Economic Technical Report of Cycle of Money – The case of Greece - Week initiated on 2 May 2004

Abstract: This work for the week of 2 May 2004 has estimated the TGICM or TCM or Track General Index of Cycle of Money. The main text and content of these reports remains the same, the focus is only on the new data and results. This paper belongs to a series of Economic Technical Reports on the Cycle of Money. This is a periodical technical report about the general index of the cycle of money. It supports the Economocracy as defined in the paper "Economocracy versus Capitalism". The GDP pending on debt could be faced only by the economic system of Economocracy. Simultaneously all the aspects that harm the political system of Democracy could be faced. The basic problem of Capitalism is that it is based on non-productive money, like interest rates. On the other hand, Economocracy leads to at least healthcare secured level, space programs secured minimum level, reconstruction of countries after wars, and most significantly can fix the Debts without any war, by non-productive money.

Keywords: Cycle of Money, Economocracy, GDP, Debt

1. Introduction

This paper is a technical report on the general index of the cycle of money week initiated on 2 May 2004. It calculates the general index of the cycle of money to reveal the trend of GDP, of debt, and of the General Index of the Cycle of Money. The economic system of Economocracy is defined by Challoumis as a positive term and should not be confused with Econocracy. Economocracy as the same happens with Democracy started as negative terms, but the definition of their meaning is positive in Greek. The methodology of the E.T.R.C.M. (Economic Technical Report of Cycle of Money) is based on the Cycle of Money.

2. Literature Review

According to the definition of Economocracy, a changed economic structure is necessary to bring the world's mounting debt down to manageable levels [1]–[16]. The necessity for economocracy as a premium democracy that serves social stability arises from the difficulty of avoiding global economic stagnation [17]–[23]. While the Economocracy's economic system is founded on the free market, it also has to contend with other disruptions such as interest rates, wars, depressions, and economic crises. From a political perspective, economic democracy is the proportionate kind of democracy. It is the only economic system that can handle issues like global debt, healthcare issues, poverty in the developing world, suitable space initiatives, and any other economic dysfunction that could stand in the way of pure democracy. This paper aims to clarify that capitalism has fundamental problems in

many aspects. Primarily it is not plausible to regime any dysfunction of the local economies and in general at a worldwide level. Well-standing democracy cannot exist without economocracy, meaning that the control of the economy from the people and for the people, is the balanced way for economic affairs and then democracy. Given interest rates and the amount of debt in the world, capitalism is implausible. The foundation of the Economocracy is the idea of a worldwide economic unit that will manage uncontrollably large global economic issues. Capitalism just pushes the future and economic responsibilities forward by depressing nations and generations of people. This leads to conflicts rather than pure democracies and unrestricted use of the planet's resources for profit. Moreover, democracy can be shielded from authoritarianism by economic democracy, since nations that reject these principles will not be given "free amounts" of funding for things like universal health care, lower income restrictions, and other initiatives. Because this money is going toward specific purposes and has no effect on the banking system, the market, the level of prices, or the overall economy, economies across the world could be covered by economies with lower debt and interest rates while still avoiding inflation. Economies could even be protected from inflation through plausible price increases.

The theory of the Cycle of Money shows that an economy is made through its function and structure, something that is reflected in the money cycle, i.e. problems in the functioning of the economy appear in the structure of the economy and vice versa – productivity and the structure of the economy are two sides of the same coin, i.e. they are inextricably linked to each other.

3. Methodology

The theory of the cycle of money shows when the savings robust the economy and when the taxes robust the economy. 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:

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

$$x_m = m - a \quad (2)$$

$$m = \mu + \alpha_p \quad (3)$$

$$\mu = \sum_{\iota=0}^{n} \mu_\iota \quad (4)$$

$$\alpha_p = \sum_{j=0}^{m} \alpha_{pj} \quad (5)$$

$$c_m = \frac{dx_m}{dm} \quad (6)$$

$$c_{\alpha} = \frac{dx_m}{da} \quad (7)$$

$$c_y = c_m - c_{\alpha} \quad (8)$$

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 [24]–[136]. Thereupon, the cycle of money shows the level of the dynamic of an economy and its robustness.

The mathematical background for the Cycle of Money theory is presented below. Money cycle calculations are defined by the following mathematical formulas:

$$c_y = \frac{dx_m}{dm} - \frac{dx_m}{da} \quad (9)$$

$$i_{cy} = Y * b_d \quad (10)$$

$$g_{cy\ Country} = \frac{c_{y\ country}}{c_{y\ Average} + c_{y\ country}} \text{ or } \frac{i_{cy\ country}}{i_{cy\ Average} + i_{cy\ country}} \quad (11)$$

$$g_{cy\ Average} = \frac{c_{y\ Average}}{c_{y\ Average} + c_{y\ Average}} \text{ or } \frac{i_{cy\ Average}}{i_{cy\ Average} + i_{cy\ Average}} = 0.5 \quad (12)$$

It is the velocities of c_m and c_{α} that determine the cycle of money, c_y. The cycle of money determines the flow of money in an economy. The c_m is about the financial liquidity, it is the velocity of transactions, and c_{α} is the velocity of escaped savings. The i_{cy} indicator of the money cycle, it is GDP, and Y is the bank reserves of each country represented by b_d. In addition, the general indicator of the money cycle of each country is represented by the indicator $g_{cy\ Country}$ and $i_{cy\ coyntry's}$ or $c_{y\ coyntry's}$ is the international indicator of $i_{cy\ Average}$ or $c_{y\ Average}$. In conclusion, it is the international $g_{cy\ Average}$ indicator and is perceived as an international constant. The appropriate assumption is c_y aimed at establishing the link between the indicator of the international (global) average, $c_y$bank

holdings and GDP per capita, considering econometric approaches. Subsequently, the initial assumption of the money cycle is verified in the context of real economic scenarios in most countries internationally, divided by the international average of the money cycle index. If an economy is approximately 0.5 can directly address an economic crisis. The perfect economy takes a value of 1. Every 0.1 that an economy loses from the unit means that it takes 3 to 5 years for that economy to recover from an economic crisis (this was identified based on the results obtained from this research). The results approaching the value of 0.5 represent an appropriate indicator of the money cycle, revealing an adequate economic structure for society and proper distribution of money among citizens – consumers. The money cycle used to define it $c_{y\ coyntry's}$ and $c_{y\ Average}$. In the light of GDP, the money cycle in quantitative analysis is an expression of $\frac{\partial(\mathrm{GDP})}{\partial(S+I+\mathrm{X})}$, according to $\frac{dx_m}{dm}$ and $-\frac{\partial(\mathrm{GDP})}{\partial(S'+I'+M)}$, according to $\frac{dx_m}{da}$. Next, $c_y = d(GDP) = \frac{\partial(\mathrm{GDP})}{\partial(S+I+X)} d(S+I+X) - \frac{\partial(\mathrm{GDP})}{\partial(S'+I'+M)}\ d(S'+I'+M)$, is savings directed to banks outside the financial system, *I′* is investments directed to banks outside the financial system and *M* is about imports. Hence, the money cycle expresses GDP under the following relationship:

$$Y = S_T + I_T + (X - M) \tag{13}$$

$$Y = (S - S') + (I - I') + (X - M) \text{ or } Y = \Delta S + \Delta I + (X - \mathrm{M}) \tag{14}$$

According to the theoretical background for the Cycle of Money theory, money lost from an economy as a result of economic transactions can be controlled and supervised by an agency that will observe money transfers between the economies of different countries by comparing economies internationally through Δ*S*, Δ*I* and (*X* – *M*). The cycle of money indicator is: $c_{ytotal} = \sum_{i=1}^{n}\sum_{t=1}^{m} c_{yi,t} = \sum_{i=1}^{n}\sum_{t=1}^{m}[\frac{\partial(\mathrm{GDP})}{\partial(S+I+X)} d(S+I+X) - \frac{\partial(\mathrm{GDP})}{\partial(S'+I'+M)}\ d(S'+I'+M)]_{i,t}$. The money cycle is an expression of the difference between the differential equations of the amount of money used in an economy and the quantity of money lost from the economy. That is why the money cycle theory advocates higher taxation of companies.

According to the OECD Weekly Tracker of GDP [137] “growth provides a real-time high-frequency indicator of economic activity using machine learning and Google Trends data. It has a wide country coverage of OECD and G20 countries. The Tracker is thus particularly well suited to assessing activity when it is changing very rapidly due to the impact of a major shock. It applies a machine learning model to a panel of Google Trends data for 46 countries, and aggregates together information about search behaviour related to consumption, labour markets, housing, trade, industrial activity and economic uncertainty. There are two series of the Weekly Tracker:

- The GDP growth Tracker (yoy) provides estimates of weekly GDP relative to the same week in the previous year. It covers the period from early 2020 to today.
- The GDP level Tracker provides estimates of the level of weekly GDP relative to 2019 Q4. It covers the period from early 2004 to today. Its methodology is described in this note.

Each series has its own 95% confidence intervals (lower and higher bands). [...]

A third generation model will replace the former two and aims at providing a perennial solution to the base effect problem. The "GDP level Tracker" provides estimates of weekly GDP levels, expressed as an index where 2019 Q4 = 100:

$$LT^w \equiv \frac{Y^w}{Y^{2019\,Q_4}} * 100 + \sigma_w \quad (15)$$

It uses a new approach to high-frequency seasonality based on machine learning, which allows GDP to be modelled from the level of the Google Trends series rather than growth rates. It is easier to interpret and so more informative than the previous versions. It also has a longer time coverage (2004 onwards) and it is more robust to outliers, while remaining consistent with the previous two Trackers. This section describes the modelling approach used to produce the Tracker of the level of Weekly GDP. The model is similar to that of the original Tracker, except that it does not use the growth rate transformation, which was applied to both GDP series and search volume indices. The following paragraphs explain how GDP level models can be derived from GDP growth models, then formally introduce the Level Tracker model, and the new seasonality adjustment method based on machine learning."

According to eq. (9) and (15):

$$Lc_y = \frac{\mathrm{d}\left(\frac{dx_m}{dm} - \frac{dx_m}{da}\right)}{\mathrm{d}\left(\frac{dx_m}{dm} - \frac{dx_m}{da}\right)^{2019\,Q_4}} + c_w = \frac{dY^w}{dY^{2019\,Q_4}} + c_w \quad (16)$$

$$Lg_{cy\ Country} = \frac{Lc_{y\ country}}{Lc_{y\ Average} + \mathrm{L}c_{y\ country}} = \frac{Li_{cy\ country}}{Li_{cy\ Average} + \mathrm{L}i_{cy\ country}} \quad (17)$$

$$Lc_{y\ Average} = \frac{Lc_{y\ Average}}{Lc_{y\ Average} + Lc_{y\ Average}} = 0.5 \quad (18)$$

For, constant bank deposits:

$$Lg_{cy\ Country} = g_{cy\ Country} \quad (19)$$

Therefore, it is plausible to proceed to the results. According to the prior literature review and methodology it is plausible to proceed to the results.

4. Results

The current week according to OECD and then according to the general index of the money cycle:

region	date	Tracker (log-deviation)	Low (log-deviation)	High (log-deviation)	Tracker (level)	Low (level)	High (level)
Greece	2004-05-02 00:00:00	-0.101197574	-0.132777944	-0.045998378	118.5935732	114.9082936	125.3475942
$Lc_y = 0.54253$							

Table: Lc_y

Should be noted that the Q4=100 is according to the 0%, to be clarified how the weekly GDP level tracker works.

$Lc_{y\ country}$ =118.5935732

$Lc_{y\ Average} =$ **100**

$Lg_{cy\ Country} = \frac{Lc_{y\ country}}{Lc_{y\ Average} + Lc_{y\ country}} = 0.54253$

The chart is the following:

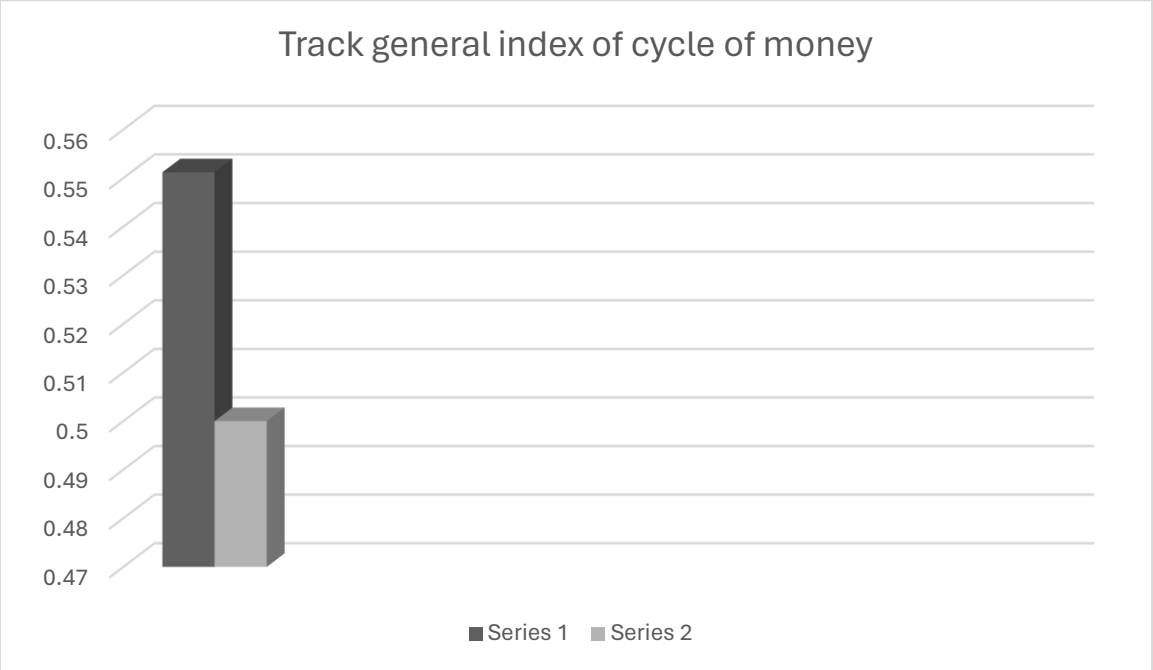

Figure: Track general index of the cycle of money

Conclusion

This week the track of the general index of the cycle of money was the prior one. The theory of the Cycle of Money has proved that the 0.5 value of the cycle of money means that Capitalism has a fundamental problem, that causes debts. Should be noted that the profits of some countries are the deficits of other countries, showing that the economic system is completely competitive, based on capitalism, something that the economic system of Economocracy achieves to fix. The 0.5 of the general index of the cycle of money (or the value 100 here) shows that Capitalism has a fundamental problem, it can't face the permanent increase of debt and the permanent unfair conditions of structural inequality.

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