

Investigating the Impact of CAP on Consumption and MPC of Saudi Beneficiaries

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Abstract

Since 2017, Saudi Arabia government adopted several reforms to minimize the side effects of implementing new fiscal policies such as energy price increases and the introduction of new taxation system (VAT). The Citizen's Account Program (CAP) is one way to achieve this objective as cash transfer program that directed to minimize the side effects of implementing these policies. In this paper, following Keynesian theory and Shapiro & Slemrod (2003) model, we investigate how consumption and income can be affected directly by implementing new fiscal policies. By using data from Saudi Family Income and Expenditure Survey (FIES), this paper estimate households' marginal propensity to consume (MPC) and examine how the propensity differs with income and find that CAP benefit derived Saudi households to spent an average of 20-halala for each one-riyal received. This paper is an attempt to determine how Saudi consumers adjust their consumption to income changes generated by subsidy, as well as understanding which economic models are more consistent with the consumption adjustments observed in the data. Empirically, we find that Saudi consumers would allocate on average 19.5%, 25.5% and 16.8% of the additional income to non-durables, semi-durable goods and services respectively. These findings corroborate with the theoretical prediction and empirical results from other countries.

التحقق من تأثير برنامج حساب المواطن (CAP) على الاستهلاك والميل الحدي للاستهلاك (MPC) للمستفيدين السعوديين

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ملخص

منذ عام 2017، تبنت حكومة المملكة العربية السعودية العديد من الإصلاحات لتقليل الآثار الجانبية المترتبة على تنفيذ السياسات المالية الجديدة مثل زيادة أسعار الطاقة وإدخال النظام الضريبي الجديد (ضريبة القيمة المضافة). ويعد برنامج حساب المواطن (CAP) إحدى تلك الطرق المطبقة لتحقيق هذا الهدف باعتباره برنامج قائم على التحويلات النقدية لحسابات المواطنين والذي يهدف إلى تقليل الآثار الجانبية لتنفيذ هذه السياسات. وفي هذه الورقة ومن خلال اتباع النظرية الكينزية ونموذج Shapiro & Slemrod (2003)، تم التركيز على كيف يمكن أن يتأثر الاستهلاك والدخل بشكل مباشر من خلال تنفيذ سياسات مالية جديدة. حيث استخدمت الورقة بيانات مسحية عن الدخل والإنفاق للأسرة السعودية (FIES)، وقد تم في هذه الورقة تقدير الميل الحدي للاستهلاك للأسر (MPC) وكذلك تم فحص كيف يختلف الميل الحدي للاستهلاك نتيجة للتغير في الدخل. حيث وجدت هذه الورقة البحثية بأن المنفعة المتحققة من CAP تحفز إنفاق الأسرة السعودية بما يعادل 20 هللة عن كل ريال يتم الحصول عليه من البرنامج. وقد حاولت هذه الورقة تحديد كيفية تعديل المستهلكين السعوديين استهلاكهم لتغيرات الدخل الناتجة عن الدعم، وكذلك فهم النماذج الاقتصادية الأكثر اتساقاً مع تعديلات الاستهلاك التي لوحظت في البيانات. ومن الناحية الكمية، وجدنا أن المستهلكين السعوديين يخصصون في المتوسط 19.5% و 25.5% و 16.8% من الدخل الإضافي للسلع غير المعمرة والسلع شبه المعمرة والخدمات على التوالي. وهذه النتائج تدعم التنبؤ النظري والنتائج التجريبية التي توصلت لها البلدان الأخرى.

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1. Introduction.

According to the permanent income hypothesis (PIH), households only react to change in income that readjust their lifetime resources. Generally, households respond differently to the shocks of income of different determination as estimated by the PIH, but they also respond to lagged of the changes of income which is not estimated by the PIH. However, Keynesian theory stated that consumers respond to the permanent income hypothesis as opposed to temporary changes in income. Nevertheless, both theories do not explain how consumption may react to different forms of income change. Therefore, both consumption and income can be affected directly by implementing new fiscal policies such as higher prices of energy and imposing new taxation system. Theories are supposed that changes in income of the same level have the same change on consumption. Accordingly and due to the lack of previous research studies related to CAP benefits effect on consumption, this paper tries to clarify how consumption respond to income generated by CAP subsidy. Essentially, the main purpose of this paper is to evaluate the effect of CAP subsidy implemented in Saudi Arabia between Dec 2017 and Dec 2019 on consumption. Since 2017, Saudi Arabia government adopted several policies to maximize the outcome of social benefits by increasing spending and developing subsidy instruments targeting eligible Saudi beneficiaries. The Citizen's Account Program (CAP) is one way to achieve this objective as cash transfer program that directed to minimize the side effects of implementing new fiscal policies. CAP launched by the end of 2017 to compensate eligible individuals and households who are affected by this new reforms and initiatives such as the implementation of the second phase of the energy price reform and introducing value added tax (VAT) in January 2018. For this purpose, CAP became a platform to provide government support to eligible families and citizens (MoF, 2019). The subsidies of CAP reached SAR 32 (\$8.33) billion in the end of 2019 increasing by 7.4% compared to 2018. Theoretically, in addition to its relevance for Saudi fiscal policy, this paper also contributes to the literature of the life-cycle/permanent income hypothesis (LC/PIH) of consumption. Consequently, the impact of income generated by CAP on consumption is expected to be different across households with different family characteristics especially the number of dependents and their liquidity positions. Theoretically, there is an argument about behaviors suggest an immediate marginal propensity to consume out of permanent shocks. Precisely, this paper estimates the MPC out of CAP benefit by using a panel Euler equation linking consumption to estimates of CAP benefit paid and different control variables by adopting methods used by Souleles (2002) and Johnson, Parker and Souleles (2006). Imperially, we follow Luengo-Prado and Sorensen (2008) who estimate the MPC out of current and lagged income using a panel of state consumption and income data, find that

the MPC out of current income is higher in states where income is more persistent and lower in agricultural states, but cannot identify clearly whether the state's income variance affects consumption. The estimated MPC for semi-durables out of the CAP is lower but vary across different households. Data used in this paper collected from two sources, Ministry of Human Resources and Social Development (MHRSD) and the Family Income and Expenditure Survey (FIES). Using a monthly data of households from the Family Income and Expenditure Survey (FIES) for the period between Jan 2018 and Dec 2019, this paper explores the variation in the impact of CAP benefits episode across families with different numbers of family members and demographic differences to identify its impact on consumption. Survey included services, semi-durable and non-durables where non-durable goods include none- eating out food, fuel, light, water charges, medicines, plants, tobacco. Also, services include eating out, rents for housing, medical expenses, public transportation, communication, education, recreational services and personal care services. In addition, services included all semi-durables such as clothing, footwear, sporting goods, video games, computer hardware and software, and books. On the other hand, survey excluded durable goods which is all products that do not need to be purchased frequently because they are made to be used for a long time. To investigate this effect, we use the responses from a representative sample of 1125 Saudi households and individuals to survey questions that ask how much they would consume of a positive income change because of the implementation CAP subsidy.

This paper proceeds as follow. Section 2 summarizes CAP initiative and discusses the theoretical literature. Section 3 describes the data and presents the questions used in (FIES) to generate the MPC. Section 4 provides a descriptive analysis, and the regression results obtained when relating the MPC to demographic variables and household resources. Section 5 results discussion, and section 6 concludes.

2. Literature Review.

2. 1. CAP Subsidy.

In the late of 2015, the Saudi government started its determined of new plan to reform energy prices, with the prices of electricity, water natural gas, gasoline and diesel all being reelevated and increased. Even though prices for these products increased from a very low base, they still significantly under international levels. The main objectives of this reform are to protect incomes of household especially those in low- and mid-income groups, to increase the competitiveness of energy-intensive industries such as petrochemicals, to control inflation, and to attract

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foreign and domestic investment. By April 2016, Vision 2030 was launched, followed by two executive programs, the 2020 National Transformation Program (NTP) and the Fiscal Balance Program (FBP) 2020, which aimed to balance the budget by 2020. Yet, Saudi government has long had in place generous social safety nets with components of social protection that benefit many social groups. More specifically, there is a clear focus toward applying several structural reforms directed by Vision 2030 and its implementation programs, including the 2020 National Transformation Program (NTP), to transform the economy of Saudi Arabia into a more efficient and diversified economy. The Vision 2030 sets a roadmap for a deep and determined socioeconomic change in the Kingdom. As an important instrument to achieve this objective, Citizen's Account Program (CAP) in Saudi Arabia has been launched as cash transfer program that started in December 2017. The CAP benefits protect low- and middle-income Saudi households from the direct and indirect effects of the various economic reforms. Most importantly, CAP eases the direct and indirect effect on low- and medium-income households resulting from the ongoing economic reforms such as the gasoline price adjustment, the electricity tariffs adjustment, and the value added tax (VAT) on all food and beverage items. Unlike CAP, which is a cash transfer program that directed to minimize the side effects of implementing new fiscal policies in Saudi Arabia, Hafiz is searching for employment program provides training and motivational services as well as financial assistance of up to 2,000 SAR monthly in order to support and enable the job search AIObaid (2015). Legitimately, eligible beneficiaries must be Saudi families, Saudi independent individuals, beneficiaries of social security, Saudi mothers married to foreigners, and holders of transport cards. In addition, in an individual level, CAP eligibility includes, single people who are not living with their family and all beneficiaries of the Supplementary Support Program (SSP). Through the program, citizens in Saudi Arabia get monthly payments from the government in a regular base with an average of (SAR 1000). Correspondingly, CAP applied to compensate citizen for the increase in prices as a result of the correction in electricity and gasoline prices, and the application of VAT on food and beverage commodities. In December 2017, immediately before the program began, more than 3.7 million households had registered, representing 13 million people, or more than half the Saudi nationalists' population. CAP beneficiaries received more than \$613.33 million a month with an average of \$250 for each household as a monthly payment. During the first quarter of 2018, compensation to employees and social benefits jumped by SAR 31 billion year-on-year, while government income from VAT, excise duties and gasoline was only SAR 17 billion higher year-on-year. Accordingly, the focus has been on ensuring that the disposable income of citizens, particularly at the lower end, is least affected due to

rising inflation from taxes and lower subsidies. However, the CAP amount will not affect any current Government support payments received by the households. As socioeconomic policy, the CAP was applied to improve efficiency of government subsidies and mitigate the effects of energy prices adjustments and other measures on Saudi households through direct cash transfers to beneficiaries. In addition, these new policies also encourage sensible consumption of the Kingdom's natural resources and products mentioned. The entitlement amount for eligible Saudi households is differed depending on three main factors: the total income of the household, number of dependents in that household and their ages. Potential beneficiary status must be updated quarterly and is validated based on the self-declared profile and supporting documents. The Ministry of Finance stated that the program costed SAR 32 billion (\$8.533 billion) by the end of 2018. The CAP database is helped consolidate the fragmented social safety net programs, and through electronic synchronization and interoperability among agencies are enabled the government to build an appropriate profile of socio-economic indicators related to household well-being (MoF, 2019). Because the program is applying for all nationals, there is no variation in program restrictions that are typically exploited by researchers to measure program impacts.

2.2. The Previous Studies

Early models of consumption suggested by Modigliani and Brumberg (1954) with the presentation of the life-cycle theory and by Friedman (1957) with the introduction of his permanent income hypothesis (PIH). They stated that individuals use saving to smooth income fluctuations, and that they should reacted little if at all to income changes that are estimated. The consumption level predicted by the PIH is sometimes defined as permanent income, although Friedman appears to have produced several alternative definitions Chao (2003). The PIH presents the important finding that consumption selections made by consumers are mainly determined by changes in permanent income not transitory income that reflected in changes in the saving rate Friedman (1957). However, the temporary income shock is derived from temporary income defined as the difference between the current and regular income. The literature suggests three approaches to deal with this issue Jappelli and Pistaferri, (2010). Several researchers who adopted the first approach such as Browning and Crossley (2001), Stephens (2001), Souleles (1999) and (2002), Agarwal et al., (2007) and Misra and Surico (2014) finds cases in which changes in income due to exogenous events such as tax rebates, disability, unemployment and evaluates in a quasi-experimental setting how consumption responds to such changes. The second approach develop by Blundell et al., (2008) depends on the statistical decomposition of the shocks of income and the covariance

restrictions applied by the theory on the joint behavior of consumption and income, in combination with long panel data to link income shocks to the growth of consumption. Survey questions which measure the responses to hypothetical or actual changes of income are the third approach. In practical, Shapiro and Slemrod (1995) and (2003) and Sahm et al. (2010) and (2015) asked the households of US to report how they changed consumption in response to tax credits, tax rebates, and payroll tax changes in the previous 15 years. Dissimilarity, Jappelli and Pistaferri (2014) examine how a hypothetical tax rebate affects consumption, and find an opposite relationship between cash-on-hand and MPC, which inconsistent with models with liquidity constraints and precautionary saving. For testing spending tendency, Parker (1999) stated that a one-dollar anticipated rise in income increases non-durable consumption by approximately 20 cents. His results consider the impact on consumption of the anticipated income increase includes only high-income taxpayers. However, there are several studies that investigates the impact of cash transfer programs such as Fishback and Kantor (1995), Hubbard, Skinner, and Zeldes (1995) and Gruber (1997) and in-kind transfer programs Gruber and Yelowitz (1999) on consumption and wealth. Bruce D. Meyer and James X. Sullivan (2003) study the impact of tax reform and welfare on consumption, providing the argument that consumption is an important measure of family well-being that has been mostly ignored in the evaluation of transfer programs. In his aggregate study, Wilcox (1989) studies the response of aggregate consumption to preannounced increases in social security benefits. He finds that consumption will not only increases when the increase of income is announced, but also when income is actually implemented. For instance, he estimates that a 10% increase in social security benefits generates a 1% increase in retail sales in the same month and a 3% increase in durable goods purchase. Recently, the literature has sought to gain further understandings by differentiating between positions in which consumers expect an income decline and those in which they expect an income rise. In their recent work, Parker and Souleles (2017) try to compare reported preferences for spending in response to several tax policies with actual follow-up spending behavior and find that the two are well associated. On contrast, some authors such as Shapiro and Slemrod 2009, Leigh 2012 and Berger-Thomson et al. 2010) have discussed that there is no significant relationship between household income and the rate of spending, as low-income households are needy today, and because they are expected to be needy in the future, they do not necessarily use the rebate to increase spending. In Saudi case, AlObaid (2011) suggested that stock price expectations have significant effect when other determinants of spending are taken into account. According to his finding, DSOIC survey data in Saudi stock market show some significant differences in spending behavior related to the value of holdings. He

stated that even though the majority of stockholders reported a considerable effect of stock prices on their spending or saving, the results of the DSOIC are consistent with life-cycle spending and saving and a modest wealth effect.

2.2.1. The MPC Sensitivity Debate.

The marginal propensity to consume (MPC) out of income changes plays an important role in the transmission of economic shocks to the real economy. In early hypotheses, Friedman (1957) in permanent income hypothesis predicts that consumption should move only in response to a change in life time resources and therefore the MPC out of temporary shock should be very small. MPC literature has considered whether household spending responses in the face of income shocks accord with the predictions of standard economic models. Several researchers analyze this model such as Campbell & Mankiw (1989), Attanasio & Weber (1995), Jappelli & Pistaferri (2010), Krueger & Perri (2011). This literature has tended to focus on the magnitude of consumption responses, and the expectation that in the face of temporary shocks, households should respond little. There has also been particular interest in understanding how households with different characteristics respond to income shocks, and whether this can be rationalized by deviations from standard consumption theory. In the positive income shock, people would be able to save if the shock was sufficiently large to bring them off the constraint. Fixler and Johnson (2014) used simple technique to illustrate how different MPCs can be used to develop an autonomous expenditure multiplier that is larger than the standard MPC multiplier. Shapiro & Slemrod (2003, 2009) in their analysis of the 2001 income tax rebate and 2008 tax stimulus, they report a lower estimate of the marginal propensity to consume. They find that only 22% of the interviewed households reported specific plan to spend the tax rebate and little evidence of liquidity constraints. Where households reported the sign and size of their spending response and the sign and size of the income shock, we are able to compute their MPC as the ratio. Jappelli & Pistaferri (2014) find a similar ‘heaping’ of responses at round values (in their case at MPCs of zero, a half and one), when asking about the spending response to a hypothetical windfall. These studies focus on the impact of expected fiscal policies on expenditure at the time when households paid additional income. In terms of liquidity constraint, MPCs are mostly lower for the rich than for the poor, and liquidity constrained consumers show a higher MPC than households that can access credit markets to smooth consumption. MPCs are consistently higher for households reporting thinking a future fall in income is likely; having concerns about their debt; being credit constrained; or reporting that they have an insufficient buffer of savings in the event of an emergency.

3. Date and Methodology.

In this section, the description of data used will be presented and we report descriptive statistics of the distribution of responses to hypothetical income changes, differentiating between services, non-durable consumption and semi-durable consumption. We summarize the empirical correlations by employing regression analysis to examine how the MPC on semi-durable, non-durables and services varies with certain household characteristics. We review different empirical methods that researchers have adopted to estimate how consumption reacts to income changes.

3.1 Data

This paper uses data collected from two sources, Family Income and Expenditure Survey (FIES) and Ministry of Human Resources and Social Development (MHRSD). However, the primary source of data used in this paper is the Family Income and Expenditure Survey (FIES). To investigate this effect, we use the responses from a representative sample of 1125 Saudi households and individuals to survey questions that ask how much they would consume of a positive income change. The survey collects detailed information on households and individual's incomes from original sources and CAP benefits, household expenditure on services, semi-durable goods and non-durable goods. Household characteristics, such as demographic and non-demographic characteristics are presented in the survey. Based on that, this paper explores the variation in the impact of CAP benefits episode across families with different numbers of family members and demographic characteristics to identify its impact on consumption.

Table (1): CAP Participation Rates by Demographic Group (24 months)

Demographic Group	Participants	Rate	Average Amount SAR
<i>SF</i>	611	0.543	1413.54
<i>SII</i>	343	0.305	300
<i>BSS</i>	103	0.092	795.18
<i>SMMF</i>	3	0.002	1239.86
<i>HTC</i>	1	0.001	1367.18
<i>BSSP</i>	65	0.058	1118.05
<i>Total</i>	1125	1.00	1001.099 (Average)

*SF (Saudi Family), SII (Saudi Independent Individuals), BSS (Beneficiaries of Social Security), SMMF (Saudi mothers married to non-Saudi), HTC (Holders of transport cards) and BSSP (Beneficiaries of Supplementary Support Program).

As shown in Table-1, survey include 1125 households and individuals based on different demographic group include (611) Saudi Families, (343) Independent Individuals, (103) Beneficiaries of Social Security, (65) Beneficiaries of Supplementary Support Program, (3) Saudi mothers married to foreigners and (1) holders of transport cards. The participation rates are very reasonable when presented on the larger sample sizes. Nonetheless, we assume, as many researchers have assumed such as Blundell and Pistaferi (2003), Gruber (1997) and (2000), Hubbard, Skinner, and Zeldes (1995) and Zeldes (1989), that the CAP spending variables apply to this year (2019). All these observations for all nonelderly households who classified in another government aid. In addition, we use the evidence from the (FIES) that asked households whether they spent or saved the money received from the CAP subsidy. This strategy follows the approach that Shapiro and Slemrod (2003, 2009) have taken to analyzing United States' fiscal stimulus packages.

Table(2): Descriptive of consumption in the study sample in 2018 and 2019

Monthly Spending	2018		2019	
	Mean	Std. Dev	Mean	Std. Dev
Non-durable goods	1,854	1,256	1,887	1,325
Semi-durable Goods	1,731	1,142	1,797	1,164
Services	1,947	1,519	1,971	1,541
Other items	1,639	1,142	1,651	1,156
Total spending	7,171	5,059	7,306	5,189

Table-2 illustrated the descriptive of consumption in the study sample between 2018 and 2019. Comparing mean and Std. deviation of 2018 to mean and Std. deviation of 2019, we find that spending increase with an average of 1.8% in 2019 where subsidies of CAP reached SAR 32 (\$8.33) billion by the end of 2019 increasing by 7.4% compared to 2018.

A large body of social security programs research requires cross-household variation in benefits, conditional on income, in order to estimate regression parameters of interest. In the following section a linear regression model for CAP spending is examined to show very simply why benefit variation is necessary, and in the following section the implications for a broader class of research methods are discussed.

3.2 Methodology

Following researchers such as Hall and Mishkin (1982), Zeldes (1989), Lusardi (1996), Blundell et al. (2008), and Dynan (2012) that examine the effects of income changes on changes in consumption, this paper estimate the marginal propensity to consume (MPC) using FIES data of consumption. Following conditions used by Lusardi (1996) and Parker (1999) studies, we estimate a typical version of a consumption Euler equation using a fixed-effects regression model. Given the theoretical predictions and empirical findings, this paper therefore assumes and test the hypothesis that the MPC from CAP payment is positive for households in Saudi Arabia.

3.3.Hypotheses:

In this section, we estimate consumption functions across income groups to test our hypothesis that the marginal propensity to consume from income (MPC) declines as income increase. The argument about these variables lead to the following hypotheses:

H₁. “There are not statistically significant between change of household's income represented by CAP benefit and household's consumption represented by MPC” means ($\beta = 0$) or ($\beta \neq 0$) for the alternative.

H₂. “There are not statistically significant between change of household's income represented by CAP benefit and household's spending on semi-durable goods represented by MPC” means ($\beta = 0$) or ($\beta \neq 0$) for the alternative.

H₃. “There are not statistically significant between change of household's income represented by CAP benefit and household's spending on non-durable goods represented by MPC” means ($\beta = 0$) or ($\beta \neq 0$) for the alternative.

H₄. “There are not statistically significant between change of household's income represented by CAP benefit and household's spending on services represented by MPC” means ($\beta = 0$) or ($\beta \neq 0$) for the alternative.

3.4.Model:

This paper, as mentioned above, intends to provide a basis for assessing the effect of CAP payments on consumption. However, there are formulas to predict household's spending. According to the usual results of the permanent income theory:

$$C = \beta_1 YP, \quad (1)$$

where C = spending, YP = permanent income (non- CAP), and β_1 = a parameter. However, equation (1) indicated that the most important factor influencing consumption expenditure is the level of income. Similarly, a household that received CAP benefits but is not constrained by illiquidity will be assumed to spend according to the following linear function;

$$C = \beta_1 [YP + CAP], \quad (2)$$

where CAP = Citizen Account Program benefits. (as with other income, we assume that CAP represents a flow of income that the household expects to receive at the end of each period).

By assuming that the MPC is the extra amount that people consume when they receive an extra Riyal of disposable income. In other word, marginal propensity to consume is an increase in consumption caused by a change in a unit of income. Thus, Based on the assumption that C will be less than Y, the MPC should be positive and lies between 0 and 1 i.e. $0 < MPC < 1$.

$$MPC = \beta = \frac{\Delta C}{\Delta Y} = \frac{\partial C}{\partial Y} \quad (3)$$

Our model specification is broadly consistent with other studies that use household information to estimate consumption functions. Empirically, several models have been used to explain the relationship between disposable income and expenditure, for instance partial adjustment is widely recognized to determine consumption behavior (Langmeier and Patrick, 1990). By following specifications used by Lusardi (1996) and Parker (1999), this paper estimate a origin of a consumption Euler equation using a fixed-effects regression model. For households were eligible for CAP from January 2018 to December 2019, we use fixed effects to estimate a model of household expenditure across Family Income and Expenditure Survey (FIES), according to:

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$$C_t = \beta_0 + \beta_1 Y_t + \beta_2 C_{t-1} + \epsilon_t \quad (4)$$

where C_t = CAP Beneficiaries consumption expenditure; β_0 = intercept of the model; β_1 & β_2 = regression coefficients of respective variable; Y_t = CAP Beneficiaries disposable income; $t, t-1$ = years; and ϵ_t = error term.

The model based on previous discussion is used to estimate the MPC for CAP beneficiaries.

4. Results and Discussion

In order to determine the consumption of CAP beneficiaries over time, the short-run MPC is estimated. However, the MPC is critical in determining how much an economy can gain from the increase in government spending. Depending on the purpose of the analysis, equation (4) can be used to test the hypothesis that expected income growth does not affect consumption growth. The parameter is precisely estimated and we reject the hypothesis that is equal to zero ($\beta = 0$). Yet, these estimates are run on the total sample which includes spending on semi-durable goods, non-durable goods and services. The Ordinary Least Squares (OLS) method is used to estimate the consumption function for each income group (Table-3). Our OLS regressions use the MPC as the dependent variable and the characteristics of the income group as well as the household characteristics as regressors.

Table(3): Regression results for income groups

Income Group	Semi-durable	Non-durable	Services
(SF)	0.0825* (0.003)	0.1225** (0.002)	0.0925** (0.003)
(SII)	0.5115*** (0.001)	0.2985*** (0.002)	0.2856*** (0.002)
(BSS)	0.0350* (0.002)	0.0982** (0.002)	0.0825* (0.002)
(SMMF)	0.2081*** (0.002)	0.3105*** (0.001)	0.2008*** (0.002)
(HTC)	0.2951*** (0.001)	0.2128*** (0.002)	0.1287** (0.002)
(BSSP)	0.0287* (0.003)	0.0884* (0.002)	0.0279* (0.003)
Sample Size	1125	1125	1125
Dependent Variable:	Household Consumption		
R-squared	0.688		

*SF (Saudi Family), SII (Saudi Independent Individuals), BSS (Beneficiaries of Social Security), SMMF (Saudi mothers married to non-Saudi), HTC (Holders of transport cards) and BSSP (Beneficiaries of Supplementary Support Program).

Note: ***, ** and * denoted statistical significance at the 1%, 5% and 10% level.

Since MPC relationship determine how much spending increases for each Riyal of additional income, MPC will be varies at different income levels and predicted to be the lowest for higher-income households. Our key regression result that the MPC out of income declines as household income increases based on an extra income generated by CAP benefits which is also supported by stylized evidence. Results shown in Table-4 present regression results of spending category for Saudi households.

Table (4): Regression results for Spending Category

Spending Category	MPC (Coef. = β)	Std. Err.	t-stat.	P> (t)	CAP Average
Semi-Durable	0.254135	0.000354	23.211	0.0000	1001.099
Non-Durable	0.195324	0.000321	25.215	0.0000	1001.099
Services	0.168752	0.000213	31.254	0.0000	1001.099
Total	0.20012	0.000213	31.212	0.000	1001.099
Obs. No.	<i>1125</i>				
R-Squared	<i>0.6512</i>				

The MPC from income, β , from the six income and three spending groups and pooled regression are statistically significant. We find that the MPC declines as household income increases because of CAP implementation, confirming our a priori prediction. However, all coefficients shown in Table-6 are positive and less than one means that changes in income levels lead to proportionately smaller changes in the consumption. According to findings shown in Table-6, following an increase their income through CAP benefits, Saudi consumers would allocate on average 19.5% of the additional income to non-durable consumption including none- eating out food, fuel, light, water charges, medicines, plants, tobacco etc. Semi-durable goods gained 25.4% of the additional income obtained by CAP benefits including spending on clothing, footwear, sporting goods, video games, computer hardware and software, and books etc. However, services gained small proportion 16.8% of the additional income obtained by CAP benefits including spending on eating out, rents for housing, medical expenses, public transportation, communication,

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education, recreational services and personal care services. Nevertheless, overall result of spending on (Semi-durable, Non-durable and Services) is also relatively small proportion 20% which represents less desire for spending on these items. Since MPCs are positive and greater than zero in all cases, results are consistent with the rejection of H_0 ($\beta = 0$) in all four hypotheses and with the acceptance of H_1 ($\beta \neq 0$) in all four Hypotheses.

Finding illustrated in Table-5 and Table-6 highlighted an evidence that follow Shapiro & Slemrod (2003) in their analysis of the 2001 income tax rebate and 2008 tax stimulus, they report a lower estimate of the marginal propensity to consume. On contrast, our findings are not supported by some authors findings such as Shapiro and Slemrod (2009), Leigh (2012) and Berger-Thomson et al. (2010) who discussed that there is no specific relationship between income of household and the rate of spending, as low-income households are needy today, and because they are expected to be needy in the future, they do not necessarily use the rebate to increase spending. In addition, our finding inconsistent with Gruber (1997) results who tests whether anticipated layoffs have no impact on consumption, and finds no rejection of this hypothesis. Given that he is considering anticipated income declines; this result is not inconsistent with his finding regarding the large impact of an unemployment shock. The regression results in Tables (3 and 4) also provide other explanation of consumption behavior among Saudi households and Individuals. Based on that, we find a positive and statistically significant coefficient across all income groups. This provides evidence of positive effects of Saudi fiscal policies, with higher wealth increasing lifetime resources and enabling consumers to increase their consumption with small portion.

However, lower and mid-income households spend a smaller proportion of their income on services were $MPC = 0.168752$, reflected in the service-to-income ratio, and are thus high able to save. Meanwhile, findings show that lower and mid-income households, on average, spent less on non-durable goods were $MPC = 0.195324$. on the other hand, an evidence that lower and mid-income households spend a highest proportion of their income on semi-durable goods were $MPC = 0.254135$. Nationally, if households tend to consume all of the increases of their income (where MPC is not very close to 1), the additional income from these increases will be want back into the economy. According to the model, discussed above, the overall effect of positive income change resulting from CAP benefits, the MPC was (0.20) which means, on average, a beneficiary spends 20 Halalaha (1 US Cent = 3.75 halalaha) for each Riyal received from CAP payment in monthly base. However, MPC in Semi-Durable goods was (0.25) is less than Non-Durable

goods MPC (0.19) which means household spends on Semi-Durable goods 25 Halalaha and spend on Non-Durable goods 19 Halalaha for each Riyal received from CAP. However, MPC in services MPC (0.16) is more less than both semi-durable and non-durable goods which means household spends on services only 16 Halalaha for each Riyal received from CAP. Even though, the baseline regressions in this paper do not distinguish between permanent and temporary variations in income, result can be generalized to give theoretical and empirical explanation for the relationship between increasing in income and spending behavior among Saudi consumers. However, since we only observe one measure of income for households and individuals in a specific period, it is difficult to distinguish between the effect of permanent and temporary income.

4. Conclusion

In this paper we addressed a gap in the knowledge about the impact of implementing CAP payments as new fiscal policies in Saudi Arabia and how different households and individuals in a different demographic group may respond differently to income changes. From the first half of second decade of the 21st century, policy makers in Saudi Arabia implementing new fiscal policies and reforms to protect household incomes specifically those in low and mid-income segments, increasing the energy-intensive industries competitiveness such as attracting foreign, controlling inflation, petrochemicals, and domestic investment. Citizen's Account Program (CAP) in Saudi Arabia as a cash transfer program that started in December 2017 was launched to protect Saudi households and individuals low- and middle-income from the direct and indirect effects of the various economic reforms and fiscal policies. Data from Family Income and Expenditure Survey (FIES) in Saudi Arabia has been used to investigate this effect. In this regard, this paper try to estimate households' marginal propensity to consume (MPC) and examine how the propensity varies with income. CAP eases the direct and indirect impact on low and mid-income households resulting from the ongoing economic reforms such as the gasoline price adjustment, the electricity tariffs adjustment, and the value added tax (VAT) on all food and beverage items. We find evidence that the MPC from income for lower and mid-income households have a tendency to be smaller. The policy implication of these finding is that the consumption reaction to a windfall of a comparable amount is similar in quantity but different in types of goods and services.

Regression result show that the MPC out of income declines as household income increases based on an extra income generated by CAP benefits where overall MPC = 0.2. Based on our findings, following an increase their income

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through CAP benefits, Saudi consumers would allocate on average 19.5% of the additional income to non-durable consumption, semi-durable goods gained 25.4% of the additional income obtained by CAP benefits. However, services gained small proportion 16.8% of the additional income obtained by CAP benefits. Results supported by several research findings such as Shapiro & Slemrod (2003) in their analysis of the 2001 income tax rebate and 2008 tax stimulus, they report a lower estimate of the marginal propensity to consume. Generally, if households tend to consume all of the increases of their income (where MPC is not very close to 1), the additional income from these increases will be want back into the economy which is supported by our findings. Finally, this paper is an attempt to determine how Saudi consumers adjust their consumption to changes in income generated by subsidy, as well as understanding which economic models are more consistent with the consumption adjustments observed in the data.

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