

Economic Technical Report of Cycle of Money – The case of Greece - Week initiated on  
18 April 2004

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**Abstract:** This work for the week of 18 April 2004 has estimated the TGICM or TCM or Track General Index of Cycle of Money. The main text content of these reports remains the same, the focus is 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 minimum level, space programs secured minimum level, reconstruction of countries after wars, and most significantly the fix of Debts without any war.

**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 18 April 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:

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

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

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

$$\mu = \sum_{i=0}^n \mu_i \quad (4)$$

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

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

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

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

The variable of  $\alpha$  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  $\alpha_s$  symbolizes the case that there are escaped savings that come from transfer pricing activities. The variable of  $\alpha_t$  symbolizes the case that there are escaped savings not from transfer pricing activities but from any other commercial activity. For instance,  $\alpha_t$  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  $\mu$  symbolizes the consumption in an economy. The variable of  $\alpha_p$  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  $c_{\alpha}$  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:

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

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

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

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

It is the velocities of  $c_m$  and  $c_{\alpha}$  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  $c_{\alpha}$  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  $g_{cy \text{ Country}}$  and  $i_{cy \text{ country's}}$  or  $c_{y \text{ country's}}$  is the international indicator of  $i_{cy \text{ Average}}$  or  $c_{y \text{ Average}}$ . In conclusion, it is the international  $g_{cy \text{ Average}}$  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  $c_{y\ country's}$  and  $c_{y\ Average}$ . In the light of GDP, the money cycle in quantitative analysis is an expression of  $\frac{\partial(GDP)}{\partial(S+I+X)}$ , according to  $\frac{dx_m}{dm}$  and  $-\frac{\partial(GDP)}{\partial(S'+I'+M)}$ , according to  $\frac{dx_m}{da}$ . Next,  $c_y = d(GDP) = \frac{\partial(GDP)}{\partial(S+I+X)} d(S+I+X) - \frac{\partial(GDP)}{\partial(S'+I'+M)} d(S'+I'+M)$ , 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:

$$Y = S_T + I_T + (X - M) \quad (13)$$

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

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  $\Delta S$ ,  $\Delta I$  and  $(X - M)$ . The cycle of money indicator is:  $c_{ytotal} = \sum_{i=1}^n \sum_{t=1}^m c_{yi,t} = \sum_{i=1}^n \sum_{t=1}^m [\frac{\partial(GDP)}{\partial(S+I+X)} d(S+I+X) - \frac{\partial(GDP)}{\partial(S'+I'+M)} d(S'+I'+M)]_{i,t}$ . 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):

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

$$Lg_{cy \text{ Country}} = \frac{Lc_y \text{ country}}{Lc_y \text{ Average} + Lc_y \text{ country}} = \frac{Li_{cy \text{ country}}}{Li_{cy \text{ Average}} + Li_{cy \text{ country}}} \quad (17)$$

$$Lc_y \text{ Average} = \frac{Lc_y \text{ Average}}{Lc_y \text{ Average} + Lc_y \text{ Average}} = 0.5 \quad (18)$$

For, constant bank deposits:

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

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	2004-04-18 00:00:00	-0.0249995	-0.072019518	0.021595898	128.0946794	122.1989605	134.2482236
$Lc_y = 0.561586$							

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.

$$Lc_{y \text{ country}} = 128.0946794$$

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

$$Lg_{cy \text{ Country}} = \frac{Lc_{y \text{ country}}}{Lc_{y \text{ Average}} + Lc_{y \text{ country}}} = 0.561586$$

The chart is the following:

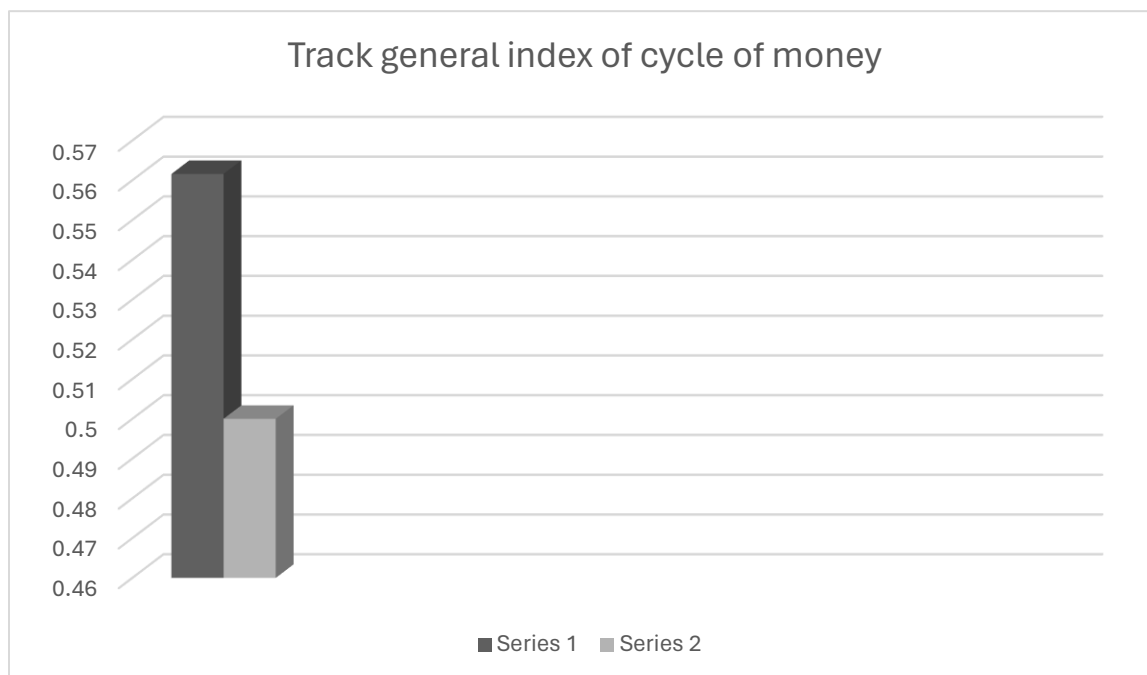


Figure: Track general index of the cycle of money

## 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.

## References

- [1] S. Aakre and D. T. G. Rübelke, "Objectives of public economic policy and the adaptation to climate change," *J. Environ. Plan. Manag.*, vol. 53, no. 6, 2010, doi: 10.1080/09640568.2010.488116.
- [2] M. Abate, P. Christidis, and A. J. Purwanto, "Government support to airlines in the aftermath of the COVID-19 pandemic," *J. Air Transp. Manag.*, vol. 89, 2020, doi: 10.1016/j.jairtraman.2020.101931.
- [3] V. Amanor-Boadu, P. H. Pfromm, and R. Nelson, "Economic feasibility of algal biodiesel under alternative public policies," *Renew. Energy*, vol. 67, 2014, doi: 10.1016/j.renene.2013.11.029.
- [4] M. Anderson, M. Mckee, and E. Mossialos, "Developing a sustainable exit strategy for COVID-19: health, economic and public policy implications," *Journal of the Royal Society of Medicine*, vol. 113, no. 5, 2020, doi: 10.1177/0141076820925229.
- [5] A. Andriansyah, T. Taufiqurokhman, and I. S. Wekke, "Responsiveness of public policy and its impact on education management: An empirical assessment from Indonesia," *Manag. Sci. Lett.*, vol. 9, no. 3, 2019, doi: 10.5267/j.msl.2018.12.008.
- [6] A. Androniceanu, R. Gherghina, and M. Ciobănașu, "The interdependence between fiscal public policies and tax evasion," *Adm. si Manag. Public*, vol. 2019, no. 32, 2019, doi: 10.24818/amp/2019.32-03.
- [7] O. Anguera-Torrell, J. P. Aznar-Alarcón, and J. Vives-Perez, "COVID-19: hotel industry response to the pandemic evolution and to the public sector economic measures," *Tour. Recreat. Res.*, 2020, doi: 10.1080/02508281.2020.1826225.
- [8] O. Arabyan, "Public infrastructure policies and economic geography," *Glas. Srp. Geogr. Drus. Serbian Geogr. Soc.*, vol. 96, no. 1, 2016, doi: 10.2298/gsgd1601093a.
- [9] I. Abdelkafi, "The Relationship Between Public Debt, Economic Growth, and Monetary Policy: Empirical Evidence from Tunisia," *J. Knowl. Econ.*, vol. 9, no. 4, 2018, doi: 10.1007/s13132-016-0404-6.
- [10] Z. J. Acs and L. Szerb, "Entrepreneurship, economic growth and public policy," *Small Bus. Econ.*, vol. 28, no. 2–3, 2007, doi: 10.1007/s11187-006-9012-3.
- [11] Z. Acs, T. Åstebro, D. Audretsch, and D. T. Robinson, "Public policy to promote entrepreneurship: a call to arms," *Small Bus. Econ.*, vol. 47, no. 1, 2016, doi: 10.1007/s11187-016-9712-2.
- [12] A. Adhikari, C. Derashid, and H. Zhang, "Public policy, political connections, and effective tax rates: Longitudinal evidence from Malaysia," *J. Account. Public Policy*, vol. 25, no. 5, 2006, doi:

10.1016/j.jaccpubpol.2006.07.001.

- [13] AICPA, "Guiding principles of good tax policy: A framework for evaluating tax proposals," *Am. Inst. Certif. Public Accountants*, vol. 2017, no. March 2001, 2017.
- [14] A. Aitken, "Measuring Welfare Beyond GDP," *Natl. Inst. Econ. Rev.*, vol. 249, no. 1, 2019, doi: 10.1177/002795011924900110.
- [15] M. Altman, "Behavioral Economics, Economic Theory and Public Policy," *SSRN Electron. J.*, 2012, doi: 10.2139/ssrn.1152105.
- [16] O. AL-UBAYDLI, M. S. LEE, J. A. LIST, C. L. MACKEVICIUS, and D. SUSKIND, "How can experiments play a greater role in public policy? Twelve proposals from an economic model of scaling," *Behav. Public Policy*, vol. 5, no. 1, 2021, doi: 10.1017/bpp.2020.17.
- [17] M. Tvaronavičienė, E. Tarkhanova, and N. Durglishvili, "Sustainable economic growth and innovative development of educational systems," *J. Int. Stud.*, vol. 11, no. 1, 2018, doi: 10.14254/2071-8330.2018/11-1/19.
- [18] Tydir N.I., "Conceptual issues of Ukraine's tax policy in the conditions of the forming a socially oriented market economy," *Actual Probl. Econ.*, vol. 12, no. 222, 2019.
- [19] M. Ud Din, I. U. Mangla, and M. Jamil, "Public Policy, Innovation and Economic Growth: An Economic and Technological Perspective on Pakistan's Telecom Industry," *LAHORE J. Econ.*, vol. 21, no. Special Edition, 2016, doi: 10.35536/lje.2016.v21.isp.a16.
- [20] N. Urwannachotima, P. Hanvoravongchai, J. P. Ansah, P. Prasertsom, and V. R. Y. Koh, "Impact of sugar-sweetened beverage tax on dental caries: A simulation analysis," *BMC Oral Health*, vol. 20, no. 1, 2020, doi: 10.1186/s12903-020-1061-5.
- [21] E. Ustinovich and M. Kulikov, "National projects, socio-economic policy and public equilibrium," *Soc. Polit. i Soc. partnerstvo (Social Policy Soc. Partnership)*, no. 6, 2020, doi: 10.33920/pol-01-2006-01.
- [22] A. Van de Vijver, D. Cassimon, and P. J. Engelen, "A real option approach to sustainable corporate tax behavior," *Sustain.*, vol. 12, no. 13, 2020, doi: 10.3390/su12135406.
- [23] J. C. J. M. van den Bergh, "A procedure for globally institutionalizing a 'beyond-GDP' metric," *Ecol. Econ.*, vol. 192, 2022, doi: 10.1016/j.ecolecon.2021.107257.
- [24] C. Challoumis, "Sensitivity plot of  $cy: \{(m_4 + 3 \cdot m_3) \cdot 10^{-4}\}$  - Cycle of money," *J. Ilm. Pendidik. Holistik*, 2024.
- [25] C. Challoumis, "The cycle of money with and without the enforcement savings," *Complex Syst. Res. Cent.*, 2021.
- [26] C. Challoumis, "Index of the cycle of money – the case of Switzerland," *Risk Financ. Manag.*, vol. 17, no. 4, pp. 1–24, 2024, doi: <https://doi.org/10.3390/jrfm17040135>.
- [27] C. Challoumis, "Impact factor of liability using the Sensitivity Method," *Peter Lang*, 2024.
- [28] C. Challoumis, "Index of the Cycle of Money - The Case of Latvia," *Econ. Cult.*, vol. 17, no. 2, pp. 5–12, 2021, doi: 10.2478/jec-2020-0015.
- [29] C. Challoumis, "The R.B.Q. (Rational, Behavioral and Quantified) Model," *Ekonomika*, vol. 98, no. 1, pp. 6–18, 2019, doi: 10.15388/ekon.2019.1.1.



- [30] C. Challoumis, "Index of the cycle of money - The case of Serbia," *Open J. Res. Econ.*, vol. 4, no. 1, 2021, [Online]. Available: <https://centerprode.com/ojre.html>.
- [31] C. Challoumis, "Sensitivity plot of  $cy: \{(m_4 + 3 \cdot m) \cdot 10^{-4}\}$  - Cycle of money," *Int. J. Glob. Sustain. Res.*, 2024.
- [32] C. Challoumis, "Sensitivity plot of  $cy: \{-(m_2 + m) \cdot 10^{-4}\}$  - Cycle of money," *Am. J. Public Dipl. Int. Stud.*, vol. 2, no. 3, pp. 352–364, 2024.
- [33] C. Challoumis, "Transfer Pricing Methods for Services and the Policy of Fixed Length Principle," *Econ. Bus.*, vol. 33, no. 1, pp. 222–232, 2019, doi: <https://doi.org/10.2478/eb-2019-0016>.
- [34] C. Challoumis, "Comparative analysis between capital and liability - Sensitivity Method," *Open J. Res. Econ.*, 2024.
- [35] C. Challoumis, "Index of the cycle of money - The case of Greece," *IJBESAR (International J. Bus. Econ. Sci. Appl. Res.)*, vol. 14, no. 2, pp. 58–67, 2021.
- [36] C. Challoumis, "Sensitivity plot of  $cy: \{(m_4 - 3 \cdot m_3) \cdot 10^{-4}\}$  - Cycle of money," *Int. J. Econ. Bus. Manag. Account.*, 2024.
- [37] C. Challoumis, "Index of the cycle of money - the case of Poland," *Res. Pap. Econ. Financ.*, vol. 6, no. 1, pp. 72–86, 2022, [Online]. Available: <https://journals.ue.poznan.pl/REF/article/view/126/83>.
- [38] C. Challoumis, "The Impact Factor of Education on the Public Sector – The Case of the U.S.," *Int. J. Bus. Econ. Sci. Appl. Res.*, vol. 13, no. 1, pp. 69–78, 2020, doi: 10.25103/ijbesar.131.07.
- [39] C. Challoumis, "Impact Factor of Capital to the Economy and Tax System," *Complex Syst. Res. Cent.*, vol. 2020, pp. 195–200, 2020, [Online]. Available: [https://www.researchgate.net/publication/350385990\\_Impact\\_Factor\\_of\\_Capital\\_to\\_the\\_Economy\\_and\\_Tax\\_System](https://www.researchgate.net/publication/350385990_Impact_Factor_of_Capital_to_the_Economy_and_Tax_System).
- [40] C. Challoumis, "Index of the cycle of money - The case of Montenegro," *Montenegrin J. Soc. Sci.*, vol. 5, no. 1–2, pp. 41–57, 2021.
- [41] C. Challoumis, "Index of the cycle of money - The case of Moldova," *East. Eur. J. Reg. Econ.*, vol. 8, no. 1, pp. 77–89, 2022.
- [42] C. Challoumis, "Elements of the Theory of Cycle of Money without Enforcement Savings," *Int. J. Financ. Bus. Manag. (IJFBM) Vol. 2 No. 1, 2023*, vol. 2, no. 1, pp. 15–28, 2023, [Online]. Available: <https://journal.multitechpublisher.com/index.php/ijfbm/article/view/1108/1202>.
- [43] C. Challoumis, "Index of the cycle of money - The case of Thailand," *Chiang Mai Univ. J. Econ.*, vol. 25, no. 2, pp. 1–14, 2021, [Online]. Available: <https://so01.tci-thaijo.org/index.php/CMJE/article/view/247774/169340>.
- [44] C. Challoumis, "Sensitivity plot of  $cy: \{(m_4 - 3 \cdot m_2) \cdot 10^{-4}\}$  - Cycle of money," *Int. J. Econ. Bus. Manag. Account.*, 2024.
- [45] C. Challoumis, "Index of the cycle of money - The case of Slovakia," *STUDIACOMMERCIALIABRATISLAVENSIA Ekon. univerzita v Bratislave*, vol. 14, no. 49, pp. 176–188, 2021.
- [46] C. Challoumis, "Comparisons of the Cycle of Money Based on Enforcement and Escaped Savings," *Pindus J. Cult. Lit. ELT*, vol. 3, no. 10, pp. 19–28, 2023.

- [47] C. Challoumis, "Sensitivity plot of  $c_y: \{(m_4 - 3 \cdot m) \cdot 10^{-4}\}$  - Cycle of money," *Hum. Cap. Innov. Manag.*, vol. 1, no. 3, pp. 60–74, 2024.
- [48] C. Challoumis, "The Issue of Utility of Cycle of Money," *J. Assoc. SEPIKE*, vol. 2019, no. 25, pp. 12–21, 2019, [Online]. Available: [https://5b925ea6-3d4e-400b-b5f3-32dc681218ff.filesusr.com/ugd/b199e2\\_dd29716b8bec48ca8fe7fbcfd47cdd2e.pdf](https://5b925ea6-3d4e-400b-b5f3-32dc681218ff.filesusr.com/ugd/b199e2_dd29716b8bec48ca8fe7fbcfd47cdd2e.pdf).
- [49] C. Challoumis, "From Economics to Economic Engineering (The Cycle of Money): The case of Romania," *Cogito*, vol. XVII, no. 2, 2024.
- [50] C. Challoumis, "Comparative analysis between cost and request of intangibles - Sensitivity Method," *Open J. Sociol. Stud.*, 2024.
- [51] C. Challoumis, "Index of the cycle of money - The case of Canada," *J. Entrep. Bus. Econ.*, vol. 11, no. 1, pp. 102–133, 2023, [Online]. Available: <http://scientifica.com/index.php/JEBE/article/view/203>.
- [52] C. Challoumis, "Methods of Controlled Transactions and the Behavior of Companies According to the Public and Tax Policy," *Economics*, vol. 6, no. 1, pp. 33–43, 2018, doi: 10.2478/eoik-2018-0003.
- [53] C. Challoumis, "Chain of the Cycle of Money with and without Maximum and Minimum Mixed Savings," *Eur. Multidiscip. J. Mod. Sci.*, vol. 23, no. 2023, pp. 1–16, 2023.
- [54] C. Challoumis, "Maximum mixed savings on the cycle of money," *Open J. Res. Econ.*, vol. 6, no. 1, pp. 25–34, 2023.
- [55] C. Challoumis, "Economocracy versus capitalism," *Acta Univ. Bohemiae Merid.*, vol. 25, no. 1, pp. 33–54, 2022.
- [56] C. Challoumis, "The cycle of money with and without the maximum mixed savings (Two-dimensional approach)," *Int. J. Cult. Mod.*, vol. 33, no. 2023, pp. 34–45, 2023.
- [57] C. Challoumis, "Impact Factor of the Rest Rewarding Taxes," in *Complex System Research Centre*, 2022.
- [58] C. Challoumis, "Estimations of the cycle of money without escape savings," *Int. J. Multicult. Multireligious Underst.*, vol. 11, no. 3, 2024.
- [59] C. Challoumis, "The Keynesian Theory and the Theory of Cycle of Money," *Hyperion Econ. J.*, vol. 6, no. 3, pp. 3–8, 2018, [Online]. Available: [https://hej.hyperion.ro/articles/3\(6\)\\_2018/HEJnr3\(6\)\\_2018\\_A1Challoumis.pdf](https://hej.hyperion.ro/articles/3(6)_2018/HEJnr3(6)_2018_A1Challoumis.pdf).
- [60] C. Challoumis, "Minimum Mixed Savings on Cycle of Money," *Open J. Res. Econ.*, vol. 6, no. 2, pp. 61–68, 2023, [Online]. Available: <https://centerprode.com/ojre/ojre0602/ojre-0602.html>.
- [61] C. Challoumis, "Sensitivity plot of  $c_y: \{(m_2 - 3 \cdot m) \cdot 10^{-4}\}$  - Cycle of mone," *Middle Eur. Sci. Bull.*, vol. 44, no. 21, p. 33, 2024.
- [62] C. Challoumis, "Identification of Significant Economic Risks to the International Controlled Transactions," *Econ. Appl. Informatics*, vol. 2018, no. 3, pp. 149–153, 2018, doi: <https://doi.org/10.26397/eai1584040927>.
- [63] C. Challoumis, "Impact Factor of Liability of Tax System According to the Theory of Cycle of Money," in *Social and Economic Studies within the Framework of Emerging Global Developments Volume 3, V. Kaya*, vol. 3, 2023, pp. 31–42.
- [64] C. Challoumis, "The Velocity of Escaped Savings and Velocity of Financial Liquidity," *Middle Eur. Sci.*

- Bull.*, vol. 41, no. 2023, pp. 57–66, 2023.
- [65] C. Challoumis, “Index of the cycle of money - The case of Belarus,” *Econ. Banks*, no. 2, 2021.
  - [66] C. Challoumis, “Comparative analysis between cost and capital based on the Sensitivity Method,” *Open J. Res. Econ.*, 2024.
  - [67] C. Challoumis, “Utility of cycle of money with and without the enforcement savings,” *Gospod. Innov.*, vol. 36, no. 1, pp. 269–277, 2023.
  - [68] C. Challoumis, “Velocity of Escaped Savings and Minimum Financial Liquidity According to the Theory of Cycle of Money,” *Eur. Multidiscip. J. Mod. Sci.*, vol. 23, no. 2023, pp. 17–25, 2023.
  - [69] C. Challoumis, “Chain of the Cycle of Money with and Without Maximum Mixed Savings (Three-Dimensional Approach),” *Acad. J. Digit. Econ. Stab.*, vol. 34, no. 2023, pp. 43–65, 2023.
  - [70] C. Challoumis, “Synopsis of principles for the authorities and controlled transactions,” *Pindus*, 2024.
  - [71] C. Challoumis, “The arm’s length principle and the fixed length principle economic analysis,” *World Sci. News*, vol. 115, no. 2019, pp. 207–217, 2019, doi: 10.2139/ssrn.1986387.
  - [72] C. Challoumis, “Minimum escaped savings and financial liquidity in mathematical representation,” *Ekonom. signali*, vol. 19, no. 1, 2024.
  - [73] C. Challoumis, “Comparisons of the cycle of money with and without the mixed savings,” *Econ. Law*, 2023, [Online]. Available: <http://el.swu.bg/ikonomika/>.
  - [74] C. Challoumis, “Analysis of the Theory of Cycle of Money,” *Acta Univ. Bohemiae Merid.*, vol. 23, no. 2, pp. 13–29, 2020, doi: <https://doi.org/10.2478/acta-2020-0004>.
  - [75] C. Challoumis, “Synopsis of principles for the authorities and controlled transactions,” *Int. J. Multicult. Multireligious Underst.*, 2024.
  - [76] C. Challoumis, “The impact factor of Tangibles and Intangibles of controlled transactions on economic performance,” *Econ. Altern.*, 2024.
  - [77] C. Challoumis, “Index of the cycle of money - The case of Ukraine from 1992 to 2020,” *Actual Probl. Econ.*, 2023.
  - [78] C. Challoumis, “Velocity of the escaped savings and financial liquidity on maximum mixed savings,” *Open J. Res. Econ.*, vol. 7, no. 1, 2024.
  - [79] C. Challoumis, “Sensitivity plot of  $cy: \{(m_4 - 3 \cdot m) \cdot 10^{-4}\}$  - Cycle of money,” *Cent. Asian J. Innov. Tour. Manag. Financ.*, 2024.
  - [80] C. Challoumis, “Chain of the Cycle of Money with and without Minimum Mixed Savings (Three-Dimensional Approach),” *Int. J. Cult. Mod.*, vol. 33, no. 2023, pp. 22–33, 2023.
  - [81] C. Challoumis, “Velocity of the escaped savings and financial liquidity on mixed savings,” *Open J. Res. Econ.*, vol. 7, no. 2, 2024.
  - [82] C. Challoumis, “Comparative analysis between cost and bureaucracy - Sensitivity Method,” *Open J. Res. Econ.*, 2024.
  - [83] C. Challoumis, “Synopsis of principles for the authorities and controlled transactions,” *SEPIKE*, 2024.

- [84] C. Challoumis, "THE IMPACT FACTOR OF HEALTH ON THE ECONOMY USING THE CYCLE OF MONEY," *Bull. Transilv. Univ. Braşov*, vol. 11, no. 60, pp. 125–136, 2018, [Online]. Available: [https://webbut.unitbv.ro/index.php/Series\\_V/article/view/2533/1979](https://webbut.unitbv.ro/index.php/Series_V/article/view/2533/1979).
- [85] C. Challoumis, "The Cycle of Money (C.M.) Considers Financial Liquidity with Minimum Mixed Savings," *Open J. Res. Econ.*, vol. 6, no. 1, pp. 1–12, 2023.
- [86] C. Challoumis, "Comparative analysis between cost and risk based on the Sensitivity Method," *Open J. Sociol. Stud.*, 2024.
- [87] C. Challoumis, *Rewarding taxes on the cycle of money*, vol. 5. 2024.
- [88] C. Challoumis, "Capital and Risk in the Tax System," in *Complex System Research Centre*, 2023, pp. 241–244.
- [89] C. Challoumis, "Comparative analysis between cost and liability based on the Sensitivity Method," *Open J. Sociol. Stud.*, 2024.
- [90] C. Challoumis, "Chain of cycle of money," *Acta Univ. Bohemiae Merid.*, vol. 24, no. 2, pp. 49–74, 2021.
- [91] C. Challoumis, "A comparison of the velocities of minimum escaped savings and financial liquidity," in *Social and Economic Studies within the Framework of Emerging Global Developments, Volume - 4, V. Kaya*, 2023, pp. 41–56.
- [92] C. Challoumis, "Index of the cycle of money: The case of Costa Rica," *Sapienza*, vol. 4, no. 3, pp. 1–11, 2023, [Online]. Available: <https://journals.sapienzaeditorial.com/index.php/SIJIS>.
- [93] C. Challoumis, "Index of the cycle of money - The case of Ukraine," *Actual Probl. Econ.*, vol. 243, no. 9, pp. 102–111, 2021, [Online]. Available: doi:10.32752/1993-6788-2021-1-243-244-102-111.
- [94] C. Challoumis, "The cycle of money - Minimum escape savings and financial liquidity," *Int. J. Multicult. Multireligious Underst.*, vol. 11, no. 5, 2024.
- [95] C. Challoumis, "Sensitivity plot of  $cy: \{m4 \cdot 10^{-4}\}$  - Cycle of money," *Int. J. Econ. Innov.*, vol. 45, no. 11, pp. 259–272, 2024, doi: <https://doi.org/10.1515/npf-2019-0049>.
- [96] C. Challoumis, "Index of the cycle of money -the case of Bulgaria," *Econ. Altern.*, vol. 27, no. 2, pp. 225–234, 2021, [Online]. Available: <https://www.unwe.bg/doi/eajournal/2021.2/EA.2021.2.04.pdf>.
- [97] C. Challoumis, "The Impact Factor of Education on the Public Sector and International Controlled Transactions," *Complex Syst. Res. Cent.*, vol. 2019, pp. 151–160, 2019, [Online]. Available: [https://www.researchgate.net/publication/350453451\\_The\\_Impact\\_Factor\\_of\\_Education\\_on\\_the\\_Public\\_Sector\\_and\\_International\\_Controlled\\_Transactions](https://www.researchgate.net/publication/350453451_The_Impact_Factor_of_Education_on_the_Public_Sector_and_International_Controlled_Transactions).
- [98] C. Challoumis, "THE INFLATION ACCORDING TO THE CYCLE OF MONEY (C.M.)," *Econ. Altern.*, 2024.
- [99] C. Challoumis, "Currency rate of the CM (Cycle of Money)," *Res. Pap. Econ. Financ.*, vol. 7, no. 1, 2023.
- [100] C. Challoumis, "The cycle of money - Escape savings and the minimum financial liquidity," *Int. J. Multicult. Multireligious Underst.*, vol. 11, no. 4, 2024.
- [101] C. Challoumis, "Principles for the Authorities on Activities with Controlled Transactions," *Acad. J. Digit. Econ. Stab.*, vol. 30, no. 1, pp. 136–152, 2023.

- [102] C. Challoumis, "Sensitivity plot of  $cy: \{(m_4 + 3 \cdot m_2) \cdot 10^{-4}\}$  - Cycle of money," *Int. J. Appl. Adv. Multidiscip. Res.*, 2024.
- [103] C. Challoumis, "Index of the Cycle of Money - The Case of England," *Br. J. Humanit. Soc. Sci.*, vol. 26, no. 1, pp. 68–77, 2023.
- [104] C. Challoumis, "Analysis of the velocities of escaped savings with that of financial liquidity," *Ekonom. signali*, vol. 13, no. 2, pp. 1–14, 2018, doi: 10.5937/ekonsig1802001c.
- [105] C. Challoumis, "Impact factor of capital using the Sensitivity Method," *Int. J. Multicult. Multireligious Underst.*, 2024.
- [106] C. Challoumis, "The Velocity of Escaped Savings and Maximum Financial Liquidity," *J. Digit. Econ. Stab.*, vol. 34, no. 2023, pp. 55–65, 2023.
- [107] C. Challoumis, "Sensitivity plot of  $cy: \{(m_4 + m) \cdot 10^{-4}\}$  - Cycle of money," *Int. J. Econ. Innov.*, vol. 24, no. 11, pp. 286–298, 2024.
- [108] C. Challoumis, "Impact Factors of Global Tax Revenue - Theory of Cycle of Money," *Int. J. Multicult. Multireligious Underst.*, vol. 11, no. 1, 2024.
- [109] C. Challoumis, "Impact factor of cost using the Sensitivity Method," *Int. J. Multicult. Multireligious Underst.*, 2024.
- [110] C. Challoumis, "Risk on the tax system of the E.U. from 2016 to 2022," *Economics*, vol. 11, no. 2, 2023.
- [111] C. Challoumis, "Sensitivity plot of  $cy: \{-m_4 \cdot 10^{-4}\}$  - Cycle of money," *Int. J. Econ. Innov.*, vol. 24, no. 11, pp. 273–285, 2024.
- [112] C. Challoumis, "Sensitivity plot of  $cy: \{(m_2 + m) \cdot 10^{-4}\}$  - Cycle of money," *Acad. J. Digit. Econ. Stab.*, vol. 37, no. 2, pp. 37–48, 2024.
- [113] C. Challoumis, "The Theory of Cycle of Money - How Do Principles of the Authorities on Public Policy, Taxes, and Controlled Transactions Affect the Economy and Society?," *Int. J. Soc. Sci. Res. Rev.*, vol. 6, no. 8, 2023.
- [114] C. Challoumis, "The Role of Risk to the International Controlled Transactions," *Econ. Appl. Informatics*, vol. 2018, no. 3, pp. 57–64, 2018, doi: 10.26397/eai1584040917.
- [115] C. Challoumis, "The Cycle of Money with and Without the Maximum and Minimum Mixed Savings," *Middle Eur. Sci. Bull.*, vol. 41, no. 2023, pp. 47–56, 2023.
- [116] C. Challoumis, "G7 - Global Minimum Corporate Tax Rate of 15%," *Int. J. Multicult. Multireligious Underst.*, vol. 10, no. 7, 2023.
- [117] C. Challoumis, "Structure of the economy," *Actual Probl. Econ.*, vol. 247, no. 1, 2022.
- [118] C. Challoumis, "Sensitivity plot of  $cy: \{-m_2 \cdot 10^{-4}\}$  - Cycle of money," *Eur. J. Bus. Startups Open Soc.*, vol. 4, no. 3, pp. 207–219, 2024.
- [119] C. Challoumis, "Theoretical analysis of fuzzy logic and Q. E. method in economics," *IKBFU's Vestn.*, vol. 2019, no. 01, pp. 59–68, 2019.
- [120] C. Challoumis, "Approach on arm's length principle and fix length principle mathematical

- representations,” in *Innovations and Contemporary Trends in Business & Economics*, 2024.
- [121] C. Challoumis, “Rewarding taxes on the economy (The theory of cycle of money),” *Int. J. Multicult. Multireligious Underst.*, vol. 11, no. 3, 2024.
  - [122] C. Challoumis, “The cycle of money with and without the escaped savings,” *Ekonom. signali*, vol. 14, no. 1, pp. 89–99, 2019, doi: 336.76 336.741.236.5.
  - [123] C. Challoumis, “FROM SAVINGS TO ESCAPE AND ENFORCEMENT SAVINGS,” *Cogito*, vol. XV, no. 4, pp. 206–216, 2023.
  - [124] C. Challoumis, “Utility of Cycle of Money without the Escaping Savings (Protection of the Economy),” in *Social and Economic Studies within the Framework of Emerging Global Developments Volume 2, V. Kaya*, 2023, pp. 53–64.
  - [125] C. Challoumis, “The Velocities of Maximum Escaped Savings with than of Financial Liquidity to the Case of Mixed Savings,” *Int. J. Econ. Financ. Sustain. Dev.*, vol. 5, no. 6, pp. 124–133, 2023.
  - [126] C. Challoumis, “Impact factor of bureaucracy to the tax system,” *Ekonom. signali*, vol. 18, no. 2, p. 12, 2023.
  - [127] C. Challoumis, “Utility of Cycle of Money with and without the Escaping Savings,” *Int. J. Bus. Dipl. Econ.*, vol. 2, no. 6, pp. 92–101, 2023.
  - [128] C. Challoumis, “The Impact Factor of Costs to the Tax System,” *J. Entrep. Bus. Econ.*, vol. 8, no. 1, pp. 1–14, 2020, [Online]. Available: <http://scientifica.com/index.php/JEBE/article/view/126>.
  - [129] C. Challoumis, “Velocity of the escaped savings and financial liquidity on minimum mixed savings,” *Open J. Res. Econ.*, vol. 7, no. 2, 2024.
  - [130] C. Challoumis and M. Savic, “Rational and Behavioral Economics,” *Ekonom. signali*, vol. 19, no. 1, 2024.
  - [131] C. Challoumis, “Multiple Axiomatics Method and the Fuzzy Logic,” *MIDDLE Eur. Sci. Bull.*, vol. 37, no. 1, pp. 63–68, 2023.
  - [132] C. Challoumis, “Conditions of the CM (Cycle of Money),” in *Social and Economic Studies within the Framework of Emerging Global Developments, Volume -1, V. Kaya*, 2022, pp. 13–24.
  - [133] C. Challoumis, “From Axiomatics Method to Multiple Axiomatics Method – Q.E. (Quantification of Everything) Method,” *Int. J. Multicult. Multireligious Underst.*, 2024.
  - [134] C. Challoumis, “The cycle of money with mixed savings,” *Open J. Res. Econ.*, vol. 6, no. 2, pp. 41–50, 2023.
  - [135] C. Challoumis, “Sensitivity plot of  $c_y: \{(m-m_4) \cdot 10^{-4}\}$  - Cycle of money,” *J. Mark. Emerg. Econ.*, vol. 4, no. 2, pp. 24–35, 2024.
  - [136] C. Challoumis, “The Cycle of Money with and Without the Minimum Mixed Savings,” *Pindus J. Cult. Lit. ELT*, vol. 3, no. 10, pp. 29–39, 2023.
  - [137] OECD, “Tracking GDP growth in real time,” *OECD Weekly Tracker of Economic Activity*, 2024. .

## SSRN References

Challoumis, Constantinos, Binary Fields and Economics through Fuzzy Logic Approach and Boolean Algebra Using Multidimensional Processing with Respect to Artificial Neural Networks and Machine Learning (June 30, 2016). Available at SSRN: <https://ssrn.com/abstract=3123275> or <http://dx.doi.org/10.2139/ssrn.3123275>

Challoumis, Constantinos, Methods of Controlled Transactions and Identification of Tax Avoidance (February 4, 2018). Available at SSRN: <https://ssrn.com/abstract=3134109> or <http://dx.doi.org/10.2139/ssrn.3134109>

Challoumis, Constantinos, Quantification of Everything (A Methodology for Quantification of Quality Data with Application and to Social and Theoretical Sciences) (November 12, 2017). Available at SSRN: <https://ssrn.com/abstract=3136014> or <http://dx.doi.org/10.2139/ssrn.3136014>

Challoumis, Constantinos, Controlled Transactions Under Conditions (March 10, 2018). Available at SSRN: <https://ssrn.com/abstract=3137747> or <http://dx.doi.org/10.2139/ssrn.3137747>

Challoumis, Constantinos, Intangible Controlled Transactions (March 13, 2018). Available at SSRN: <https://ssrn.com/abstract=3140026> or <http://dx.doi.org/10.2139/ssrn.3140026>

Challoumis, Constantinos, Tangibles and Intangibles in Controlled Transactions (March 15, 2018). Available at SSRN: <https://ssrn.com/abstract=3141198> or <http://dx.doi.org/10.2139/ssrn.3141198>

Challoumis, Constantinos, Analysis of Tangibles and Intangibles Transactions Subject to the Fixed Length Principle (March 17, 2018). Available at SSRN: <https://ssrn.com/abstract=3142960> or <http://dx.doi.org/10.2139/ssrn.3142960>

Challoumis, Constantinos, Impact Factor of Sensitivity of Tax System (The Bureaucracy) (March 18, 2018). Available at SSRN: <https://ssrn.com/abstract=3143209> or <http://dx.doi.org/10.2139/ssrn.3143209>

Challoumis, Constantinos, Impact Factor of Liability of Tax System (Stable Tax System) (March 19, 2018). Available at SSRN: <https://ssrn.com/abstract=3143985> or <http://dx.doi.org/10.2139/ssrn.3143985>

Challoumis, Constantinos, Impact Factor of Intangibles of Tax System (March 20, 2018). Available at SSRN: <https://ssrn.com/abstract=3144709> or <http://dx.doi.org/10.2139/ssrn.3144709>

Challoumis, Constantinos, Impact Factor of Risks of Tax System (March 21, 2018). Available at SSRN: <https://ssrn.com/abstract=3145207> or <http://dx.doi.org/10.2139/ssrn.3145207>

Challoumis, Constantinos, Impact Factor of Capital to the Tax System (March 21, 2018). Available at SSRN: <https://ssrn.com/abstract=3145388> or <http://dx.doi.org/10.2139/ssrn.3145388>

Challoumis, Constantinos, Impact Factor of Costs to the Tax System (March 21, 2018). Available at SSRN: <https://ssrn.com/abstract=3146573> or <http://dx.doi.org/10.2139/ssrn.3146573>

Challoumis, Constantinos, Analysis of Impact Factors of Global Tax Revenue (March 23, 2018). Available at SSRN: <https://ssrn.com/abstract=3147860> or <http://dx.doi.org/10.2139/ssrn.3147860>

Challoumis, Constantinos, Arm's Length Principle and Fix Length Principle Mathematical Approach (March 23, 2018). Available at SSRN: <https://ssrn.com/abstract=3148276> or <http://dx.doi.org/10.2139/ssrn.3148276>

Challoumis, Constantinos, Transfer Pricing Methods for Services (March 24, 2018). Available at SSRN: <https://ssrn.com/abstract=3148733> or <http://dx.doi.org/10.2139/ssrn.3148733>

Challoumis, Constantinos, The Theory of Cycle of Money (March 25, 2018). Available at SSRN: <https://ssrn.com/abstract=3149156> or <http://dx.doi.org/10.2139/ssrn.3149156>

Challoumis, Constantinos, Q.E. (Quantification of Everything) Method and Econometric Analysis (March 26, 2018). Available at SSRN: <https://ssrn.com/abstract=3150101> or <http://dx.doi.org/10.2139/ssrn.3150101>

Challoumis, Constantinos, The Theory of Cycle of Money Without Escaping Savings (March 27, 2018). Available at SSRN: <https://ssrn.com/abstract=3150655> or <http://dx.doi.org/10.2139/ssrn.3150655>

Challoumis, Constantinos, Comparison between the Cycle of Money with and Without the Escaped Savings (March 28, 2018). Available at SSRN: <https://ssrn.com/abstract=3151438> or <http://dx.doi.org/10.2139/ssrn.3151438>

Challoumis, Constantinos, The Theory of Cycle of Money Without Enforcement Savings (March 28, 2018). Available at SSRN: <https://ssrn.com/abstract=3151945> or <http://dx.doi.org/10.2139/ssrn.3151945>

Challoumis, Constantinos, Comparison between the Velocities of Minimum Escaped Savings with than of Financial Liquidity (March 29, 2018). Available at SSRN: <https://ssrn.com/abstract=3152288> or <http://dx.doi.org/10.2139/ssrn.3152288>

Challoumis, Constantinos, A Complete Analysis of Cycle of Money (March 29, 2018). Available at SSRN: <https://ssrn.com/abstract=3152588> or <http://dx.doi.org/10.2139/ssrn.3152588>

Challoumis, Constantinos, Comparisons of Cycle of Money (March 31, 2018). Available at SSRN: <https://ssrn.com/abstract=3153510> or <http://dx.doi.org/10.2139/ssrn.3153510>

Challoumis, Constantinos, Curved Space Economy (March 31, 2018). Available at SSRN: <https://ssrn.com/abstract=3153743> or <http://dx.doi.org/10.2139/ssrn.3153743>

Challoumis, Constantinos, Rewarding Taxes for the Cycle of Money and the Impact Factor of the Rest Rewarding Taxes (April 1, 2018). Available at SSRN: <https://ssrn.com/abstract=3153982> or <http://dx.doi.org/10.2139/ssrn.3153982>

Challoumis, Constantinos, Rewarding Taxes for the Cycle of Money and the Impact Factor of the Education (April 1, 2018). Available at SSRN: <https://ssrn.com/abstract=3154093> or <http://dx.doi.org/10.2139/ssrn.3154093>

Challoumis, Constantinos, Rewarding Taxes for the Cycle of Money and the Impact Factor of the Health (April 1, 2018). Available at SSRN: <https://ssrn.com/abstract=3154122> or <http://dx.doi.org/10.2139/ssrn.3154122>

Challoumis, Constantinos, Impact Factor of the Rest Rewarding Taxes (April 2, 2018). Available at SSRN: <https://ssrn.com/abstract=3154753> or <http://dx.doi.org/10.2139/ssrn.3154753>

Challoumis, Constantinos, Impact Factor of the Education (April 3, 2018). Available at SSRN: <https://ssrn.com/abstract=3155238> or <http://dx.doi.org/10.2139/ssrn.3155238>

Challoumis, Constantinos, Impact Factor of Health to the Cycle of Money (April 3, 2018). Available at SSRN: <https://ssrn.com/abstract=3155246> or <http://dx.doi.org/10.2139/ssrn.3155246>

Challoumis, Constantinos, Utility of Cycle of Money (April 3, 2018). Available at SSRN: <https://ssrn.com/abstract=3155944> or <http://dx.doi.org/10.2139/ssrn.3155944>

Challoumis, Constantinos, Utility of Cycle of Money Without the Escaping Savings (April 4, 2018). Available at SSRN: <https://ssrn.com/abstract=3156583> or <http://dx.doi.org/10.2139/ssrn.3156583>

Challoumis, Constantinos, Utility of Cycle of Money without the Enforcement Savings (April 4, 2018). Available at SSRN: <https://ssrn.com/abstract=3156629> or <http://dx.doi.org/10.2139/ssrn.3156629>

Challoumis, Constantinos, Comparisons of Utility of Cycle of Money With and Without the Escaping Savings (April 5, 2018). Available at SSRN: <https://ssrn.com/abstract=3156986> or <http://dx.doi.org/10.2139/ssrn.3156986>



Challoumis, Constantinos, A Complete Analysis of Utility of Cycle of Money (April 5, 2018). Available at SSRN: <https://ssrn.com/abstract=3157173> or <http://dx.doi.org/10.2139/ssrn.3157173>

Challoumis, Constantinos, Chain of Cycle of Money (April 6, 2018). Available at SSRN: <https://ssrn.com/abstract=3157657> or <http://dx.doi.org/10.2139/ssrn.3157657>

Challoumis, Constantinos, Cycle of Money with Mixed Savings (April 6, 2018). Available at SSRN: <https://ssrn.com/abstract=3157974> or <http://dx.doi.org/10.2139/ssrn.3157974>

Challoumis, Constantinos, Cycle of Money with the Maximum Mixed Savings (April 7, 2018). Available at SSRN: <https://ssrn.com/abstract=3158166> or <http://dx.doi.org/10.2139/ssrn.3158166>

Challoumis, Constantinos, Cycle of Money with the Minimum Mixed Savings (April 7, 2018). Available at SSRN: <https://ssrn.com/abstract=3158175> or <http://dx.doi.org/10.2139/ssrn.3158175>

Challoumis, Constantinos, Comparisons of Cycle of Money with and Without the Mixed Savings (April 7, 2018). Available at SSRN: <https://ssrn.com/abstract=3158190> or <http://dx.doi.org/10.2139/ssrn.3158190>

Challoumis, Constantinos, Comparisons of Cycle of Money with and Without the Maximum Mixed Savings (April 7, 2018). Available at SSRN: <https://ssrn.com/abstract=3158220> or <http://dx.doi.org/10.2139/ssrn.3158220>

Challoumis, Constantinos, Comparisons of Cycle of Money with and Without the Minimum Mixed Savings (April 7, 2018). Available at SSRN: <https://ssrn.com/abstract=3158323> or <http://dx.doi.org/10.2139/ssrn.3158323>

Challoumis, Constantinos, Comparisons of Cycle of Money with and Without the Maximum and Minimum Mixed Savings (April 7, 2018). Available at SSRN: <https://ssrn.com/abstract=3158399> or <http://dx.doi.org/10.2139/ssrn.3158399>

Challoumis, Constantinos, Chain of Cycle of Money with Mixed Savings (April 7, 2018). Available at SSRN: <https://ssrn.com/abstract=3158422> or <http://dx.doi.org/10.2139/ssrn.3158422>

Challoumis, Constantinos, Theoretical Definition of the Equations of Cycle of Money, of Minimum Escaped Savings and of Velocity of Financial Liquidity (April 9, 2018). Available at SSRN: <https://ssrn.com/abstract=3159200> or <http://dx.doi.org/10.2139/ssrn.3159200>

Challoumis, Constantinos, Comparison between the Velocities of Escaped Savings with Than of Minimum Financial Liquidity (April 9, 2018). Available at SSRN: <https://ssrn.com/abstract=3159572> or <http://dx.doi.org/10.2139/ssrn.3159572>

Challoumis, Constantinos, Comparison between the Velocities of Escaped Savings with than of Financial Liquidity to the Case of Mixed Savings (April 10, 2018). Available at SSRN: <https://ssrn.com/abstract=3159927> or <http://dx.doi.org/10.2139/ssrn.3159927>

Challoumis, Constantinos, Comparison between the Velocities of Escaped Savings with than of Maximum Financial Liquidity to the Case of Mixed Savings (April 10, 2018). Available at SSRN: <https://ssrn.com/abstract=3159951> or <http://dx.doi.org/10.2139/ssrn.3159951>

Challoumis, Constantinos, Comparison between the Velocities of Maximum Escaped Savings with than of Financial Liquidity to the Case of Mixed Savings (April 10, 2018). Available at SSRN: <https://ssrn.com/abstract=3159986> or <http://dx.doi.org/10.2139/ssrn.3159986>

Challoumis, Constantinos, A Complete Analysis of Comparisons between Velocities with and Without the Mixed Savings (April 10, 2018). Available at SSRN: <https://ssrn.com/abstract=3160326> or <http://dx.doi.org/10.2139/ssrn.3160326>

Challoumis, Constantinos, Cycle of Money With the Velocities of the Escaped Savings and of the Financial Liquidity (April 11, 2018). Available at SSRN: <https://ssrn.com/abstract=3161033> or <http://dx.doi.org/10.2139/ssrn.3161033>

Challoumis, Constantinos, Cycle of Money with the Velocities of the Minimum Escaped Savings and of the Financial Liquidity (April 12, 2018). Available at SSRN: <https://ssrn.com/abstract=3161749> or <http://dx.doi.org/10.2139/ssrn.3161749>

Challoumis, Constantinos, Cycle of Money with the Velocities of the Escaped Savings and of the Minimum Financial Liquidity (April 12, 2018). Available at SSRN: <https://ssrn.com/abstract=3161802> or <http://dx.doi.org/10.2139/ssrn.3161802>

Challoumis, Constantinos, Cycle of Money with the Velocities of the Escaped Savings and of the Financial Liquidity Considering Mixed Savings (April 13, 2018). Available at SSRN: <https://ssrn.com/abstract=3162459> or <http://dx.doi.org/10.2139/ssrn.3162459>

Challoumis, Constantinos, Cycle of Money with the Velocities of the Escaped Savings and of the Financial Liquidity considering Maximum Mixed Savings (April 14, 2018). Available at SSRN: <https://ssrn.com/abstract=3162766> or <http://dx.doi.org/10.2139/ssrn.3162766>

Challoumis, Constantinos, Cycle of Money with the Velocities of the Escaped Savings and of the Financial Liquidity considering Minimum Mixed Savings (April 14, 2018). Available at SSRN: <https://ssrn.com/abstract=3162798> or <http://dx.doi.org/10.2139/ssrn.3162798>

Challoumis, Constantinos, Principles for the Authorities and for the Controlled Transactions (Maximization of Utility of Economy and Maximization of Utility of Companies of Controlled Transactions) (April 16, 2018). Available at SSRN: <https://ssrn.com/abstract=3163502> or <http://dx.doi.org/10.2139/ssrn.3163502>

Challoumis, Constantinos, Analysis of Axiomatic Methods in Economics (April 24, 2018). Available at SSRN: <https://ssrn.com/abstract=3168087> or <http://dx.doi.org/10.2139/ssrn.3168087>

Challoumis, Constantinos, Comparison between the Velocities of Escaped Savings with than of Financial Liquidity (April 27, 2018). Available at SSRN: <https://ssrn.com/abstract=3169817> or <http://dx.doi.org/10.2139/ssrn.3169817>

Challoumis, Constantinos, Comparison between the Cycle of Money with and Without the Enforcement Savings (May 5, 2018). Available at SSRN: <https://ssrn.com/abstract=3174087> or <http://dx.doi.org/10.2139/ssrn.3174087>

Challoumis, Constantinos, Fuzzy Logic Concepts in Economics (June 4, 2015). Available at SSRN: <https://ssrn.com/abstract=3185732> or <http://dx.doi.org/10.2139/ssrn.3185732>

Challoumis, Constantinos, Behavioral Economics Concepts (2015). Available at SSRN: <https://ssrn.com/abstract=3186070> or <http://dx.doi.org/10.2139/ssrn.3186070>

Challoumis, Constantinos, Rational Economics in Comparison to the Case of Behavioral Economics (Keynesian, and Neoclassical Approaches) (July 6, 2018). Available at SSRN: <https://ssrn.com/abstract=3209295> or <http://dx.doi.org/10.2139/ssrn.3209295>

Challoumis, Constantinos, Multiple Axiomatics Method Through the Q.E. Methodology (July 31, 2018). Available at SSRN: <https://ssrn.com/abstract=3223642> or <http://dx.doi.org/10.2139/ssrn.3223642>

Challoumis, Constantinos, Multiple Axiomatics Method and the Fuzzy Logic (August 1, 2018). Available at SSRN: <https://ssrn.com/abstract=3224425> or <http://dx.doi.org/10.2139/ssrn.3224425>

Challoumis, Constantinos, Approach of the Impossibility Theory of Kenneth Arrow in the Voting System (April 16, 2019). Available at SSRN: <https://ssrn.com/abstract=3373304> or <http://dx.doi.org/10.2139/ssrn.3373304>

Challoumis, Constantinos, Comparisons of Utility of Cycle of Money with and without the Enforcement Savings (2018). Available at SSRN: <https://ssrn.com/abstract=3420124> or <http://dx.doi.org/10.2139/ssrn.3420124>

Challoumis, Constantinos, Theoretical Definition about the Velocities of Minimum Escaped Savings with Than of Financial Liquidity (July 16, 2019). Available at SSRN: <https://ssrn.com/abstract=3421113> or <http://dx.doi.org/10.2139/ssrn.3421113>

Challoumis, Constantinos, Theoretical Definition of the Velocities of Escaped Savings With Than of Financial Liquidity (July 16, 2019). Available at SSRN: <https://ssrn.com/abstract=3421122> or <http://dx.doi.org/10.2139/ssrn.3421122>

Challoumis, Constantinos, Mathematical Background of the Theory of Cycle of Money (August 9, 2021). Available at SSRN: <https://ssrn.com/abstract=3902181> or <http://dx.doi.org/10.2139/ssrn.3902181>

Challoumis, Constantinos, Essential Points of the Theory of the CM (Cycle of Money) - (Βασικά στοιχεία της θεωρίας του ΚΧ (Κύκλου Χρήματος)) (March 12, 2023). Available at SSRN: <https://ssrn.com/abstract=4386352> or <http://dx.doi.org/10.2139/ssrn.4386352>

Challoumis, Constantinos, Elements from Savings to Escape and Enforcement Savings (Στοιχεία από τις Αποταμιεύσεις στις Εκφεύγουσες και Ενισχυτικές Αποταμιεύσεις) (November 13, 2023). Available at SSRN: <https://ssrn.com/abstract=4630497> or <http://dx.doi.org/10.2139/ssrn.4630497>

Challoumis, Constantinos, Comparative analysis between risk and bureaucracy - Sensitivity Method (April 16, 2024). Available at SSRN: <https://ssrn.com/abstract=4796508> or <http://dx.doi.org/10.2139/ssrn.4796508>

Challoumis, Constantinos, International imprints on money cycle theory (Διεθνείς αποτυπώσεις στη θεωρία του κύκλου χρήματος) (May 1, 2024). Available at SSRN: <https://ssrn.com/abstract=>

Challoumis, Constantinos, Economic Technical Report of Cycle of Money – The case of Greece - Week initiating on 4 January 2004 (May 12, 2024). Available at SSRN: <https://ssrn.com/abstract=>

Challoumis, Constantinos, Economic Technical Report of Cycle of Money – The case of Greece - Week initiating on 11 January 2004 (May 12, 2024). Available at SSRN: <https://ssrn.com/abstract=>

Challoumis, Constantinos, Economic Technical Report of Cycle of Money – The case of Greece - Week initiating on 18 January 2004 (May 12, 2024). Available at SSRN: <https://ssrn.com/abstract=>

Challoumis, Constantinos, Economic Technical Report of Cycle of Money – The case of Greece - Week initiating on 25 January 2004 (May 12, 2024). Available at SSRN: <https://ssrn.com/abstract=>

Challoumis, Constantinos, Economic Technical Report of Cycle of Money – The case of Greece - Week initiated on 1 February 2004 (May 12, 2024). Available at SSRN: <https://ssrn.com/abstract=>

Challoumis, Constantinos, Economic Technical Report of Cycle of Money – The case of Greece - Week initiated on 8 February 2004 (May 12, 2024). Available at SSRN: <https://ssrn.com/abstract=>

Challoumis, Constantinos, Economic Technical Report of Cycle of Money – The case of Greece - Week initiated on 15 February 2004 (May 12, 2024). Available at SSRN: <https://ssrn.com/abstract=>

Challoumis, Constantinos, Economic Technical Report of Cycle of Money – The case of Greece - Week initiated on 22 February 2004 (May 12, 2024). Available at SSRN: <https://ssrn.com/abstract=>

Challoumis, Constantinos, Economic Technical Report of Cycle of Money – The case of Greece - Week initiated on 29 February 2004 (May 12, 2024). Available at SSRN: <https://ssrn.com/abstract=>

Challoumis, Constantinos, Economic Technical Report of Cycle of Money – The case of Greece - Week initiated on 7 March 2004 (May 12, 2024). Available at SSRN: <https://ssrn.com/abstract=>

Challoumis, Constantinos, Economic Technical Report of Cycle of Money – The case of Greece - Week initiated on 14 March 2004 (May 13, 2024). Available at SSRN: <https://ssrn.com/abstract=>

Challoumis, Constantinos, Economic Technical Report of Cycle of Money – The case of Greece - Week initiated on 21 March 2004 (May 13, 2024). Available at SSRN: <https://ssrn.com/abstract=>

Challoumis, Constantinos, Economic Technical Report of Cycle of Money – The case of Greece - Week initiated on 28 March 2004 (May 13, 2024). Available at SSRN: <https://ssrn.com/abstract=>

Challoumis, Constantinos, Economic Technical Report of Cycle of Money – The case of Greece - Week initiated on 4 April 2004 (May 13, 2024). Available at SSRN: <https://ssrn.com/abstract=>