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Velocity of Escaped Savings and Minimum Financial Liquidity According to the Theory of Cycle of Money

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Abstract: This paper is about the comparison of the velocity of escaped savings with the velocity of minimum financial liquidity. This analysis is based on the cycle of money in combination with the velocity of escaped savings with the velocity of minimum financial liquidity. This means that the escaped savings and the minimum enforcement savings are parts of these velocities. Therefore, it compares the velocity of the minimum financial liquidly with the velocity of the escaped savings. The method that is used is the Q.E. method.

Keywords: minimum financial liquidity, escaped savings, cycle of money.

Introduction

This research highlights the importance of enforcement savings versus escaped savings. An economy that does not fit the characteristics of an economy that protects domestic savings is also linked to its overall structure. An economy in which large companies substitute the activities of smaller companies results in liquidity being lost from the financial system, weakening it (Challoumis, 2019a, 2019b). This is because high profits are extremely difficult to return to the economy, so they are saved in tax havens and banks outside the country's banking system.

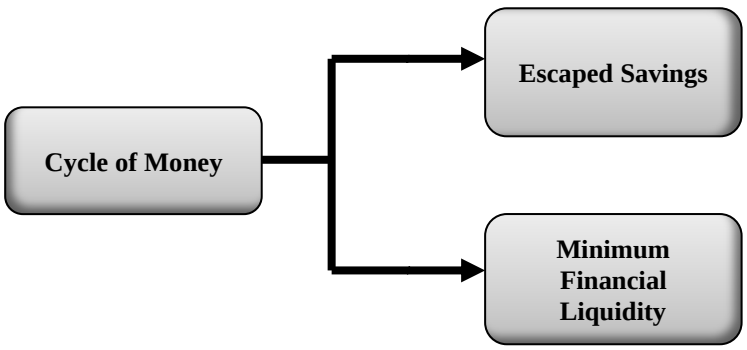

Figure 1: Cycle of money based on escaped savings and minimum financial liquidity

This paper analyzes the case of the cycle of money with the velocity of minimum financial liquidity with the velocity of escaped savings. Then, in this scrutiny, the basic principles of the cycle of money are included in the next two sections of this paper. Thence, using the Q.E. method extracted conclusions, about the importance of these velocities in the economy (Challoumis, 2020, 2021c; De Araujo et al., 2020; Engström et al., 2020; Fernandez & Raine, 2019; Gangl & Torgler, 2020; Maier, 2012; Syukur, 2020; Van de Vijver et al., 2020)(Baker et al., 2020; Berg et al., 2020; Gangl & Torgler, 2020; Hagenaars et al., 2017; Levi, 2021). The contracts and the agreements between the participants of control transactions are those that determine the allocation of profits and losses.

The agreements should mention changes that happen in the contracts. This is the reason why the tax authorities should make periodic inspections (Carattini et al., 2018; Carfora et al., 2021; Cascajo et al., 2018; Castaño et al., 2016; Castro & Scartascini, 2019). 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 (Challoumis, 2023d, 2023e). 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 (Fernandez & Raine, 2019; Siegmeier et al., 2018; Urwannachotima et al., 2020; Van de Vijver et al., 2020; Παπακωνσταντίνου et al., 2013). 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 (Challoumis, 2021f, 2021a, 2021d, 2021e, 2021c, 2021g, 2021h, 2021b, 2022b, 2022a, 2023a, 2023c, 2023b). 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:

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

$$z = |\tilde{z} - 1| \quad (2)$$

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 that 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. According to prior equations, it 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. (4) shows the case of the arm's length principle. In addition, 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. 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 to recovery of the tax losses of the global tax revenue from the controlled transactions of the transfer pricing. 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:

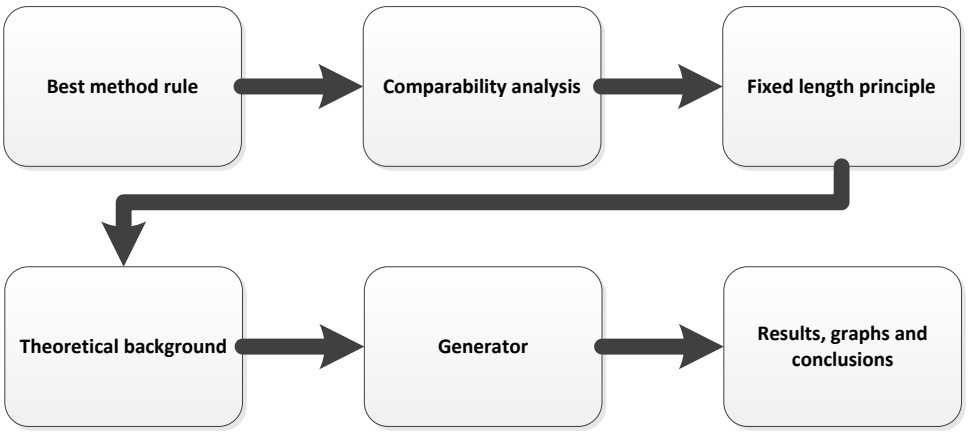

Figure 2: Cost sharing and application of fixed length principle

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. Moreover, the methodology which followed stands on the Q.E. method.

Literature Review

The tax revenues correspond to the savings that the companies could have if the taxes were avoided. 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 taxed (De Araujo et al., 2020; Gong et al., 2020; Kominers et al., 2017; Maier, 2012; Olcina et al., 2020; Paes-Sousa et al., 2019). The theory of the cycle of money shows when the savings robust the economy and when the taxes robust the economy/ It is crucial for this determination to 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:

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

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

$$\mathrm{m} = \mu + \alpha_p \quad (9)$$

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

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

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

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

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

The variable of α is symbolized 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 escaped 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 escaped savings. Therefore, the variable of c_y symbolizes the term of the cycle of money.

Therefore, it is obtained that the cycle of money grows when there is a tax system like the case of the fixed length principle which permits the low taxation of uncontrolled transactions and the higher taxation of controlled transactions. Should be mentioned that as uncontrolled transactions are considered the same happens with the cases of the financial liquidity of citizens and the small and middle-sized companies. In addition, there are three basic impact factors of the rewarding taxes. The rewarding taxes are the only taxes that have an immediate and important role in the market of any economy. These factors are affiliated with education, with the health system of each society, and with the rest relevant structural economic factors of the prior two impact factors. This issue is illustrated in the next scheme:

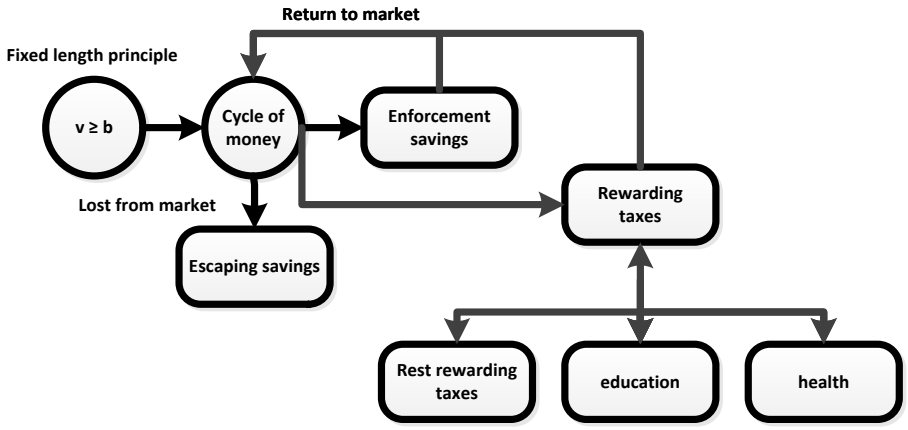

Figure 3: The cycle of money with rewarding taxes

In the previous figure, it is the case that the tax system includes all the tax factors and all the rewarding tax factors.

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For the mathematical approach to the cycle of money:

$$\mu > \alpha_p > \alpha_t > \alpha_s \quad (15)$$

Using Eq. (15) in the case of Eq. (1) to (14):

Factors	Values
α_s	0.6
α_t	0.7
μ	0.9
α_p	-

Table: Compiling coefficients

The generator of this procedure used the coefficients which appeared in the previous table. Therefore, the factors have an upper limit of 1, and a lower limit of 0, but s and $\tilde{s}$ are plausible to receive values greater than one as their mathematical structure allows this. After 461 iterations the following diagram:

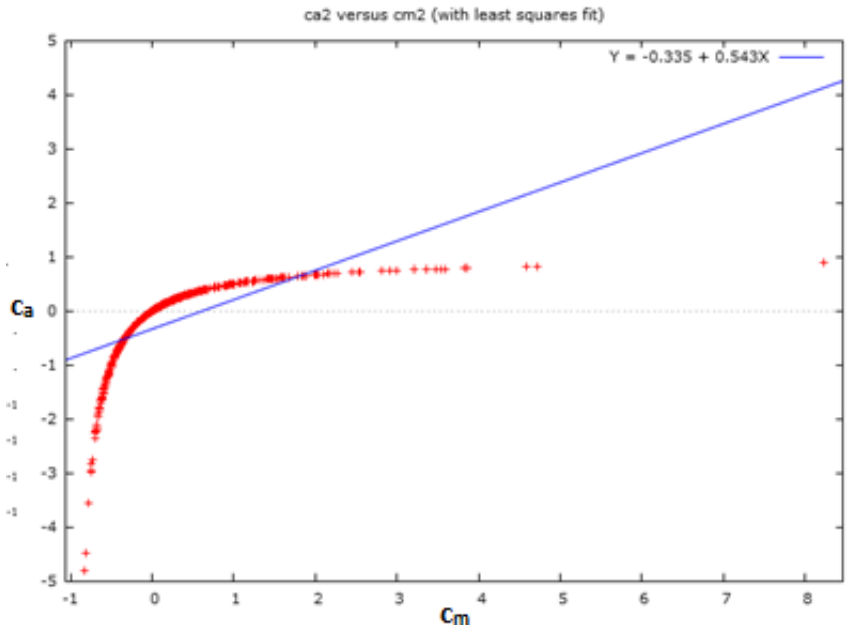

Figure 4: Velocities of escaped savings and minimum financial liquidity

Based on Fig. 4 concluded that the values of the velocity of financial liquidity are much lower than the values of the escaped savings (high negative value, showing that the escaped savings are at a high level). This shows that under these conditions the dynamic of any economy is weak, and the velocity of financial liquidity takes very low values, as the cycle of money in this economy is without the appropriate enforcement savings.

Conclusion

This paper shows that the general behavior of the velocity of financial liquidity is very low with the velocity of escaped savings having a high impact on the economy. This means that the economy has a weak positive orientation, and therefore the economy in this case is growing weakly. Therefore, consumption and investments in this economy will be at a low level.

Appendix

```
%Q.E. (C)(R) 2017 Constantinos Challoumis

as=0;
at=0;
xm=0;
m=0;
m1=0;
ap=0.1;
cm=0;
ca=0;
cy=0;
t=0;

while t<10
```

```
   t=t+1;

if rand()<9
   as=0.6*rand();
end

if rand()<9
   at=0.7*rand();
end

if rand()<9
   m1=0.9*rand();
end



a=as+at;
m=m1+ap;
xm=m-a;
cm=xm/a;
ca=xm/m;
cy=cm-ca;


tab=[a,xm,m,cm,ca,cy;tab];
end
```

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