

Understanding the Keynesian Economics of Tanzan Ishibashi

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Abstract

As a journalist, Tanzan Ishibashi asserted the necessity of expansionary fiscal policy during the great global depression to overcome deflation. Therefore, Ishibashi doubtless correctly understood Keynesian economics to a certain extent. This paper examines the degree to which he understood Keynesian economics, based on his 1935 Toyo Keizai editorial titled, “The Upper Limit of Government Finance Expansion and Lower Limit of Contraction.” The results show he used the equilibrium condition “Savings (S) = Investment (I)” to explain how the scale of government finance is determined, but he did not always mention the principle of effective demand that states when the scale of public finance expands, the equilibrium condition changes. It follows that, at the point prior to The General Theory of Employment, Interest and Money being published in 1936, Ishibashi’s understanding of Keynesian economic was limited.

Introduction

Prior to World War II, Tanzan Ishibashi worked as a journalist at the economic magazine, Toyo Keizai. After the war, he was a politician who served as minister of finance and minister of international trade and industry, and even as prime minister for a short period.¹ He was also the man who introduced Japan to the economic theory and ideology of J. M. Keynes in the early 1920s.² Hence, we can surmise that as a journalist and a politician, Ishibashi applied Keynesian policy to Japan’s government finance. However, it is not easy to comprehend the degree of his understanding of Keynesian economics. This paper therefore uses his editorial, “The Upper Limit of Government

Finance Expansion and Lower Limit of Contraction”³ to assess the extent of his grasp of Keynesian economics.

This editorial, which commented on the statements made by Korekiyo Takahashi who was at the time minister of finance, was published in three installments in 1935. In these installments, Ishibashi used the savings and investment balance equation ($S = I$) to explain that government finance cannot infinitely expand, nor can it contract without limit.

Since this editorial was written in 1935, Keynes’ *A Treatise on Money*⁴ (1930) had been published, but *The General Theory of Employment, Interest and Money*⁵ (1936) had yet to be printed. Consequently, since the relation equation between savings and investment was utilized within *A Treatise on Money*, it can be concluded that Ishibashi was aware of that relation equation.⁶ However, *The General Theory of Employment, Interest and Money* had not yet been published, and it is possible he did not know about the principle of effective demand.

When *The General Theory of Employment, Interest and Money* was published in Britain in 1936, Ishibashi purportedly actively promoted its translation by Tsukumo Shionoya, the first translator, and its publication in Japan.⁷

1. Tanzan Ishibashi’s understanding of government finance

1.1 Historical backdrop

Ishibashi introduced *The Economic Consequences of the Peace*,⁸ published by Keynes in December 1919, in an editorial appearing in *Toyo Keizai Shinpo* on March 27, 1920. He continued harboring an interest in Keynes’ publications and papers, and read works such as “The End of Laissez-Faire”⁹ (1926) and *A Treatise on Money* (1930). “The Upper Limit of Government Finance Expansion and Lower Limit of Contraction” was presented as an editorial in 1935 and was written based on Keynes’ works. This editorial was published in three parts, titled “1. Evaluating Finance Minister Takahashi’s Latest Mindset” (June 15, 1935), “2. Examining the Funding of Expenditures Through Bonds, Currency, and Taxation” (June 29), and “3. Urgent Needs Fail to Suppress Bond Issuance” (July 13).

This editorial was an assessment by Ishibashi of the public controversy over implementing tight fiscal policy through a reduction in war expenditures, which was an idea put forth by Finance Minister Korekiyo Takahashi¹⁰ in the Keisuke Okada¹¹ Cabinet during discourse that took place on May 31, 1935. Finance Minister Takahashi's comments garnered attention due to the economic and political backdrop of that time.

Economically, the emergence of inflation around 1935 caused by economic recovery from the Showa Depression¹² and its subsequent development was a matter of concern. Japan's economy soured due to the worldwide depression that occurred in October 1929 and the Showa Depression triggered by the lifting of the gold embargo¹³ in January 1930. The global depression progressed, taking down the United States and many other countries throughout the world. The economic downturn induced by the Showa Depression recovered ahead of the rest of the globe in 1932 through expansionist fiscal policy. The actions taken by Finance Minister Korekiyo Takahashi of the Inukai Cabinet, which formed in 1931, included re-imposing the gold embargo, increasing government expenditure through the Bank of Japan's underwriting the issuance of bonds, and the implementation of various public undertakings (government assistance projects).

Politically, the influence of the military had been growing since the Manchurian Incident in September 1931. On May 15, 1932, Prime Minister Tsuyoshi Inukai was assassinated in an event that came to be called the "May 15 Incident." Thereafter, the office of prime minister was held by the former military men, Makoto Saito and Keisuke Okada. Moreover, in May 1933 Japan declared the intent to formally withdraw from the League of Nations because the international organization did not sanction the continued existence of Manchukuo.

Japan's economy grew in 1933 and 1934 through expansionary fiscal policy, but an inflationary trend was also seen. In these circumstances, the discussion by Finance Minister Takahashi on May 31, 1935 led to growing talk that the government was aiming for fiscal restraint focused on military expenditures. The military concluded that Takahashi's comments expressed intent to decrease military spending, and the "February 26 Incident" was organized by young army officers the following year on February 26, 1936. This incident led to the deaths and injuries of several people, including the assassination of Finance Minister Takahashi. It was in this period that Ishibashi published his editorial.

1.2 The June 15 editorial ¹⁴

In “1. Evaluating Finance Minister Takahashi’s Latest Mindset,” Ishibashi makes the case that the comments made by Takahashi were not an announcement of fiscal austerity through decreasing military spending.

At the time, there were those who opposed and those who agreed with fiscal tightening. The reasons for opposition were concern that cutting military expenditures would shrink production and negatively impact industry, and that decreasing Japan’s military expenditures at a time when the world’s great powers were expanding their military would put the country at a disadvantage in the arms race. The reason for agreement was anxiety over inflation occurring due to the utilization of public bonds to cover the deficit in revenue every year.

Prior to the discourse on May 31, Ishibashi spoke directly with Korekiyo Takahashi and presented the content of that meeting in a May 4 article titled, “Speaking Openly with Finance Minister Takahashi.” However, this article was subject to a rigorous revision by Takahashi. Ishibashi draws the conclusion that, insofar as that article states, there is no way Takahashi is intending to implement fiscal restraint. He then objects to a statement made during that meeting by Takahashi, “Though warships themselves will not be built, the expense for building warships will be used in production.” If the expense for building warships can be used in production, then only weapons and warships should be built. However, in actuality if only weapons and warships were made, other things could not be made and thus, weapons and warships also could not be made. Therefore, he believes this part of the discourse is misunderstood by Takahashi, but the rapid swell in war expenses from 1933 simultaneously increased the nation’s production, so the misunderstanding was unavoidable. In fact, there was a surplus in production capacity, so even if the war expenses ballooned, production could also be increased.

However, the idea that the building of warships is productive is missing from the May 31 discourse by Finance Minister Takahashi. Furthermore, each year national savings covered the national economy, and the issuance of bonds was permissible as long as there was margin, but exceeding that would result in completely depleting the past national savings and running down production capacity.

Given this, Ishibashi took the view that Takahashi’s comments on May 31 were a correction of the May 4 misunderstanding, and did not signify an ag-

gressive cutback of government finance.

1.3 The June 19 editorial¹⁵

In “2. Examining the Funding of Expenditures Through Bonds, Currency, and Taxation,” despite the fact that Ishibashi maintains Finance Minister Takahashi’s comments did not signify fiscal tightening, he feels the reason so many people miscomprehended was that most did not possess knowledge of government finance. In addition, Ishibashi contends that government finance can never be increased ad infinitum by issuing bonds to compensate. Thus, he explains that when using bonds for expenditures to compensate, if it is implemented only for enterprises that do not bring production capabilities such as war expenditure, production capacity will wane since investment declines. Similarly, government finance can never be increased indefinitely when compensating by boosting production of paper money or increasing taxes. Ishibashi uses the savings/investment relation equation to explain the possibility of increasing government finances. Since his use of that equation is quite interesting from the perspective of modern macroeconomics, it will be discussed in detail in Section 3.

1.4 The July 13 editorial¹⁶

In “3. Urgent Needs Fail to Suppress Bond Issuance,” Ishibashi discusses the fact that there is also a limit to the contraction of government finance. When government finance contracts, unless consumption or investment grows by that same amount, the national economy will contract. He also uses the savings/investment relation equation to explain this relationship. Again, this equation is quite interesting from the perspective of modern macroeconomics and will be introduced in detail in Section 3.

2. The savings/investment relation equation

2.1 Generating revenue resources by issuing bonds

Ishibashi utilized the savings/investment relation equation to explain why government finance cannot be infinitely increased by issuing bonds. To check

his argument, the crucial parts of his editorial will be examined.

Excerpt 1:¹⁷

“...There is an inevitable limit to issuing bonds. Using the words of Finance Minister Takahashi introduced earlier, excluding the amount of money necessary to cover the national economy each year from each year’s national savings (stated a little more exactly, the amount of investments in each year needed to maintain the current standard of the national economy), the issuance of bonds must not exceed that remaining balance. The national economy will be damaged if that limit is exceeded. To simplify, that relationship can be expressed using the following denotation.

1. Yearly national savings amount = S
2. Yearly investment amount needed to maintain the current standard of the national economy = I
3. Amount of issued bonds = D

$S - I = D$ is that limit. In that case, what happens if the amount of bonds issued exceeds that limit? If we rewrite $S - I = D$ as $S = I + D$, then when the amount of bonds issued exceeds the limit on the right, that is, D is increased, I will gradually decrease. In an extreme situation, conceivably I becomes zero and $S = D$. If government spending through bond issuance is only carried out for enterprises that do not bring reproduction potential in economic terms, such as armaments, the national economy will gradually drop further and further below the normal standard as I diminishes, and eventually when I nears total destruction even the current decline in production capacity must be supplemented...”

Excerpt 2:¹⁸

“Fundamentally, just as previously stated, when defining I as the ‘yearly investment amount needed to maintain the current standard of the national economy,’ and when the amount of issued bonds does not completely deplete I, that is, when the relationship $S - I = D$ exists, the national economy simply maintains the present state, and does not have the ability to aggressively advance. Unless $S - I > D$, the national economy cannot possess the ability to move forward. Therefore, $S - I = D$ is the limit to which government finance can be increased through the issuance of bonds, and if bond issuance surpasses this, the national economy will deteriorate, and in time the current bond issuance and maintenance of government finance will

form a demarcation line outside the bounds of possibility.⁷

When Ishibashi's editorial discussion on increased government finance is assessed from a macroeconomic perspective, several questionable points arise. Questionable Point 1: Ishibashi viewed the yearly national savings amount S as a constant, and assigned investment and bond issuance as the source of funding for that savings amount. This means if the standard of the national economy were established, the level of savings would be established, and investment and bond issuance would be determined by the savings. However, in macroeconomic theory, when investment and bond issuance are established, the level of national income is determined, and as a result, savings is subsequently determined. His explanation differs from macroeconomic theory.

Questionable Point 2: In Excerpt 1, the limit of the amount of bond issuance is given as $S - I = D$. When that limit is exceeded and public bonds (D) are issued, investment (I) declines and finally hits zero. Normally, investment (I) is private investment and separate from government policy, so even if bond issuance (D) increases, private investment (I) should not decrease. Hence, the view that an increase in bond issuance brings a decline in investment because savings is established contradicts the ideas of macroeconomics.

Questionable Point 3: Ishibashi maintains that if government spending is only carried out for enterprises not accompanied by reproduction potential in economic terms, such as armaments, the national economy will gradually drop further and further below the usual level as I diminishes, but effective demand increases if government spending is escalated, regardless of whether reproduction quantity exists, so the national economy will grow.

2.2 Generating revenue resources by issuing currency or increasing taxes

Ishibashi also mentioned increasing taxes or issuing currency instead of bonds to generate revenue resources.

Excerpt 3:¹⁹

“The above relationship is very much the same when funds for expenditures are generated without relying on bond issuance by increasing the issuance of currency or increasing taxes. However, in this case, rather than

staying within the bounds of the nation's voluntary savings, it eats away at consumption and has the effect of driving forced savings, so to speak. When done well, especially in the case of increased taxes, this does not touch the previously noted I or S. Conceivably, necessary government funds can be withdrawn from the nation's consumption—that is, it simply causes forced savings. This is one reason payment of public finance through taxation, compared to the methods of bond issuance or increasing currency issuance, is said to be sound..."

Ishibashi viewed the implementation through increased currency issuance or increased taxes as carrying out forced savings. This leads to the following questionable point.

Questionable Point 4: The idea that increasing taxes brings forced savings without touching I or S is true in terms of investment (I), but savings (S) will decrease by the amount of increased taxes, and therefore there is an impact of forced savings. Also, investment increases if means such as an investment tax credit is utilized, so investment may be impacted.

Excerpt 4:²⁰

"Finally, just as argued by scholars, paying government spending by increasing the issuance of currency is nothing more than a type of tax hike. Furthermore, it is a bad practice that immediately causes a rise in prices. People should know of that incomparable harmful tax increase and bond issuance..."

He presents a simplified argument that increased currency issuance causes a rise in prices and is detrimental. However, in a deflation it can help to curb a drop in prices. Therefore, the following questionable point arises.

Questionable Point 5: The impact of increased currency issuance differs depending on the state of the economy, so it cannot simply be limited to an adverse effect.

2.3 Upper limit to the growth of government finance

In the July 13 editorial, Ishibashi once again explains the upper limit to the growth of government finance. The following excerpt is a relevant passage.

Excerpt 5:²¹

“Looking at how each year’s national production is appropriated, the majority is allotted to consumption to maintain the lives of the people, and the remainder to savings. For convenience, if E is used to express yearly national production, and C to express yearly consumption for maintaining the lives of the people, then $C + S = E$. In any society, there is no other form in which the yearly national production is measured. Thus, when government finance expansion exceeds the balance of $S - I$, in any society it can only be that I is depleted or, further, C is eroded. It goes without saying that the resulting harm is the same in any society. There are those who sometimes say that if only capitalism were abandoned, then government finance could grow to any amount, and conclude that growth is like a freedom, but that is erroneous thinking arising from not knowing the previous rationale.”

The same issue exists in this excerpt as in Questionable Point 1.

2.4 Lower limit of government finance contraction

Ishibashi also examined the opposite of government finance expansion—the contraction of government finance.

Excerpt 6:²²

“...Many pundits think the more government finance contracts, the better (i.e., there is no lower limit), but in fact, that is based on one major assumption, which is that the absorption by the government due to the contraction will be consumed immediately through national revenue by the people. If consumption prior to the government contraction (i.e., expenditure) is expressed by F , and as before C is the yearly consumption necessary to maintain the lives of the people, E is the yearly national production, and P is newly established as the amount provided for productive use from national savings each year (i.e., the remainder after the amount absorbed by F is subtracted from the yearly national savings), then the relationship $C + P + F = E$ is derived. Further, assuming each of these is stable at a certain ratio, what would happen if fiscal restraint, that is, the contraction of F , were to occur? The idea that there is no lower limit to government finance contraction takes the view that contraction of F will

immediately induce expansion of P or C, or both, and production will grow in the future, or it will help to improve the nation's living standard. If this viewpoint were to always be true and could be proven, then it would indeed be that no limit exists on the contraction of government finance, at least in relation to the nation's economy."

This Excerpt 6 introduces the theory that there is no limit to government finance contraction, and purports that when government finance contracts, immediately P or C, or both, will be caused to expand. However, whether the expansion of P or C, or both, will truly arise is doubtful since it is unclear what the driving force is that increases P or C. Therefore, the theory that there is no limit to the contraction of government finance is not generally possible. However, Ishibashi voices his suspicions about it in the following excerpt.

Excerpt 7:²³

"However, in my opinion, having said this much, undeniably many people already have doubts as to whether the assumption of limitless contraction is always true. This is because they must have experienced and remember actual instances when the contraction of F did not immediately cause expansion of P or C by that contracted amount. Certainly, in the event that the contraction of F were to immediately increase P or C by that much, for example, when government finance expansion in wartime abnormally suppresses and decreases national consumption or the conditions of the economic community are markedly favorable, it would feel as if there was a deficit no matter how many business funds are available. National consumption first maintains ordinary habits, and when the demand for business funds starts to decline, it is unforeseeable that if government finances contract, C or P would immediately expand. Probably, a major part of the contraction of F would appear as decreased demand for goods and labor, prices would fall, and then production would drop off and lead to a depression..."

This Excerpt 7 contradicts the explanation made in the argument regarding an upper limit to government expansion that states an increase in bond issuance (D) immediately brings a decrease in investment (I), as indicated in Excerpt 1. This leads to the following questionable point.

Questionable Point 6: Ishibashi says that when government finance

expands, investment (I) immediately decreases if bond issuance (D) is increased, but when government finance contracts, if consumption prior to the government contraction (i.e., payment), expressed by F, decreases, then investment (P) and consumption (C) must increase. However, in fact there are many instances where they did not increase. Despite the fact he asserts that investment decreases when government finance expands, his contention that when government finance contracts, investment does not increase is a contradictory one.

Questionable Point 6 can be viewed as showing Ishibashi's understanding of government finance was as yet insufficient.

3. An explanation according to macroeconomic theory

3.1 When funding expenditures by issuing bonds

Ishibashi's argument will be examined based on current macroeconomic theory. First is a look at the government's generation of revenue resources when funding is sourced only through bond issuance. Denotation is defined as follows.

National income = Y, Consumption = C, Investment = I, Government spending = G (= Government consumption expenditure GC + Government investment expenditure GI), Bond issuance = D, Taxation = T, Currency issuance = M

In addition, consumption function is defined as $C = C(Y)$.

Consumption function possesses the following kind of behavior.

$$1 > dC / dY > 0, d^2C / dY^2 < 0$$

National income is represented by the following balance equation. The left side is supply, and the right side is demand.

$$Y = C + I + G$$

The portion not consumed in national income is savings. However, taxation is not initially considered.

$$S \equiv Y - C$$

Investment subtracted from this savings becomes a surplus, but when this surplus is used as government expenditure and the revenue source for government expenditure is funded by bond issuance (D), the following relation equation is derived.

$$\begin{aligned} S - I &= D \\ &= G \end{aligned}$$

Thus, savings = investment + government expenditure.

$$S = I + G$$

At this point the value of national income is determined. Fig. 1 shows this relationship. Balanced national income is determined at the point the savings function (S) and investment (I) + government expenditure (G) intersect.

Here, a confirmation is made of the change that arises when government spending (G) increases (ΔG) and new government spending G^* ($G^* > G$) is expanded, as shown in Excerpt 1. This is shown in Fig. 2.

When effective demand exists that is comprised of consumption (C), investment (I), and government expenditure (G), and government expenditure G newly increases to G^* , national income also increases, and balanced national income increases from Y to Y^* ($Y^* > Y$). The new equilibrium condition is as follows.

$$Y^* = C(Y^*) + I + G^*$$

Savings (S) also increases according to an increase in government expenditure.

$$S^* \equiv Y^* - C(Y^*)$$

$$dS^* / dY^* = dY^* / dY^* - dC(Y^*) / dY^* > 0$$

(dependent on the function form of the consumption function $1 > dC / dY > 0$)

Investment subtracted from savings is government expenditure.

$$\begin{aligned} S^* - I &= D^* \\ &= G^* \end{aligned}$$

As is clear from this savings and investment relationship, when the amount of bond issuance (D) (= government expenditure G) increases, savings (S) increases to fulfill the equilibrium condition even though investment (I) does not change. Therefore, it differs from the relationship noted in Excerpt 1, “When the amount of bonds issued (D) increases, investment (I) decreases because savings (S) does not change.”²⁴ The conclusion derived from this is that Ishibashi seemingly uses the savings/investment relationship, but he is not utilizing the relationship that a government expenditure increase leads to national earnings increasing and a subsequent savings increase. If savings grows it means there is no longer a need to decrease investment, even if government expenditure increases. It follows that Ishibashi did not accurately use the theory of effective demand that states when government expenditure

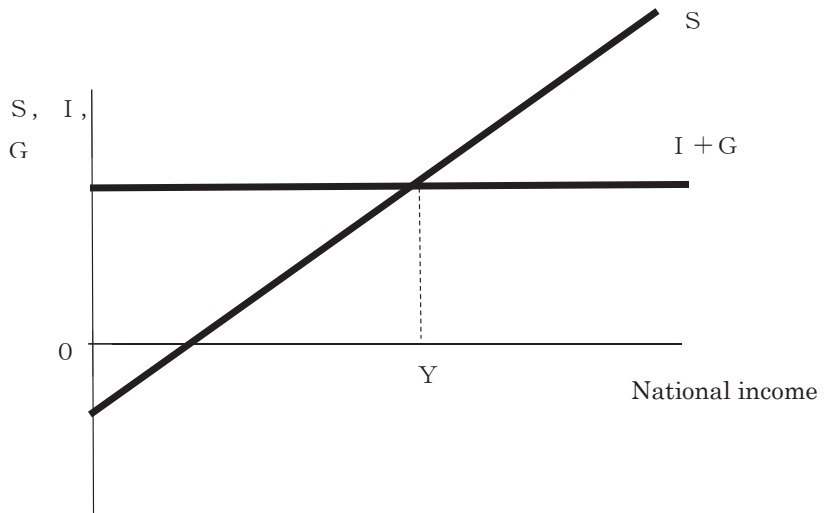


Fig.1 $S - I = G$

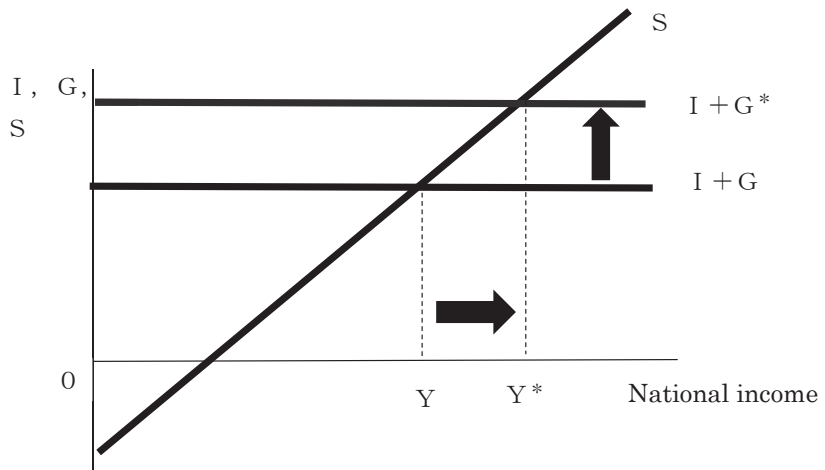


Fig.2 $S(Y^*) - I = G^*$

is increased, national earnings can be increased.

3.2 When funding expenditures through taxation

Next is an examination of idea that when government expenditures are funded by taxation, consumption is decreased due to forced savings, as presented in Excerpt 3.

National income is represented by the following balance equation.

$$Y = C + I + G$$

Consumption subtracted from national income is savings and taxation.

$$Y - C \equiv S + T$$

Thus, the equilibrium condition for savings/investment is as follows.

$$S + T = I + G$$

Based on this, the difference in savings and investment is as follows.

$$S - I = G - T$$

If investment is low and there is a savings surplus ($S > I$), government expenditure must surpass tax revenue to create a fiscal deficit in order to maintain the level of national income. It is necessary to cover this fiscal deficit by issuing bonds.

$$G - T = D (> 0)$$

Thus,

$$S - I = D.$$

When a disparity emerges between savings and investment in this way, in the short term that disparity can be covered by issuing bonds (or redemption.)

When there is excess investment ($S < I$), then $G < T$, so tax revenue surpasses expenditure. In this case, there is a tax surplus, so by redeeming past bonds the excess in taxes can be utilized.

In addition, if the Bank of Japan directly underwrites the issued bonds, then the bond issuance (D) and new currency issuance (M) are equal.

$$\begin{aligned} G - T &= D \\ &= M \end{aligned}$$

Thus, the savings/investment disparity becomes the amount of the new currency issuance.

$$S - I = M$$

Since bond issuance and currency issuance are financial developments, the currency market or bond market must also be examined.

3.3 The crowding out effect

Ishibashi's explanation that when the bond issuance amount (D) increases to exceed the limit of $S - I = D$, then investment (I) gradually decreases could occur when the crowding out effect exists. However, it is generally inconceivable that when government expenditure is increased, investment will decrease exactly by that same amount to create a 100% crowding out effect.

Investment is dependent on the interest rate (r). If the interest rate rises, investment declines. If the interest rate drops, investment increases. This is because when government spending increases, national earnings increase, but because the demand for capital needed for trade goes up at that time, investment funds decrease, the interest rate rises, and investment declines. For an even more detailed analysis, applying IS-LM analysis is recommended.

3.4 Increasing unproductive war expenditure

It is difficult to define expenditures related to military affairs. The 2008 System of National Accounts (2008 SNA) treats weapons systems as a capital formation. Previous SNA viewed it as government consumption. Items such as warships take years to build and once completed can be used for a long time just as general durable goods, but even so they were viewed as consumables and thus treated as government consumption expenditures.

While quoting from the comments by Korekiyo Takahashi, Ishibashi asserted that, "If only weapons and warships were made, other things could not be made and thus, weapons and warships also could not be made." This assertion was presented in 1935; in the end the Japanese economy would later come to experience exactly that.

Triggered by the "February 26 Incident" in February 1936, the Japanese economy began treading the path of a military state in earnest, and war expenditures rapidly grew. Along with this, the metals needed for production of weapons and warships ran short. Since it was difficult to produce new metals, in 1938 the Japanese government established the Iron & Steel Distribution Regulation to compensate for the shortage in metal resources needed for the worsening war situation, lack of resources, and especially the production of weapons. Furthermore, the government called for the collection of non-essential, non-urgent metals. Even so, given that there was still a shortage of metals, based on the National Mobilization Law of August 30, 1941, the

government announced the Metal Collection Act which came into enforcement on September 1 of the same year. Through this, metals were collected on a large scale under the name of the war effort. As a result, factory production machines and the like were also donated, and production in the private sector decreased. When the war ended, Japan's economy was left with insufficient private capital.

Conclusion

It is clear from several editorials that Tanzan Ishibashi read works by J. M. Keynes and formed his own economic ideology. However, based on the editorial, "The Upper Limit of Government Finance Expansion and Lower Limit of Contraction," it can be said that, although in 1935 he was aware of the savings/investment relation equation, he was not necessarily sufficiently aware of the principle of effective demand.

However, it is unclear whether Ishibashi came to understand the principle of effective demand at some point after *The General Theory of Employment, Interest and Money* was published by Keynes in 1936. That is because there is no suitable material containing theoretical content employing the savings/investment relation equation that can be used to make a judgment, similar to "The Upper Limit of Government Finance Expansion and Lower Limit of Contraction." Thus, determining the point at which Ishibashi understood the principle of effective demand is a new subject left to future research.

Notes

1. For information on Tanzan Ishibashi's career, refer to Hiroshi Masuda (1990).
2. In the Toyo Keizai editorial "Those Capable of Winning Wars" published on March 27, 1920, Tanzan Ishibashi refers to *The Economic Consequences of the Peace by Keynes* (December 1919). *The Collected Writings of Tanzan Ishibashi*, Vol. 3, p. 147. Also, refer to Tadashi Yamaguchi (1990) p. 196–198 regarding the Japanese translation of *The General Theory of Employment, Interest and Money*.
3. "The Upper Limit of Government Finance Expansion and Lower Limit of Contraction" (1935), *The Collected Writings of Tanzan Ishibashi*, Vol. 9, p.

- 376–390.
4. *A Treatise on Money I The Pure Theory of Money*, 1930; *The Collected Writings of John Maynard Keynes* Vol. 5, THE MACMILLAN PRESS LTD.
 5. *The General Theory of Employment, Interest and Money*, 1936
 6. Savings (S) and investment (I) are used in “Part 3 The Basic Equation” in *A Treatise on Money I*
 7. *The Collected Writings of Tanzan Ishibashi*, Vol. 3; Tsukumo Shionoya, “Ishibashi and Keynes,” separate printing, Monthly Bulletin No. 5
 8. *The Collected Writings of John Maynard Keynes*, Vol. 2, “The Economic Consequences of the Peace”
 9. John Maynard Keynes, *The Collected Writings of John Maynard Keynes*, Vol. 2, “The End of Laissez-Faire,” London, 1926.
 10. Korekiyo Takahashi (September 19, 1854–February 26, 1936) was a bureaucrat and politician in the Meiji, Taisho, and early Showa eras. He was the 20th prime minister (November 13, 1921–June 12, 1922). When Tsuyoshi Inukai formed his cabinet in 1931, he became the 4th finance minister and re-imposed the gold embargo (December 13, 1931). Finance Minister Takahashi also implemented government assistance projects and increased government expenditure (military budget) through underwriting by the Bank of Japan as a reflation policy measure. In the midst of the great global depression, the Japanese economy shook free of deflation. When Inukai was assassinated in the “May 15 Incident” in 1932, he was assigned as acting prime minister, and when Makoto Saito formed his cabinet, he remained as finance minister (5th time). In addition, in 1934 he served as finance minister for a 6th time in the Keisuke Okada Cabinet.
 11. Keisuke Okada (February 14, 1868–October 17, 1952) was a military officer and politician. He was minister of the navy in the Giichi Tanaka Cabinet and Makoto Saito Cabinet, and after the “May 15 Incident” served as prime minister (July 1934–March 1936). In the “February 26 Incident,” he was attacked by young officers, but escaped.
 12. The Showa Depression refers to the depression that arose in the Japanese economy from 1930 to 1931. This was a serious depression impacted by the worldwide depression in the fall of 1929. The Osachi Hamaguchi Cabinet formed in 1929 decided on returning to the gold standard and took measures to reduce prices to boost the global competitiveness of Japanese products. This added deflationary pressure to the market that resulted in the Showa Depression.
 13. Japan’s economy in the 1930s climbed out of recession and achieved high economic growth. Therefore, the possibility of the price standard rising emerged. In particular, the Producer Price Index had a high rate of increase exceeding 10%, at 11.0% in 1932 and 14.6% in 1933. However, in 1934 it fell to 1.9%, with the rate of increase at a low level of 2.6% in 1935 and 4.2% in 1936. In 1937, it jumped to 21.4%, and in 1938 fell to 5.5%. Later, it once again rose, shifting to a level of around 10%.

14. The major powers utilized the gold standard system prior to World War I. However, during that war, each country imposed a ban on the export of gold. After the war, there was a growing move to return to the gold standard by the United States (1919) and other countries, but Japan did not due to reasons such as the depression. Despite the occurrence of the worldwide depression in 1929, Finance Minister Junnosuke Inoue from the Osachi Hamaguchi Cabinet lifted the gold embargo in January 1930.
15. *The Collected Writings of Tanzan Ishibashi*, Vol. 9, p. 376–382.
16. *The Collected Writings of Tanzan Ishibashi*, Vol. 9, p. 383–386.
17. *The Collected Writings of Tanzan Ishibashi*, Vol. 9, p. 386–390.
18. *The Collected Writings of Tanzan Ishibashi*, Vol. 9, p. 383–384.
19. *The Collected Writings of Tanzan Ishibashi*, Vol. 9, p. 384–385.
20. *The Collected Writings of Tanzan Ishibashi*, Vol. 9, p. 385.
21. *The Collected Writings of Tanzan Ishibashi*, Vol. 9, p. 385–386.
22. *The Collected Writings of Tanzan Ishibashi*, Vol. 9, p. 387.
23. *The Collected Writings of Tanzan Ishibashi*, Vol. 9, p. 388–389.
24. *The Collected Writings of Tanzan Ishibashi*, Vol. 9, p. 389.
25. Tanzan Ishibashi was assuming a fixed level of natural income. When government expenditure is increased, national earnings increase, but to return to the previous national earnings standard requires decreasing investment (I). Therefore, under the condition of fixed national earnings, when government expenditure increases, investment decreases.

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