

# Speed Years and Deficit: Between Statistics and Endogenous Data

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## 1. Introduction: summing up background

This introduction briefly explains economic and social background of main subject in this paper, starting with questions and answers (Q&A).

Why does the wage rate not increase under the market principles? It seems that Japanese economy is government-oriented, far from no control of the central government. No one denies a fact that when the private sector acts as if there is no government, enterprises in a country is economically most robust over years. Why is it so? Enterprises or companies are responsible to earn profits at a high level. Otherwise, companies must leave various markets and productions. When the wage rate decreases, as seen in the actual world, the society is unstable and run for instant profits and small and medium companies lose their earning power, under oligopoly of large global companies. Do these phenomena really destroy the capitalism, as discussed by some economists and researchers? No, never. Rather the essence of the current capitalism is strengthened: the Yin and Yang principle works more vividly and extreme results turn to the reverse by naturally. A problem is: by what policies and methods?

This section aims at answer the above questions: not only by clarifying sustainable policies and methods but also by connecting these solutions with strategies reinforcing local-area industries such as agriculture, forest, fishing, and green new cycling industries. What is a basic philosophy scientifically underlying green cycling society by local-area? The origin of the basic philosophy is moderation or ‘closest to moderation.’ The author’s two conditions for scientific policies and strategies are i) the use of two dimensional plains and ii) the realization of ‘close to Nature.’ Sciences, natural and social, cannot be out of natural law. Human differs from other living animals and plants. What is different from other living things?

There are *five senses* in human body: smelling, touching, seeing, hearing, and tasting. According to the literature, smelling is equal to the natural work itself, while four other senses are given only to human and endowed with thinking by individual. Yes, thinking is a special

ability of human alone. *Human thinking* makes everybody different and leads to i) three human wants of appetite, sleeping, and carnal desire; ii) money, iii) position, and iv) desire for fame. Human is fair and even but, *Human thinking* makes rich and poor by qualitative and quantitative level. Is qualitative level of human thinking measurable? Yes, according to the author's "*Earth Endogenous System*" (the *EES*; 2013 1<sup>st</sup> edition and 2<sup>nd</sup> 2014) and hyperbola functions as the reduced form of the *EES*, results of qualitative level of *human thinking* are accurately measured in the macro level or by country. For example, the level of democracy is pertinently measured by country, as shown in "*Hyperbola Economics towards A Utopia Economy*" (the *HEU*; BAP, Toronto, 2015, 650p.). Why is it possible for one to measure the level of democracy?

Directly, the *EES* has six aspects: 1) The real rate of profits/returns is zero,  $RRR = 0$ ; 2) Technology is independent of national taste (preferences, culture by country, civilization by area, and history); 3) Macro-inequality is free from the relative share of capital; 4) Most effective and efficient solely under deficit = 0; 5) Politics-neutral, and 6) Spirituality-neutral. For example, politics-neutral means that an economy is most effective qualitatively and efficient quantitatively.

Essentially as a whole system by country, the *HEU* clarifies and measures four original points:

- i) Money ( $M2$ ) = quality = quantity = the same = 1.0000 under the market principle since human born historically;
- ii) The first defect of the market principles is: Vertical and no cause is shown horizontally. This defect was pointed out in the *EES* such that warps become cloth by weaving using woofs, as the author has advocated in the two dimensions that correspond whole lovely cloth. *The HEU* reinforces the defect of the market principles by using the real assets as surrogate for the financial/market assets in the literature.
- iii) The first defect of the market principles is: The markets are always instant while goods and services require a certain weeks/months/years for each production. This defect is also unavoidable. Someone says: The faster, the fruitful an economy is. No, an economy needs production and, production periods must be unique for competitiveness among the global economies.
- iv) Phenomena in the global world have a common work such that strong positive absorbs weak positive and likewise, strong negative absorbs weak negative. Further, the common work is observed, beyond space and time. This is called *similar grouping*. From the viewpoint of culture by country and civilization by area, in the case of Japan, one God or absolute Nature is divided by/composed of so many gods harmoniously when human starts new life in this

world and; one Buddha by or of so many Priests by function. Roles differ by god and priest. As a result, the basic philosophy in the *HEU* is shown strategy-oriented as follows:

- a) Human body for vivid long-life: Chew well 40 to 60 times; Eat 20% reduce, body needs no doctor; Eat 40% reduce, body do no older; Eat 60% reduce, close to God or Nature; Don't eat too much any food and drink. This is a clever way to keep moderation-oriented. Too much often destroys natural cure power; sometimes excretion/discharge and other times accumulate residues and aggravate clean blood-flow. Positively; eat natural foods such as salt, pickled Japanese apricot or apricot, and black sesame. Aging will be weaker or stop since natural foods prevent body from poisonous matter. Natural foods are effective to macro economy from micro individual, slowly but steadily. Social and medical expenses are saved with natural foods increasing through local-area production and consumption. Green cyclical local-economy will recover human mind as well.
- b) Human mind for vivid long-life: Human is happy with smiling family without troubles and unfortunate illnesses and accidents. Human body and mind belong to *similar grouping* in the world. This is the win-win relationship. How can *similar grouping* be explained by the author's philosophy based on the *HEU*?
- c) Philosophy based on the *HEU*: The Yin and Yang principle is scientifically measured by case, even in two dimensional planes. If one in the win-win relationship is positive then, the other in the same win-win relationship is negative and, vice versa. Positive and negative change by individual. This comes from human's five senses, as observed already above. Let step into by case. Case here means everything each by each. One individual perceives a light wave while the other individual does not. One individual perceives the difference of role between man and woman while the other individual does not. Man is positive body but negative mind. Woman is negative body but positive mind. Man is forgettable challenges for new dreams and woman does not.
- d) Furthermore, man's cycle unstable and instant while woman's cycle is 60 years or more in order to connect ancestors with descendants through life-born. The last perception is given by God or Nature; no one manage the supreme difference between man and woman. Therefore, the Yin and Yang principle in the *HEU* preserves the supreme difference if the case is applied to man and woman. The origin of the two dimensional plains is occupied by God or Nature. Human approaches close to God or Nature, which is measured by the y axis and the vertical or horizontal asymptote (the VA, the 1<sup>st</sup> and 3<sup>rd</sup> quadrants or the HA, the 2<sup>nd</sup> and 4<sup>th</sup> quadrants). Concretely, soon see the *HEU* (2015) since this journal paper is pub-

lished before the publication of the *HEU*.

In short, the author stays at the two dimensional planes. If five-six dimensional planes are taken into consideration, any science will complete, as Ishida Shizuko has proved by using family tools, three sorts of Japanese words, paper, bamboo, and others, since 1968 (see chapter 10 of the *EES* and also Appendix of the *HEU* for comparison).

## 2. Speed years and Deficit: between statistics and endogenous data

One of cores of sustainable economy is traced back to deficit. Deficit is a result of statistics data, although deficit is clearly one of externals in the original IMF data. Deficit makes the SNA (1993, 2008/2010) complete in the stream of dynamic and balanced equilibrium by year. Nevertheless, deficit is not always available in “*International Financial Statistics (IFS) Yearbook*” published by year and by country. The *EES* and its Kamiryo Endogenous World Table (KEWT) database 15 external data from the IFSY hitherto.

In Sep 2014, the author got e-Library from IMF Data Publication. The contents are much more specialists-oriented, corresponding with quality level of the NSA by country. Deficit is not directly indicated, differently from the *IFSY*. Incidentally at the same time in Japan, the author met a chance to look at <http://ecodb.net> by country, where the author was excited with the results of deficit time series, compared with the other two sources. Thus in Sep 2014, the author could summarize LONG time series, 1960–2013. This is why the author intended to write a short paper satisfied with time series tables and figures. The author is visiting IMF Data Publication, Washington, D. C., in the middle Oct 2014 and discussing the relationship between endogenous and statistics data.

First, let us start with the Yin and Yang principle in the macro level, based on the *HEU*. It looks like complicated among the real assets, financial/market assets, total assets, the government sector, the private sector, the total/aggregated economy. Then, using the KEWT database by country, let us break down to i) deficit and ii) the speed years for convergence by sector.

If the real assets are positive, the financial/market assets are negative and, vice versa. If the government (G) sector is positive, the private (PRI) sector is negative and, vice versa. Why is one country private-oriented and another country government-oriented, for some periods and/or repeatedly? If endogenous data are positive, statistics data are negative and, vice versa. Why are statistics data always within a certain range of endogenous data, by country, sector, year, and

over years? Yes, the Yin and Yang solely exist in order to clarify dynamic and balanced situation instantly and over years: There is no good and bad, black and white, or friend and enemy. One needs the other, as the win-win relationship. This is the closest way for human economy and society to be sustainable as steady cycling.

The endogenous-equilibrium algebraically and geometrically holds under perfect competition and with no assumption, forecasting, and probability. Or, marginal productivity of labor equals the wage rate,  $MPL = w$ ; and marginal productivity of capital equals the rate of return,  $MPK = r$ ; the relative price level  $p$  equals the absolute price level  $P$ ,  $p = P = 1.0000$ ; the rate of substitution measured equals one,  $\sigma = 1.0000$ ; Axiom of a constant capita-output ratio prevails everywhere and any time,  $\Omega = \Omega^* = \Omega_0$ ;  $r = r^* = r_0$ .

Second, step into deficit ( $\Delta D$ , hereunder) and the speed years (SPEED, hereunder) convergence, using KEWT database; Short and LONG time series, 1990–2013 and 1960–2013 respectively.

$\Delta D$  and SPEED each are typical keys in statistics and endogenous data. IMF staff perceives this fact, through learning by doing, days and nights, for educating how to make detailed data consistently over years. Also it is a fact the same phenomena by country never happen repeatedly in the future. Nevertheless, economists have challenged for hypotheses historically and currently. This behavior expresses an essence of endless game, unless there is found other data satisfying no-assumption. The author never denies their efforts continuously up-to-date.

Econometrics with no-assumption or no-equation is one of valuable human technological progresses. The author proposes: the relationship between statistics and endogenous data reinforce methods for sustainable model/system in macro and micro economies. The literature is based on micro economies, households, and enterprise, by using individual economy. The *EES* and the *HEU* are based on the G sector and the PRI sector under the endogenous-equilibrium, by using unique macro-utility (see *JES* 18 (Sep, 1): 75–112). There is no difference between statistics data endogenous data, except for just after redistribution of taxes or just before redistribution of taxes. We use the same data, regardless of naming of statistics and endogenous data.

This paper, for empirical tests and proofs, presents **Tables 1 to 9** for the SPEED and **Tables 10 to 18** for  $\Delta D$ , each up-dated.  $\Delta D$  is also shown by **Figures** by country (figures of the SPEED, see *PRSCE* 55 (Sep, 1): 211–250, for comparison).

Number of countries is  $17 + 14 + 15 + 19 = 65$  by area: Pacific and Asia; Euro including Euro area aggregated; Euro except for Euro countries; and Rest, South America, middle east, and

Africa. It is true that the endogenous-equilibrium realizes by country by the use of Axiom, even if data belong to a low level qualitatively. Axiom of a constant capita-output ratio,  $\Omega = \Omega^* = \Omega_0$  and  $r = r^* = r_0$  are accurately measured, simultaneously with  $\alpha = \Omega \cdot r$ . Each country has peculiar characteristics and taste.

What most effectively clarifies the structure of green cycling sustainability, in terms of  $\Delta D$  and SPEED in the macro level? The answer is a set of three ratios: i) the wage rate,  $w = W / L$ ; ii) the rate of return, maximized,  $r_{MAX} = \Pi / K$ ; iii) net investment, minimized,  $i_{MIN} = I / Y$ . Of course, six endogenous parameters primarily produce all the parameters and variables. Basic ratios in the six endogenous parameters: the technology coefficient,  $\beta^*$ ;  $i = I / Y$ ; the diminishing returns to capital coefficient,  $\delta_0$ ; and the capital-output ratio,  $\Omega = \Omega^* = \Omega_0$ , where the rate of technological progress is  $g_A^* = i(1 - \beta^*)$ .

In short, ‘if the rate of return is maximized by minimizing net investment, the wage rate steadily increases under no inflation/deflation and with full-employment.’  $\Delta D$  and SPEED are most closely involved in the above paragraph, by country and in reality. Human has approached the Utopia economy in reality step by step and satisfying national taste, preferences, culture and history.  $\Delta D$  and SPEED express beautiful story by country, like fairytale with love and target.

SPEED by country: It is natural for a country to step from investment to consumption. Developed countries have generally taken this natural step. Some developing countries pursue net investment and consumption at the same time. This is unusual. It implies that the SPEED fluctuates rapidly and unstably, reflecting dynamic balances by year. The SPEED sometimes avoids a minus diminishing returns to capital coefficient,  $\delta_0$ , by using the absolute value equation. The SPEED sometimes shows minus value, due to the technology coefficient,  $\beta^*$ . Despite, the SPEED is honest in that the SPEED reflects results of policies. Many developing countries are in this respect unstable and fluctuating over years.

### 3. The Cost Accounting of Deficit: A Version

The author’s question: Is it possible for an economist to measure the results obtained by decreasing/increasing deficit by year? As long as we use statistics data, we cannot. From the viewpoint of the *EES* and the *HEU*, we can. This section shows the version of this idea. Another paper will discuss this idea, empirically and originally.

When the cost accounting of deficit is designed and executed by country and by year, anyone could understand the essence of deficit. IMF has executed a similar way but arranging for the

SNA statistics data. This fact means how important for policy-makers to evaluate the effects of deficit. The author's cost accounting of deficit will clarify the same effects by using purely endogenous data in the author's database, KEWT 9.15. Note: the KEWT series, 1.7 to 9.15, each take 10 real assets and 15 financial/market assets in *International Financial Statistics (IFS)*, IMF. It implies that the statistics and endogenous data each commonly have the same essence of data. For example, the statistics data are always within a certain range of endogenous data, the author has proved hitherto in journals.

This section is composed of the following five specific indications:

**(1) Definition of the cost accounting of deficit**

To measure the decrease/increase in consumption brought up by the decrease/increase in deficit. Consumption is a final goal of measurement for the effects/results of deficit. Consumption is directly connected with the wage rate, the inflation/deflation rate, the rate of return, and for comparison, GDP. GDP remains main goal. GDP, however, changes qualitatively and differently from the common sense of the literature.

**(2) Presumption and Proposition for the cost accounting of deficit**

Presumption: The effects of deficit are connected with several factors such as i) taxes/output, ii) national disposable net income to GDP, and iii) net investment of the government sector to output. The KEWT database series have tested these factors carefully by country. For the cost accounting of deficit, the author fixes the above i) and ii). Resultantly, iii) varies by country. It means that the value iii) must be plus. However, the *EES* and the *HEU* are based on maximum returns and minimum net investment.

Proposition: Under the above definition and presumption, the proposition is set up naturally.

If consumption increases by decrease in deficit, Proposition holds; Yes.

If consumption decreases by decrease in deficit, Proposition does not hold; No.

Or differently,

If consumption decreases by increase in deficit, Proposition holds; Yes.

If consumption increases by increase in deficit, Proposition does not hold; No.

**(3) Foundation and methodology of Proposition**

Foundation: The *EES* and *HEU* each empirically realize cyclical economy, where convergence holds beyond space and time. No inflation/deflation under full-employment. Or the wage rate rises steadily. The corresponding phenomena are reversed, as we have experienced and apparently confirmed by the statistics data.

Methodology: The cost accounting uses two period differences of the SNA. The differences

are marginal absolute values, plus and minus, between two years. Therefore, the differences are always ex post. Even the methodology is ex post, it is unique since there is never available any similar methodology in this world. We must pay attention to how its effects are valuable (see, soon below).

Under the endogenous-equilibrium: the speed years for convergence by country, sector, and year and over years reflect real-assets equilibrium most effectively and efficiently or qualitatively and quantitatively. The coefficient,  $\delta_0$ , have sometimes a minus value so that we need ABS (absolute software) for #NUM!. The speed years, however, always reflect real-assets equilibrium, regardless of the use of ABS.

#### **(4) Effects and implications of the cost accounting of deficit**

1. It is meaningless if tax rate-increase and tax rate-decrease are simultaneously executed.
2. Subsidies for promoting industry must be considered as minus taxes.
3. By a fact that deficit is essentially involved in all the economic policies executed by decision-makers and leaders, many countries will satisfactorily process a good cooperation with each other. Decision-makers and leaders are confident in mutual cooperation. This will also contribute to IMF staff's efforts for many years and by country.
4. All the people in the world satisfy the spirit of Keynes, 1944, why Keynes initiatively established IMF and the World Bank for finance function.
5. In the past, human has repeatedly had battle and war each other, with huge social cost at the sacrifice of people. In the future, all the people will cooperate each other for peaceful human goals.

#### **(5) Bright experience of true education for children**

1. True education is based on education philosophy: Philosophy overlaps theories, practice, history, culture, and history, by country and, civilization by area.
2. Parents and teachers are confident in why human goals must be 'closer to Nature and God.' Babies intuitively know parents' enthusiasm poured into babies. Children intuitively know teachers' enthusiasm poured into children.
3. People understand that causes not come from the financial/market assets but the real assets of the SNA. Organizations, public and private, will be refreshed and, these organizations recover organic system, although these are designed by human in this world.
4. People will perceive that the earth and the universe are one and unique place for human training. As a result, all the people will be peacefully happy, body and mind, with each other. Yes, human cannot live alone.



Speed Years and Deficit

Table 1 Deficit, LONG time series, 1990–2013

P & A	1. the US	2. Canada	3. Mexico	4. Austral	5. New Ze	6. Bangla	7. China	8. India	9. Indones
1960	0.30	(0.25)	1.0	(234)	(0.31)			(6.5)	
1961	(3.30)	(1.00)	1.5	(32)	(0.22)			(6.0)	
1962	(7.10)	(0.86)	2.0	(358)	0.08			(8.8)	
1963	(4.80)	(0.23)	2.5	(415)	(0.17)			(10.9)	
1964	(5.90)	(0.17)	3.0	(418)	(0.40)			(11.7)	
1965	(1.40)	(0.02)	3.5	(268)	(0.59)			(12.4)	
1966	(3.70)	(0.71)	(4.5)	(424)	(0.54)			(17.2)	
1967	(8.60)	(1.31)	(6.0)	(661)	(1.15)			(14.6)	
1968	(25.20)	(0.82)	(7.5)	(653)	(0.73)			(10.8)	
1969	3.20	0.22	(9.0)	(307)	0.91			(10.2)	(76.1)
1970	(2.80)	(0.99)	(6.0)	(260)	0.92			(13.6)	(101.2)
1971	(23.00)	(1.91)	(4.0)	(78)	(0.38)			(16.0)	(91.4)
1972	(23.40)	(1.74)	(17.0)	130	(1.74)			(21.8)	(109.2)
1973	(14.90)	(1.70)	(27.0)	(409)	(2.52)	(364.0)		(17.0)	(136.9)
1974	(6.10)	(1.97)	(34.0)	(241)	(3.83)	(330.0)		(23.6)	(98.5)
1975	(53.2)	(5.70)	(54.0)	(2506)	(7.80)	(1444.0)		(32.0)	(404.9)
1976	(73.7)	(6.30)	(64.0)	(3643)	(7.25)	(3728.0)		(36.9)	(236.1)
1977	(53.7)	(9.41)	(61.0)	(2746)	(4.93)	209.0	3.1	(37.9)	190.3
1978	(59.2)	(11.95)	(63.0)	(3325)	(8.81)	4274.0	1.0	(50.8)	(121.8)
1979	(40.7)	(10.56)	(102.0)	(3400)	(11.16)	874.0	(17.1)	(63.0)	(159.5)
1980	(73.8)	(10.73)	(134.0)	(2050)	(10.73)	4976.0	(12.8)	(88.6)	(1098.8)
1981	(79.0)	(8.43)	(392.0)	(1040)	(12.14)	(7396.0)	(2.6)	(87.3)	(792.7)
1982	(128.0)	(20.81)	(1454.0)	(551)	(9.51)	3135.0	(2.9)	(107.3)	(1412.4)
1983	(207.8)	(25.16)	(1363.0)	(4518)	(13.37)	9003.0	(4.4)	(133.3)	(1041.7)
1984	(185.4)	(28.87)	(2094.0)	(7976)	(10.28)	2873.0	(4.5)	(175.8)	(496.8)
1985	(212.3)	(28.68)	(3978.0)	(6778)	(11.18)	(5924.0)	2.2	(222.5)	(281.8)
1986	(221.2)	(20.11)	(10407.0)	(5807)	(7.23)		(7.1)	(272.0)	(2643.3)
1987	(149.7)	(14.00)	(18160.0)	(3363)	(3.18)		(8.0)	(281.7)	(1955.6)
1988	(155.2)	(17.50)	(38232.0)		7.21		(7.9)	(301.9)	
1989	(152.6)	(17.17)			3.97		(7.4)		
1990	(272.5)	(31.77)	(18.7)	8	(1.77)	(2.10)	(14.7)	(435)	0.8
1991	(289.2)	(37.80)	27.7	2	(4.04)	6.69	(23.7)	(358)	1.0
1992	(254.0)	(42.13)	46.9	(10)	(4.24)	5.82	(25.9)	(399)	(1.1)
1993	(201.5)	(42.63)	6.5	(14)	(1.01)	7.31	(29.3)	(605)	2.0
1994	(146.2)	(36.63)	(0.4)	(14)	1.73	0.59	(57.5)	(568)	3.6
1995	(110.8)	(29.22)	(9.8)	(12)	3.30	(7.89)	(58.2)	(599)	10.1
1996	(2.4)	(15.55)	(5.5)	(5)	2.47	(45.84)	(53.0)	(669)	6.2
1997	54.4	5.33	(34.2)	2	1.29	(47.89)	(58.2)	(431)	(4.2)
1998	122.7	12.92	(55.6)	16	(0.32)	(59.71)	(92.2)	(585)	(28.2)
1999	236.4	22.60	(71.3)	(3)	(0.98)	(39.86)	(174.4)	(652)	(12.6)
2000	127.2	35.06	(69.3)	7	0.33	(80.3)	(249.1)	(815)	(55.5)
2001	(181.6)	7.88	(42.4)	8	1.62	(120.0)	(251.7)	(1007)	(37.7)
2002	(556.7)	9.25	(111.6)	10	3.24	(86.8)	(315.0)	(1162)	(23.7)
2003	(719.6)	10.24	(75.8)	13	4.88	(81.7)	(293.5)	(1015)	(35.3)
2004	(713.6)	27.48	(78.0)	16	6.39	(101.4)	(209.0)	(1038)	(29.9)
2005	(598.0)	34.64	(62.6)	20	7.65	(122.7)	(228.1)	(1174)	(9.8)
2006	(475.3)	42.58	(150.9)	29	7.26	(124.1)	(166.3)	(963)	(32.7)
2007	(584.1)	30.87	(177.7)	16	6.18	(122.8)	154.0	(1281)	(31.4)
2008	(1149.9)	(3.55)	(162.8)	14	2.76	(253.4)	(126.2)	(3217)	(87.4)
2009	(2122.1)	(51.18)	(233.0)	(58)	(2.89)	(225.3)	(778.2)	(4257)	(87.4)
2010	(1875.5)	(62.58)	(567.0)	(69)	(10.09)	(213.4)	(613.2)	(6540)	(80.0)
2011	(1714.0)	(43.09)	(485.9)	(64)	(10.01)	(328.6)	(605.0)	(7173)	(46.6)
2012	(1571.2)	(46.47)	(576.8)	(56)	(3.35)	(314.3)	(1137.9)	(7468)	(136.8)
2013	(1232.9)	(47.00)	(618.8)	(57)	(1.23)	(411.6)	(1058.7)	(8216)	(195.2)
2014	(1124.6)		(699.3)			(446.3)	(1245.7)	(9233)	(257.2)

Data source: Deficit, IMF Publications, i) *International Financial Statistics Yearbook (IFS)*, ii) e-Library, and iii) <http://ecodb.net>: Included in KEWT 9.15 database.

Table 2 Deficit, Short time series, 1990–2013

P & A	10. Japan	11. Korea	12. Malay	13. Philip	14. Singa	15. Sri La	16. Thai	17. Vietna
1960	54	2.0	132	8		(453)	69	
1961	61	(1.0)	(30)	(232)		(385)	176	
1962	(59)	(10.0)	(217)	53		(452)	(388)	
1963	(198)		(333)	(115)	(11.0)	(423)	(700)	
1964	(315)	1.0	(362)	29	(122.0)	(466)	(475)	
1965	(515)	(1.0)	(482)	(302)	(80.0)	(492)	(521)	
1966	(827)	(6.0)	(518)	(153)	(56.0)	(518)	(1086)	
1967	(722)	(7.0)	(524)	(236)	(20.0)	(616)	(1625)	
1968	(703)	6.0	(478)	(262)	70.0	(702)	(2371)	
1969	(609)	(44.0)	(414)	(996)	76.0	(825)	(2742)	
1970	(319)	(21.0)	(438)	39	90.0	(898)	(5400)	
1971	(181)	(10.0)	(1010)	(183)	40.0	(1153)	(7176)	
1972	(1457)	(161.0)	(1305)	(1101)	108.0	(1168)	(7092)	
1973	(1825)	(27.0)	(1040)	(843)	(12.0)	(960)	(7041)	
1974	(1798)	(164.0)	(1371)	445	197.0	(767)	2464	
1975	(7666)	(202.0)	(1892)	(1360)	121.0	(1704)	(6265)	
1976	(9417)	(192.0)	(1996)	(2332)	31.0	(2518)	(13866)	
1977	(11916)	(316.0)	(2766)	(2807)	164.0	(1671)	(13142)	
1978	(15236)	(300.0)	(2896)	(2171)	146.0	(5290)	(17767)	
1979	(16318)	(545.0)	(3683)	(349)	468.0	(6300)	(20485)	
1980	(16872)	(849.0)	(7104)	(3385)	538.0	(12157)	(32266)	
1981	(6128)	(1585.0)	(11015)	(12154)	213.0	(10518)	(25667)	
1982	(5986)	(1656.0)	(11171)	(14414)	1098.0	(13927)	(33748)	
1983	(1969)	(663.0)	(9183)	(7468)	661.0	(12846)	(36633)	
1984	(2671)	(841.0)	(7075)	(9957)	16443.0	(10482)	(33975)	
1985	728	(943.0)	(3708)	(11158)	816.0	(15679)	(53705)	
1986	1743	(86.0)	(7506)	(30648)	561.0	(18202)	(48264)	
1987	5333	478.0	(6153)	(16728)	(1165.0)	(17073)	(28368)	
1988	11810	2009.0	(3891)	(20339)		(28197)	14913	
1989	14183	(1391.0)	(4957)	(19044)			36300	
1990	7826	(1.21)	(3.4)	(37.2)	6.5	(25.2)	107.0	(1.20)
1991	8084	(3.49)	(2.6)	(26.3)	7.6	(35.2)	100.5	(1.80)
1992	2856	(1.19)	(1.2)	(16.0)	9.5	(22.9)	71.8	(2.02)
1993	(12377)	1.70	0.4	(21.9)	13.0	(32.1)	55.6	(6.04)
1994	(19199)	0.98	4.4	18.1	13.1	(49.5)	101.2	(2.53)
1995	23800	1.04	1.9	11.1	15.9	(55.2)	135.0	(1.22)
1996	(25110)	0.43	1.8	6.3	18.9	(59.9)	43.3	(0.50)
1997	(19810)	(0.07)	6.6	1.6	13.6	(56.4)	(15.1)	(5.40)
1998	(24768)	(13.22)	(5.0)	(50.0)	20.4	(71.6)	(129.0)	(0.45)
1999	(36068)	(15.51)	(9.5)	(111.7)	16.4	(65.0)	(154.2)	(0.63)
2000	(39838)	26.39	(23.5)	(121.1)	15.9	(105.6)	(108.1)	(9.00)
2001	(30531)	17.73	(16.8)	(140.6)	(2.3)	(131.5)	(123.0)	(13.40)
2002	(38465)	26.26	(16.5)	(161.3)	(0.8)	(120.5)	(116.2)	(12.62)
2003	(38465)	13.10	(21.0)	(164.7)	11.0	(125.1)	119.4	(19.93)
2004	(29994)	0.81	(17.3)	(149.4)	11.7	(153.3)	29.0	(1.48)
2005	(24258)	7.88	(16.1)	(96.1)	16.9	(172.4)	103.8	(11.08)
2006	(18496)	10.38	(16.3)	(3.0)	17.0	(205.8)	168.2	2.70
2007	(10710)	22.61	(17.9)	(20.5)	32.7	(246.1)	19.5	(25.01)
2008	(20600)	16.82	(27.5)	(1.3)	17.3	(309.6)	12.0	(7.89)
2009	(48965)	0.20	(48.0)	(210.5)	(1.3)	(476.4)	(281.1)	(108.93)
2010	(44875)	19.40	(37.2)	(212.8)	23.8	(446.0)	(79.7)	(59.48)
2011	(46283)	22.53	(33.2)	(38.9)	32.3	(450.2)	(63.3)	(29.49)
2012	(41246)	22.67	(33.7)	(70.1)	31.0	(489.0)	(196.0)	(155.38)
2013	(39998)	13.33	(45.6)	(10.0)	26.1	(500.6)	(23.8)	(203.99)
2014	(35581)	16.54	(37.6)	(98.1)	23.3	(505.7)	(192.3)	(269.21)

Data source: Deficit, IMF Publications, i) *International Financial Statistics Yearbook (IFS)*, ii) e-Library, and iii) <http://ecodb.net>: Included in KEWT 9.15 database.



Speed Years and Deficit

Table 3 Deficit, LONG time series, 1990–2013

Euro	Euro Area	1. Austria	2. Belgium	3. Finland	4. FRANCE	5. Germany	6. GREECE	7. IRELAND
1960		(3.10)	(22)		(40.20)	(1.90)	(1.70)	(0.03)
1961		(1.48)	(17)		(4.40)	1.05	(1.90)	(0.04)
1962		(1.83)	(12)		(6.10)	(1.30)	(2.20)	(0.04)
1963		(4.05)	(23)		(8.20)	(2.66)	(2.10)	(0.04)
1964		(4.57)	(15)		(1.60)	(0.65)	(3.00)	(0.04)
1965		(3.30)	(22)		0.20	(1.93)	(3.00)	(0.07)
1966		(3.62)	(17)		(2.00)	(2.45)	(2.50)	(0.05)
1967		(7.83)	(23)		(6.30)	(8.27)	(3.40)	(0.04)
1968		(8.44)	(34)		(9.50)	(4.19)	(4.50)	(0.08)
1969		(7.18)	(28)		(3.40)	1.62	(4.70)	(0.09)
1970		(1.80)	(21)		3.70	6.94	(5.20)	(0.10)
1971		0.24	(40)		(3.50)	6.37	(6.40)	(0.10)
1972		(0.85)	(68)		6.80	5.83	(9.80)	(0.13)
1973		(8.96)	(62)		4.70	12.43	(11.00)	(0.17)
1974		(9.76)	(47)		5.80	(6.43)	(18.00)	(0.36)
1975		(26.34)	(109)		(37.80)	(37.16)	(26.30)	(0.50)
1976		(34.06)	(148)		(17.10)	(31.21)	(31.20)	(0.49)
1977		(30.21)	(168)		(22.30)	(25.57)	(35.80)	(0.56)
1978		(34.92)	(209)		(29.60)	(26.49)	(42.40)	(0.86)
1979		(35.31)	(248)		(37.00)	(27.63)	(51.50)	(1.06)
1980		(33.57)	(282)	0.77	(2.00)	(26.91)	(53.40)	(1.28)
1981		(32.52)	(447)	1.58	(73.00)	(36.31)	(177)	(1.79)
1982		(54.53)	(432)	0.76	(122)	(32)	(175)	(2.03)
1983		(71.84)	(516)	(0.13)	(141)	(33)	(283)	(1.84)
1984		(58.22)	(596)	1.08	(116)	(32)	(351)	(1.82)
1985		(63.33)	(538)	1.10	(128)	(20)	(587)	(2.13)
1986		(84.72)	(553)	1.67	(166)	(16)	(520)	2.12
1987		(81.55)	(436)	0.03	(73)	(21)	(703)	1.80
1988		(79.14)		3.21	(128)	(33)	(1045)	(0.64)
1989				5.55			(1553)	(0.48)
1990		(81)	(365)	5.42	(137)	(40)	(1.81)	0.25
1991		(92)	(416)	(0.38)	(86)	(62)	(1.78)	0.22
1992		(80)	(486)	(4.78)	(274)	(73)	(1.36)	0.19
1993		(107)	(456)	(7.58)	(402)	(79)	(2.43)	0.18
1994		(127)	(350)	(6.50)	(412)	(44)	(5.05)	0.18
1995		(120)	(450)	(6.61)	(503)	(62)	(3.25)	0.21
1996		(100)	(325)	(3.84)	(413)	(74)	(2.90)	0.22
1997		(44)	(259)	(1.76)	(284)	(49)	(2.51)	0.25
1998		(60)	(210)	1.85	(215)	(35)	(2.13)	0.28
1999	(50)	(4.43)	(0.76)	2.03	(24)	(28)	(1.93)	0.26
2000	(29)	(4.70)	0.66	9.18	(7)	(26)	(2.69)	0.30
2001	(89)	(0.97)	0.92	7.07	(11)	(63)	(4.65)	0.29
2002	(153)	(2.12)	(0.41)	5.90	(37)	(82)	(5.13)	3.01
2003	(185)	(4.12)	(0.50)	3.55	(51)	(92)	(6.48)	3.72
2004	(181)	(11.25)	(0.70)	3.43	(44)	(89)	(10.17)	5.17
2005	(158)	(4.87)	(7.95)	4.24	(32)	(81)	(6.64)	6.01
2006	(68)	(5.19)	0.99	6.76	(25)	(44)	(9.19)	9.25
2007	2	(2.97)	(0.34)	9.60	(32)	(0)	(11.45)	6.14
2008	(134)	(3.14)	(3.66)	8.07	(47)	(6)	(18.80)	(6.30)
2009	(495)	(11.60)	(19.21)	(4.68)	(125)	(75)	(33.47)	(18.76)
2010	(529)	(13.37)	(14.45)	(5.02)	(125)	(112)	(24.63)	(45.73)
2011	(369)	(8.07)	(14.89)	(1.96)	(93)	(24)	(23.06)	(19.84)
2012	(349)	(8.68)	(15.62)	(4.22)	(90)	(4)	(19.93)	(12.51)
2013	(302)	(7.55)	(11.21)	(5.10)	(78)	(5)	(26.31)	(11.72)
2014				(5.22)				

Data source: Deficit, IMF Publications, i) *International Financial Statistics Yearbook (IFS)*, ii) e-Library, and iii) <http://ecodb.net>: Included in KEWT 9.15 database.

Table 4 Deficit, LONG time series, 1990–2013

Euro	8. Italy	9. Luxemb	10. Netherl	11. Portug	12. Sloval	13. Sloven	14. SPAIN
1960	(0.38)		5.62				(0.90)
1961	(0.36)		6.17				(1.00)
1962	(0.55)		6.91				(1.90)
1963	(0.79)		7.92				(4.90)
1964	(0.82)		9.43				(22.40)
1965	(1.55)		10.50				(26.80)
1966	(1.83)		11.71				(36.10)
1967	(1.27)		13.16				(31.20)
1968	(2.03)		14.26				(42.40)
1969	(1.72)		16.22				(36.70)
1970	(3.23)		18.66	(3.10)			(16.80)
1971	(4.78)		21.85	(2.20)			(46.40)
1972	(5.89)		24.43	(5.60)			(18.70)
1973	(8.02)	2125	27.42	(3.60)			(10.40)
1974	(8.97)	4067	32.45	(8.90)			(59.40)
1975	(16.47)	1008	38.25	(31.80)			(107.90)
1976	(14.87)	314	43.47	(54.00)			(65.40)
1977	(22.37)	706	47.85	(40.90)			(2.00)
1978	(34.31)	3801	52.61	(92.80)			(264)
1979	(30.40)	(294)	57.17	(101)			(465)
1980	(37.02)	1673	60.26	(122)			(635)
1981	(53.29)	(3016)	62.75	(180)			(874)
1982	(72.80)	1152	65.12	(195)			(1093)
1983	(83.26)	(3560)	66.66	(220)			(1408)
1984	(95.69)	10253	66.39	(272)			(2113)
1985	(123)	21431	67.67	(522)			(1963)
1986	(110)	16336	68.55	(543)			(1424)
1987	(114)	8079	70.45	(554)			(1550)
1988	(126)		70.93				(1620)
1989	(134)		71.70				(1650)
1990	(145)		(23.30)	(450)			(1678)
1991	(149)		(14.94)	(667)			(1758)
1992	(130)		(19.14)	(290)			(2524)
1993	(110)		(5.45)	(958)			(4221)
1994	(110)		(3.02)	(708)			(4944)
1995	(123)	0.04	(23.02)	(796)	(15.00)	0.00	(3606)
1996	(136)	0.06	(9.63)	(380)	(8.54)	0.03	(4004)
1997	(31)	0.11	(10.92)	(372)	(1.09)	(0.14)	(1909)
1998	(48)	0.13	(3.18)	(248)	(1.06)	(0.11)	(800)
1999	(11)	0.18	(5.82)	(3.16)	(1.43)	(9.10)	(8)
2000	(18)	0.19	(0.37)	(1.66)	(2.70)	(0.23)	5
2001	(52)	0.30	2.22	(3.14)	(1.54)	(0.26)	9
2002	(34)	1.27	(5.04)	(2.51)	(2.13)	(0.34)	13
2003	(17)	0.85	(10.51)	(2.61)	(0.82)	(0.33)	13
2004	(45)	0.36	(6.98)	(3.21)	(0.80)	(0.36)	15
2005	(59)	0.81	0.56	(7.76)	(1.08)	(0.30)	29
2006	(36)	1.25	4.08	(6.14)	(1.41)	(0.25)	43
2007	(33)	1.98	3.81	(4.43)	(0.99)	0.09	46
2008	(46)	1.80	7.17	(6.50)	(1.35)	(0.10)	(22)
2009	(74)	0.49	(25.52)	(15.48)	(5.04)	(1.96)	(87)
2010	(66)	0.63	(24.86)	(14.18)	(5.05)	(1.90)	(77)
2011	(60)	0.90	(22.83)	(6.77)	(3.50)	(2.03)	(90)
2012	(47)	0.72	(21.46)	(12.10)	(3.22)	(1.13)	(111)
2013	(48)	0.64	(16.23)	(9.68)	(2.15)	(4.99)	(77)
2014					(2.79)	(1.96)	

Data source: Deficit, IMF Publications, i) *International Financial Statistics Yearbook (IFS)*, ii) e-Library, and iii) <http://ecodb.net>: Included in KEWT 9.15 database.



Speed Years and Deficit

Table 5 Deficit, LONG time series, 1990–2013

Europe	1. Denmark	2. Iceland	3. Norway	4. Sweden	5. Switzerland	6. the UK
1960	686	(1.35)	(0.65)	(1.23)	0.76	(0.31)
1961	(248)	(1.50)	(0.26)	0.59	0.44	(0.22)
1962	643	1.00	(0.42)	0.60	0.18	0.08
1963	826	(2.00)	(0.54)	(0.08)	0.02	(0.17)
1964	1118	(4.00)	(0.70)	(0.19)	0.13	(0.40)
1965	1092	(3.45)	(0.86)	0.02	(0.24)	(0.59)
1966	1452	(4.35)	(0.43)	1.74	(0.13)	(0.54)
1967	309	(4.80)	(0.72)	1.01	(0.27)	(1.15)
1968	553	(5.35)	(1.30)	2.25	0.03	(0.73)
1969	247	(6.60)	(1.73)	0.88	(0.39)	0.91
1970	2930	(9.35)	(2.49)	(3.10)	0.30	0.92
1971	3569	(11.25)	(2.33)	(2.44)	(0.87)	(0.38)
1972	4089	(15.60)	(1.44)	(2.47)	(0.03)	(1.74)
1973	6140	(18.00)	(1.03)	(3.21)	(1.43)	(2.52)
1974	1535	(30.00)	(1.76)	(7.98)	(0.88)	(3.83)
1975	(4330)	(66.00)	(4.72)	(7.55)	(1.77)	(7.80)
1976	(519)	(122.00)	(10.01)	(1.17)	(1.38)	(7.25)
1977	(2730)	(69.00)	(13.13)	(6.06)	(1.29)	(4.93)
1978	(1066)	(173.00)	(14.47)	(20.45)	(0.06)	(8.81)
1979	(2584)	(156.00)	(14.99)	(33.22)	(2.35)	(11.16)
1980	(10002)	(193.00)	(5.40)	(43.03)	(0.08)	(10.73)
1981	(24690)	(172.00)	6.82	(51.52)	1.49	(12.14)
1982	(37322)	(938.00)	3.89	(52.39)	0.90	(9.51)
1983	(35154)	(1998.00)	9.45	(60.15)	(1.45)	(13.37)
1984	(22241)	(1610.00)	8.96	(47.98)	(0.89)	(10.28)
1985	(3726)	(4719.00)	18.28	(46.39)	(0.49)	(11.18)
1986	30113	(7639.00)	17.32	(26.22)	1.81	(7.23)
1987		(2677.00)	0.32	18.39	1.18	(3.18)
1988			0.07	23.75	2.15	
1989					(1.69)	
1990	0.13	(8.95)	3.86	13.61	-1.28	4.00
1991	0.12	(17.34)	(22.16)	(21.97)	(3.30)	(5.69)
1992	0.10	(12.49)	(31.91)	(59.41)	(2.44)	(30.00)
1993	0.08	(16.84)	(45.38)	(215.18)	(8.35)	(40.61)
1994	0.08	(21.97)	(16.44)	(194.64)	(4.44)	(34.46)
1995	0.12	(20.27)	14.49	(153.18)	(5.14)	(38.92)
1996	0.11	(4.39)	6.52	(58.02)	(4.40)	(27.44)
1997	0.14	1.86	8.82	(16.66)	(4.92)	(16.14)
1998	0.14	16.28	(32.43)	6.84	0.36	(1.09)
1999	0.12	20.44	(47.23)	30.53	(2.40)	8.32
2000	0.15	9.53	0.10	89.48	(3.82)	35.00
2001	0.13	14.61	0.22	48.77	1.37	4.45
2002	1.08	(3.98)	0.15	(17.48)	(3.99)	(23.01)
2003	(3.44)	(9.09)	(0.51)	(16.66)	(2.95)	(39.80)
2004	26.80	19.07	6.38	26.87	(2.72)	(42.53)
2005	74.47	98.58	9.43	70.38	(0.40)	(43.60)
2006	83.11	98.58	19.80	86.01	2.35	(37.91)
2007	82.42	102.70	4.52	135.78	(8.34)	(41.19)
2008	58.93	21.79	5.51	94.56	(8.72)	(73.34)
2009	(43.52)	(110.54)	32.27	(0.95)	3.75	(159.55)
2010	(42.87)	(143.49)	18.37	33.22	0.63	(148.17)
2011	(32.20)	(96.07)	13.41	35.87	1.81	(119.66)
2012	(60.07)	(67.76)	24.02	11.59	(0.15)	(124.78)
2013	(10.08)	(74.90)	12.74	(11.01)	0.03	(94.00)
2014					(1.37)	(70.07)

Data source: Deficit, IMF Publications, i) *International Financial Statistics Yearbook (IFS)*, ii) e-Library, and iii) <http://ecodb.net>: Included in KEWT 9.15 database.

Table 6 Deficit, LONG time series, 1990–2013

Europe	1. Bulgaria	2. Czech R.	3. Hungary	4. Latvia	5. Poland	6. Romania	7. RUSSIA	8. TURKEY	9. Ukraine
1960									
1961									
1962									
1963									
1964									
1965									
1966									
1967								(1.90)	
1968								(2.60)	
1969								(3.70)	
1970						1.20		(3.60)	
1971						3.20		(6.50)	
1972						6.60		(5.10)	
1973						6.90		(5.50)	
1974						1.70		(7.40)	
1975						1.10		(7.00)	
1976						2.80		(13.20)	
1977			(8.67)			0.90		(32.80)	
1978			(8.87)			0.90		(54.60)	
1979			(10.70)			1.20		(137)	
1980			(11.12)		(11.51)	3.00		(161)	
1981			(22.10)		(45.85)	10.40		(117)	
1982			(16.10)		(15.85)	21.90		(300)	
1983			(6.40)		(97.21)	24.70		(483)	
1984			15.70		(39.90)	52.90		(1816)	
1985			(10.10)		(180.40)	20.90		(2050)	
1986			(30.90)		(41.30)			(1259)	
1987			(40.30)		(241.60)			(2346)	
1988			(3.20)		(673.00)			(3859)	
1989			(30.00)					(7502)	
1990			(46.20)		(1.18)			(12)	
1991			(92.24)		(4.43)			(33)	
1992			(156.64)		(4.43)			(47)	
1993			(282.19)		(5.06)			(47)	(0.1)
1994			(308.32)		(4.81)			(115)	(0.1)
1995	(46)	(196.4)	(355.50)	(20)	(5.76)	(213)	(70)	(150)	(3.5)
1996	(33)	(55.2)	(213.10)	(44)	(7.83)	(458)	(148)	(316)	(6.0)
1997	333	(68.2)	(383.60)	23.34	(8.30)	(976)	(150)	(1239)	(5.2)
1998	599	(99.5)	(631.50)	(30)	(6.85)	(1103)	(209)	(2444)	(2.9)
1999	349	(77.1)	(831.75)	(150)	(1.80)	(1361)	(185)	(4774)	(6.7)
2000	(170)	(82.3)	(528.30)	(120)	9.47	(1223)	243	(4387)	(5.6)
2001	(180)	(136.8)	(649.00)	(100)	(30.10)	(1856)	287	(10076)	(6.2)
2002	(210)	(156.7)	(1301.97)	(150)	(29.16)	464	78	(50610)	(4.2)
2003	0	(179.8)	(1367.11)	(110)	(41.43)	(1590)	191	(47320)	(2.4)
2004	600	(82.9)	(1328.90)	(80)	(36.75)	(1374)	835	(24500)	(15.2)
2005	1030	(101.1)	(1572.75)	(100)	(25.38)	1002	1763	(5260)	(10.0)
2006	1730	(79.2)	(1940.99)	(50)	(17.37)	2336	2242	(5230)	(7.4)
2007	1960	(26.7)	(1147.14)	100	5.84	5215	2245	(16440)	(14.2)
2008	1990	(81.0)	(1100.51)	(121)	(11.34)	(5875)	2012	(25380)	(30.0)
2009	(630)	(217.4)	(1236.59)	(103)	(53.50)	(26964)	2449	(57260)	(57.1)
2010	(2820)	(180.7)	(1161.56)	(940)	(55.89)	(12198)	(1585)	(37850)	(62.3)
2011	(1490)	(124.6)	1101.16	(450)	(19.04)	(13575)	861	(8480)	(35.9)
2012	(360)	(168.2)	(600.83)	20.00	(20.40)	(4964)	260	(25620)	(63.0)
2013	(1450)	(111.3)	(563.86)	(220)	(41.17)	1618	849	(23700)	(65.1)
2014	(1520)	(111.5)		(180)			475	(41210)	

Data source: Deficit, IMF Publications, i) *International Financial Statistics Yearbook (IFS)*, ii) e-Library, and iii) <http://ecodb.net>: Included in KEWT 9.15 database.



Speed Years and Deficit

Table 7 Deficit, LONG time series, 1990–2013

REST	1.Argentina	2.Bolivia	3.Brazil	4.Chile	5.Colombia	6.Paraguay	7. Peru	8. Iran	9.Kazakh	10.Kuwait
1960		(0.30)			(0.10)	(0.12)		(6.48)		
1961		(0.50)			(0.60)	(0.16)		(6.82)		
1962		(1.00)			(0.90)	(0.01)		(7.06)		188
1963		(1.00)			(0.40)	(0.20)		(8.06)		192
1964		(1.20)			(0.40)	(0.38)		(9.98)		200
1965		(1.40)			(0.40)	(0.04)		(13.18)		191
1966		(1.30)			0.10	0.16		(14.96)		232
1967		(1.20)			(0.20)	(0.28)		(17.18)		280
1968		(1.00)			(0.60)	(0.27)		(20.00)		297
1969		(0.40)			(0.80)	0.20		(23.98)		306
1970		(0.40)			(1.10)	0.16		(54.10)		396
1971		(1.00)			(2.50)	(0.31)		(26.10)		420
1972		(1.00)			(4.70)	(1.61)		(54.40)		427
1973		(1.00)	(0.03)	(0.10)	(5.60)	(0.04)		(13.20)		439
1974		(1.60)	(0.03)	(0.50)	(4.10)	1.74		140.30		563
1975		(2.40)	(0.03)	(2.30)	(0.90)	(0.56)		12.00		756
1976	(0.10)	(2.80)	(0.06)	1.80	5.30	(2.22)		(37.60)		1027
1977	(0.10)	(3.00)	(0.06)	(3.20)	4.50	1.63	(0.10)	(262)		1363
1978	(0.20)	(3.00)	(0.10)	(0.50)	6.20	3.06	(0.10)	(450)		1478
1979		(7.00)	(0.18)	37.20	(9.20)	4.34	0.10	(231)		1734
1980	(1.00)	(10.00)	(0.30)	58.20	(27.70)	1.81	(0.10)	(915)		2325
1981	(5.00)	(10.00)	(0.60)	33.00	(60.40)	(10.59)	(0.40)	(841)		2630
1982	(11.00)	(111.00)	(1.30)	(12.20)	(118)	2.99	(0.60)	(603)		3344
1983	(87.00)	(310.00)	(4.80)	(40.90)	(128)	(7.73)	(2.40)	(842)		2649
1984	(267)	(7639.00)	(18.80)	(56.20)	(167)	(18.44)	(3.30)	(597)		2735
1985	(2924)	(1182.00)	(154)	(60.70)	(158)	(20.00)	(4.10)	(594)		3084
1986	(1964)	(126.00)	(488)	(31.40)	(107)	(25.00)	(12.70)	(1333)		2683
1987	(6675)	(32.00)	(1393)	20.00	(61.00)	(20.00)	(41.90)	(1419)		2823
1988		(45.00)	(1600)	4.80		(35.00)	(128.20)	(1200)		2988
1989		(400)	(3000)			(20.00)	(4857.10)	(1000)		3162
1990	(0.13)	(0.68)	(0.7)	74	(0.16)	4.10	(0.44)	(817)		(1.70)
1991	(0.96)	(0.80)	(2.6)	186	0.03	0.23	(0.59)	(1110)		(4.74)
1992	(0.07)	(0.97)	(2.4)	346	(1.12)	(0.97)	(1.66)	(776)		(2.89)
1993	(1.57)	(1.49)	(1.3)	357	(0.33)	0.69	(2.06)	(6752)		(1.14)
1994	(1.89)	(0.83)	(2.1)	362	(1.03)	2.44	2.13	(5726)		(0.67)
1995	(1.43)	(0.59)	(0.3)	667	(1.94)	0.71	(4.10)	(6459)	(25)	(0.15)
1996	(5.23)	(0.71)	(45.7)	658	(3.78)	(0.02)	(1.98)	(2536)	(60)	1.09
1997	(4.36)	(1.37)	(53.4)	623	(4.50)	(0.17)	(1.26)	(7139)	(64)	1.58
1998	(4.15)	(2.39)	(72.4)	132	(6.94)	0.23	(1.88)	(22083)	(72)	0.54
1999	(8.13)	(1.85)	(56.3)	(502)	(10.55)	(2.65)	(5.49)	(2998)	(70)	1.39
2000	(6.82)	(1.94)	(39.8)	56	(8.86)	(0.01)	(5.20)	42591	(3)	3.68
2001	(8.74)	(3.67)	(33.9)	644	(6.30)	0.13	(5.29)	7650	(13)	3.09
2002	(3.46)	(4.98)	(65.8)	320	(10.57)	(2.41)	(4.26)	4931	73	2.24
2003	(0.45)	(4.88)	(88.9)	582	(5.82)	0.11	(3.71)	14909	184	2.47
2004	(9.42)	(3.86)	(56.3)	1999	(24.75)	1.47	(2.98)	55113	151	3.89
2005	(9.44)	(1.73)	(76.8)	3128	(46.77)	0.94	(1.07)	54296	452	10.22
2006	6.98	4.10	(86.0)	6111	(3.81)	0.88	5.81	46602	782	19.43
2007	(17.10)	1.79	(74.5)	7168	(3.63)	1.40	10.70	311044	660	12.73
2008	(8.81)	4.31	(47.7)	3876	(1.21)	2.90	9.54	22885	197	7.84
2009	(4.13)	0.02	(106.2)	(3939)	(14.10)	0.46	(5.75)	32353	(226)	8.19
2010	(1.96)	2.30	(105.7)	(406)	(17.97)	1.64	(0.35)	132111	321	8.42
2011	(6.29)	1.38	(108.0)	1706	(12.34)	1.08	9.60	11930	1646	14.77
2012	(8.71)	3.28	(121.3)	886	0.80	(1.39)	11.27	(23453)	1374	17.47
2013	9.74	0.20	(157.5)	(902)	(7.15)	(1.78)	2.67	(81470)	1780	14.90
2014	(17.89)	(0.83)	(175.1)	(1576)	(7.05)	(1.83)	0.57	(274227)	1530	12.99

Data source: Deficit, IMF Publications, i) *International Financial Statistics Yearbook (IFS)*, ii) e-Library, and iii) <http://ecodb.net>: Included in KEWT 9.15 database.

Table 8 Deficit, LONG time series, 1990–2013

REST	11.Pakistan	12.Saudi Ar	13.Algeria	14.Egypt	15.Kenya	16.Moroc	17.Niger	18.S.Africa	19.Tanzani
1960	(0.98)				(245)			(79)	
1961	(0.73)				(231)			(73)	
1962	(0.82)				(245)			(143)	
1963	(1.21)				(210)			(53)	
1964	(1.29)				(310)			(175)	
1965	0.02		(1.04)		(393)	(767)	(78)	(355)	
1966	(2.31)		(0.60)		(404)	(422)	(47)	(278)	
1967	(3.86)		(0.96)		(204)	(709)	(124)	(234)	
1968	(2.99)		(1.44)		(260)	(567)	(178)	(361)	(305)
1969	(2.80)		(1.00)		(340)	(834)	(302)	(313)	(412)
1970	(3.95)		(1.99)		(376)	(619)	(119)	(400)	(369)
1971	(3.07)		(1.75)		(335)	(658)	36	(852)	(688)
1972	(2.58)		(0.92)		(782)	(897)	37	(769)	(555)
1973	(4.55)		(3.13)		(696)	(526)	404	(209)	(360)
1974	(5.15)		2.03		(558)	(1348)	1487	(588)	(851)
1975	(11.47)			(938)	(1259)	(3341)	(1300)	(1679)	(1865)
1976	(12.24)			(1557)	(1558)	(7217)	1130	(1979)	(1805)
1977	(12.58)			(1114)	(1020)	(7647)	1135	(1769)	(855)
1978	(13.25)			(1246)	(871)	(5773)	2122	(2049)	(1956)
1979	(18.00)			(1964)	(2411)	(6039)	2871	(2110)	(4134)
1980	(13.34)			(1500)	(1122)	(7184)	9184	(1231)	(4046)
1981	(16.14)			(1096)	(3897)	(10557)	2055	(1860)	(3667)
1982	(15.35)			(3554)	(4462)	(10630)	500	(2416)	(5513)
1983	(24.78)			(2364)	(1597)	(7680)	(2000)	(4039)	(4333)
1984	(25.93)			(3258)	(2710)	(6762)	(2900)	(4346)	(4414)
1985	(33.78)			(3439)	(3375)	(9424)	(1999)	(3976)	(6802)
1986	(46.92)			(4655)	(5586)	(11872)	(2774)	(6457)	
1987	(48.78)			(2613)	(9841)	(7025)	(9702)	(9359)	
1988	(42.76)			(4716)	(5526)			(8769)	
1989	(44.71)				(6574)			(11720)	
1990	(46)	(10.0)	18	(5.5)	(8)	(4.76)		(10)	(15)
1991	(77)	(12.0)	33	(1.1)	(11)	(5.08)		(14)	(4)
1992	(95)	(10.0)	8	(4.8)	(3)	(3.37)		(26)	(100)
1993	(119)	(14.0)	(90)	2.7	(15)	(6.51)		(28)	(65)
1994	(113)	(13.0)	(28)	0.6	(23)	(8.92)		(39)	(133)
1995	(124)	(15.5)	12	1.8	(6)	(12.37)	1	(23)	(113)
1996	(169)	(18.5)	101	(4.4)	6	(9.49)	37	(29)	31
1997	(190)	(17.0)	81	(5.2)	(14)	(2.20)	(5)	(21)	(49)
1998	(172)	(18.0)	(101)	(2.6)	(5)	(7.33)	(133)	(19)	(46)
1999	(202)	(14.9)	(62)	(0.2)	(2)	(8.51)	(285)	(13)	(170)
2000	(172)	43.7	400	(4.2)	7	(20.77)	(104)	(19)	(150)
2001	(158)	22.0	158	(19.8)	20	4.35	(186)	(9)	(123)
2002	(127)	(12.5)	53	(43.0)	21	4.96	(43)	(10)	(109)
2003	(141)	44.1	256	(37.7)	(25)	4.28	239	(32)	(255)
2004	(110)	116.9	323	(40.1)	(19)	2.90	(764)	(30)	(514)
2005	(208)	262.5	1031	(45.3)	21	0.05	(1349)	(3)	(635)
2006	(322)	344.0	1186		(32)	(0.65)	(2796)	9	(800)
2007	(362)	234.0	574	(56.2)	(34)	4.34	(3717)	30	(392)
2008	(762)	615.1	1000	(71.7)	(67)	6.44	(4556)	(15)	(638)
2009	(606)	(65.8)	(545)	(71.9)	(110)	3.33	(3535)	(118)	(1691)
2010	(874)	41.7	(47)	(100.0)	(139)	(3.34)	(2316)	(139)	(2090)
2011	(1260)	301.6	(63)	(174.1)	(152)	(5.39)	347	(152)	(1881)
2012	(1685)	401.8	(663)	(165.7)	(214)	(6.09)	(12)	(214)	(2291)
2013	(1795)	231.6	(12)	(245.9)	(239)	(4.81)	(2158)	(239)	(2896)
2014	(1356)	207.0	(239)	(220.4)	(248)	(4.64)	(896)	(248)	(3015)

Data source: Deficit, IMF Publications, i) *International Financial Statistics Yearbook (IFS)*, ii) e-Library, and iii) <http://ecodb.net>: Included in KEWT 9.15 database.



**Appendix:** How to get IMF Publication DATA more to the point; by learning this issue during the trip to IMF, Washington, D. C., 15–27 Oct 2014

1. Presumption: To understand IMF Publication DATA more accurately

The literature is based on GDP (and/or GNP) statistics data-values and their statistics data-ratios. GDP is unique core in statistics methods and analytical methods, each established by statistician, researcher or economist. GDP is endowed with specific character expressing A System of National Accounts (1993, SNA). Therefore, there is no contradiction among various methods stated here above. Several key items in the SNA are:

- (1) Consumption by consumers,  $C_{PRI}$ , consumption by Government,  $C_G$ , where total consumption C is equal to  $C_{PRI} + C_G$ ;
- (2) the balance of payments and deficit by year,  $BOP = \Delta D + (S - I)_{PRI}$ , where  $BOP = S - I$  and  $\Delta D = (S - I)_G$ ;
- (3) Taxes = Indirect Taxes+ Direct Taxes, where subsidies are minus taxes;
- (4) Consumption of capital or economic depreciation; Wages and Profits included in GDP.
- (5) Net primary income from abroad, which is required for GNP calculation.
- (6) Social benefits, donations, and/or grants.

These items belong to General Government (GG), Central Government (CG), and/or Local Government (LG), which differ by country. This is because IMF respects each country's culture, methods, and applications, without oppressing IMF's education using strict manuals. In any way, GDP is fortunately full of natural consistency among values, ratios, and numerical figures. Historically, these facts are proved empirically and economics and econometrics march together harmoniously up to date.

2. Problems in economics using the SNA data

The current economics use assumptions by model. This is unavoidable due to model formulation. Also, there is no theoretical data in GDP and models. As a result, various methods have been invented over years and based on statistics developments; normal distribution, standard deviation sigma, variance, probability, t- and F-value, density function, correlations, and new methods and methodologies, although several key methods have gradually accepted, commonly to researchers. In short, endless games continue forever, with instant changes under no repeating phenomena.

3. IMF Publication DATA<sup>1)</sup>

There are a few data sources in IMF publication DATA (hereafter, IMF DATA) such as:

(1) *International Financial Statistics (IFS) Yearbook* by year. The author could understand that IFS printed data must be a base for other IMF data. There is at least two year delay in publication. For example, in 2014, we have 2011 and or 2012 at most but, some cases by country have blank in data.

(2) *The e-Library on line DATA*. All the data in detail are available by month, quarter, and year. There is no blank in data series.

(3) *Government Finance Statistics (GFS)*. Some cases by country have blank in data.

The author could learn that each data source differs so that each data are not always consistent with each other. We must be flexible and without preoccupation. The author's *purely endogenous system* (or the *EES*, 1<sup>st</sup> edition 2013 and, 2<sup>nd</sup> 2014) differs from the literature in that theory data-values express practice data-values and that continuous data-values are required. The *EES* needs no blank. Hitherto, the author has repeatedly tested data accuracy comparing no blank data with some blank data transitional. The author has concluded a fact that the *EES* works accurately by year even we have blank data both in 1960–2012 LONG and 1990–2012 Short. Why is it so similarly?

A reason is the existence of a constant capital-output ratio, whose origin comes from Paul Samuelson's mathematical proof in 1970. The author proposes AXIOM such that the capital-output ratio is always constant over years by setting specific devices into the Excel

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1) Acknowledgements: I am very happy to be able to contact with pertinent persons by section, IMF. Without the current and historical DATA, IMF, my work on 'purely endogenous' model/system does not exist. Publication DATA and its staff are benefactors. Those days are memorial to my life-work starting in 1950 when I published "Records for devaluation of fixed assets after severe inflation for several years since 1945. On 17 Oct 2014, Jim Beardow, Senior Communications Officer, Communication Department, met me shaking hands with me. This occurred, I believe, Nature/God helped me to study IMF DATA, luckily. Then, I met Jittapat, Sirison, Information Management Assistant, Statistics Department. In the near future in 2015, Jittapat becomes a partner of my work/researches at IMF. Jittapat has been a key person to introduce me to proper researchers, IMF.

Murto Wickens, an expert in various statistics and methods, to my understanding, helped me and reflected Jim's intention most deeply and I never forget his goodwill in the future. 11–11:30 am on 22 Oct, I met Claudia Dziobek, Manager, with Murto; I conveyed to her my exciting thankfulness to learn IMF DATA. I promised her to meet her when a good timing comes fortunately, after the HEU publication in 2015. Furthermore, I had chances to see and learn more from two Japanese researchers, (1) Junji Ueda, Advisor, Fiscal Affairs Department, and (2) Joji Ishikama for the balance of payments; I learned comparative standards of data between Japan and all the other countries more objectively. When Jittapat is busy with meetings, Lily Seo kindly acted as an agent of Jittapat.

software that measures the KEWT (Kamiryo Endogenous World Table) Database; by country, sector, and year and over years. This will be geometrically--without using equations--published in the *HEU* ("*Hyperbola Economics towards a Utopia economy in reality and by country*," early 2015), where algebra and geometry are united into a whole original one system.

4. The market principles need no arbitrary policies: just laissez-faire

The *EES* and the *HEU* solely hold under perfect competition. Key word for economic sustainability or robustness by country is perfect competition, where no restriction or control is available. Some economists advocate that Japan and the US are similar in economic character. The author's answer is truly reversed. Definite differences between the US and Japan exist theoretically, empirically, and historically as follows:

Question to the US: Why is the macro-economy robust and sustainable in the US?

Answer to the US: Sustainable cycles are forecasted solely due to perfect competition.

A1. Consumption is perfect among consumers' perfect competition, particularly daily goods and services to individuals; to the author's feeling.

A2. Democracy is much more confident in individual circumstances. Democracy differs by individual but, most people are involved in the spirit of democracy.

A3. The US is a united nation that is fair/even among races, culture, and history more confidently compared with one year ago.

A4. The above facts were confirmed by Prof. Bryan, L. Boulier, DWU, after getting an appointment on 23 Oct 2014<sup>2)</sup>.

A5. Perfect competition implies least regulation existing among interest-groups. Public opinions prevail everywhere and, are practically accepted by the US society.

A6. Mass media is seeking concrete results and nearer to Arts and Beauty of nature.

A7. Most people thinks of others like familiar person, historically reminding a young continent.

Question to Japan: Why is the macro-economy weak in Japan?

Answer to Japan: Japan is endowed with traditional modest culture and civilization but, hidden behind the curtain of global competition. The curtain must be open and transparent.

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2) Separately in a paper, the author will discuss contents of this appointment. Bryan is one of academic leaders in IAES, Savannah, and the author respects his moderate and careful attitude.

A1. Two extremes appear currently among people; closer to Nature individuals, and against Nature-oriented individuals, who neglect historical heritage.

A2. Some individuals are free from the essence of democracy and against peaceful communications among people by country. Without peace in mind, a human society cannot be survival continuously. Peace is most close to Nature or abstract existence.

A3. Leaders concentrate on lip-service, without sincere learning by doing. For example, to recover consumption per capita, policies must cut government consumption. Nevertheless, leaders spend more government consumption, which destroys sustainable robustness in consumption per capita.

A4. People must perceive the essence of democracy as their own familiar decision-making. Closed spirit narrows future prosperity in economic activities.

A5. Small size countries such as Norway, Sweden, and Finland, each know possibility of bankruptcy or default, through their body and mind. It implies, Japan should be local-based, where local people maintain their self-government. Japanese people realize this fact and want to convert central-government oriented to local-government oriented.

A6. As a result, we Japanese will recover good, moderate character of culture/agriculture; mountains, forest, rivers, and sea; a green cyclical economy by local-government.

A7. The Yin and Yang principle in the old China is numerically measured by the structure/mechanics of hyperbola economics towards a Utopia economy in reality and by green cycles.

Finally, the author adds my basic ideas and thoughts. The author accepts any idea or thought since it is right naturally from each aspect. In the case of the *EES* and the *HEU*, the author wholly proves six neutral aspects, including politics-neutral and spirituality-neutral. Basic ideas and thoughts directly expressed in the *HEU*: The Yin and Yang principle is scientifically measured by case, even in two dimensional planes. Perfect competition under the market principles is a key for understanding, as the author repeatedly stresses. And, GDP has consistent mechanics to ex-post analytical analysis.

