

Evaluating the impact of government support policy on household consumption expenditure in Algeria: An econometric study (1994-2022)

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Abstract:

This study aimed to evaluate the impact of government support on consumption by Algerian families during the period (1994 - 2022). The study results indicate a long-term equilibrium relationship between the variables examined. In the long term, economic growth and inflation had a positive and significant impact on household expenditure in Algeria. In contrast, social transfers and unemployment had a positive but insignificant effect on Algerian household consumption. In the short term, social transfers and unemployment had a negative and insignificant impact on consumers' expenditure. Conversely, inflation had a favorable and substantial effect on the spending of Algerian households.

Keywords: Government support; Social transfers; Consumer spending; ARDL model; Algerian families.

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1.INTRODUCTION:

Many economic theories have discussed household consumption, given its significant role in economic development. According to the Organization for Economic Co-operation and Development, Family consumption accounts for approximately 60% of GDP in most countries worldwide. (Bonsu & Muzindutsi, 2017) Household consumption expenditure is the total amount households spend to meet their daily needs. (HAMDAOUI & DELENDIA, 2022)

According to World Bank statistics, household consumption in Algeria reached 47% of GDP in 2020, 42 % in 2021, and decreased to 38% in 2022.(worldbank, 2022) Several factors influence household spending behavior, the most significant being the prices of goods and services, household wealth, and interest rates. (Guerrouf, Seffari, & Abada, 2021)

To mitigate the impact of these factors and protect families from poverty, governments, particularly in developing countries, provide support programs for low- income families. This support includes direct assistance, such as cash transfers to Low-income families, and indirect support, which covers subsidies for essential goods and services. Algeria's social support program includes housing, health, education, pensions, electricity and gas subsidies, commodity subsidies, and several other forms of support. According to the Algerian report presenting the draft finance law for 2022, social transfers totaled 1.969.142 million dinars in 2021, accounting for 21% of the government's budget. Moreover in 2022, it reached 1,942,004 million dinars, accounting for 19,7 % (Ministryoffinance, 2022). This level of sociale transfers reflects the Algerian government's commitment to improving the standard of living and quality of life for its citizens.

The Keynesian consumption theory posits that an increase in income consistently ends in an increase in consumption. This study aims to evaluate the impact of government support on household consumption in Algeria, As social transfers indirectly enhance household income. In light of the previously mentioned, we provide the following problem.

1.1.Problem of the study :

How does the government's support policy impact household consumption expenditure in Algeria during the period 1994-2022?

1.2.Hypotheses:

- There is a long-term equilibrium relationship between government support and household spending in Algeria.
- Government support reduces household spending in the short term.

1.3. Importance of the study:

Several studies have analyzed government support policies in Algeria; however, none have focused on their impact on improving the living standards of Algerian families. This study aims to fill this research gap and evaluate the impact of government support on household consumption spending in Algeria from 1994 to 2022 using the ARDL model.

1.5. Approach to the study:

This study employed two different methodologies: a qualitative approach to review and analyze previous studies on the subject, and a quantitative approach using the ARDL model to examine the relationship between government support and Algerian household spending over the period (1994 -2022).

2.Literature reviews:

Several studies have investigated the impact of government support on family expenditure. Some studies find that government support enhances household consumption, while others show that it hurts family consumption. This section will present a thorough analysis of studies related to the study's topic.

(Fosu & Ankrah Twumasi, 2021) This study aims to assess the impact of government spending and maternal health support program on private consumption in Ghana from 1967 to 2018. The study employed a quantitative approach, using an ARDL model to assess the impact of government spending on family consumption, and a logistic linear regression model to analyze the effect of the Maternal Health Support program on households' final consumption. The researchers found that

government spending and maternal health support program negatively impacted family consumption. Despite the significance of the findings, the study focused on the macro level rather than the micro level. The real effect of the health support program would have been apparent had it been implemented in smaller regions. (Habimana, Haughton, Nkurunziza, & Haughton, 2021) This investigation aims to analyze the effect of direct government support on poverty and family consumption in Rwanda. The study showed that government support in Rwanda reduced the poverty rate, but it did not significantly affect household consumption. (Maisyarah & Sofyardi, 2018) This study aimed to examine the impact of rice subsidies on the welfare and expenditure of low-income families in North Sumatra, Indonesia. The study results indicate that the rice subsidy had a positive impact on the family's welfare and consumption spending. (Muindi & Mukorera, 2022) This article evaluated the impact of fiscal policy (government expenditure and tax revenues) on family consumption in Kenya from 1971 to 2018. The researchers used a non-linear autoregressive distributed lag (NARDL) model to analyze the relationship between the study variables. The study's results suggest that, in the short term, fiscal policy did not affect household consumer spending, but in the long term, reduced tax rates boosted household consumer spending. (Riza & Wiriyana, 2021) This research paper examined the impact of the expansion of monetary and fiscal policies on private consumption in Indonesia during the period 2015 to 2020. The Vector Correction Model (VCM) was used to evaluate the relationships among the variables; the results of the study found that, in the long term, government expenditure negatively affected family consumption, whereas interest rates and the money supply positively influenced household consumption. (Zarepour & Wagner, 2022) This study examined the impact of Iran's fuel subsidy reform policy on family consumption. The study's results indicate that, despite the cash compensation provided to consumers, the reform of fuel subsidies negatively affected consumer spending. Despite the significance of the results, the study period was short (2010 - 2012), precluding an evaluation of the program's long-term effects. (Gadisi, Owusu-Sekyere, &

Ogundeji, 2020) This research assessed the effect of government subsidies on the well-being of families in South Africa. The compensatory variance (CV) model and propensity score matching (PSM) were employed to analyze the relationship among the study variables. The findings of this study show that government support programs have a positive impact on household well-being in Limpopo Province. The study showed positive findings, but the inclusion of an urban region would have clarified the differences and the real impact of the government support program in rural and urban regions. (Pramisita & Others, 2023) This study examined the impact of social cash transfer on the spending of low-income households in Indonesia during the COVID-19 pandemic. This study covered 99 families receiving government social aid and 103 families who did not receive the assistance between May 2021 and February 2022. Researchers found that government support programs have a positive influence on family consumption. (Dartanto, et al., 2021) this study examined the impact of social transfers on tobacco consumption in Indonesia between 2007 and 2017. The research applied a quantitative methodology, employing three standard models to explore the correlation between social assistance and smoking intensity, the tobit model for evaluating the relationship between social assistance and smoking intensity, and the difference-in-differences model to assess the impact of social assistance on smoking intensity, and applied the t-test to explore differences in economic and social indicators between smokers and non-smokers. The study concluded that government social support had a positive impact on tobacco consumption. (Undai & Fachry, 2024) This study analyzed the influence of social government transfers and demographic factors (level of education, family size, Father's age within the family, and experience) on the income and expenditure of low-income households during the COVID -19 pandemic in South Sulawesi. The study found that cash transfers enhanced household income. (Lakshmanasamy, 2022) This paper analyzed the influence of" IGNOAPS, an Indian pension support program for elderly women, on household consumption and well-being in India, finding that Gandhi's pension

program positively influenced household well-being and expenditure. Despite the study's scientific value, it focused on the recipients of the support program to demonstrate the program's effect on family welfare. It would have been more appropriate to include people who would not benefit from the support to show the program's real effects.

3. Evaluating the impact of government support on household consumption expenditure in Algeria:

This section will evaluate the impact of government support on consumption spending by Algerian households between 1994 and 2022. Using the ARDL model developed by Pesaran and other researchers to estimate both long- and short-term relationships between variables that are stationary at the level or after the first difference. (PESARAN, Shin, & Smith, 2001) The following method is applied using this model: (Gassem, 2024)

- Conducting unit root tests to determine the degree of stability of the study variables.
- Determining the optimal lag period through the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC)
- Conducting a boundary test (Bound test) to confirm the existence of cointegration among the variables.
- Estimating the long-term relationship between variables to understand how independent variables affect the dependent variable in the long run.
- Estimating the Error Correction Model (ECM) to test the short-term relationship between variables, and the speed of returning to equilibrium after a short-term shock.
- Conducting diagnostic tests for the model

3.1.Data and variables :

Annual data from the period (1994-2022) are included in this study and were collected from official sources, specifically the World Bank and reports presenting the draft finance law in Algeria. To evaluate the impact of government support on the consumption of Algerian households.

Table 01: Variables and Data Sources

Type of the variables	variables	Data Sources
Dependent variable	Household consumption expenditure (HCE)	World Bank
Independent variable	Social transfers (ST)	Reports presenting the draft finance law in algeria
Independent variable	Unemployment (Ump)	World Bank
Independent variable	Inflation (INF)	World Bank
Independent variable	Gross Domestic Product (GDP)	World Bank

Source: Prepared by authors

3.2 Estimating the stability and stationarity of the variables:

To use the ARDL model, the variables must be stationary at the level or after the first differences. Therefore, before employing the model, it is essential to assess the degree of stability of the variables. This study will use two standard unit root tests, namely the augmented Dickey-Fuller test (ADF) and the Phillips-Perron test (PP), to assess the stability of the study's variables.

Table 02: Summary of Unit Root Test results (ADF)

augmented Dickey-Fuller test (ADF)							
At the level				at the first difference			degree of stability
With Constant	With Constant and linear Trend	Without Constant and linear Trend		With Constant	With Constant and linear Trend	Without Constant and linear Trend	
HCE	- 2.089465 (0.2501)	- 2.76373 (0.2215)	8.78013 (1.000)	- 4.94157 (0.0005)	- 4.42396 (0.0083)	- 2.51792 (0.0139)	I(1)

ST	- 2.235817 (0.1989)	- 1.04998 (0.9199)	3.12950 (0.9991)	- 4.92981 (0.0005)	- 5.48218 (0.0007)	- 3.8828 (0.0004)	I(1)
GDP	- 2.505741 (0.1249)	- 2.22424 (0.4588)	5.79771 (1.0000)	- 4138590 (0.0035)	- 5.08564 (0.0019)	- 2.43907 (0.0168)	I(1)
UMP	- 1.191744 (0.6636)	- 0.89564 (0.9426)	- 1.76095 (0.0744)	- 4.90975 (0.0005)	- 5.33106 (0.0010)	- 4.4895 (0.0001)	I(1)
INF	- 3.842814 (0.0069)	- 6.32134 (0.0001)	- 3.50817 (0.0011)	-	-	-	I(0)

Source: Prepared by authors

Table 03: Summary of Unit Root Test results (P.P)

	Phillips Perron test (PP)						degree of stability
	At the level			at the first difference			
	With Constant	With Constant and linear Trend	Without Constant and linear Trend	With Constant	With Constant and linear Trend	Without Constant and linear Trend	
HCE	- 1.87086 (0.3404)	- 3.57792 (0.0503)	- 7.55036 (1.0000)	- 5.36019 (0.0002)	- 4.65539 (0.0049)	- 2.5278 (0.0136)	I(1)
ST	- 2.43787 (0.1410)	- 0.89916 (0.9421)	- 2.94094 (0.9986)	- 4.92088 (0.0005)	- 5.52429 (0.0006)	- 3.8506 (0.0004)	I(1)
GDP	- 6.72865 (0.0000)	- 2.22212 (0.4599)	5.79771 (1.0000)	- 4.07411 (0.0041)	- 3.93465 (0.0243)	- 2.313 (0.0225)	I(1)
UMP	- 1.20797 (0.6565)	- 1.05160 (0.9196)	- 1.68915 (0.0858)	- 4.91880 (0.0005)	- 5.28815 (0.0011)	- 4.5614 (0.0001)	I(1)
INF	- 4.41200 (0.0002)	- 4.17962 (0.0139)	- 3.50817 (0.0011)	-	-	-	I(0)

Source: Prepared by authors

The unit root test results showed that inflation was the only variable exhibiting stability at the level in both tests. In contrast, the other variables (HCE, ST, GDP, UMP) showed stability after the first difference. Since the variables are stationary in levels and differenced, this makes them suitable for the ARDL model.

3.3. Determining the optimal lag for the model:

Table 03: Var lag order selection criteria

lag	Log l	LR	FPE	AIC	SC	HQ
0	9729836	NA	9.43e-10	- 6.592740	- 6.3548478	- 6.520013
1	270.2266	271.7444*	2.51e-14*	- 17.15904*	- 15.73168*	- 16.72268*

Source: Prepared by authors

The table above shows that the optimal lag order for the model is 1, based on the criteria (HQ, SC, AIC, FPE, LR).

3.4. Joint integration test:

Before estimating the model's parameters in the long run, it is necessary to verify the existence of a long-run equilibrium relationship between the variables. In this study, we will use the joint integration test to detect a long-term relationship between the variables.

Table 04: Summary of the Joint Integration Test results

F statistica	Critical valeurs	Significance level		
		1%	5%	10%
F= 44.97369	I(0)	2.525	3.058	4.28
	I(1)	3.56	4.22	5.84

Source: Prepared by Authors

The above table shows that F STATISTICA = 44.97369 exceeds the critical values for both the minimum and the maximum at significance

levels of 1%, 5%, and 10%. These results indicate a consistent integration among the study's variables.

3.5. Long-term estimation of the model's variables:

Table 05: summary results of the Long-term estimation of the model's variables

Long Run Coefficients				
Variables	Coefficient	Std. Error	t-Statistic	Prob
ST	0.189955	0.219617	0.864938	0.3985
GDP	0.743177	0.278329	2.670145	0.0156
UMP	0.895617	1.235907	0.724664	0.4780
INF	6.165983	1.955637	3.152928	0.005
C	0.764230	2.490342	0.309878	0.7625

Source: Prepared by authors

The table above shows a positive, though statistically insignificant, impact of social transfers and unemployment on household consumption expenditure. An increase of 1% in social transfers leads to a 0.189955% rise in household consumption, and an increase of 1% in unemployment results in a 0.895617% rise in household consumption. Additionally, economic growth and inflation have a positive and significant impact on household consumption. Specifically, a one-unit increase in economic growth results in a 0.743177 increase in household consumption, whereas a one-unit increase in inflation leads to a 6.165983 increase in consumption.

3.6. short-term estimation of the model's variables:

Table 06: Summary results of the short -term estimation of the model's variables

ECM regression				
Variables	Coefficient	Std. Error	t-Statistic	Prob
D(ST)	-0.022670	0.20800	-1.089855	0.2902
D(GDP)	0.081114	0.38606	2.101063	0.5000
D(UMP)	-0.1560331	0.159594	-1.004619	0.3284

Evaluating the impact of government support on Algerian household consumption expenditure: An econometric study (1994 - 2022)

D(INF)	0.906344	0.98260	9.223924	0.0000
cointEq (-1)*	-0.139928	0.007536	-18.56875	0.0000

Source: Prepared by Authors

Table 06 shows that the error-correction coefficient is significant and negative, indicating a long-term relationship between the study's variables. This value represents the rate of transition from the short term to the long term. In our study, the transition from the short term to the long term approximately takes 7 years and 7 months.

Social transfers and unemployment have an inverse, yet statistically insignificant impact on the consumption of Algerian households. A 1% increase in social transfers results in a 0.02% decrease in consumption, while a 1% rise in unemployment leads to a 0.15% decline in consumption. Additionally, there is a positive, though statistically insignificant, impact of economic growth and consumption on Algerian households, such that a 1-unit increase in economic growth translates into a 0.08-unit increase in consumption. Additionally, inflation has a positive and significant impact on the dependent variable, with a one-unit increase leading to a 0.90% increase in consumption among Algerian families.

3.7. Diagnostic tests for the study model:

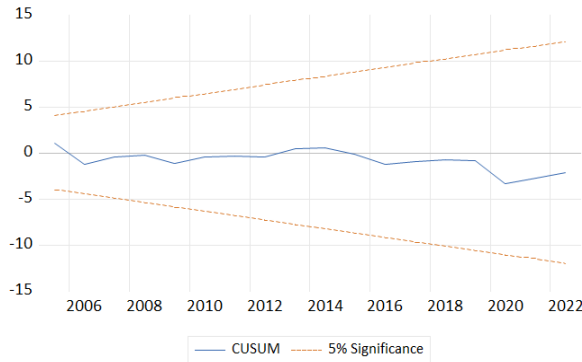
Table 07: Summary results of the Diagnostic tests

Tastes	F statistic	Pro - F
Correlation LM test : Breush-godfrey serial	1.762899	0.2018
Normality test : Jake Berra	2.173345	0.337337
Heteroskedasticity test: ARCH TAST	0.049585	0.8256

Source: Prepared by Authors

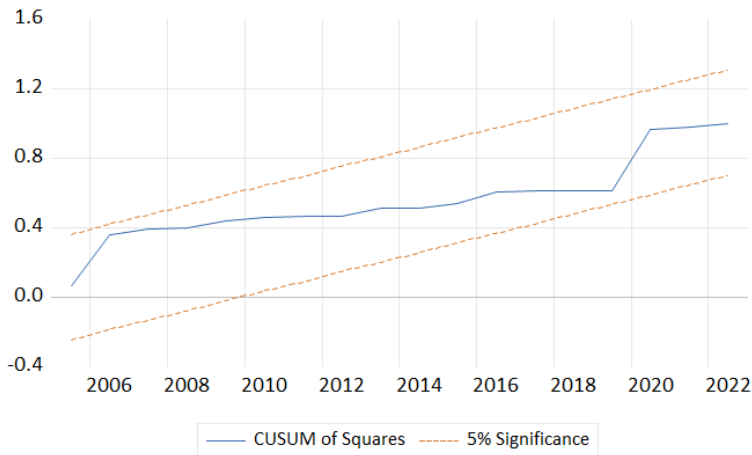
The diagnostic test results indicate that the model is without problems, as the p-values for the three tests are above the 5% significance level.

Figure 01: CUSUM structural stability test



Source :by authours

Figure 02: CUSUM of squars structural stability test



Source :by authours

The previous figures show that the residuals and their squares remain within the crucial limitations at a 5% significance level. These results indicates the stability and quality of the study model .

4.Discussion:

The model's long-term estimates indicate a positive and significant impact of both economic growth and inflation on Algerian families' consumption.

A 1% increase in economic growth results in a 0.74% increase in household spending, consistent with Keynesian consumption theory, as higher economic growth leads to higher income, which in turn stimulates increased consumption. A 1% increase in inflation results in a 6.16% increase in family expenditure in Algeria. These results correspond with the theory of inflation expectations. Algerian families tend to spend more than they expect due to anticipated future price increases. The results indicate a positive but insignificant impact of both social transfers and unemployment on the consumption of Algerian households. A 1% increase in social transfers leads to a 0.18% increase in the consumption of Algerian households. This effect is often due to two factors: the first is inflation, and the second is. Moreover, the second is that most government support is implicit rather than direct cash transfers, which explains its limited impact on consumption. Furthermore, the findings indicate that a 1% rise in unemployment results in a 0.89% increase in consumer expenditure. This is often attributed to the prevalence of the parallel economy in Algeria, where unemployment rates do not accurately reflect the real number of unemployed persons. Many people categorized as unemployed actually participate in unofficial activities that yield

Revenue, thus enhancing consumption. In the short term, the estimation results indicated that both social transfers and unemployment had an adverse, insignificant effect on consumption among Algerian households. A 1% increase in social transfers results in a 0.02% decrease in family consumption, demonstrating the limited efficacy of government support in boosting household consumption. A 1% rise in unemployment reduces consumption by 0.15. Conversely, inflation had a positive and significant impact on Algerian families' consumption, with a 1% increase in inflation resulting in a 0.90% increase in household spending. This effect is due to Algerian families' spending habits, which align with the theory of inflationary expectations. Economic growth had a positive impact on Algerian households' expenditure, with a 1% increase in growth resulting in a 0.08% rise in consumption.

5. Conclusion:

In several developing nations, governments provide financial or implied assistance to their residents to improve their standard of living. Nonetheless, a significant mystery exists regarding the efficacy of this policy. This study aims to clarify part of the mystery and to evaluate the impact of Algeria's government support policy on family consumption between 1994 and 2022. Using the ARDL model . The study's findings revealed a long-term equilibrium relationship among the variables.

Furthermore, both economic growth and inflation have a positive and significant impact. Contrast, social transfers, and unemployment have a positive but non-significant effect on the long-term consumption of Algerian households. However, in the short term, social transfers and unemployment have a negative, non-significant impact on consumer spending. Conversely, inflation had a positive and significant impact on Algerian consumers' spending.

Our study recommends that the Algerian authorities reform the government support policy to enhance its effectiveness. Consequently, improve the living standards of low-income Algerian families.

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