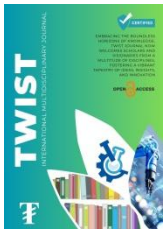
DOI 10.5281/twist.10049652#356

TWIST, 2025, Vol. 20, Issue 1, pp. 58-73

TWIST

Journal homepage: www.twistjournal.net



How Do Government Debt and the Phillips Curve Affect Social Protection of Filipinos?

Kristalyn C. Co
Business Economics Department, College of Commerce and Business Administration,
University of Santo Tomas España Blvd, Sampaloc, Manila, 1008 Metro Manila, Philippines

Ma. Isabel Therese E. Geron*
Business Economics Department, College of Commerce and Business Administration,
University of Santo Tomas España Blvd, Sampaloc, Manila, 1008 Metro Manila, Philippines
[**Corresponding author*]

Peter Jeff C. Camaro, M. A.
Business Economics Department, College of Commerce and Business Administration,
University of Santo Tomas España Blvd, Sampaloc, Manila, 1008 Metro Manila, Philippines

Abstract
Social Protection has been one of the priorities of the Philippine government as it is crucial in reducing poverty and improving the social status of Filipinos, especially the poor and vulnerable. This study investigates the effect of Government Debt and the Phillips Curve on the social protection expenditures of the public sector in the Philippines from the period 1991 to 2022. Using Ordinary Least Squares (OLS) regression analysis, the study identified that rising unemployment rate leads to declining social protection as labor market distortions and difficulties in social welfare systems are created. Meanwhile, government debt and inflation rate are found to be statistically insignificant with a direct and inverse relationship, respectively. The findings suggest that a policy involving employment generation must be implemented to provide efficient social protection among Filipinos.

Keywords
Social Protection, Government Debt, Unemployment, Inflation, Phillips Curve

INTRODUCTION

More than 4.1 billion people around the globe remain unprotected and many countries still do not have systems in place for timely response to shocks as shown by the 2020-2022 World Social Protection Report of the International Labour Organization (ILO). Amidst the social protection expansion worldwide during the COVID-19 crisis, there are still significant challenges in ensuring everyone can access social security and protection. Social protection is critical for eradicating extreme poverty and boosting prosperity as it covers access to healthcare and income security, especially for people in old age, unemployment, sickness, disability, work injury, maternity, or the loss of a primary income earner, as well as families with children. It comprises measures, policies, and programs that protect and secure a society's livelihood and well-being, reducing poverty and vulnerability (Burchi et al., 2022).

Social protection can be provided in two ways: in cash or in-kind, through non-contributory schemes, including social assistance, or contributory schemes—like social insurance. Furthermore, as expounded by the United Nations Economist Network (UNEN), there is no single approach across countries to build a national social protection system; it will all depend on the context and perspective of a particular country, specifically which will be the most effective and efficient combination of the various benefits and schemes for its citizens (Behrendt et al., 2021).

In the Philippines, the National Economic and Development Authority (NEDA) Social Development Committee (SDC) defines the country's social protection system as the overall attempt of the government to support the poor and vulnerable; specifically, these are "programs and policies that seek to reduce poverty and vulnerability to risks and enhance the social status and rights of the marginalized by promoting and protecting livelihood and employment,

protecting against hazards and sudden loss of income, and improving people's capacity to manage risks." It encompasses four main components, namely, (1) labor market interventions, (2) social welfare programs, (3) social safety nets—which are all funded by the government—and (4) social insurance, which is primarily financed by member contributions. The first component, labor market interventions, entails government initiatives to increase job opportunities in the country while advancing Filipino workers' rights and welfare. Social welfare programs, on the other hand, are developmental and preventive initiatives that aim to assist the poor's most basic needs while lowering the risks of unemployment, marginalization, relocating, disease and disability, aging, and losing family caregivers. Meanwhile, social safety nets are non-contributory initiatives, which are typically short-term solutions or emergency measures that deal with the consequences of natural catastrophes, economic shocks, and calamities on specific vulnerable populations. Finally, social insurance is a contributing scheme designed to distribute risks over time and across income groups and to reduce income risks since resources are pooled (Villar, 2013).

Social protection in the Philippines, being a developing country, has been a priority of the government. According to Diokno-Sicat & Mariano (2018) social protection expenditures of the government continue to experience an increasing trend from 2009 to 2017. However, from the Social Protection Index (SPI) of the Asian Development Bank (ADB) which aims to assess the nature and effectiveness of the social protection programs as well as to facilitate cross country comparison, it was discovered that the Philippines is still behind other Asian countries. Specifically, in 2013, the Philippines fell somewhat short of the average SPI index at 2.1% of GDP per capita compared to the overall social protection programs of Southeast Asian countries using the weighted SPI. Likewise, the country's social insurance and social assistance spending, which come in at 1.7% and 0.3% of GDP per capita, respectively, are significantly less than the regional average. On the contrary, in terms of labor market programs, the Philippines performed the best in Southeast Asia, coming in at 0.125 %.

In recent years, one priority of the government is increasing the breadth indicator—how far social protection reaches the target beneficiaries in the Philippines. However, data from ADB showed that from 2.2% in 2015 it went up to only 2.5% in 2018, indicating that the average benefits from social protection received by Filipinos remained relatively small. Hence, it is vital for the policy makers to reassess the programs and policies, as well as to investigate all factors that significantly affect the said social protection of the country.

Another remaining concern in the Philippines is the country’s national debt. In particular, the outstanding government debt is said to have an increasing trend from 1986 to 2020 as the government continues to borrow money from both external and internal sources to provide for the demands and needs of its citizens (Santos et al., 2022). A study by the Philippine Institute for Development Studies (PIDS) determined that there has been a sharp accumulation of government debt due to the COVID-19 pandemic which caused a greater fiscal deficit as the government increased its social and stimulus spending to curb the adverse effects of the said pandemic. Data showed that the national debt-to-GDP ratio in 2019 was at 39.6% which grew to 54.5% in 2020, reaching 60.5% in 2021. However, the said recent increasing trend of government debt is less concerning since the national government debt 2024 report of the Bureau of Treasury (BTr) showed that significant portion of the country’s debt is from domestic or internal sources at 68.71% while the remaining 31.29% are sourced from external sources, indicating that the national debt is sustainable as the money stays within the economy as it becomes settled because the biggest lenders of the government are Filipinos. Moreover, the government debt was not induced by interest rate shocks or excessive foreign borrowings; rather it was the pandemic which caused a significant decline in government revenue and a surge in social spending to provide a relief response to its people (Debuque-Gonzales et al., 2022).

Government debt, promoted with caution and allocated in proper destinations, enhances the country’s economic growth and development. However, indebtedness can also lead to undesirable effects on the economy; debt through public borrowings increases the current money supply in a country which emanates favorable conditions for inflation. Moreover, high accumulation of public debts is sometimes reduced through unconventional means, specifically amortization through inflation (Bilan et al., 2014).

Inflation, which measures the overall price increase of goods and services over a certain period of time, is often perceived as a negative indicator for economic growth as it lowers the individual’s purchasing power. However, studies showed that there is a significant connection between countries’ growth and reasonable inflation. As discussed by Umaru & Zubairu (2012) inflation positively influences economic growth as it encourages productivity and output levels. Whether inflation has a positive or negative effect on a country’s economic growth and development has been a long-standing subject of debate. Hence, as a means to somewhat resolve this, it was determined that the inflation rate must be between certain percentage levels for it to have a positive effect on the economy, otherwise it will lead to detrimental effects (Kasidi & Mwakanemela, 2013).

The central bank of the Philippines, Bangko Sentral ng Pilipinas (BSP) set the target level of inflation rate between 2% to 4% in the country to support the steady growth of the economy. However, recent trends of the inflation rate experienced variations; according to BSP the average inflation rate from 2020 was at 2.4%, increasing to 3.9% in 2021, leading to 5.8% in 2022, and further growing to 6.0% in 2023. Likewise, Cabacungan et al., (2023) discovered that there was an upward trend of inflation, indicating the rise in prices of essential commodities. Recently, in 2024 there has been a significant decline in the average inflation rate, specifically it is now at 3.6% which remains within the target range (BSP, 2024). These fluctuations of the inflation rate must be carefully monitored and managed since it impacts the citizen’s standard of living, business growth, employment, and the economy. To be more specific, Lazaro et al. (2023)

stated that inflation affects consumers, especially with low income, as they already struggle to afford basic necessities, along with employees because inflation may outpace their wage increase. Similarly, small and medium-sized enterprises (SMEs) may also struggle due to the higher costs.

Inflation is said to be correlated with unemployment as explained by the Phillips curve, which states that unemployment and inflation has a stable and inverse relationship. In a study by Iyke & Ho (2019), low inflation and high unemployment lead to stagnant price reactions and instability of the inflation-unemployment dynamic, affecting business cycles and resulting in recession. Hence, the said indirect relationship of inflation-unemployment by the Phillips curve is contingent on economic shocks, societal responses, and policy responses which in turn affects social protection. Unemployment is defined as the proportion of the labor force without work but are available and actively seeking for one. In times of unemployment, it is unattainable for an individual to afford the basic necessities of life, leading to widespread poverty and inequality (Asaju, 2014). Moreover, even though unemployment starts at an individual and household level, it still affects society, and ultimately, the economy. O'Campo et al. (2015) mentioned three arguments that explains why unemployment leads to poverty; (1) loss of income and benefits which leads to material deprivation, (2) unemployment can be a acute or chronic stressor which lessens self-esteem and increases psychological distress, and (3) unemployment results to unhealthy coping behaviors. Furthermore, according to ILO's World Employment and Social Outlook (WESO), global unemployment rates in 2024 will worsen as an extra two million workers are expected to be looking for jobs, increasing the global unemployment rate from 5.1% in 2023 to 5.2%.

In the Philippines, the unemployment rate experienced fluctuations in the past years. From a report by the Philippine Statistics Authority (PSA), the recorded unemployment rate in 2020 was at 10.3% but their latest report recorded a significant decrease in February 2024 compared to the previous months, specifically it was at 3.5%. However, it is important to note that there is still a significant number of Filipinos unemployed which continue to be a societal concern. As addressed by Castillo et al. (2024) unemployment remains to be a significant issue in the country despite recent economic expansion due to its socioeconomic consequences such as lost wages along with social and mental health issues. As he highlighted, above 100 million people live in the country and millions of Filipinos have historically searched for jobs abroad because of the unbalanced job market.

Given the current conditions of government debt, inflation, and unemployment levels in the Philippines, does it affect the government's priority for social protection? How do these macroeconomic variables affect the social protection expenditures of the public sector?

AIMS & OBJECTIVES

The aim of the study is to investigate the effect of government debt, inflation rate, and unemployment rate on the social protection expenditure of the public sector in the Philippines as a means to improve the social welfare of Filipinos by pursuing the following objectives:

1. To determine the relationship between government debt and social protection in the Philippines.
2. To determine if the inflation rate influences social protection in the Philippines.
3. To determine the effect of unemployment rate on social protection in the Philippines.

SIGNIFICANCE OF THE STUDY

The findings of this study will provide the Philippine government—including policymakers and its citizens factual information as to how social protection expenditures are being affected by the movements of the said macroeconomic factors which is beneficial in the creation of programs and policies that will most benefit the said welfare of Filipinos. Moreover, future researchers can utilize this study to understand the significance of government intervention, specifically how it impacts the social protection of Filipinos, and ultimately their social well-being.

STATEMENT OF HYPOTHESES

Hypothesis 1

Ho: There is no significant relationship between government debt and social protection in the Philippines.
Ha: There is a significant relationship between government debt and social protection in the Philippines.

Hypothesis 2

Ho: There is no significant relationship between inflation and social protection in the Philippines.
Ha: There is a significant relationship between inflation and social protection in the Philippines.

Hypothesis 3

Ho: There is no significant relationship between unemployment and social protection in the Philippines.
Ha: There is a significant relationship between unemployment and social protection in the Philippines.

THEORETICAL FRAMEWORK

The Phillips curve, as proposed by A.W. "Bill" Phillips, postulates that unemployment-inflation has an indirect relationship; the negative correlation between the two variables makes them vulnerable to economic disturbances and policy responses. However, some neoclassical economists contest the inverse relationship of the Phillips curve. As they

argue, Phillips curve might only exist in the short-run because workers may demand an increase in wages as inflation rises. As a result, firms may have to face job layoffs due to the rise of production costs. This implies an opposing scenario to the Phillips curve (Abdullah et al., 2018; Dukic, 2021).

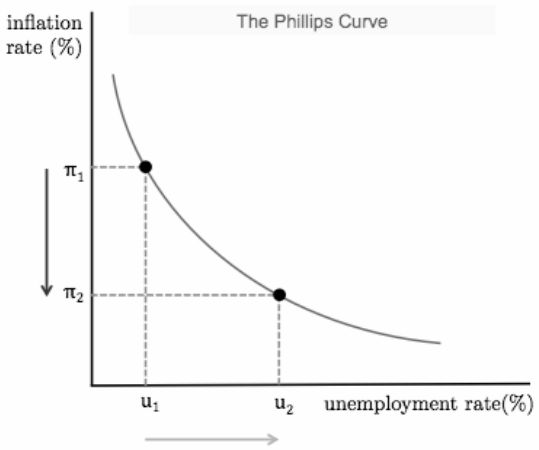


Fig. 1 Phillips Curve

CONCEPTUAL FRAMEWORK

Through accumulation of government debt, government revenue increases resulting in greater social spending, thereby increasing the social protection expenditures in the country as well. However, as government debt sharply increases, inflation happens. Inflation is negatively correlated to unemployment as explained by the Phillips curve. Despite this negative relationship, studies asserted that both inflation and unemployment positively affect social protection. A decline in inflation of domestic currency will hinder the government from increasing social protection spending (Castro et al., 2024). Meanwhile, unemployment rate predicts social protection as unemployment remained to be positive and statistically significant in each estimation procedure (Haelg et al., 2020).

SIMULACRUM

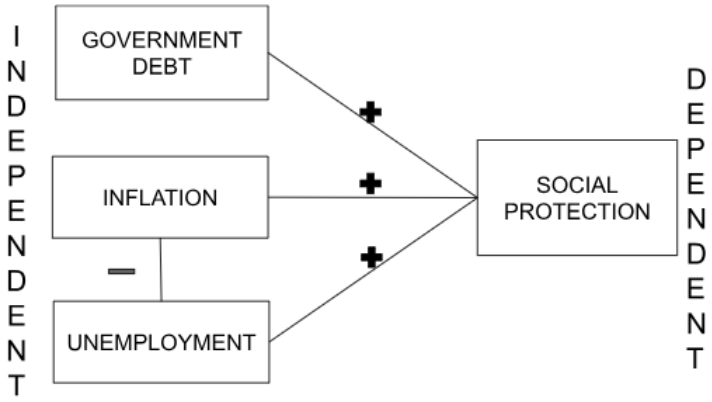


Fig. 2 Simulacrum

The figure above encapsulates the whole concept of the study, which investigates how social protection expenditures in the Philippines is influenced by government debt and the Phillips curve, specifically the inflation rate and unemployment rate.

REVIEW OF RELATED LITERATURE

Social Protection as influenced by Government Debt

Social protection can be financed in two ways: through tax revenues and non-tax revenue, precisely debt (Asma et al., 2023). As emphasized, public debt highly relies on public spending (Tarek & Yahya, 2019). Debt is necessary for many coping strategies, particularly helping the impoverished, because it permits the flow of money, products, and services (Guérin, 2014).

According to Nguyen (2022) public spending financed by debt plays a crucial role in running the economy. Akram (2015) highlighted that government debt has been used to finance public social spending to help them increase their leverage and lead to higher growth. Similarly, researchers asserted that government debt positively correlates with social spending—including all social protection, social security, and social welfare expenses (Seater, 2013; de Mendonça & Tiberto, 2014; Nugraha & Handra, 2021; Omondi & Onono – Okelo, 2021). As further explained by Bastagli (2015), for a government to expand its fiscal space to finance social protection, it can increase its external financing through increased borrowings. Bećiragić & Trenovski (2023) also determined that increases in public debt are followed by a short-term increase in current, capital, and social protection expenditures.

Furthermore, Tashevska et al. (2022) assessed the relationship between social protection expenditures, measured in percent of GDP, and government debt, expressed in debt-to-GDP ratio. The results revealed that higher debt levels are associated with higher social protection expenditure. Likewise, among developing countries, it was determined that due to their greater fiscal capacity—government revenue sourced from tax and debts, their social protection expenditures are high, implying that these variables have a significant and positive relationship (Murshed et al., 2017). To a certain degree, Ahuja & Murthy (2017) support this claim; the results of their study showed that emerging Asian countries initially experienced a positive correlation between debt and social protection expenditures. However, there came a time when the said relationship became negative as these countries were caught in a vicious cycle of low growth and high public debt.

Correspondingly, several scholars claim that there is indeed a negative correlation between government debt and social spending, specifically social protection expenditures; the study by Shabbir (2015) discovered that outstanding external debt and its servicing liability harm social spending since the government has to reduce its spending to service its debt and other obligations. Similar findings were asserted by Fisher (2015), stating that as the state's economic conditions worsen, the local government's tax revenue decreases, which can cause debt levels to increase as a source of revenue. The limited government revenue eventually will result in a reduction in public welfare expenditures. The said increase of debt levels can lead to adverse effects on economic development (Mawardi, 2019). Nguyen et al. (2024) explained that as a country experiences a currency and debt crisis—being unable to pay back its government debt—social protection spending is significantly reduced, which leads to adverse effects on the part of the population that is most dependent on social support. For developing countries, Rahim et al. (2023) discussed that external and total public debt has a negative and significant impact on economic growth through social spending; precisely as public debt reaches the threshold point, the funds they allocate to social spending are transferred to pay debt services. This is supported by various studies which asserted that debt service led to crowding out of social spending which led to insufficient funds among social sectors resulting in shortage of essential services at health and education (Iiyambo & Kaulihowa, 2020; Gurowa et al., 2023)

On the contrary, some scholars remain uncertain. Chang et al. (2016) discovered that social spending results in government debt among certain countries in their sample; however, other remaining countries revealed the opposite: government debt leads to a rise in social spending. As supported by Czech & Tusinska (2016), the dynamics of public debt and social expenditure are complex as they vary among countries.

Social Protection as influenced by Inflation

Inflation affects social protection due to its vulnerability to economic disturbances (Almenfi et al.,2022). The government adheres to its adverse effects by spending more on social protection; about 67% of the 1,016 social protection measures foster support in attaining the basic necessities of life (Almenfi et al.,2022; Deyneli, 2024). Hence, in times of high inflation fiscal policies must also be aligned with the fluctuations in business cycles caused by inflation (Albonico & Rossi, 2014; Faust & Leeper, 2015; Amores et al.,2023). Consequently, Deyneli et al. (2024) assert a positive correlation between inflation rate, unemployment rate, and social protection expenditure; as inflation increases, social spending for subsidy increases.

In the study of Ghosh (2023), the reinforcement of tight monetary policies and increasing interest rates of developed countries during inflation does not significantly address the inflation problem. Hence, this may only worsen financial volatility and result in economic recessions. Subsequently, the overall increase in social protection expenditure in the European Union was concentrated in the 2008-2009 economic crisis, during which specific measures were implemented, indicating that the global recession significantly impacted social protection expenditure (Ghosh, 2023; Spasova & Ward, 2019). Moreover, an inflation crisis challenges social protection systems across nations wherein welfare transfers are essential in the crisis-response model of the Southern European (SE) government to support households affected by the inflationary shocks brought by the COVID-19 pandemic. In Ukraine, there is large spending on social security and social protection because of the rise of inflation. Meanwhile, in the Asia-Pacific region, the short-term response is in the form of cash transfers. (Socijalne & Ukrajini, 2014; Meerendonk et al.,2024; Canto et al.,2024).

On the other hand, Béland et al. (2023a) assert that the responsiveness of a social policy during inflationary periods relies on whether economies have automatic indexation responses that follow the actual value of wages, whereas in times of high inflation, ad hoc social policy that is in line with the alleviation of inflationary effects on social benefits is necessary. In the same way, the government aligns its policy response regarding inflation according to its economic system. They instinctively adjust to inflationary pressure in their three key areas: policy wage definition, social security benefits advancements, and individual taxation (Béland et al., 2023b). The public sector measures inflation through the Consumer Price Index (CPI), which accounts for the fluctuation of the average prices of certain basket of goods and services identified based on expenditure data of families and households (Colgan & Callan, 2015; Eurostat, 2022).

Conditional Cash Transfers (CCTs) enhance welfare by providing social assistance and boosting human capital development, fostering poverty reduction (Brooks, 2015). In the Philippine context, social protection is composed of CCT, which monthly allocates PHP 600 on rice subsidies for families that are part of the Pantawid Pamilyang Pilipino Program (4Ps). Adhering to the 2017 TRAIN Law, monthly rice subsidies increased to PHP 200 in 2018 and PHP 300 in 2019 and 2020 to reduce inflation's impact and help people experiencing poverty as part of the government's unconditional cash transfer program (Mariano & Sicat, 2021). In essence, the public sector has responded to high inflation by increasing its budget on basic grants and expanding it along with rice subsidies and unconditional cash transfers (UCT) (ADB, 2020).

Furthermore, Mihaljek (2023) and Macia (2023) discovered that inflation in the short term affects tax revenues and fiscal positions because nominal revenues immediately incline with the increase of inflation compared to nominal expenditures. However, in the long run, these effects can be counterproductive for the government, as they may lead to increased spending on new projects and programs, thereby compromising their ability to manage inflation. Similarly, Cummins et al. (2015) argue that low inflation has significant implications for economic growth and macroeconomic stability. This underscores the importance of fiscal policies that aim to curb inflation, as high inflation can lead to long-term disturbances, hinder investments, and burden low-income households. Conversely, countries with low and stable inflation experience rapid economic growth, while economies with high inflation tend to have slow economic growth and fall into financial crisis (Ha et al., 2023).

On the contrary, Anderson et al. (2016) specify that social welfare spending is part of government expenditures, and they discovered an indirect correlation between inflation and government expenditures in terms of social welfare spending. As supported by Brooks (2015), there is uncertainty about a positive correlation between inflation and social protection expenditures. Although CCT programs positively impact their beneficiaries. Implementing and expanding social welfare programs are expensive, and inflation will hinder their progressive allocation to beneficiaries. Therefore, acquiring CCT in developing nations amid high inflation may pose a challenge, and the efficiency of CCT in raising human capital and reducing poverty may be questioned.

Social Protection as influenced by Unemployment

The Phillips curve, with its explanation of the indirect correlation of inflation-unemployment, is not just a key economic theory but a significant concept in understanding the dynamics of social protection expenditure and unemployment rates (Iyke & Ho, 2019). Low inflation and high unemployment lead to weak price fluctuations and an inefficient inflation-unemployment relation. This understanding is vital for economists, policymakers, and researchers in the field of social welfare and public policy. Hence, labor policies that are designed to support income generation in times of unemployment have become standard ever since the relationship between the welfare state and the protection of people from unemployment risks emerged (Rueda, 2015). Public policies enhance every individual's life, mainly if they rely on the support given by the state. In times of unemployment, these individuals depend on cash transfers aligned with labor market policy programs. This implies that when the unemployment rate rises, the government's social expenditure for unemployment increases (Wulfgramm, 2014; Deyneli et al.,2024).

As asserted by Haelg et al. (2020) there is a positive correlation between unemployment and social protection expenditures through the baseline model, implying that as the unemployment rate rises by 1%, there is a correlated 0.36% increase in social protection expenditure; similarly, unemployment benefits increase during recessions. Athanasenas et al. (2015) also discovered that unemployment significantly and positively affects social protection expenditure to support social welfare. In 27 European Countries, unemployment was the only significant indicator affecting social protection expenditure (Bedhar & Halaskova, 2020). In Ukraine, social protection and social security are the highest expenditures in the budget because of the rising unemployment rate (Socijalne & Ukrajini, 2014).

The COVID-19 pandemic has not only increased unemployment rates but also adversely affected low-income households, making the study of unemployment and social protection even more relevant in the current context. As a response, the government has raised and expanded its unemployment insurance, which encompasses $1,200 per adult and $500 per dependent, an increment in SNAP payments under the Families First Coronavirus Act and the CARES Act. They have also implemented a Pandemic EBT program to cope with the lost meals in school (Bitler et al.,2020). In addition, the COVID-19 unemployment crisis and inefficient public services have challenged Ireland to recover from the recession (McGan et al.,2020).

In a declining economy, workers consider social security in the form of unemployment benefits as a safety net. The public sector ought to aid the adverse effects of the increase in the unemployment rate by providing unemployment insurance, which is categorized as part of unemployment protection policies, leading to a rise in social protection expenditures. (Chaffin & Corder, 2018; Saran et al.,2021).

Moreover, unemployment insurance (UI) refers to insurance provisions for those unemployed to compensate for their income loss, whereas the benefit payments increase as unemployment rises. The program allows them more time to search for new jobs correlated with their expertise. Consequently, UI is essential to social protection for supporting working households, and the government must thoroughly plan unemployment insurance systems to aid economic downturns efficiently (Bambra et al., 2015; Kyyra et al., 2017; Chang, 2019; Dele-Adedeji et al.,2024). In the same manner, food insecurity caused by the rising unemployment rate can be counteracted by raising social protection expenditure; specifically, $1000 per capita decreases the interdependence of unemployment with food insecurity by 0.05% points, indicating that unemployment correlated with food insecurity can only be alleviated through high social protection spendings (Loopstra et al.,2016). The poverty reduction in the context of social spending significantly affects the poverty vulnerability of low-income households (Chzhen, 2016).

However, Kyyra et al. (2017) have also identified that UI negatively affects human behavior in searching for new jobs because they may rely on the insurance benefits passively, leading to layoffs and distortions in the labor market. These adverse effects serve as a question of the effectiveness of the certainty of UI benefits in raising the social protection of the people since the benefit covers only a fraction of an individual's previous earnings. Hence, amid twin challenges brought on by the Great Recession, the government finds it challenging to enhance welfare systems because of the high

unemployment and fiscal deficits (McGan et al.,2020). Meanwhile, Liang et al. (2016) and Cammeraat (2020) also assert that there are insufficient social work programs for the youth unemployment rate, which affects their human capital development, making social protection expenditure questionable in raising social protection for every individual. In addition, Hong (2014) discovered that Korea and Taiwan do not show statistical significance in terms of social expenditure and unemployment despite their positive correlation.

Synthesis

Vast research has been conducted on how government debt, inflation, and unemployment affect social spending or expenditures, specifically on social protection. However, they failed to establish a consistent relationship among the variables.

Social protection expenditures increase as government debt increases as the government has greater fiscal capacity, thereby allowing them to finance public social spending, which boosts economic growth (Seater, 2013; Akram, 2015; Murshed et al., 2017). Conversely, Shabbir (2015) asserted a negative relationship between government debt and social protection expenditures. As public debt increases, the government must allocate more significant funds for debt services. Hence, the funds that were initially for social expenditures are transferred to service the debt, leading to adverse effects on economic growth (Gurowa et al., 2023; Rahim et al., 2023)

On the other hand, certain researchers claim that there is a positive link between inflation and social protection. As expounded by Deyneli et al. (2024) as inflation increases, social expenditure for subsidy increases; in the case of Ukraine and Asia-Pacific region for instance, large spending on social security and social protection was recorded due to rise of inflation. (Byndyu, 2014; Meerendonk et al.,2024; Canto et al., 2024). On the contrary, some explained that social welfare spending as part of government expenditures has an indirect correlation to inflation (Anderson et al., 2016)

Lastly, the indirect correlation of inflation-unemployment, as given by the Phillips curve, remains a crucial concept in understanding the dynamics of social protection expenditures and unemployment rates. As claimed by various studies, when there is a high unemployment rate, it results in increasing government social expenditure (Iyke & Ho, 2019; Deyneli et al., 2024). One reason for this is that the public sector is responsible for aiding the adverse effects of the increase in the unemployment rate by providing social support such as unemployment insurance, leading to a rise in social protection expenditures (Chaffin & Corder, 2018; Saran et al.,2021). However, some claim that unemployment must be indirectly related to social protection, stating that unemployment insurance (UI) negatively affects human behavior in searching for new jobs as they rely on the insurance benefits passively, leading to layoffs and distortions in the labor market (Kyyra et al., 2017).

Overall, without question, a correlation between government debt, inflation, unemployment, and social protection expenditures exists (Tashevska et al., 2022; Tarek & Yahya, 2019).

METHODOLOGY

Research Design

This research investigates how government debt, inflation rate, and unemployment rate affects the social protection expenditure of the public sector in the Philippines. In doing so, the study deals with a quantitative analysis of the aforementioned economic variables aided with an economic model, specifically OLS regression, to test the hypotheses and ultimately achieve its objectives. This quantitative study employed time-series data with a correlational research design as the main objective is to examine the relationships and effects of three independent variables: government debt, inflation rate, and unemployment rate on social protection expenditures of Filipinos.

Scope and Limitations

This paper examines the effects of government debt, inflation, and unemployment on social protection expenditures in the Philippines. The researchers want to explore if those aforementioned variables have significant implications for the country's policies and programs aimed at protecting and securing its society's livelihood and well-being, which ultimately affects its development status.

Researchers gathered secondary data sourced from reputable outlets; data for government debt (in debt-to-GDP ratio) were obtained from the Bureau of Treasury (BTr) database, the principal custodian for all financial assets of the Philippine government. Meanwhile, the data for the inflation rate (in percentage) were gathered from Bangko Sentral ng Pilipinas (BSP), the central bank of the Philippines. The data for the unemployment rate (in percentage) were extracted from MacroTrends. Lastly, social protection expenditures (as a percent of GDP) were sourced from the International Monetary Fund (IMF).

The researchers will employ an annual time period, covering the years 1991 up until 2022, to effectively analyze the data. The analysis relies on secondary data sourced from the aforementioned reputable outlets; hence, it is limited to the available data provided by the said sources. Moreover, the limited time frame can affect the accuracy and effectiveness of the study as the study will only be conducted for a short period of time, and there might be a need for extensive and profound research on the topic.

Data Analysis / Model

The research utilized Multiple Linear Regression to be able to determine the direction of relationship—whether positive or negative—between the independent and dependent variables based on the theoretical and conceptual framework.

Furthermore, the software utilized to run the said regression is GRETL, which is the first complete econometrics package to be released under the GNU software license, as it also provides important diagnostic tests for the study aside from the quality, availability, and its ease of use (Baiocchi & Distaso, 2003).

In terms of the model, the research used the Ordinary Least Squares (OLS) method to estimate the effect of the following independent variables: government debt, inflation, and unemployment to the dependent variable: social protection expenditures in the Philippines. The OLS model is drawn from the following function:

$$SPE = \beta_0 + \beta_1 Debt + \beta_2 INF + \beta_3 UE + \varepsilon \quad (1)$$

where SPE denotes social protection expenditures, β_0 is the constant, $\beta_1, \beta_2, \beta_3$ are the beta coefficients, $Debt$ stands for government debt, INF is inflation rate, UE is unemployment rate and is ε the residual or error term.

Regression Diagnostics

In linear regression, there are numerous tests in investigating the model assumptions. The table summarizes the said diagnostic tests as well as its corresponding function:

Diagnostic tests	Function
Augmented Dickey-Fuller Test	a unit root test, to know the *stationarity* of the data set.
Variance Inflation Factor (VIF)	detects *multicollinearity* or the correlation between two independent variables.
Breusch-Pagan test	detects *heteroskedasticity*, the presence of unequal variance in the error term, specifically if the variance of errors in regression is dependent on the independent variables' values.
Durbin-Watson test	detects *autocorrelation* or the correlation in the residuals.
Breusch-Godfrey test	a test for *serial correlation* to detect autocorrelation of the variables and its lagged values.
Normality of Residuals	determines if there is normality or non-normality distribution of residuals.
Ramsey's RESET	detects *specification errors*—whether the model is mis-specified in terms of the error. It further examines whether there is a linear relationship between the dependent variable and the independent variables really or a non-linear form would be more appropriate.

RESULTS AND DISCUSSION

Multiple linear regression was utilized to determine the significant effects of the independent variables to social protection expenditure using the econometric model below:

$$SPE = 4.875 + 0.691 Debt - 0.029 INF - 1.149 UE + \varepsilon \quad (2)$$

Table 1 Regression Diagnostic Results

Diagnostic Tests	Results	Interpretation
Augmented Dickey-Fuller Test	P-value is < 0.05	No presence of unit root and time series is stationary
Variance Inflation Factor (VIF) Test	All values < 5	No presence of multicollinearity
Breusch-Pagan test	Due to the HAC standard errors, specifically the Newey-West estimator, no presence of heteroskedasticity, autocorrelation, and serial correlation was detected.	
Durbin-Watson test		
Breusch-Godfrey test		
Normality of Residuals	P-value is > 0.05	Residuals are normally distributed
Ramsey's RESET	P-value is > 0.05	No presence of misspecification
Johansen Cointegration Test	Two p-values < 0.05	Two cointegrating equation

Table 1 presents the regression diagnostic result for the model using the 5% significance level. Augmented Dickey-Fuller (ADF) Test was used to assess the stationarity of the data set. The time series of all the variables, namely social protection expenditures (SPE), government debt (DEBT), inflation (INF) rate, and unemployment (UE) rate are all stationary at their first differences, having p-values that are less than 0.05. Therefore, the null hypothesis that all series have a unit root is rejected, concluding that the time series' statistical properties do not change over time.

Furthermore, the Variance Inflation Factor (VIF) Test showed that the VIF for DEBT, INF, and UE are 1.266, 1.243, and 1.535 respectively which are all less than 5. Therefore, multicollinearity does not exist in the model.

The Breusch-Pagan Test used for determining heteroskedasticity, Durbin-Watson Test for identifying autocorrelation, and Breusch-Godfrey Test for detecting serial correlation all have values greater than the 5% significance level due to the implementation of the Heteroskedasticity and Autocorrelation Consistent (HAC) standard errors, specifically the Newey-West estimators which allowed more accurate statistical inference by adjusting the standard errors accordingly.

In testing the distribution of the residuals, the p-value exceeded the 5% significance level, indicating that the residuals are normally distributed, which is crucial for the validity of series statistical tests such as the t-test and F-test.

Moreover, Ramsey's RESET test was utilized to detect any misspecification in the regression model. The test revealed that the p-values for all variants are above the 5% significance level implying that the functional form is correct and all relevant variables are incorporated in the model.

Lastly, the cointegration test result using the Johansen test revealed that there are two cointegrating equations with p-values of 0.0000 and 0.0023 respectively at 0.05 level. This means that the variables have long-term or equilibrium relationships and the deviations from this equilibrium relationship are mean-reverting.

Table 2 OLS Model Regression Result

Model 1: OLS, using observations 1991-2022 (T = 32)
Dependent variable: SPE
HAC standard errors, bandwidth 2, Bartlett kernel

Variables	Coefficient	Std. Error	t-ratio	p-value	
const	4.87513	0.477694	10.21	6.13e-011	***
DEBT	0.690553	1.23309	0.5600	0.5799	
INF	−0.0293412	0.0150451	−1.950	0.0612	*
UE	−1.14862	0.191222	−6.007	1.80e-06	***

Mean dependent var	1.138135	S.D. dependent var	0.731467
Sum squared resid	4.74832	S.E. of regression	0.411804
R-squared	0.713722	Adjusted R-squared	0.683049
F(3, 28)	26.67843	P-value(F)	2.33E-08
Log-likelihood	−14.87891	Akaike criterion	37.75782
Schwarz criterion	43.62077	Hannan-Quinn	39.70122
rho	0.373722	Durbin-Watson	1.24568

As the study is a time series analysis, the regression model can be affected by both autocorrelation and heteroskedasticity which violates the assumption of OLS regression. Hence, to ensure reliable estimates and improve the robustness of statistical inference of the OLS model, the HAC standard errors, specifically the Newey-West Standard Error Model procedure (Newey & West, 1987), with a bandwidth of 2 and a Bartlett kernel is used.

Social Protection Expenditure (SPE) exhibits an upward trend, measuring at 4.875 percent of GDP, when all other factors are held constant. This suggests that the government has been prioritizing social protection to provide social support for Filipinos. To further understand the trends of social protection, three macroeconomic variables influencing it were analyzed.

Unemployment (UE) rate showed a significant negative impact on SPE, particularly, a 1 percent increase in UE rate leads to a 1.149 percent of GDP decrease in the country's social protection expenditures. Similar to the study of McGan et al. (2020) which discovered that due to high unemployment rates, the government is facing difficulties in enhancing social welfare systems. Also, due to increased unemployment insurance—a part of unemployment protection policies under social protection expenditures— layoffs and distortions in the labor market are created (Kyyra et al., 2017).

On the other hand, government debt (DEBT) exhibited an insignificant positive impact on social protection expenditure. This finding is aligned with the study of Czech and Tusinska (2016) who explained that government debt and social protection expenditures have no significant relationship because fluctuations in public finances as caused by increase in public debt are brought by political issues; emphasizing that growth in public debts are primarily caused by the adverse effects of the crises itself and not social spending. Thus, the issue on welfare spending depends on a proper political economy. Similarly, in the Philippine context, a sharp accumulation of government debt happened due to the COVID-19 pandemic to curb its adverse effects (Debuque-Gonzales et al., 2022). However, despite government debt being statistically insignificant to social protection expenditures, its coefficient displayed similar patterns with other scholarly papers. Several studies have determined that government debt is positively correlated with social protection expenditures since government debt has been used to finance public social spending to help them increase their leverage and lead to higher growth (Akram, 2015; Tashevska et al., 2022; Bastagli, 2015).

Meanwhile, inflation (INF) rate demonstrated an insignificant negative effect on social protection expenditure at 0.05 significance level. As explained by Mihaljek (2023), although high inflation initially improves the fiscal position of a country in the short term, government expenditures rapidly catch up with the level of inflation since it gives the perception among politicians to implement new policies and projects thereby increasing public expenditures—including social expenditures, and thus offset the fiscal improvement and may lead to adverse impact on public finances in the long run. Furthermore, the finding is supported by the studies of Anderson et al (2016) and Brooks (2015) explaining that social welfare spending, being a part of government expenditures, has an indirect correlation on inflation because inflation hinders the implementation and expansion of social welfare programs, which are already expensive.

In summary, the model highlighted that the Phillips Curve is found to have a significant effect on social protection expenditure. Specifically, among the three macroeconomic variables, unemployment rate has the highest significant impact on social protection expenditures in the Philippines from 1991 to 2022. Whereas both government debt and inflation rate is found to be statistically insignificant.

CONCLUSION AND RECOMMENDATION

Conclusion

This study focused on analyzing how the Government Debt and the Phillips Curve affected Social Protection in the Philippines. The research delved into identifying the effects and significance of the exogenous macroeconomic variables to the endogenous variable. Data were extracted from the Bureau of Treasury, Bangko Sentral ng Pilipinas, MacroTrends, and International Monetary Fund for the period of 1991 to 2022. Using multiple regression analysis, the study revealed that Government Debt showed an insignificant relationship to Social Protection Expenditure because increasing public debt does not directly raise social protection expenditures, but an appropriate political economy is needed to solve the social spending problems during an economic crisis. Meanwhile, inflation rate had a negative insignificant impact on social protection expenditure, this implies that increasing inflation rate harms the sustainability of social welfare programs because it will be more costly to allocate efficiently. Furthermore, the Unemployment rate also revealed a negative significant impact to Social protection expenditure because rising unemployment rate challenges the government to enhance social welfare systems and will cause disruptions to labor market policies that are under social welfare policies.

The findings of this study highlighted the effects of government debt, inflation rate, and unemployment rate on social protection in the Philippines. Particularly, the Phillips Curve has shown significant effects on social protection. This paper will foster an awareness of how social protection expenditures are affected and allocated depending on the variations of the macroeconomic variables presented in the study.

Policy Recommendation

Ensuring adequate social protection for the poor remains a challenge to the government. The Philippines remains behind other Asian countries in terms of the effectiveness of the distribution of social protection. From the findings, the significant negative relationship between unemployment rate and social protection expenditure provides the government with substantial evidence of how the provision of social insurance poses a challenge amidst rising unemployment. Therefore, policymakers must implement policies relative to combating rising unemployment.

One policy recommendation involves investments in skill development, job training, incentives in the form of wage subsidies to employers and other active labor market policies that would enable Filipinos seeking for employment to be equipped with necessary skills demanded by the evolving labor force. This in turn will allow them to reduce reliance on unemployment insurance, boost employment opportunities leading to declining unemployment rate and ultimately, the government can improve the social well-being of the citizens as they strengthen its provision of social protection efficiently. The policy will also provide financial security as higher and stable employment translates to individuals being able to support themselves and eventually reduce poverty and build more resilient communities.

APPENDIX

A. Augmented Dickey-Fuller Test

1. Social Protection Expenditure

```
Augmented Dickey-Fuller test for d_SPE
testing down from 2 lags, criterion AIC
sample size 31
unit-root null hypothesis: a = 1

  test without constant
  including 0 lags of (1-L)d_SPE
  model: (1-L)y = (a-1)*y(-1) + e
  estimated value of (a - 1): -1.37415
  test statistic: tau_nc(1) = -7.98397
  asymptotic p-value 5.21le-14
  lst-order autocorrelation coeff. for e: 0.071
```

2. Government Debt

```
Augmented Dickey-Fuller test for d_DEBT
testing down from 2 lags, criterion AIC
sample size 31
unit-root null hypothesis: a = 1

  test without constant
  including 0 lags of (1-L)d_DEBT
  model: (1-L)y = (a-1)*y(-1) + e
  estimated value of (a - 1): -0.725361
  test statistic: tau_nc(1) = -4.13751
  asymptotic p-value 3.655e-05
  lst-order autocorrelation coeff. for e: 0.048
```

3. Inflation Rate

```
Augmented Dickey-Fuller test for d_UE
testing down from 2 lags, criterion AIC
sample size 31
unit-root null hypothesis: a = 1

  test without constant
  including 0 lags of (1-L)d_UE
  model: (1-L)y = (a-1)*y(-1) + e
  estimated value of (a - 1): -1.01697
  test statistic: tau_nc(1) = -12.7329
  asymptotic p-value 9.726e-27
  lst-order autocorrelation coeff. for e: -0.296
```

4. Unemployment Rate

```
Augmented Dickey-Fuller test for d_INF
testing down from 2 lags, criterion AIC
sample size 30
unit-root null hypothesis: a = 1

  test without constant
  including one lag of (1-L)d_INF
  model: (1-L)y = (a-1)*y(-1) + ... + e
  estimated value of (a - 1): -1.75773
  test statistic: tau_nc(1) = -7.16264
  asymptotic p-value 6.886e-12
  lst-order autocorrelation coeff. for e: -0.283
```

B. OLS Regression

```
Model 1: OLS, using observations 1991-2022 (T = 32)
Dependent variable: SPE
HAC standard errors, bandwidth 2, Bartlett kernel

            coefficient   std. error   t-ratio    p-value
  ---------------------------------------------------------
  const       4.87513      0.477694     10.21     6.13e-011 ***
  DEBT        0.690553     1.23309       0.5600   0.5799
  INF        -0.0293412    0.0150451    -1.950    0.0612    *
  UE         -1.14862      0.191222     -6.007    1.80e-06  ***

Mean dependent var   1.138135   S.D. dependent var   0.731467
Sum squared resid    4.748320   S.E. of regression   0.411804
R-squared            0.713722   Adjusted R-squared   0.683049
F(3, 28)             26.67843   P-value(F)           2.33e-08
Log-likelihood      -14.87891   Akaike criterion     37.75782
Schwarz criterion    43.62077   Hannan-Quinn         39.70122
rho                  0.373722   Durbin-Watson        1.245680

Excluding the constant, p-value was highest for variable 2 (DEBT)
```

C. Diagnostic Tests

1. Variance Inflation Factor (VIF) Test

```
Variance Inflation Factors
Minimum possible value = 1.0
Values > 10.0 may indicate a collinearity problem

        DEBT    1.266
         INF    1.243
          UE    1.535

VIF(j) = 1/(1 - R(j)^2), where R(j) is the multiple correlation coefficient
between variable j and the other independent variables
```

2. Breusch-Pagan test

```
Breusch-Pagan test for heteroskedasticity
OLS, using observations 1991-2022 (T = 32)
Dependent variable: scaled uhat^2

            coefficient   std. error   t-ratio   p-value
  ---------------------------------------------------------
  const       1.72801      2.15445      0.8021   0.4293
  DEBT        1.11178      3.56532      0.3118   0.7575
  INF        -0.111849     0.0871358   -1.284    0.2098
  UE         -0.205801     0.683652    -0.3010   0.7656

  Explained sum of squares = 6.39094

Test statistic: LM = 3.195468,
with p-value = P(Chi-square(3) > 3.195468) = 0.362458
```

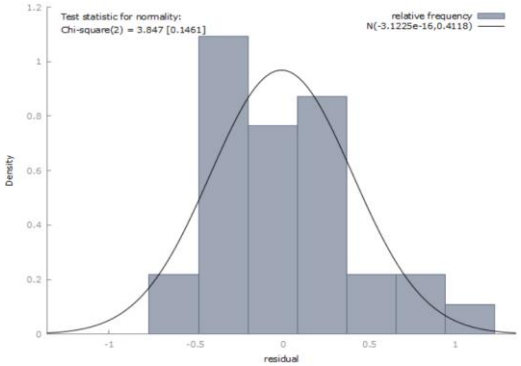
3. Durbin-Watson Test

```
Durbin-Watson statistic = 1.24568

H1: positive autocorrelation
   p-value = 0.00320099
H1: negative autocorrelation
   p-value = 0.996799
```

4. Breusch-Godfrey test

```
Breusch-Godfrey test for autocorrelation up to order 2
OLS, using observations 1991-2022 (T = 32)
Dependent variable: uhat

            coefficient   std. error   t-ratio    p-value
  ----------------------------------------------------------
  const      -0.0693497    0.542424    -0.1279     0.8993
  DEBT       -0.0537088    0.889177    -0.06040    0.9523
  INF         0.00733319   0.0220212    0.3330     0.7418
  UE          0.0162357    0.172080     0.09435    0.9256
  uhat_1      0.432401     0.197964     2.184      0.0382  **
  uhat_2     -0.131249     0.230208    -0.5701     0.5735

  Unadjusted R-squared = 0.155857

Test statistic: LMF = 2.400234,
with p-value = P(F(2,26) > 2.40023) = 0.111

Alternative statistic: TR^2 = 4.987424,
with p-value = P(Chi-square(2) > 4.98742) = 0.0826

Ljung-Box Q' = 4.78367,
with p-value = P(Chi-square(2) > 4.78367) = 0.0915
```

5. Normality of Residuals




```
Frequency distribution for residual, obs 2-33
number of bins = 7, mean = -3.1225e-016, sd = 0.411804

       interval          midpt    frequency    rel.      cum.

          < -0.48062   -0.62375        2       6.25%     6.25%  **
-0.48062 - -0.19435   -0.33749       10      31.25%    37.50%  **********
-0.19435 -  0.091912  -0.051221       7      21.88%    59.38%  *******
 0.091912 -  0.37818    0.23505        8      25.00%    84.38%  *********
  0.37818 -  0.66444    0.52131        2       6.25%    90.63%  **
  0.66444 -  0.95071    0.80758        2       6.25%    96.88%  **
         >=  0.95071    1.0938         1       3.13%   100.00%  *

Test for null hypothesis of normal distribution:
Chi-square(2) = 3.847 with p-value 0.14611
```

6. Ramsey's RESET

```
RESET test for specification (squares and cubes)
Test statistic: F = 0.293057,
with p-value = P(F(2,26) > 0.293057) = 0.748

RESET test for specification (squares only)
Test statistic: F = 0.607945,
with p-value = P(F(1,27) > 0.607945) = 0.442

RESET test for specification (cubes only)
Test statistic: F = 0.594501,
with p-value = P(F(1,27) > 0.594501) = 0.447
```

7. Johansen Cointegration Test

```
Johansen test:
Number of equations = 4
Lag order = 1
Estimation period: 1991 - 2022 (T = 32)
Case 3: Unrestricted constant

Log-likelihood = 77.9597 (including constant term: -12.8523)

Rank Eigenvalue Trace test  p-value  Lmax test  p-value
   0    0.88004     110.30 [0.0000]     67.859 [0.0000]
   1    0.63659      42.443 [0.0008]     32.392 [0.0005]
   2    0.18443      10.051 [0.2819]     6.5238 [0.5546]
   3    0.10437      3.5273 [0.0604]     3.5273 [0.0604]

Corrected for sample size (df = 27)
Rank Trace test p-value
   0     110.30 [0.0000]
   1     42.443 [0.0023]
   2     10.051 [0.3172]
   3     3.5273 [0.0741]
```

ACKNOWLEDGEMENTS
We would like to express our sincere gratitude to the Almighty Father for giving us strength and wisdom in formulating and conducting this paper. To the College of Commerce and Business Administration, thank you for giving us the opportunity to conduct this study. To Sir Peter Jeff Camaro, M.A., our research adviser, thank you for your consistent guidance and support throughout our research. To our family and friends, we would also like to show our sincere appreciation for motivating us from the beginning until the end of this research.

FUNDING INFORMATION
This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

DECLARATION OF CONFLICT
The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

REFERENCES
[1] Abdullah, D. et al. (2018). Empirical Analysis on The Existence of The Phillips Curve. MATEC Web of Conferences, 150, 05063. https://doi.org/10.1051/matecconf/201815005063
[2] ADB. (2020). PHILIPPINES: PUBLIC EXPENDITURE ON SOCIAL PROTECTION AND POLICY REFORMS FOR CONVERGENCE. https://www.adb.org/sites/default/files/linked-documents/52257-001-sd-04.pdf
[3] Ahuja, D., & Murthy, V. (2017). Social cyclicality in Asian countries. International Journal of Social Economics, 44(9), 1154–1165.https://doi.org/10.1108/ijse-04-2016-0112
[4] Akram, N. (2015). Is public debt hindering economic growth of the Philippines? International Journal of Social Economics, 42(3), 202–221. https://doi.org/10.1108/ijse-02-2013-0047
[5] Albonico, A., & Rossi, L. (2014). Policy Games, Distributional Conflicts, And The Optimal Inflation. Macroeconomic Dynamics, 19(6), 1261–1293. https://doi.org/10.1017/s1365100513000825
[6] Almenfi, M. et al. (2022). Tracking Global Social Protection Responses to Inflation – Living paper v. 4. Social Protection Discussion Papers and Notes. https://ideas.repec.org/p/wbk/hdnspu/178842.html
[7] Amores, A. F. et al. (2023). Inflation, Fiscal Policy and Inequality. Social Science Research Network. https://doi.org/10.2139/ssrn.4604418
[8] Anderson, E. et al. (2016). Does Government Spending Affect Income Inequality? A Meta-Regression Analysis. Journal of Economic Surveys, 31(4), 961–987. https://doi.org/10.1111/joes.12173
[9] Asian Development Bank. (2014). Measuring Social Protection Expenditures in Southeast Asia: Estimates Using the Social Protection Index. https://www.adb.org/publications/measuring-social-protection-expenditures-southeast-asia-estimates-using-social
[10] Asian Development Bank. (2022). The Social Protection Indicator for Asia. https://doi.org/10.22617/sgp220562-2
[11] Asma, M.,et al. (2023). Public Debt, Social Spending and Economic Growth: An Analysis for Developing Economies. Journal of Development and Social Sciences, 4(1), 697–706. https://doi.org/10.47205/jdss.2023(4-I)62
[12] Athanasenas, A., et al. (2018). Investigating Social Protection Convergence in the EU-15: A Panel Data Analysis. European Research Studies, XVIII (2), 79–96. https://ersj.eu/journal/446
[13] Baiocchi, G., & Distaso, W. (2003). GRETL: Econometric software for the GNU generation. Journal of Applied Econometrics, 18(1), 105–110. https://doi.org/10.1002/jae.704
[14] Bambra, C. et al. (2015). Social welfare matters: A realist review of when, how, and why unemployment insurance impacts poverty and health. Social Science & Medicine, 132, 88–94. https://doi.org/10.1016/j.socscimed.2015.03.025
[15] Bangko Sentral ng Pilipinas. (2022). Inflation Rates. https://www.bsp.gov.ph/Statistics/Prices/Table%2034_2018.pdf
[16] Bangko Sentral ng Pilipinas. (2024). Monetary Policy Report. https://www.bsp.gov.ph/Price%20Stability/MonetaryPolicyReport/FullReport_February2024.pdf
[17] Bastagli, F. (2015). Working paper 421 Bringing taxation into social protection analysis and planning. https://www.developmentpathways.co.uk/wp-content/uploads/2015/07/61292_Bringing_taxation_into_social_protection.pdf

[18] Bećiragić, I., & Trenovski, B. (2023). What is the purpose of the public debt in North Macedonia: Current, capital or social spending. International Journal of Economic Practice and Policy, 20(2), 68–89. https://doi.org/10.5937/skolbiz2-47612
[19] Bednar, P., & Halaskova, R. (2020). Relationship of Social Protection Expenditures and Socioeconomic Indicators: A Panel Data Analysis of the EU Countries. Montenegrin Journal of Economics, 16(2), 19–31. https://doi.org/10.14254/1800-5845/2020.16-2.2
[20] Béland, D. et al. (2023a). Social Policy Responses to Rising Inflation in Canada and the United States. Social Policy and Society, 1–13. https://doi.org/10.1017/S1474746423000222
[21] Béland, D. et al. (2023b). Understanding the Inflation and Social Policy Nexus. Social Policy and Society, 1–13. https://doi.org/10.1017/s1474746423000349
[22] Bilan, I., & Roman, A. (2014). Interconnections between Public Indebtedness and Inflation in Contemporary Economies. ECONOMICS & SOCIOLOGY, 7(4), 59–70. https://doi.org/10.14254/2071-789x.2014/7-4/4
[23] Bitler, M. P., et al. (2020). The Social Safety Net in the Wake of COVID-19. Brookings Papers on Economic Activity, 2020(2), 119–158. https://doi.org/10.1353/eca.2020.0008
[24] Brooks, S. M. (2015). Social Protection for the Poorest. Politics & Society, 43(4), 551–582. https://doi.org/10.1177/0032329215602894
[25] Burchi, F., et al. (2022). Disentangling the Relationship Between Social Protection and Social Cohesion: Introduction to the Special Issue. The European Journal of Development Research. https://doi.org/10.1057/s41287-022-00532-2
[26] Bureau of Treasury. (2024). National Government Debt Recorded at P14.79 Trillion as of End-January 2024. https://www.treasury.gov.ph/wp-content/uploads/2024/03/NG-Debt-Press-Release-January-2024.pdf
[27] Byndyu, V. (2014). Problems And Prospects Of Social Protection In Ukraine. FBIM Transactions, 2(2), 15–23. https://doi.org/10.12709/fbim.02.02.02.02
[28] Cabacungan, J. et al. (2023) Inflation and Unemployment: Economic Challenges Faced by the Philippines during Covid-19 Pandemic. http://dx.doi.org/10.2139/ssrn.4453924
[29] Cammeraat, E. (2020). The relationship between different social expenditure schemes and poverty, inequality and economic growth. International Social Security Review, 73(2), 101–123. https://doi.org/10.1111/issr.12236
[30] Canto, O. et al. (2024). Social Policy Responses to Rising Inflation in Southern Europe. Social Policy and Society, 1–16. https://doi.org/10.1017/S147474642400006X
[31] Castillo, A., et al. (2024). Addressing Unemployment: A Critical Issue in the Philippine Economy. Social Science Research Network. https://doi.org/10.2139/ssrn.4731483
[32] Castro, V., et al. (2024). Social protection spending and financial crises. Finance Research Letters, 59, 104753–104753. https://doi.org/10.1016/j.frl.2023.104753
[33] Chaffin, L. Y., & Corder, J. K. (2018). How do social security expenditures vary by state? The surprising impact of unemployment. Journal of Public Policy, 38(3), 305–328. https://doi.org/10.1017/S0143814X17000277
[34] Chang, C., et al. (2016). Does higher government debt link to higher social expenditure? New method, new evidence. Applied Economics, 48(16), 1429–1451. https://doi.org/10.1080/00036846.2015.1044745
[35] CHANG, Y.-L. (2019). Unequal Social Protection under the Federalist System: Three Unemployment Insurance Approaches in the United States, 2007–2015. Journal of Social Policy, 49(1), 189–211. https://doi.org/10.1017/s0047279419000217
[36] Chzhen, Y. (2016). Unemployment, social protection spending and child poverty in the European Union during the Great Recession. Journal of European Social Policy, 27(2), 123–137. https://doi.org/10.1177/0958928716676549
[37] Colgan, B., & Callan, T. (2015). The Distributional Impact of Inflation: 2003-2014. ESRI Research Note. https://www.esri.ie/publications/the-distributional-impact-of-inflation-2003-2014
[38] Cummins, M., et al. (2015). Fiscal Space for Social Protection and the SDGs: Options to Expand Social Investments in 187 Countries. Papers.ssrn.com. SRRN Electronic Journal. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2603728
[39] Czech, S., & Tusińska, M. (2016). Economic Growth, Public Debt And Social Spending. Should Welfare State Take The Blame? Ekonomia I Prawo, 15(1), 33. https://doi.org/10.12775/eip.2016.003
[40] de Mendonça, H. F., & Tiberto, B. P. (2014). Public debt and social security: Level of formality matters. Economic Modelling, 42, 490–507. https://doi.org/10.1016/j.econmod.2014.07.030
[41] Debuque-Gonzales, M.,et al. (2022). Fiscal Effects of the COVID-19 Pandemic: Assessing Public Debt Sustainability in the Philippines. In DISCUSSION PAPER SERIES. https://pidswebs.pids.gov.ph/CDN/document/pidsdps2217.pdf

[42] Dele-Adedeji, I., et al. (2024). The challenge of youth unemployment in Nigeria. Journal of International and Comparative Social Policy, 1–11. https://doi.org/10.1017/ics.2024.4
[43] Deyneli, F., et al. (2024), "What are the main determinants of social expenditure? A panel data approach for EU and OECD countries", International Journal of Social Economics, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/IJSE-05-2023-0384
[44] Diokno-Sicat, C., & Mariano, M.A. (2018). A Public Expenditure Review of Social Protection Programs in the Philippines. https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidsdps1831.pdf
[45] Dukic, M. (2021). Comparison of Keynesian and (Neo)classical economics. https://www.academia.edu/45184834/Comparison_of_Keynesian_and_Neo_classical_economics
[46] EuroStat. (2022). Beginners:Inflation Statistics Explained. https://ec.europa.eu/eurostat/statistics-explained/SEPDF/cache/63284.pdf
[47] Faust, J., & Leeper, E. (2015). The Myth of Normal: The Bumpy Story of Inflation and Monetary Policy. NBER. 10.13140/RG.2.1.1643.9527
[48] Fisher, E. (2015). The Crucible of Debt and Welfare Spending: Evidence from State-level Welfare Expenditures in the United States. Review of Political Economy, 27(2), 201–217. https://doi.org/10.1080/09538259.2015.1012791
[49] Ghosh, J. (2023). The social consequences of inflation in developing countries. Economic and Labour Relations Review, 34(2), 203–211. https://doi.org/10.1017/elr.2023.11
[50] Guérin, I. (2014). Juggling with Debt, Social Ties, and Values. Current Anthropology, 55(S9), S40–S50. https://doi.org/10.1086/675929
[51] Gurowa, S. U., et al. (2023). Nexus Between Public Debt Servicing and Social and Community Sector Spending in Nigeria. International Journal of Research and Innovation in Social Science (IJRISS), 7(8). https://doi.org/10.47772/ijriss
[52] Ha, J. et al. (2023). One-stop source: A global database of inflation. Journal of International Money and Finance, 137, 102896. https://doi.org/10.1016/j.jimonfin.2023.102896
[53] Haelg, et al. (2020). Determinants of social expenditure in OECD countries. KOF Working Papers, No. 475, ETH Zurich, KOF Swiss Economic Institute, Zurich,. https://doi.org/10.3929/ethz-b-000407604
[54] Hong, I. (2014). Trends and Determinants of Social Expenditure in Korea, Japan and Taiwan. Social Policy & Administration, 48(6), 647–665. https://doi.org/10.1111/spol.12089
[55] Iiyambo, H., & Kaulihowa, T. (2020). An assessment of the relationship between public debt, government expenditure and revenue in Namibia. Public Sector Economics, 44(3), 331–353. https://doi.org/10.3326/pse.44.3.3
[56] International Labour Organization. (2020). ILO Flagship Report World Social ProtectionReport. https://webapps.ilo.org/wcmsp5/groups/public/---ed_protect/---soc_sec/documents/publication/wcms_817572.pdf
[57] International Labour Organization. (2024). Global unemployment rate set to increase in 2024 while growing social inequalities raise concerns, says ILO report | International Labour Organization. Www.ilo.org. https://www.ilo.org/resource/news/global-unemployment-rate-set-increase-2024-while-growing-social
[58] Iyke, B. N., & Ho, S.-Y. (2019). Unemployment and Inflation: Evidence of a Nonlinear Phillips Curve in the Eurozone. The Journal of Developing Areas, 53(4), 151–164. https://www.jstor.org/stable/26598330
[59] Kasidi, F., & Mwakanemela, K. (2013). Impact of Inflation on Economic Growth: A Case Study of Tanzania. Asian Journal of Empirical Research, 3(4), 363–380. https://archive.aessweb.com/index.php/5004/article/view/3366/5381
[60] Kyyra, T., et al. (2017). Unemployment Insurance in Finland: A Review of Recent Changes and Empirical Evidence on Behavioral Responses. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.2921065
[61] Lazaro, E. et al. (2024). Philippine Inflation Trends and Effects: A Comparative Analysis Across Four Recent Administrations and Regional Predictions. Social Science Research Network. https://doi.org/10.2139/ssrn.4715451
[62] Li, J. F., & Lin, Z. X. (2016). Social benefit expenditures and stagflation: evidence from the United States. Applied Economics, 48(55), 5340–5347. https://doi.org/10.1080/00036846.2016.1176118
[63] Liang, J. et al. (2016). Youth unemployment: Implications for social work practice. Journal of Social Work, 17(5), 560–578. https://doi.org/10.1177/1468017316649357
[64] Loopstra, R. et al. (2016). Food insecurity and social protection in Europe: Quasi-natural experiment of Europe's great recessions 2004–2012. Preventive Medicine, 89, 44–50. https://doi.org/10.1016/j.ypmed.2016.05.010
[65] Macia, D. G. (2023). The Effects of Inflation on Public Finance. Www.google.com. https://www.google.com/url?q=https://www.imf.org/-/media/Files/Publications/WP/2023/English/wpiea2023093-print-pdf.ashx&sa=D&source=editors&ust=1714491544316495&usg=AOvVaw1w9bzlkDLpJ1YwDO5pI7jy

[66] Mariano, C., & Sicat, M. A. (2021). Public Expenditure Review of Social Protection Programs in the Philippines. https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidsrp2101.pdf
[67] Mawardi, I., et al. (2019). Public Debt As A Source Of Financing For Government Expenditures In The Perspective Of Islamic Scholars. Humanities & Social Sciences Reviews, 7(4), 285–290. https://doi.org/10.18510/hssr.2019.7436
[68] McGann, et al. (2020). Workfare redux? Pandemic unemployment, labour activation and the lessons of post-crisis welfare reform in Ireland. International Journal of Sociology and Social Policy, 40(9/10), 963–978. https://doi.org/10.1108/ijssp-07-2020-0343
[69] Meerendonk, A. V. D., et al. (2024). Costing Social Protection Reform for Asia And The Pacific Strategies To Achieve Sustainable Development Goals In The Developing Member Countries Adb Sustainable Development Working Paper Series No. 92. Adb Sustainable Development Working Paper Series. https://www.adb.org/sites/default/files/publication/945516/sdwp-092-social-protection-reform-asia-pacific.pdf
[70] Mihaeljek, D. (2023). Inflation and public finances: an overview. Public Sector Economics,7(4), 413–430. https://doi.org/10.3326/pse.47.4.2
[71] Murshed, S. M., et al. (2017). Fiscal capacity and social protection expenditure in developing nations. In Working Paper Series. https://doi.org/10.35188/unu-wider/2017/284-7
[72] Newey, Whitney K and West, Kenneth D (1987), "A Simple, Positive Semi-definite, Heteroskedasticity and Autocorrelation Consistent Covariance Matrix". Econometrica. 55, 703-708
[73] Nguyen, V. B. (2022). The Effect of Public Debt on Income Inequality in Advanced Economies: Does Institutional Quality Matter? Ekonomický Časopis, 70(09-10), 723–742. https://www.ceeol.com/search/article-detail?id=1192526&fbclid=IwZXh0bgNhZW0CMTAAAR28uyrMuX17vNSGn8-N2D95FhLKzPFyHDsYQLXGuDL0wqCPlPckSNk3E_aem_ATko__WnkgnPv_hr5aPBdKZFdGVACp1GtHVRaEnXS85IDIlrkOgw7ykwybxsc3VWBgMJFhSvExouWB2u-_D31MK
[74] Nugraha, M. K. R., & Handra, H. (2021). The Relationship between Government Debt and Social Welfare. Jurnal Ekonomi Pembangunan, 19(1), 125–134. https://doi.org/10.29259/jep.v19i1.13786
[75] Omondi, F., & Onono – Okelo, P. (2021). Impact Of Debt Servicing On Social Spending And Well Being Of Low-Income Households In Kenya A Case Study Of Nairobi City And Mombasa Counties. https://oi-files-cng-v2-prod.s3.eu-west-2.amazonaws.com/kenya.oxfam.org/s3fspublic/file_attachments/DEBT%20SERVICE%20N%20SOCIAL%20SPENDING%20gogo.pdf
[76] O'Campo, P. et al. (2015). Social welfare matters: A realist review of when, how, and why unemployment insurance impacts poverty and health. Social Science & Medicine, 132, 88–94. https://doi.org/10.1016/j.socscimed.2015.03.025
[77] Rahim, F. U., et al. (2023). Public Debt, Social Spending and Economic Growth: An Analysis for Developing Economies. Journal of Development and Social Sciences, 4(1), 697–706. https://doi.org/10.47205/jdss.2023(4-I)62
[78] Rueda, D. (2015). The State of the Welfare State: Unemployment, Labor Market \ Policy, and Inequality in the Age of Workfare. Comparative Politics, 47(3), 296–314. https://doi.org/10.5129/001041515814709275
[79] Santos, B., et al. (2022). Journal of Economics, Finance and Accounting Studies. Journal of Economics, Finance and Accounting Studies. https://doi.org/10.32996/jefas
[80] Saran, A. et al. (2021). PROTOCOL: The effectiveness of social protection interventions in low- and middle-income countries: An evidence and gap map. Campbell Systematic Reviews, 17(3). https://doi.org/10.1002/cl2.1160
[81] Seater, J. 2013. "Government Debt, Entitlements, and the Economy." In The Handbook of Major Events in Economic History. doi:10.4324/9780203067871. ch35.
[82] Shabbir, S., & M. Yasin, H. (2015). Implications of Public External Debt for Social Spending: A Case Study of Selected Asian Developing Countries. THE LAHORE JOURNAL of ECONOMICS, 20(1), 71–103. https://doi.org/10.35536/lje.2015.v20.i1.a3
[83] Spasova, S., & Ward, T. (2019). Benchmark Social protection expenditure and its financing in Europe A study of national policies. https://www.sozialpolitik-aktuell.de/files/sozialpolitik-aktuell/_Politikfelder/Europa-Internationales/Dokumente/2019_10_EUKommi_Social%20protection%20expenditure%20and%20its%20financing%20in%20Europe.pdf
[84] Tarek, B. A., & Yahya, B. A. A. A. B. (2019). The effect of governance on public debt: an empirical investigation for the Arabian Gulf countries. Journal of Economic Studies, 46(4), 812–841. https://doi.org/10.1108/jes-07-2017-0168
[85] Tashevska, B., et al. (2022). Social Protection Expenditures In Central And Eastern European Countries: Does Government Debt Matter? Economic and Business Trends Shaping the Future. https://doi.org/10.47063/ebtsf.2022.0002

[86] Umaru, A., & Zubairu, A. A. (2012). Effect of Inflation on the Growth and Development of the Nigerian Economy (An Empirical Analysis). International Journal of Business and Social Science, 3(10).
[87] United Nations Economist Network. (2021). Thematic Brief Social Protection. https://www.un.org/sites/un2.un.org/files/2021/04/a-tb_on_social_protection.pdf
[88] Villar, F. (2013). "The Philippine Social Protection Framework and Strategy: An Overview." 12th National Convention on Statistics (NCS). Mandaluyong City: DSWD. 1.
[89] Wulfgramm, M. (2014). Life satisfaction effects of unemployment in Europe: The moderating influence of labour market policy. Journal of European Social Policy, 24(3), 258–272. https://doi.org/10.1177/0958928714525817