consumption in particular declined, while spending on essentials remained resilient but limited in real terms.

Lastly, policy coordination emerged as a critical success factor. Countries that integrated monetary discipline, fiscal targeting, and wage policy coherence achieved more balanced outcomes, preserving economic momentum without compounding inflation risks. These findings suggest that resilient recoveries depend on aligning institutional, behavioral, and macroeconomic levers in a coordinated and adaptive framework.

8.2. Final Thoughts on Recovery Pathways and Economic Resilience

As the world economy transitions from pandemic stabilization to long-term recovery, the path forward must prioritize both resilience and inclusivity. The experience of 2021–2022 underscored that macroeconomic adjustments are not merely technical exercises—they shape real livelihoods, business confidence, and social cohesion.

Going forward, policymakers must continue to balance the imperative of controlling inflation with the equally urgent task of protecting real incomes. Wage policy will play a central role—not only in ensuring fairness but in restoring demand fundamentals. Encouraging responsible wage growth through coordinated mechanisms can support consumption without reigniting inflationary cycles.

Monetary policy, too, must remain flexible and transparent. Restoring credibility requires clear signaling, timely action, and a willingness to adjust as conditions evolve. Equally, fiscal policy should remain agile—focusing on strategic public investment, targeted transfers, and automatic stabilizers that respond to income gaps in real time.

Economic resilience also depends on institutional strength. Countries with robust labor market frameworks, social dialogue structures, and digital infrastructure were better able to absorb shocks and pivot toward recovery. Strengthening these foundations will be essential for managing future disruptions, whether from geopolitical instability, climate volatility, or technological transformation.

Ultimately, the post-pandemic moment presents an opportunity to rethink conventional macroeconomic approaches. Rather than returning to pre-crisis baselines, recovery strategies should aim for systems that are more adaptive, equitable, and forward-looking—capable not only of absorbing shocks but of transforming them into drivers of long-term, inclusive growth.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

References

[1]   Baccaro L, Pontusson J. Rethinking comparative political economy: the growth model perspective. Politics & society. 2016 Jun;44(2):175-207.

[2]   Ha J, Kose MA, Ohnsorge F. Inflation during the pandemic: What happened? What is next?.

[3]   Altunyan A, Kotcofana T, Titova A. Stabilization policy of the state in the post-pandemic period. InSHS Web of Conferences 2021 (Vol. 129, p. 01001). EDP Sciences.

[4]   Sharma D, Bouchaud JP, Gualdi S, Tarzia M, Zamponi F. V–, U–, L–or W–shaped economic recovery after Covid-19: Insights from an Agent Based Model. PloS one. 2021 Mar 2;16(3):e0247823.

[5]   Weinstock LR. The Post-Pandemic Labor Market and Rising Inflation. Congressional Research Service (CRS) Reports and Issue Briefs. 2021 Nov 1:NA-.

[6]   Cavallo EA, Powell A. 2021 Latin American and Caribbean Macroeconomic Report: Opportunities for Stronger and Sustainable Postpandemic Growth.

[7]   Song L, Zhou Y. The COVID-19 pandemic and its impact on the global economy: what does it take to turn crisis into opportunity?. China & World Economy. 2020 Jul;28(4):1-25.

[8]   Barbosa-Filho NH, Izurieta A. The risk of a second wave of post-crisis frailty in the world economy. International Journal of Political Economy. 2020 Nov 23;49(4):278-303.

[9]   Mlinarević P. ROLE OF FISCAL POLICY IN STIMULATING THE ECONOMIC RECOVERY OF THE WESTERN BALKAN COUNTRIES. Zbornik radova Ekonomskog fakulteta u Istočnom Sarajevu. 2021(23):11-20.

[10]   Barua S. Understanding Coronanomics: The economic implications of the coronavirus (COVID-19) pandemic.

[11]   Mihaljek D. Interactions between fiscal and monetary policies: a brief history of a long relationship. Public Sector Economics. 2021 Dec 6;45(4):419-32.

[12]   Williams M, Yussuf M, Yussuf M, Olukoya A. Machine learning for proactive cybersecurity risk analysis and fraud prevention in digital finance ecosystems. Int J Eng Technol Manag Sci. 2021 Dec;5(12):160. doi: 10.5281/zenodo.14735561.

[13]   Cottarelli C. Euro Area fiscal policies and capacity in post-pandemic times. IN-DEPTH ANALYSIS Requested by the ECON committee. 2021.

[14]   Bonatti L, Fracasso A, Tamborini R. Monetary and Fiscal Spillovers Across the Atlantic: The Role of Financial Markets. Università degli studi di Trento, Dipartimento di economia e management; 2021 Jun 8.

[15]   Solorza M. Responsible fiscal policy and Economic Development: A challenge for Latin America after COVID-19. International Journal of Political Economy. 2021 Jul 3;50(3):198-211.

[16]   Benigno P, Canofari P, Messori M. The implementation and rationale of the ECB's new inflation target. IN-DEPTH ANALYSIS. 2021;695.

[17]   Yeyati EL, Valdés R. COVID-19 in Latin America: How is it different than in advanced economies. COVID-19 in developing economies. 2020;100.

[18]   Chiu IH, Kokkinis A, Miglionico A. Addressing the challenges of post-pandemic debt management in the consumer and SME sectors: a proposal for the roles of UK financial regulators. Journal of Banking Regulation. 2021 Oct 26;23(4):439.

[19]   Hetzel RL. Will the pandemic bulge in money cause high inflation?. Turkish Economic Review. 2021;8(4):144-61.

[20]   Wei X, Han L. The impact of COVID-19 pandemic on transmission of monetary policy to financial markets. International Review of Financial Analysis. 2021 Mar 1;74:101705.

[21]   Botta A, Caverzasi E, Russo A. Fighting the COVID-19 crisis: Debt monétisation and EU recovery bonds. Intereconomics. 2020 Jul;55:239-44.

[22]   Açikgöz Ö, Günay A. The early impact of the Covid-19 pandemic on the global and Turkish economy. Turkish journal of medical sciences. 2020;50(9):520-6.

[23]   Addison T, Sen K, Tarp F. COVID-19: Macroeconomic dimensions in the developing world. WIDER Working Paper; 2020.

[24]   Chapter IG. UK economic outlook: the future isn't what it used to be. The Institute for Fiscal Studies. 2021 Oct.

[25]   Powell JH. Opening remarks: Monetary policy in the time of COVID. InFederal Reserve Bank of Kansas City, Macroeconomic Policy in an Uneven Economy, Symposium 2021 (pp. 1-15).

[26]   Debrun X, Masuch K, Vansteenkiste I, Ferdinandusse M, von Thadden L, Hauptmeier S, Alloza M, Bańkowski K, Semeano JD, Eisenschmidt J, Bletzinger T. Monetary-fiscal policy interactions in the euro area.

[27]   Bonatti L, Fracasso A, Tamborini R. Is High Inflation the New Challenge for Central Banks?.

[28]   Stern N, Zenghelis D. Fiscal responsibility in advanced economies through investment for economic recovery from the COVID-19 pandemic. Grantham Research Institute on Climate Change and the Environment, London. 2021 Mar.

[29]   Karr J, Loh K, San Andres E. COVID-19, 4IR and the Future of Work. APEC Policy Support Unit Brief No. 2020 Jun 5;34.

[30]   Alpert D. Inflation in the 21st Century: Taking down the inflationary straw man of the 1970s.

[31]   Outlook RE. The European Recovery: Policy Recalibration and Sectoral Reallocation.

[32]   Didier T, Huneeus F, Larrain M, Schmukler SL. Financing firms in hibernation during the COVID-19 pandemic. Journal of Financial Stability. 2021 Jan 7;53:100837.

[33]   Hartmann P, Schepens G. Beyond the pandemic: the future of monetary policy-takeaways from the ECB's online Sintra Forum. Beyond the pandemic: the future of monetary policy.:5.

[34]   Koester G, Lis E, Nickel C, Osbat C, Smets F. Understanding low inflation in the euro area from 2013 to 2019: cyclical and structural drivers. ECB Occasional Paper. 2021 Sep(2021280).

[35]   Worth J, Faulkner-Ellis H. Teacher Labour Market in England: Annual Report 2021. National Foundation for Educational Research. 2021 Mar.

[36]   Hwang Y, Immormino J, Steinback GI. Purchasing Power to the People: An Agent-Based Simulation of Pandemic Economic Recovery. InProceedings of the 2020 Conference of The Computational Social Science Society of the Americas 2021 (pp. 87-112). Springer International Publishing.

[37]   Seccareccia M. What is full employment? A historical-institutional analysis of a changing concept and its policy relevance for the twenty-first century post-COVID-19 economies. Journal of Economic Issues. 2021 Apr 3;55(2):539-51.

[38]   Hetzel RL. A quantity theory framework for thinking about monetary policy. Turkish Economic Review. 2021;8(3):77-96.

[39]   Elliott RJ, Schumacher I, Withagen C. Suggestions for a Covid-19 post-pandemic research agenda in environmental economics. Environmental and Resource Economics. 2020 Aug;76:1187-213