The Impact of Monetary Connectivity: From Single Currency to Economic Growth

Yeremia Nicolaus Widjanarko
Universitas Airlangga

Abstract

This research investigated the impact of the adoption of the Euro as a single currency in the European region (Eurozone) on transaction costs, consumption, investment, and economic growth. By combining monetary transmission theory, empirical data analysis, and case studies, this research revealed mechanisms that linked the single currency to increased economic activity and growth in the Eurozone. The results showed that the elimination of currency conversion costs, exchange rate uncertainties, and foreign currency risks had reduced transaction costs, encouraged cross-border trade, investment, and economic integration. The increase in transaction volume and value reflected an increase in household consumption, which in turn drove production, innovation, and further investment. The stability and confidence created by the European Central Bank and positive market expectations had contributed to sustained economic growth, as reflected in trend of the Eurozone's gross domestic product (GDP). This research highlighted the transformative role of single currency system in promoting prosperity and economic stability across all member states.

Keywords: *Economic Growth, Euro, Eurozone, Monetary Connectivity, Monetary Transmission.*

Abstrak

Penelitian ini menyelidiki dampak dari adopsi Euro sebagai mata uang tunggal di kawasan Eropa (Eurozone) terhadap biaya transaksi, konsumsi, investasi, dan pertumbuhan ekonomi. Dengan menggabungkan teori transmisi moneter, analisis data empiris, dan juga studi kasus, penelitian ini mengungkap bahwa mekanisme yang menghubungkan mata uang tunggal dengan peningkatan aktivitas ekonomi dan pertumbuhan di Eurozone. Hasil riset menunjukkan bahwa penghapusan biaya konversi mata uang, ketidakpastian nilai tukar, dan risiko valuta asing telah menurunkan biaya transaksi, mendorong perdagangan lintas batas, investasi, dan integrasi ekonomi. Peningkatan volume dan nilai transaksi mencerminkan peningkatan konsumsi rumah tangga, yang pada gilirannya mendorong produksi, inovasi, dan investasi lebih lanjut. Stabilitas dan kepercayaan yang diciptakan oleh Bank Sentral Eropa serta ekspektasi pasar yang positif telah berkontribusi pada pertumbuhan ekonomi yang berkelanjutan, seperti yang tercermin dalam tren produk domestik bruto (PDB) Eurozone. Penelitian ini menyoroti peran transformatif dari sistem mata uang tunggal dalam mendorong kemakmuran dan stabilitas ekonomi di seluruh negara anggota.

Kata Kunci: *Euro, Eurozone, Konektivitas Moneter, Pertumbuhan Ekonomi, Transmisi Moneter.*

Introduction

The adoption of a single currency within an economic region represents a monumental undertaking with profound and far-reaching implications for the participating states. The European Union's historic decision to introduce the Euro as a unified currency in 1999 marked a pivotal moment in the journey towards greater economic integration and cohesion among its member states. This momentous step was driven by a multitude of factors, including the pursuit of economic stability, the facilitation of cross-border trade and investment, and the fostering of closer regional ties (De Grauwe 2013; Frieden & Walter 2017). However, the true impact of this single currency on monetary connectivity and economic growth within the Eurozone remains a subject of ongoing inquiry and debate, warranting in-depth examination from multiple perspectives. On one hand, proponents argue that the elimination of currency conversion costs, exchange rate uncertainties, and currency risks has the potential to significantly reduce transaction costs, thereby encouraging cross-border economic activities and stimulating growth (Angeloni & Ehrmann 2003; Boivin et al. 2008). Conversely, critics contend that the loss of monetary policy autonomy and the constraints imposed by the single currency could hinder individual countries' ability to respond effectively to economic shocks and potentially exacerbate regional disparities (Krugman 2013; Stiglitz 2018). At the core of this discourse lies the intricate interplay between monetary policy decisions, consumer behavior, investment patterns, and overall economic performance – a nexus that finds its theoretical underpinnings in the Monetary Transmission Theory (Cecchetti 1994; Benhabib & Farmer 2000). This theory elucidates the mechanisms through which changes in central bank policies, such as interest rate adjustments and money supply decisions, influence various economic variables and ultimately impact economic growth, inflation, employment, and other macroeconomic indicators.

Navigating this complex landscape requires a multidimensional approach that synthesizes theoretical frameworks, empirical data analysis, and real-world case studies. By delving into the experiences of businesses, consumers, and investors operating within the Eurozone, this research aims to shed light on the intricate mechanisms through which the adoption of the Euro has shaped monetary connectivity, consumption patterns, and, ultimately, economic growth across the region. Furthermore, the investigation into the Eurozone's single currency holds significant implications that extend beyond the confines of this economic bloc. As other regions contemplating monetary integration closely observe the Eurozone's evolution, the lessons learned from this pioneering endeavor could inform policy decisions and guide future strategies for fostering sustainable economic development on a global scale. In this context, the present study seeks to contribute to the ongoing discourse by providing a comprehensive analysis of the impact

of the Euro's adoption on transaction costs, consumption, investment, and economic growth within the Eurozone. By triangulating multiple data sources, theoretical frameworks, and real-world perspectives, this research endeavors to disentangle the complex interplay between monetary connectivity, transaction patterns, consumption behaviors, and economic growth within this unique economic region.

Literature Review

The literature on the Eurozone's single currency and its implications for monetary connectivity and economic growth was multifaceted and evolving. Several studies explored the rationale behind the formation of the Eurozone, highlighting the objectives of enhancing economic stability, promoting price stability, increasing trade and investment, and fostering a far deeper economic integration (Juneja 2017; Mika & Zymek 2018; Vaidere 2014). These studies underscored the potential benefits of a single currency in eliminating currency barriers, creating a larger market, and enabling more efficient resource allocation. Empirical research delved into the impact of the Euro on various economic indicators within the Eurozone. Firtescu et al. (2020) and Tampakoudis et al. (2012) examined the role of transaction as indicators of consumption, highlighting their significance in driving production, innovation, and investment activities. Their findings suggested that the reduction in transaction costs facilitated by the single currency could stimulate economic growth through increased consumption and subsequent economic activities. Nano Georgiou (2020) and Raleva (2020) further explored multiplier effect of transactions, illustrating how increased consumer spending could generate income and spur activities across various sectors, contributing to overall economic growth. These studies underscored the interconnectedness of economic activities within the Eurozone and the potential for the single currency to amplify these linkages.

Several studies also had investigated the impact of the single currency on specific economic variables, such as household consumption and government spending. European Central Bank (2024) reports tracked household consumption patterns within the Eurozone, indicating a steady increase in consumption levels, potentially attributable to the stability and confidence generated by the single currency system. Additionally, studies analyzed the relationship between government spending ratios and economic growth within the Eurozone, highlighting the role of fiscal policies in supporting economic activities (European Central Bank 2024). Micco et al. (2003) examined the trade effects of the Euro, finding that the single currency had increased trade among Eurozone members by approximately 8-16% in the first four years. This increase in trade activities

was attributed to the reduction in transaction costs and the elimination of exchange rate uncertainties, which facilitated cross-border economic integration. Alesina et al. (2002) explored the relationship between currency unions and economic growth, using a panel of countries over several decades. Their findings suggested that currency unions had a positive impact on trade and income levels, particularly for smaller and poorer economies, as they benefited from increased trade and financial integration with larger economies within the union.

Frankel and Rose (2002) investigated endogeneity of optimum currency area (OCA) criteria, suggesting that countries could potentially meet the criteria for a successful currency union ex-post, even if they did not initially satisfy the criteria ex-ante. Their study provided insights into the potential for currency unions to shape economic structures and foster convergence among member states over time. De Sousa and Lochard (2011) analyzed the impact of the Euro on financial markets, concluding that the single currency had contributed to the development of a more integrated and liquid financial market within the Eurozone. This integration facilitated capital flows, risk-sharing, and the efficient allocation of resources, which could stimulate investment and economic growth. Baldwin and Wyplosz (2009) explored the role of the Euro in the context of the 2008-2009 global financial crisis. They argued that the Eurozone's single currency and the institutional framework provided by the European Central Bank had played a crucial role in mitigating the impact of the crisis on member states, fostering greater economic resilience compared to non-Eurozone countries. While the literature provided valuable insights into the theoretical and empirical aspects of the Eurozone's single currency, there was a need for further research to disentangle the complex interplay between monetary connectivity, transaction patterns, consumption behaviors, and economic growth within this unique economic region.

Methodology

This study employed a qualitative explanational method to investigate the impact of adoption of the Euro as a single currency on transaction costs, consumption, investment, and economic growth in the Eurozone. The objectives of this study were (1) to investigate the impact of the Euro adoption on the volume and value of transactions, consumption, and economic growth; (2) to analyze how the Euro, as a single currency, catalyzed consumption, which resulted in economic growth within the Eurozone; (3) to draw relationship between transaction volumes and value, consumption levels, and economic growth of the Eurozone member states. This study uses primary data obtained from the official ECB website and various government agencies of Eurozone member states that discuss

Euro adoption and monetary policy. Additionally, it gathers information from secondary sources such as books, academic papers, and proceedings that explain monetary transmission theory, economic integration, and case studies from businesses, consumers, and investors highlighting their experiences in the Eurozone. The analysis of this study employs content analysis of policy documents and academic literature to identify key themes and perspectives related to Euro adoption, monetary transmission theory, and economic integration (Yin 2018; Hsieh and Shannon 2005). Moreover, it employs thematic analysis of case studies and narratives to explore the experiences and perceptions of businesses, consumers, and investors operating within the Eurozone (Yin 2018; Hsieh and Shannon 2005). The findings provide insights into mechanisms, policies, and perceptions that shape the impact of the Euro on transaction costs, consumption patterns, and economic growth within the Eurozone. The methodology provides a framework for holistic, contextualized comparison that illuminates their political-economic roles in the global development finance landscape.

Theoretical Framework: Monetary Transmission Theory

The monetary transmission theory refers to the mechanisms through which monetary policy or decisions, particularly those related to interest rates and money supply, impact the whole economy. This theory is crucial in understanding how changes in monetary policy by central banks within one economic region can influence various economic variables, then ultimately affect economic growth, inflation, employment, and other macroeconomic indicators (Cecchetti 1994). There are several channels related to monetary transmission. Firstly, the interest rate channel involves central banks such as the European Central Bank changing their policy interest rates (e.g., the main refinancing rate), directly influencing borrowing costs for households, businesses, and governments. Lower interest rates incentivize borrowing and spending, leading to increased consumption, investment, and other economic activities, while higher interest rates can dampen these effects (Benhabib and Farmer, 2000; Romer et al. 1990). Secondly, the credit channel operates by lower interest rates encouraging banks to lend more as borrowing becomes cheaper, resulting in increased credit creation and liquidity in the states' financial system, stimulating spending and investment (Cecchetti 1994; Benhabib and Farmer 2000). Thirdly, the asset price channel shows how monetary policy can influence asset prices such as stocks, real estate, and bond yields. Changes in interest rates affect the discount rates used to value assets, leading to price changes. For instance, lower interest rates can boost asset prices as investors seek higher returns, leading to generate wealth effects that stimulate consumption and investment, while higher interest rates can lead to lower asset prices, impacting consumer and investor confidence (Romer et al., 1990; Tobin, 1978).

Fourthly, the exchange rate channel demonstrates how lower interest rates can lead to a depreciation of the currency, making exports more competitive and boosting exports, whereas higher interest rates can lead to currency appreciation, impacting exports and imports (Benhabib and Farmer 2000; Romer et al. 1990). Fifthly, the expectations channel emphasizes the role of market or consumers' expectations in the transmission of monetary policy. Central banks' credibility and communication capability are vital in shaping expectations about future interest rate movements, inflation, and economic condition as a whole. Positive expectations can amplify the impact of monetary policy actions, while negative or uncertain expectations can mitigate their effectiveness (Cecchetti 1994; Benhabib and Farmer 2000). Finally, the balance sheet channel illustrates how changes in monetary policy can affect the balance sheets of households, businesses, and financial institutions. Lower interest rates can reduce debt-servicing costs for borrowers, improve corporate profitability, and strengthen bank balance sheets, supporting lending, investment, and economic growth (Romer et al. 1990; Tobin 1978).

Explaining monetary connectivity manifested through the implementation of a regional single currency such as the Euro, the monetary transmission theory believed that it made the cost of transactions lower. The adoption of the Euro as a single currency within the Eurozone eliminates currency conversion costs, exchange rate uncertainties, and also currency risk for businesses and consumers. This reduction encourages cross-border trade, investment, and economic integration, leading to increased consumption of goods and services produced within the Eurozone (Angeloni and Ehrmann 2003; Boivin et al. 2008). It also enhances market integration where, with a single currency, market participants can easily compare prices, access a larger market, and engage in more transactions across borders without worries of facing currency exchange barriers. This enhanced market integration fosters competition, improves market efficiency, and expands market opportunities, encouraging higher levels of consumption (Cecioni and Neri 2011; Peersman and Smets 2003). Then the single currency creates stability and confidence. The Eurozone's single currency is backed by a centralized monetary authority, the European Central Bank (ECB), which aims to maintain price stability and economic growth. The credibility, stability, and predictability associated with the Euro instill confidence among consumers, businesses, and investors, encouraging spending, investment, and economic expansion (Peersman and Smets 2003; Angeloni and Ehrmann 2003). At the same time, it makes possible for Eurozone state members to benefit from a coordinated monetary policy across member states, ensuring a harmonized approach to interest rates, money supply, and financial stability. This coordination contributes to more stable inflation expectations, reduced interest rate differentials, and also to more predictable monetary conditions, supporting consumption

and investment decisions (Peersman and Smets 2003; Angeloni and Ehrmann 2003). Finally, the single currency becomes the facilitator of capital flows, allowing for efficient allocation of resources, investment diversification, and risk-sharing among member states. This facilitates investment in productive sectors, infrastructure projects, and innovation, which contributes to long-term economic growth and improved GDP performance (Angeloni and Ehrmann 2003; Boivin et al. 2008).

Result

Data 1:Euro as the single regional currency

The Eurozone referred to 19 member states of the European Union that officially adopted the Euro as the single currency. All these states integrated their economies and monetary policies under the auspices of the European Central Bank (Iversen et al. 2016; De Grauwe 2013). There were several key characteristics of the Eurozone, namely (1) Single Currency. The Euro became the only valid currency for transactions within the Eurozone. This simplified trade and capital movement among these 19 states (Frieden and Walter 2017; Iversen et al. 2016); (2) Centralized Monetary Policy. European Central Bank was responsible for determining the monetary policies applicable across the states under the Eurozone, including policies related to interest rates and the amount of money in circulation (Frieden and Walter, 2017; Iversen et al., 2016); (3) Single Market. The Eurozone had a single market for goods, services, capital, and labor. This enabled greater economic mobility and created new economic opportunities for both businesses and individuals (De Grauwe 2013; Frieden and Walter 2017); (4) Synergistic Economic Governance. States under the Eurozone umbrella were required to comply with strict convergence criteria to maintain economic stability and sustainability of the Euro (De Grauwe 2013; Frieden and Walter 2017).

According to various studies on its origins, the Eurozone was formed with the aim of enhancing economic stability, manifested in efforts to promote price stability, interest rate stability, and strengthen economic resilience against external shocks (Juneja 2017; Mika and Zymek 2018; Vaidere 2014). Subsequently, this economic zone was also intended to foster increased trade and investment through a single currency that eliminated currency barriers and created a larger market, thus facilitating both activities among the 19 member states (Juneja 2017; Mika and Zymek 2018; Vaidere 2014). Finally, the Eurozone was also established to allow these states to synergize through economic integration, which also became their collective identity in international economic-political dynamics

(Juneja 2017; Mika and Zyme, 2018; Vaidere 2014). Through the Eurozone, the 19 states under this integration could transact more efficiently with a much lower costs because currency conversion costs had been eliminated. Additionally, price indices in Eurozone market became more transparent and easily comparable among member states, which could enhance competition and enable consumers to get the best offers from the market (Juneja 2017; Mika and Zymek 2018; Vaidere 2014). At the macro level, the Eurozone could also attract greater trade and investment, which could eventually translate into economic growth. This integration also allowed all of these 19 states under it to achieve economic stability through centrally designed economic policies based on some strict convergence (Juneja 2017; Mika and Zymek 2018; Vaidere 2014).

Data 2: Transaction, Consumption and Economic Growth

Transactions in the economy were activities that included the purchase and sale of goods and services between individuals, corporations, and state governments. Transactions could involve payment with cash, electronic transfers, or exchange of other assets, and their role was crucial in representing consumption, which was a vital part of economic growth through several mechanisms (Firtescu et al. 2020). Firstly, transactions acted as consumption indicators. Every economic transaction, whether it was the purchase of daily consumption goods like food and clothing or the acquisition of capital goods such as machinery and equipment, reflected consumption activities. The volume and patterns of these transactions provided insights into consumer preferences, their confidence levels in the state's economy, and the health of the consumption sector (Firtescu, et al. 2020; Tampakoudis, et al. 2012). For example, if there was a significant increase in household purchases, it indicated that consumers felt more comfortable with their state's economic situation and were inclined to spend more money.

Secondly, transactions drove production and innovation activities. When demand for a product increased, producers adjusted their production to meet that demand. This allowed for the creation of new jobs, improved production efficiency, and spurred innovation efforts to meet the evolving market demand. Over time, these innovations could result in new and competitive products or services, which in turn would enhance consumer welfare and also macroeconomic competitiveness (Tampakoudis, et al. 2012; Nano Georgiou 2020; Raleva 2020). Thirdly, the transactions also had a significant multiplier effect. Every currency, or in this context, the Euro, spent by consumers in a several transaction not only generated income for the recipient of that transaction but also stimulated further spending in the economy (Tampakoudis, et al. 2012; Nano Georgiou

2020; Raleva 2020). For example, when a consumer bought a new car, it not only provided income to the car manufacturer but also spurred activities in other sectors such as banking through auto loans, insurance through vehicle protection, and the vehicle maintenance services.

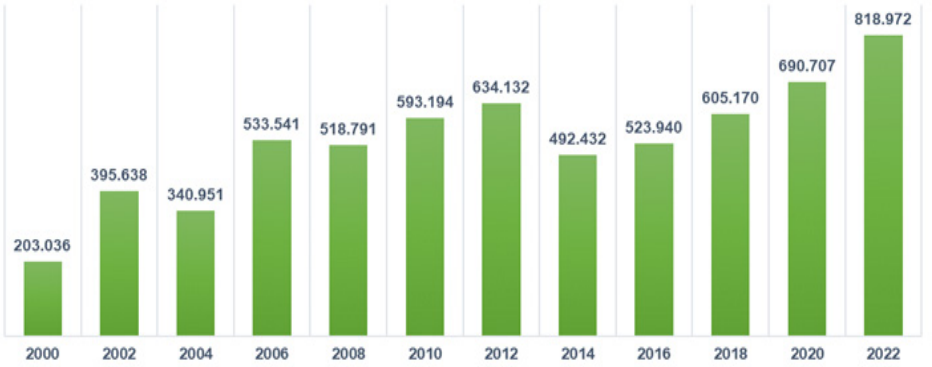
Fourthly, transactions also encompassed investment in both, infrastructure and capital development. These investments could include the construction of roads, bridges, energy facilities, or investments in cutting-edge technology. These transactions not only created jobs and increased productivity but also laid a stronger foundation for long-term economic growth by improving connectivity, efficiency, and the competitiveness of the state's economy (Nano Georgiou 2020; Raleva 2020). Fifthly, transactions also strengthened the role of the financial market through the buying and selling of assets such as stocks, bonds, or other financial instruments. An active and efficient financial market could trigger faster mobilization of capital for productive investment, support business development and innovative projects, and enable efficient budget allocation across all economic sectors (Nano Georgiou 2020; Raleva 2020). Lastly, transactions also impacted government spending as transactions could include government expenditures for various economic development agendas. These expenditures not only provided direct benefits to the public through improved services and infrastructure but also created opportunities for the private sector to engage in these agendas, thus enhancing overall economic activity (Nano Georgiou 2020; Raleva 2020).

Data 3: Transaction and Consumption

The data visualized the total value of all settled transactions in the Eurozone from 2000 to 2022 in billion Euros (see Figure 1). Practically, the transaction value reflected the accumulation of monetary activities related to financial transactions such as payments, transfers, and also the settlements in the Eurozone (European Central Bank 2023). The data clearly showed an upward trend in settled transaction value throughout 2000 to 2022, although there were also fluctuations and noticeable declines in certain years due to various economic factors such as financial crises, changes in market conditions, and policy changes (European Central Bank 2023). In 2000, the settled transaction value was 203.306 billion Euros, which can be seen as a relatively low starting point. Over the next few years, this value increased substantially, reaching 395.638 billion Euros in 2022. This rapid increase was driven by the broader integration and expansion in the Eurozone as well as overall economic growth and development during that period (European Central Bank 2023). However, in 2014, the settled transaction value experienced a significant decline, dropping to 492.432 billion Euros, as result of the global economic slowdown since 2008 and

the Eurozone debt crisis. The effects of these two crises were the main factors contributing to the contraction in economic activities leading to decrease in transactions in the Eurozone (European Central Bank 2023). In the following years, the settled transaction value in this region began to recover, reaching 523.940 billion Euros in 2016 and continued to increase. The highest value recorded in the data was 818.972 billion euros in 2022, indicating a strong recovery and growth in financial transactions within the Eurozone in recent years

Figure 1. Cross-Border Transaction Value Settled in billion EUR, 2000-2022.

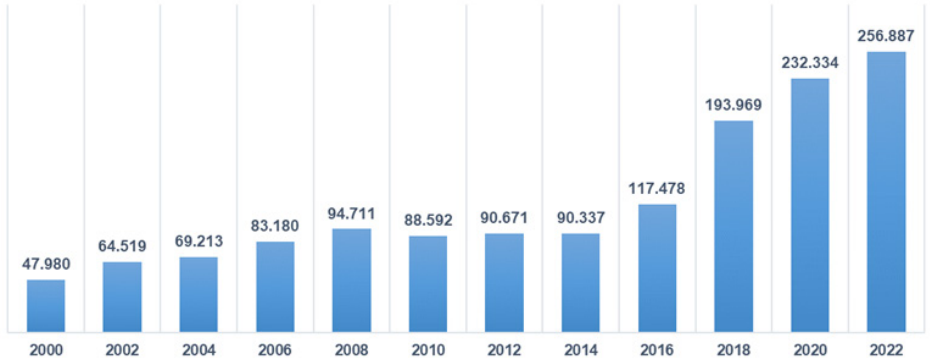


Source: European Central Bank. Figure 2

displayed information regarding settled transaction volume in the Eurozone during the same period in units of thousands of transactions. Settled transaction volume was reflection of total individual transactions without considering their monetary value. Consistent with the data visualizing settled transaction value above, settled transaction volume also exhibited similar trend character, although there were fluctuations in certain years due to various economic and market factors (European Central Bank 2023). In 2000, the settled transaction volume amounted to 47.980 thousand. This figure could be considered as a low starting point as well, and in the following years, this number had increased steadily, reaching 69.213 thousand transactions in 2004 and peaking in 2008 with total of 94.711 thousand transactions in the Eurozone. This growth could be attributed to effective integration and improvements within the region (European Central Bank 2023). However, in 2010, the settled transaction volume experienced a decline to 88.592 thousand transactions. After the decrease in 2010, settled transaction volume began to recover and grow rapidly, reaching 117.478 thousand transactions in 2016 and continued to increase in the following years. The highest volume recorded in the data was 256.887 thousand transactions in 2022, indicating substantial

recovery and growth in the number of financial transactions within the Eurozone in recent years (European Central Bank 2023).

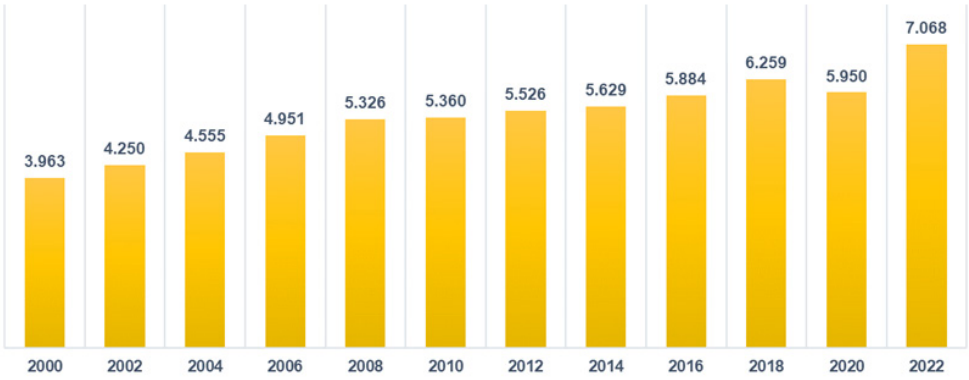
Figure 2. Cross-Border Transaction Volume Settled (in thousand), 2000-2022.



Source: European Central Bank.

In addition to the increase in volume and value of settled transactions in the Eurozone, there was also an increase in household consumption from 2000 to 2022. Household consumption reflected the total expenditures spent by households on consuming services and goods such as food, clothing, transportation, entertainment, and the others (European Central Bank 2024). Figure 3 below shows a steady and consistent increase in household consumption from Eurozone states, directly reflecting growth in disposable income, high consumer confidence, and increased prosperity in the Eurozone economy. However, there were also periods where household consumption did not grow rapidly or stagnated (European Central Bank 2024). In 2000, household consumption in the Eurozone was 3.963 billion Euros, and in the following years, this figure gradually increased to reach 4.555 billion Euros in 2004 and 4.951 billion Euros in 2006. This growth was primarily due to an increase in living standards and household purchasing power (European Central Bank 2024). However, during the Eurozone debt crisis, household consumption growth slowed down, although not significantly. In 2008, household consumption only reached 5.326 billion Euros, and in 2010, it grew slowly to 5.360 billion Euros. Growth amidst this crisis reflected the resilience of consumption levels in the Eurozone. Consumption growth accelerated again post-crisis, evidenced by household consumption amounting to 5.884 billion Euros in 2016 and then growing again to 6.259 billion Euros in 2018. The highest value recorded in the data was 7.068 billion Euros in 2022 (European Central Bank 2024).

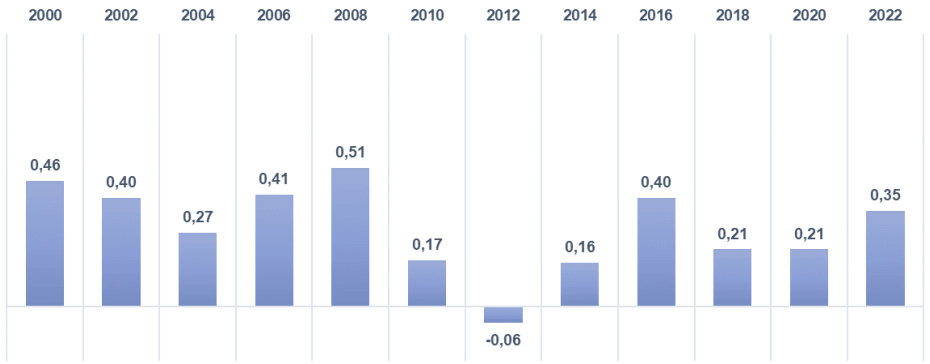
Figure 3. Household Consumption, 2000-2022.



Source: European Central Bank.

The data below presented government spending in the form of its ratio to Gross Domestic Product (GDP) in Eurozone from 2000 to 2022. This proportion was displayed in decimal fractions representing the proportion times the GDP allocated by Eurozone states. Simply put, government spending could be understood as the total expenditure of a state's government to access goods and services for both consumption and investment purposes. Government spending played a crucial role in the economy because high or low government spending figures would influence economic activities, the quality of public services, and GDP growth (European Central Bank, 2024). In 2000, the government spending ratio of Eurozone states was 0.46 times their GDP. Then the figure decreased to a lower point, to 0.27 times in 2004, which represented tight control over national spending agendas aimed at preventing government budget deficits (European Central Bank 2024). Unlike the three previous data points, the government spending figures of states actually experienced a substantial increase, reaching their peak in 2008 at 0.51 times their GDP. The major factor behind this increase was the implementation of fiscal stimulus, which increased government spending to support economic activities and mitigate the impact of the Eurozone debt crisis (European Central Bank 2024).

Figure 4. Government Spending, 2000-2022.



Source: European Central Bank

Data 4: Economic Growth

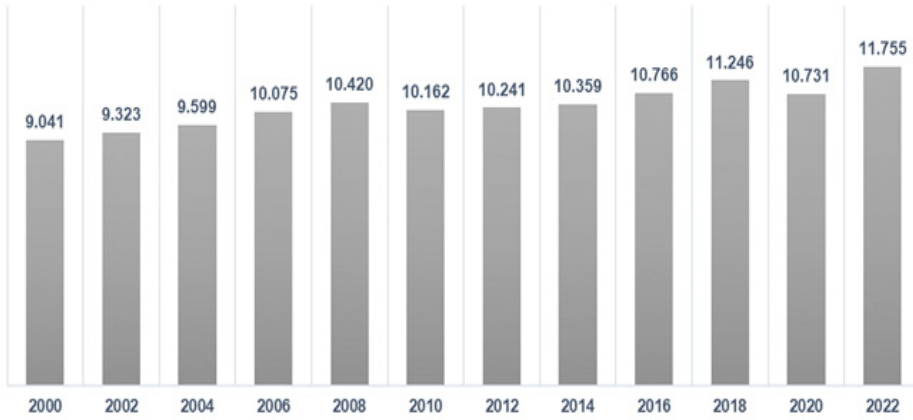
This table presented the Gross Domestic Product (GDP) at market prices for the Eurozone for each year from 2000 to 2022. The values were given in billions of euros. GDP at market prices was a key economic indicator that measured the total value of all final goods and services produced within a state or region over a specific period, typically a year. It was one of the primary metrics used to assess the overall size and performance of an economy. In the context of the Eurozone, the GDP at market prices represented the combined economic output of all the member states that had adopted the euro as their official currency. This data provided valuable insights into the overall economic growth, productivity, and economic well-being of the Eurozone as a whole (European Central Bank 2024).

In 2000, the GDP at market prices for the Eurozone was 9,041 billion euros. Over the next few years, the GDP exhibited steady growth, reaching 9,599 billion euros in 2004 and 10,075 billion euros in 2006. This growth could be attributed to various factors, such as increased economic integration, trade activities, and productivity gains within Eurozone during that period (European Central Bank 2024). However, during the global financial crisis and the subsequent Eurozone debt crisis, the GDP growth slowed down significantly. In 2008, the GDP at market prices reached 10,420 billion euros, but it experienced a decline in the following years, dropping to 10,162 billion euros in 2010. This decline could be attributed to the economic downturn, reduced consumer spending, and disruptions to trade and investment flows within the Eurozone during the crisis period (European Central Bank 2024).

After the initial impact of the crises, the Eurozone economy gradually recovered, and the GDP at market prices started to grow again. In 2012, the GDP was 10,241 billion euros, and it continued to increase in the

subsequent years, reaching 10,766 billion euros in 2016 and 11,246 billion euros in 2018. This recovery could be attributed to various factors, such as economic policy measures, improved consumer confidence, and increased economic activity within the Eurozone. However, in 2020, the GDP at market prices experienced another decline, dropping to 10,731 billion euros. This decline could likely be attributed to the economic impact of the COVID-19 pandemic, which disrupted global trade, supply chains, and economic activity across various sectors (European Central Bank 2024). The most recent data point in 2022 showed a GDP at market prices of 11,755 billion euros, indicating a strong rebound and recovery from the pandemic-induced economic downturn (European Central Bank 2024).

Figure 5. GDP at Market Price in billion EUR, 2000-2022



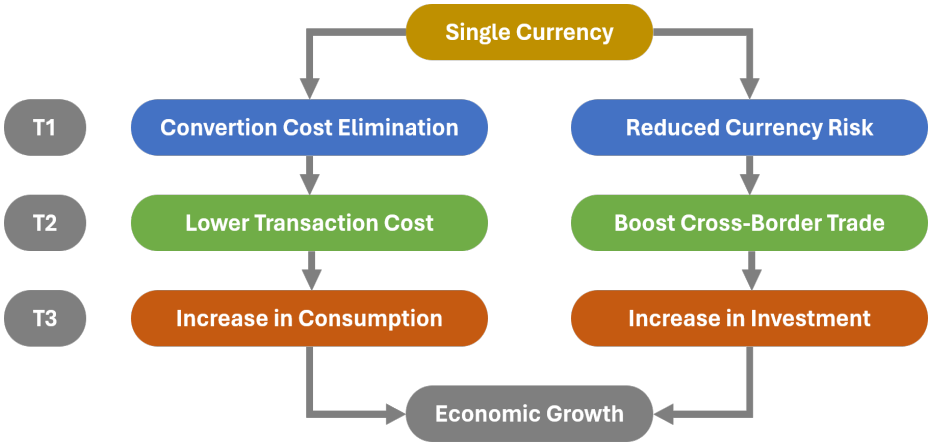
Source: European Central Bank

Discussion

As we synthesize insights from all the data above, we can trace the following cumulative relationship: (1) The adoption of the Euro as a single currency within the Eurozone (Data 1) leads to lower transaction costs by eliminating currency conversion costs, exchange rate uncertainties, and currency risks (Frieden and Walter 2017; Iversen et al. 2016; De Grauwe 2013); (2) These lower transaction costs, coupled with the stability and confidence instilled by the centralized European Central Bank and the expectations channel of the monetary transmission theory, encourage cross-border trade, investment, and economic integration within the Eurozone (Firtescu et al. 2020; Tampakoudis et al. 2012; Nano Georgiou 2020; Raleva 2020); (3) The reduction in transaction costs and enhanced economic integration lead to an increase in the value and volume of transactions settled within

the Eurozone (Data 3) (European Central Bank 2023; European Central Bank 2024); (4) The increase in transactions represents higher levels of consumption activities (Data 2), as evidenced by the steady rise in household consumption within the Eurozone (Data 3) (European Central Bank 2023; European Central Bank 2024); (5) The rise in consumption drives production, innovation, and investment activities (Data 2), as producers adjust their output to meet the changing demand patterns reflected in the transaction data (European Central Bank 2023; European Central Bank 2024); (6) The increased economic activities, facilitated by the lower transaction costs, enhanced consumption levels, and the broader economic integration resulting from the single currency system, contribute to the overall economic growth of the Eurozone, as reflected in the upward trend of the GDP at market prices data (Data 4) (European Central Bank 2024).

Figure 6. Single Currency to Economic Growth Transmission Process.



Source: Various Literatures

The first data lays the foundation by introducing the Eurozone, a monetary union of 19 member states of the European Union that adopt the Euro as their single official currency. This economic and monetary integration is established with several key objectives, including enhancing economic stability, promoting price stability, increasing trade, intensifying investment flows, and fostering deeper economic integration among the participating members (Frieden and Walter 2017; Iversen et al. 2016; De Grauwe 2013). In the theoretical framework, adopting a single currency brings one significant advantage, the elimination of the need for currency conversion. By then, a single currency ultimately alleviates exchange rate uncertainties and mitigates currency risks for both businesses and consumers that operate across multiple border trade and investment

activities, also facilitating a greater purpose of economic integration within the Eurozone (Angeloni and Ehrmann 2003; Boivin et al. 2008).

The theory also outlines several channels through which changes in monetary policy, such as interest rate adjustments and money supply decisions, can influence a number of economic variables and impact economic growth, inflation, employment, and other macroeconomic indicators. One of the channels highlighted is the interest rate channel, which posits that lower interest rates incentivize borrowing and spending, leading to increased consumption, investment, and other economic activities, while higher interest rates can dampen these effects (Cecioni and Neri 2011; Peersman and Smets 2003).

Moving on to the second data, it elaborates on the crucial role of transactions in the economy and connection to consumption activities. It explains that every economic transaction, whether for the purchase of consumer goods, services, or capital goods, represents consumption. The volume and patterns of these transactions serve as indicators of consumer preferences, confidence levels, and the overall health of the consumption sector within an economy (Tampakoudis et al. 2012; Nano Georgiou 2020; Raleva 2020). Moreover, Data 2 highlights that transactions drive production and innovation activities. As consumer demand increases, reflected in the rise of transaction volumes, producers must adjust their output to meet this changing demand. This, in turn, leads to the creation of new jobs, improved production efficiency, and the development of innovative products or services to cater to evolving market preferences. Over time, these innovations enhance consumer welfare and improve the overall competitiveness of the economy (Firtescu, et al. 2020; Tampakoudis, et al. 2012).

The next data provides empirical evidence to support the theoretical arguments presented in the previous texts. It presents data on the total value and volume of cross-border transactions settled within the Eurozone from 2000 to 2022. The data clearly shows an upward trend in both transaction value and volume over the years, with some fluctuations during periods of economic crises, such as the global financial crisis and the Eurozone debt crisis (European Central Bank 2023; European Central Bank 2024). This upward trend in transaction value and volume can be attributed to the broader integration and expansion of the Eurozone, as well as the overall economic growth and development facilitated by the single currency system. The elimination of currency conversion costs, exchange rate uncertainties, and currency risks, as mentioned in the theoretical framework, likely contributes to the increase in cross-border transactions within the Eurozone (European Central Bank 2023; European Central Bank 2024). Furthermore, it also presents data on household consumption in the Eurozone, which is a direct measure of consumer spending on goods

and services. It shows there is a steady and consistent increase in household consumption from 2000 to 2022, reflecting the growth in disposable income, consumer confidence, and increased prosperity within the Eurozone economy. This increase in household consumption can be linked to the lower transaction costs and enhanced economic integration resulting from the adoption of the single currency, as well as the increase in transaction volumes observed (European Central Bank 2023; European Central Bank 2024).

The monetary transmission theory also highlights the role of the single currency in creating stability and confidence within the Eurozone. The Euro, backed by the credible and centralized European Central Bank, instills confidence among consumers, businesses, and investors, further encouraging spending, investment, and economic expansion. This confidence and stability likely contribute to the observed rise in household consumption and transaction volumes within the Eurozone (Cecchetti 1994; Benhabib and Farmer 2000). Additionally, the theoretical framework discusses the expectations channel of the monetary transmission theory, which emphasizes the role of market and consumer expectations in shaping the impact of monetary policy actions. The credibility and communication capabilities of central banks, such as the European Central Bank, are vital in shaping expectations about future interest rate movements, inflation, and overall economic conditions. Positive expectations can amplify the effects of monetary policy actions, while negative or uncertain expectations can mitigate their effectiveness. This channel likely plays a role in influencing consumer and investor confidence, further contributing to the observed trends in consumption and economic growth within the Eurozone (Benhabib and Farmer 2000; Romer et al. 1990).

Lastly, the fourth data provides insights into the Gross Domestic Product (GDP) at market prices for the Eurozone from 2000 to 2022, which is a comprehensive measure of the overall economic output and performance. The GDP data shows an overall upward trend, with some fluctuations during periods of economic crises, such as the global financial crisis and the Eurozone debt crisis (European Central Bank 2024). The upward trend in GDP can be attributed to the increased economic activities facilitated by the lower transaction costs, enhanced consumption levels, and the broader economic integration resulting from the adoption of the single currency within the Eurozone. The rise in consumption, driven by lower transaction costs and increased transaction volumes, as evidenced in the third data, likely contributes to higher production levels, innovation, and investment activities, ultimately contributing to the observed economic growth reflected in the GDP data (European Central Bank 2024).

Conclusion

The comprehensive analysis of the interconnected data points paints a vivid picture of the profound impact of adopting the Euro as a single currency within the Eurozone. This adoption triggers a series of cumulative effects that shape the economic landscape of the region. Firstly, the elimination of currency conversion costs, exchange rate uncertainties, and currency risks (as detailed in Data 1) substantially lowers transaction costs within the Eurozone. This reduction in transaction costs paves the way for increased cross-border trade, investment, and economic integration (as highlighted in Data 2). The stability and confidence instilled by the European Central Bank (ECB) and the expectations channel of the monetary transmission theory further fuel this trend by encouraging economic activities across borders. The empirical evidence presented in Data 3 corroborates this narrative, showcasing an upward trend in the value and volume of settled transactions within the Eurozone. This surge in transactions is directly linked to increased consumption activities (as discussed in Data 2), as every economic transaction reflects a form of consumption. The rise in consumption, in turn, drives production, innovation, and investment activities (as emphasized in Data 2), creating a virtuous cycle of economic dynamism. Moreover, the stability and confidence generated by the single currency system, backed by the ECB, contribute to the overall economic growth of the Eurozone (as indicated in Data 4). The GDP data reveal a consistent upward trajectory, albeit with fluctuations during economic crises, showcasing the resilience and recovery capacity of the Eurozone economy. In essence, the adoption of the Euro as a single currency not only lowers transaction costs but also fosters economic integration, increases consumption, boosts production and innovation, and ultimately propels economic growth within the Eurozone. This cumulative relationship underscores the transformative power of a unified currency system in driving sustained economic prosperity and stability across member states.

References

Journal

Angeloni, Ignazio, & Michael Ehrmann, 2003. "Monetary transmission in the Euro Area: Early evidence", *Economic Policy*, 18(37): 469-501.

Benhabib, Jess, & Roger E. A. Farmer, 2000. "The monetary transmission mechanism", *Review of Economic Dynamics*, 3(3): 523-550.

Boivin, Jean, Marc P. Giannoni, & Benoît Mojon, 2008. "How has the Euro changed the monetary transmission mechanism?", *NBER Macroeconomics Annual*, 23(1): 77-126.

Cecioni, Martina & Stefano Neri, 2011. "The monetary transmission mechanism in the Euro Area: Has it changed and why?", *Bank of Italy Tami di Discussione (Working Paper)*, no. 808.

De Grauwe, Paul, 2013. "The political economy of the Euro", *Annual Review of Political Science*, 16: 153-170.

De Sousa, J., & Lochard, J., 2011. "Does the single currency affect foreign direct investment?" *The Scandinavian Journal of Economics*, 113(3): 553-578 (2011).

Firtescu, Bogdan Narcis, et al., 2020. "Capital formation, consumption and trade effects on economic growth – An ARDL based investigation for the Eurozone countries", *Transformations in Business & Economics*, 19(2B): 849-874.

Frankel, J. A., & Rose, A. K., 2002. "An estimate of the effect of common currencies on trade and income", *The Quarterly Journal of Economics*, 117(2): 437-466.

Frieden, Jeffry, & Stefanie Walter, "Understanding the political economy of the Eurozone crisis." *Annual Review of Political Science*, 20:371-390.

Hsieh, H. F., & S. E. Shannon, 2005. "Three approaches to qualitative content analysis", *Qualitative Health Research*, 15(9): 1277-1288.

Iversen, Torben, David Soskice, and David Hope, . "The Eurozone and Political Economic Institutions", *Annual Review of Political Science*, 19: 163-185.

Juneja, Januj, 2017. "How Germany benefits the most from its Eurozone membership", *Research in International Business and Finance*, 42: 1074-1088

Micco, A., Stein, E., & Ordoñez, G., 2003. "The currency union rffect on trade: Early evidence from EMU", *Economic Policy*, 18(37): 315-356.

Mika, Alina, & Robert Zymek, 2018. "Friends without benefits? New EMU members and the 'Euro Effect' on Trade", *Journal of International Money and Finance*, 83:75-92.

Raleva, Stela, 2020. "Bulgarian GDP expenditure structure: Growth impact and convergence with Eurozone" *University of National and World Economy*, 1: 167-191.

Romer, Christina D. & David H. Romer, 1990. "New Evidence on the Monetary Transmission Mechanism." *Brookings Papers on Economic Activity* 1990, 1: 149-213.

Tobin, James, 1978. "Monetary policies and the economy: The transmission mechanism", *Southern Economic Journal*, 44(3): 421-431.

Vaidere, Inese, 2014. "Benefits and risks of the Eurozone: Latvian case of Euro adoption." *Journal of Economics & Management Research*, 3: 116-134.

Book

Baldwin, R. & Wyplosz, C., 2009. *The Economics of European Integration*. New York: McGraw-Hill Education.

Yin, R. K., 2018. *Case Study Research and Applications: Design and Methods*. London: SAGE Publications.

Proceeding

Alesina, A., Barro, R. J., & Tenreyro, S., 2002. "Optimal Currency Areas", *National Bureau of Economic Research*, no. w9072.

Cecchetti, Stephen G., 1994. "Distinguishing Theories of the Monetary Transmission Mechanism", *Federal Reserve Bank of St. Louis: Economic Policy Conference.*

Peersman, Gert & Frank Smets, 2003. "The Monetary Transmission Mechanism in the Euro Area: More Evidence from VAR Analysis", *Mtn Conference Paper*, no.91.

Tampakoudis, Ioannis A., Dimitra Fylantzopoulou, & Konstantina Nikandrou. "Examining the Linkages between GDP Growth and Sustainable Development in the Eurozone", *ICIB Proceedings: International Conference on International Business.*

Thesis

Nano Georgiou, Angela. "The Impact of the European Union and Eurozone Membership on Economic Growth: A Quantitative Analysis of How the Economic Growth of the Member Countries Has Been Affected." Thesis, Södertörn University.

Online Articles

European Central Bank, 2023. "Traffic Settled in the TARGET Services" [online]. In https://www.ecb.europa.eu/stats/payment_statistics/large_value_payment_systems/html/index.en.html (accessed January 11 2024).

European Central Bank, 2024. "Government Final Consumption, Euro Area 20 (Fixed Composition) as of 1 January 2023, Annual" [online]. In https://data.ecb.europa.eu/data/datasets/MNA/MNA.A.N.I9.W0.S13.S1.D.P3._Z._Z._T.EUR_R_B1GQ.Y.GOY (accessed 22 January 2024).

European Central Bank, 2024. "Private Final Consumption, Euro Area 20 (Fixed Composition) as of 1 January 2023, Quarterly" [online]. In https://data.ecb.europa.eu/data/datasets/MNA/MNA.Q.Y.I9.W0.S1M.S1.D.P31._Z._Z._T.EUR.V.N. (accessed 10 January 2024).