Is there a Similiarity between Fibonacci Sequence and Euler's Number with Respect to Quantum Perspective Model?

By Tahir Ölmez

Selçuk University

Abstract- According to Quantum Perspective Model, this article studies whether there is a link between the Euler's numbers and the Fibonacci series. When the digits of the Euler's number after the comma are converted from decimal(10) number base system to binary(2) number base system, it corresponds to the number in the Fibonacci series.(0,1,1,2,3,5,8,13,21,34,55…) [7].From this point of view, when the first hundred digits of the Euler's numbers after the comma were calculated, the number "55" (ten times) in the Fibonacci series was found, in particular. Besides, the eleventh number in the Fibonacci series is also "55". In other words, the approximate unchanged numbers of the golden ratio numbers after the comma can be reached for the first time after dividing them from "55" to "34" (1,618). In sum, Euler's numbers are not only attributed to the Fibonacci series in mathematics, but also attributed to the golden ratio in nature.

Keywords: quantum perspective model, euler's numbers, fibonacci series, binary number base system, the golden ratio and the pascal triangle.

GJSFR-F Classification: MSC 2010: 35Q31

ISTHEREASIMILIARITYBETWEENFIBONACCISEQUENCEANDEULERSNUMBERWTHRESPECTTOQUANTUMPERSPECTVEMODEL

Strictly as per the compliance and regulations of:

Is there a Similiarity between Fibonacci Sequence and Euler's Number with Respect to Quantum Perspective Model?

Tahir Ölmez

Abstract- According to Quantum Perspective Model, this article studies whether there is a link between the Euler's numbers and the Fibonacci series. When the digits of the Euler's number after the comma are converted from decimal(10) number base system to binary(2) number base system, it corresponds to the number in the Fibonacci series. (0,1,1,2,3,5,8,13,21,34,55…) [7]. From this point of view, when the first hundred digits of the Euler's numbers after the comma were calculated, the number "55" (ten times) in the Fibonacci series was found, in particular. Besides, the eleventh number in the Fibonacci series is also "55". In other words, the approximate unchanged numbers of the golden ratio numbers after the comma can be reached for the first time after dividing them from "55" to "34" (1,618). In sum, Euler's numbers are not only attributed to the Fibonacci series in mathematics, but also attributed to the golden ratio in nature.

Keywords: quantum perspective model, euler's numbers, fibonacci series, binary number base system, the golden ratio and the pascal triangle.

I. Euler's Numbers and Golden Ratio

Euler's numbers are e: 2,718281828459045…[1]

The starting point of this study was found as follows. When the first fifteen digits of the number "e" after the comma are subtracted from a quadrillion, the first three digits of the numbers obtained at the result are "618". Also, the golden ratio numbers include "618", too.(Remember, it is approximately 1,618) (For more information about "618" and biochemistry [6]) In fact, in the digits after "618" in the result, Euler's numbers are the same as the digits after the first three digits after the comma (281828459045).

Fibonacci series : .0,1,1,2,3,5,8,13,21,34,55… [7]

The golden ratio has the continued fractions (1/1, 2/1, 3/2, 5/3, 8/5, 13/8, 21/13, 34/21, 55/34…etc) are ratios of successive Fibonacci numbers. [7]

The starting point of the numbers in the Fibonacci series is the Pascal triangle, which is also formed by the exponents of the eleven "11" digit. Namely, From Fibonacci series, the number of "55" is the eleventh(11) number. Another mysterious point is that if you calculate the diagonals of this triangle. the sum of the numbers in the diagonals will give you the Fibonacci sequence [1]. (1,1,2,3,5,8,13,21,34,55) [7]. Namely, the value of a row is a power of 11. [3]

Author: Selçuk University, Social Sciences Dept., Selcuklu/Konya. e-mails: bsonmez3@gmail.com, tolmez123@yahoo.com
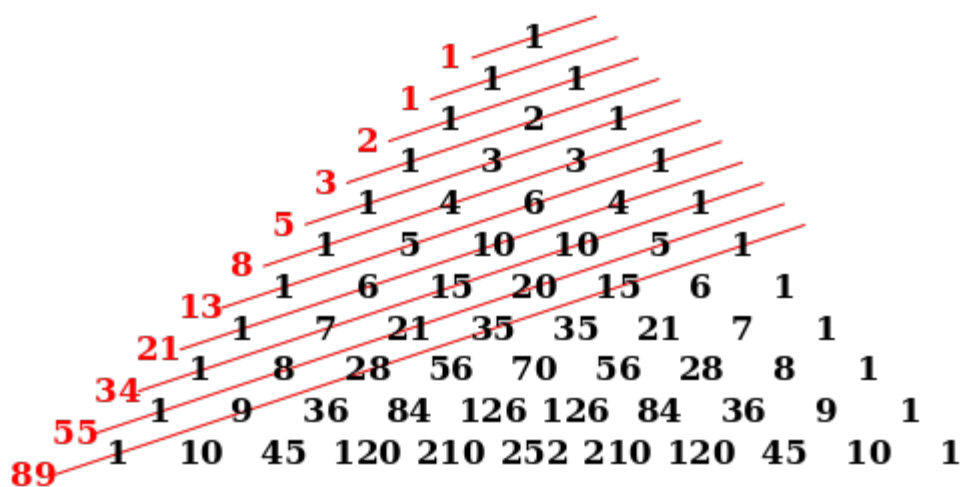
Picture 1: The Pascal triangle and Fibonacci series [2]

II. Calculation of Euler's Numbers from Decimal base System (10) to Binary base System (2) and Vice Versa

Table 1: The representation of decimal numbers in the binary base and vice versa

DECIMAL BINARY	1 01	2 10	3 11	4 100	5 101	6 110	7 111	8 1000	9 1001	10 1010
DECIMAL BINARY	11 1011	12 1100	13 1101	14 1110	15 1111	16 10000	17 10001	18	19	20
DECIMAL BINARY	21 10101	22	23	24 11000	25	26	27 11011	28	29	30 11110
DECIMAL BINARY	31	32	33	34	35 100011	36 100100	37	38 100110	39	40
DECIMAL BINARY	41	42 101010	43	44	45 101101	46 101110	47 101111	48	49	50
DECIMAL BINARY	51 110011	52 110100	53	54	55	56	57	58	59 111011	60
DECIMAL BINARY	61	62 111110	63	64	65	66 1000010	67 100011	68	69 1000101	70
DECIMAL BINARY	71 1000111	72 1001000	73	74 1001010	75 1001011	76	77 1001101	78 1001110	79	80
DECIMAL BINARY	81 1010001	82 1010010	83	84 1010100	85	86	87 1010111	88	89	90
DECIMAL BINARY	91	92	93	94	95 1011111	96 1100000	97 1100001	98	99 1100011	100

III. Calculation of Euler's Numbers from Decimal base System (10) to Binary base System (2) and Vice Versa

The first hundred of Euler's numbers are here:

e:2,718281828459045235360287471352662497757247093699959574966967627724076630353547594571382178525166642742746

At first, Euler's numbers of both digits after the comma was taken each time. For example, 71,82,81,82,84…and so on. Then these numbers are found in the binary number system in Table-1. (For instance, "71", 1000111 and so on).Secondly, convert these binary numbers to decimal number base (For instance, "71" 1000111; 1000=8 and

111=7). Finally, all decimal numbers are subjected to the addition process, respectively. (8+7+2+4+2+2+17+2+4+2+5=55). The result of the addition is "55".

Euler's numbers: 71   82   81   82   84

Euler's numbers: 1000 111 10 100 10   10 10001 10 100 10   101 *0*

Euler's numbers: 8 +   7   +2+4+2   + 2 +17   +2+4+2   +5

EMPTY =55

Euler's numbers: 84(more)   59   04 52   35   36   02   87

Euler's numbers: 100 111 01 11   1001 10 100 1000 11 100 100 10   10 101

Euler's numbers: 4   +3   +2+3 + 9 +   2 + 4 +8   +3 +4   +4   + 2   +2 +5=55

Euler's numbers: 87(more) 47   13   52   66   24

Euler's numbers :   11   1011 11 11 01 1 10 100 10000 10 1 1000

Euler's numbers :   3   +11 +3   +3+1+1+2+4   +16   +2 +1+8 =55

Euler's numbers: 97   75   72   47   09   36

Euler's numbers: 1 10000 1 100 10 11   100 1000 10 1 111   10 01 10   01 *00*

Euler's numbers: 1+16+   1 +4   +2   +3   +4   +8   +2 +1+7   +2+1   +2+1

EMPTY=55

Euler's numbers: 99   95   95   74   96

Euler's numbers: 1 1000 11 1 01 1111 1 01 1111 100 10 10 1

Euler's numbers: 1 + 8 +3 +1+1+15   +1+1+15 +4 +2 +2   +1=55

Euler's numbers: 96(more)   69   67

Euler's numbers: 100000   100 *00*   101 10000

Euler's numbers :   32 + 2   +*EMPTY*+5 +16 =55

Euler's numbers: 67(more) 62   77   24   07   66

Euler's numbers: 11   111 110 10 01 101 1 1000 1 11 10000

Euler's numbers: 3   +7 +6   +2+1 +7 +1 +8   +1+3+16=55

Euler's numbers: 66(more) 30   35   35   47   59

Euler's numbers: 10   111 10 1000 11 1000 11 1011 11 111 01

Euler's numbers: 2   +7   +2 +8 +3 +8 +3 +11 +3 +7 +1 =55

Euler's numbers : 59(more) 45   71   38   21   78   52

Euler's numbers: 1   101 101 1000 111 100 110 101 01 100 11 10   11 01

Euler's numbers: 1   + 5   +5   +8   +7   +4   +6   +5 +1   +4 +3 +2   +3 +1 =55

Euler's numbers: 52(more) 51   66   42   74   27   46

Euler's numbers : *00*   1 100 11 10000 10 10 10 10 100 10 10 110 11 10 11 10

Euler's numbers : *EMPTY* +1+4+3 +16   +2 +2 +2+2 +4 +2 +2 +6 +3   +1+3 +2=*55*

IV. Conclusion

The most widely used number digit system today is decimal. But in this work, Euler's numbers have been converted from decimal base system to binary number base system. Interestingly, the first number of Euler's numbers is "2".Binary numbers have only two digits (0 or 1) too [5].

According to Quantum Perspective Model[4], after calculating the first hundred digits of Euler numbers after the comma, the number" 55 " (ten times) was found, especially in the Fibonacci series (0,1,1,2,3,5,8,13,21,34,55…)[7] .The 11th digit in the Fibonacci series is also "55". The numbers of the this series can be reached through The Pascal Triangle with the exponents of this number 11.As a result, after calculating the first hundred of Euler's numbers after the comma, the number" 55 " has been obtained (ten times).It is the sign of the relationship between Euler's numbers and Fibonacci series.During the calculation, the "*EMPTY*" numbers "*00*" are disregarded. According to the number-based system, the number" 00 " has no value, neither in the decimal nor in the binary-based system. According to binary encoding base system, on the case of current not passing, this means 0 (zero). [8] That's why, it can be the reason of disregardence of "*EMPTY*" "*00*" numbers.

As described in the reviews by Mäkelä, and Annila, the Fibonacci sequence is for other mathematical model functions which have useful results. (Mäkelä and Annila, 2010):If Fibonacci numbers are found in Nature, Why not include them in Euler's numbers? Or is it the difference how it discovers parameters in science in terms of the quantum perspective model, especially when the relevant unit of analysis is invariant numbers?

References Références Referencias

1. https://www.math.utah.edu/~pa/math/e.html December 08, 2020 Euler's number to 10,000 digits
2. https://en.wikipedia.org/wiki/Golden˙ratio 05 December 2020.
3. http://somerandomathblog.blogspot.com/2017/02/pascals-triangle.html PASCAL'S TRIANGLE PICTURE
4. Köklü K. A Quantum Perspective Model to Genetic Codes through Various Sciences. Neuroquantology April 2019a; Vol 17.No:3. DOI: 10.14704/nq.2019. 17.3.1974
5. https://owlcation.com/stem/Binary-Numbers 04 December 2020.
6. Ölmez T.Is there an aesthetics in golden ratio as regards to the common cis-regulatory elements versus to atomic numbers of elements with respect to Quantum perspective model? Neurology and Neuroscience Reports 2020; Vol.3.DOI: 10.15761/NNR.1000119
7. http://www.math.brown.edu/tbanchof/ups/group5/ma8n˙roots2.1.html04 December 2020.
8. https://study.com/academy/lesson/binary-language-of-computers-definition-lesson-quiz.html05 December 2020.

8. https://study.com/academy/lesson/binary-language-of-computers-definition-lesson-quiz.html05 December 2020.

9. Mäkelä T and Annila A. Natural Patterns of Energy Dispersal. Physics of Life Review 2010; 7: 477-498.

Notes