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Sensitivity plot of c_y:{-m^4*10^{-4}} - Cycle of money

Constantinos Challoumis

A R T I C L E I N F O.

Keywords: sensitivity plot, cycle of money, financial liquidity, escape savings

Abstract:

The current work shows the case that the escape savings have very high rate. Then, this paper is about the comparison of the cycle of money including the escape savings and financial liquidity. It is plausible to extract the appropriate conclusions about savings in an economy when the savings return to the market for investments and consumption and when these savings are omitted and lost from the economy. This happens through the velocity of financial liquidity and the velocity of escape savings. The current study has used the sensitivity plot of money cycle. The current research is part of a series of case studies from the sensitivity plot of c_y. It uses definitions and mathematical determinations by the cycle of money but estimates on the first time presented results of sensitivity plot of c_y:{-m^4*10^{-4}} of the cycle of money in a case study scenario. In this case, escape savings are completely identical to the cycle of money.

Introduction

The money cycle is being followed by the restructuring of the administrative structure and the introduction of a new public financial administration model. The current study examines the money cycle case as presented in the literature (Challoumis, 2023j): “This paper analyzes the case of the cycle of money with and without the escaping savings. The same procedure is followed for the enforcement savings (Arai et al., 2018; Biernaski & Silva, 2018; Brownell & Frieden, 2009; dos Santos Benso Maciel et al., 2020; Ewert et al., 2021; Fan et al., 2020; Kiktenko, 2020; Kreft & Sobel, 2005; Mackean et al., 2020; Rizzo & Throsby, 2006; Sánchez et al., 2020; Shamah-Levy et al., 2019; Turner, 2010). This could happen when there are returned savings and when there are no returned savings. This economic comparison has as a result that in a market consumption and

investments in combination with savings have an important role, subject to the public and the tax policy (Altman, 2012; Arabyan, 2016; Guardino & Mettler, 2020; Haigh, 2020; Kananen, 2012; Muñoz & Flores, 2020; Ng, 2018; Reeves et al., 2019; Snow, 1988; Williamson & Luke, 2020). Therefore the appropriate tax rate is the key element for the appropriate public policy".

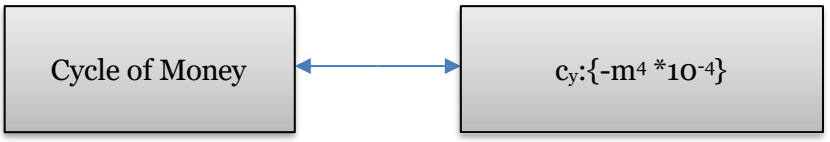

Figure 1:Cycle of money for c_y:{ $-m^4 * 10^{-4}$}

The fixed length principle is satisfied when the public policy with the lower taxation of uncontrolled transactions and the higher taxation of the controlled transactions is applied.

Literature Review

The agreements between the participants in control transactions are those that determine the allocation of profits and losses. To the agreements should be mentioned the changes in the contracts (Challoumis, 2018c, 2019c, 2023d, 2023u, 2023f, 2023b, 2023q, 2024g, 2024a, 2024l, 2024k, 2020d, 2020b, 2021f, 2021k, 2021a, 2022e, 2022c, 2022b; Challoumis & Savic, 2024): "This is the reason why the tax authorities should make periodic inspections. The periodic specification of contracts is important for comparability analysis. These periodic inspections of the companies that participate in controlled transactions are crucial for the arm's length principle. Then, the determination of the cost-sharing depends on the periodic check of companies that are tested parties. The scope of the companies of controlled transactions is to face the issues that are connected with the taxation of their activities. Therefore, the requirements for the companies of controlled transactions with the tax authorities should be in the range of the arm's length principle. Thereupon, the appropriate agreement of the companies of controlled transactions is that which permits them the maximization of their profits in tax environments with low tax rates, and the maximization of costs in economic environments with high tax rates.

Moreover, should be notified that the companies of controlled transactions and the same time the inspections of tax authorities are done under the condition of proportional adjustments (Challoumis, 2018g, 2018b, 2019f, 2019e, 2020c, 2020a, 2021d, 2022d, 2023p, 2023ag, 2023ab, 2023ah, 2023g, 2023ac, 2023e, 2024e). The interpretation of the condition of the proportional adjustments is that the companies that participate in controlled transactions many times don't have the appropriate data

and uncontrolled transactions of similar circumstances to compare and therefore they proportionally adjust their data (Arbel et al., 2019; Hasselman & Stoker, 2017; Hausman et al., 2016; Islam et al., 2020; Jensen, 2020; Menguy, 2020; Oueslati, 2015; Scholvin & Malamud, 2020; Spiel et al., 2018; Tummers, 2019). According to (Challoumis, 2024a)This means that if the companies that are tested parties conclude that the profits and losses of companies from uncontrolled transactions are much higher or much fewer then they make a proportional analogy to compare them with their data. The production of goods or services creates profits and costs for the companies. Based on the prior scrutiny:

$$u = s(zf + \tilde{z}d) \quad (1)$$
$$z = |\tilde{z} - 1| \quad (2)$$

The symbol u is about the impact factor of the comparability analysis which has any method to the s. The symbol z is a coefficient which takes values between 0 and 1. What value could be received is determined by the influence of the method (using the best method rule) on the s. The symbol of f is about the cost which comes up from the production of goods, and the symbol of d is about the cost which comes from the distribution of the goods (Challoumis, 2019g, 2019a, 2023m, 2023w, 2023h, 2023c, 2023y, 2023ai, 2023i, 2024c, 2024m, 2021h, 2021e, 2021c, 2023v, 2023s, 2023n, 2023l, 2023z). According to Eq. (1) - (2) is plausible to determine the following equations:

$$u_c = zf + \tilde{z}d \quad (3)$$
$$b = (p - u_c) * j_1 \quad (4)$$

The symbol of b in the prior equation is about the amount of taxes that should be paid to the companies of controlled transactions in the application of the arm's length principle. The u_c is the amount of tax obligations that can be avoided through the allocations of profits and losses. Moreover, j_1 is a coefficient for the rate of taxes. Then, the Eq. (5) shows the case of the arm's length principle. In addition, in the case of the fixed length principle:

$$v = p * j_2 \quad (5)$$

The symbol of v in the previous equation shows the taxes that should be paid to the enterprises of controlled transactions in the application of the fixed length principle (Blundell & Preston, 2019; Challoumis, 2018c; Dancygier & Laitin, 2014; Dollery & Worthington, 1996; Fronzaglia et al., 2019; Grabs et al., 2020; Jeon et al., 2020; Laplane & Mazzucato, 2020; Mancuso & Moreira, 2013; Saleem et al., 2017). Then, j_2 is a coefficient for the rate of taxes in the case of the fixed length principle:

$$v \geq b \quad (6)$$

The tax for the companies that participate in controlled transactions of transfer pricing in the case of the fixed length principle is higher or at least equal to that of the case of the arm's length principle. Thereupon, with the fixed length principle the enterprises of controlled transactions can tackle issues that come from the allocation of the profits and losses. Therefore, the tax authorities can face the transfer pricing effects on the global tax revenue. The fixed length principle permits the recovery of the tax losses of the global tax revenue from the controlled transactions of the transfer pricing" (Challoumis, 2018a, 2019d, 2024b, 2024i, 2024j, 2024h, 2019b, 2021j, 2021g, 2023o, 2023r, 2023t, 2023j, 2024n). The next scheme illustrates the procedure that companies of controlled transactions follow for their allocations of profits and losses, the proportional adjustments of data, and the fixed length principle:

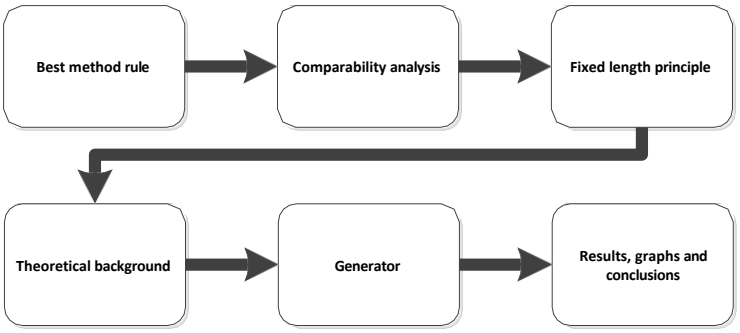

Figure 2: Cost sharing and application of fixed length principle

Fig. 2 determines the procedure of the fixed length principle and its quantity analysis for the determination of the behavior of the model. The next section presents the theory of the cycle of money.

Materials and methodology

The tax revenues correspond to the savings that the companies could have if the taxes were avoided. The definitions are defined by prior mathematical research (Challoumis, 2018h, 2018d, 2018c, 2018e, 2019g, 2019f, 2019e, 2020d, 2020a): "The way that these savings are administrated is different from case to case. Then the benefits of the companies could be managed in a completely different way, as could be saved or could be taxed (Challoumis, 2018f, 2018i, 2021b, 2021i, 2022a, 2023a, 2023k, 2023af, 2023aa, 2023ae, 2023x, 2023ad, 2024d, 2024f). The theory of the cycle of money shows when the savings robust the economy and when the taxes robust the economy (Bartels, 2005; Béland, 2017; Bowling et al., 2019; Carfora et al., 2021; John, 2018; Kalambokidis, 2014; Ladvocat & Lucas, 2019; Leckel et al., 2020; Maestre-Andrés et al., 2019; Mohindra, 2007; Smętkowski et al., 2020; Ustinovich & Kulikov, 2020). This determination must be a separation of

savings into the non-returned savings (or escaped savings) and the returned savings (or enforcement savings). For the scope of this analysis below are demonstrated the equations which are:

$$\alpha = \alpha_s + \alpha \text{ or } \frac{1}{v} + \alpha_t \quad (7)$$

$$x_m = m - a \quad (8)$$

$$m = \mu + \alpha_p \quad (9)$$

$$\mu = \sum_{\iota=0}^{n} \mu_\iota \quad (10)$$

$$\alpha_p = \sum_{j=0}^{m} \alpha_{pj} \quad (11)$$

$$c_m = \frac{dx_m}{dm} \quad (12)$$

$$c_\alpha = \frac{dx_m}{da} \quad (13)$$

$$c_y = c_m - c_\alpha \quad (14)$$

The variable of α symbolizes the case of the escaped savings. This means that there are savings that are not returning to the economy or come back after a long-term period. The variable of α_s symbolizes the case that there are escaped savings that come from transfer pricing activities. The variable of α_t symbolizes the case that there are escape savings not from transfer pricing activities but from any other commercial activity. For instance, α_t could refer to the commercial activities that come from uncontrolled transactions. The variable of m symbolizes the financial liquidity in an economy. The variable of μ symbolizes the consumption in an economy. The variable of α_p symbolizes the enforcement savings, which come from the citizens and small and medium-sized enterprises. The variable of x_m symbolizes the condition of financial liquidity in an economy. The variable of c_m symbolizes the velocity of financial liquidity increases or decreases. The variable of c_α symbolizes the velocity of escape savings". Therefore, the variable of c_y symbolizes the term of the cycle of money. Thereupon, the cycle of money shows the level of the dynamic of an economy and its robustness.

Results - Sensitivity Plot of c_y {-m^4 *10^{-4} }

Case study analysis of c_y in the current case:

$$c_m = 0 \quad (15)$$

$$c_a = -m^4 * 10^{-4} * m \quad (16)$$

$$logc_a = \log(-m^4 * 10^{-4}) \quad (17)$$

Based on Eq. (14) – (17):

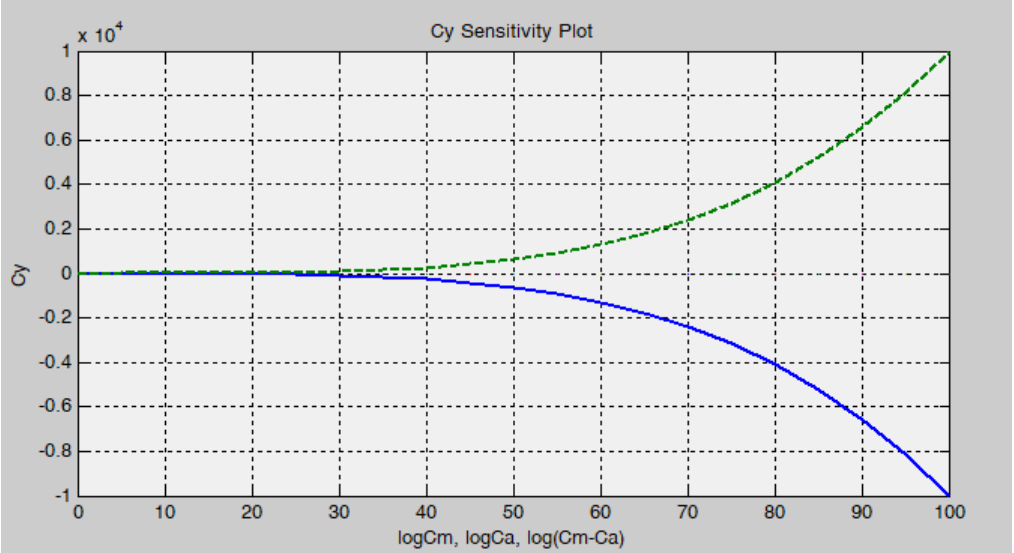

Figure 3: $c_y = f(logc_m, logc_a)$

In this case, financial liquidity is completely identical to the cycle of money. From the prior graph, it is obvious that when the velocity of financial liquidity is higher than the escape savings then the cycle of money is increased geometrically. The absence of financial liquidity ensures that the cycle of money is at its lower level, according to $c_y = -m^4$.

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