

IDENTIFYING THE OPTIMAL CASH WAQF LINKED SUKUK: INDONESIAN EXPERIENCE

DR. RIFKI ISMAL

Bank Indonesia and Tazkia Institute, Indonesia

Email: rifki_ismal@yahoo.com

Received on: 27-05-22

Accepted on: 23-07-22

<https://doi.org/10.57144/hi.v45i3.500>

Abstract

The National *Waqf* Body (BWI) and Ministry of Finance (MoF) have implemented a model called Cash *Waqf* Linked *Sukuk* (CWLS) and issued the Government of Indonesia *Sukuk* (Islamic securities) namely *Sukuk Waqf* Indonesia (SWI) in 2020. The intention behind applying CWLS model is to accelerate *waqf* as one of the Islamic social funds and particularly, to optimize the collection of cash *waqf* with Islamic securities to serve the public and at the same time to diversify the sovereign securities (*Sukuk*) in the Islamic financial market. Indeed, it is very crucial to assess the feasibility of the CWLS model as a new sovereign *Sukuk* instrument in the market despite its sharia compliant aspect. Especially, it needs to undergo a robust academic assessment such as formulation of the model, optimal level of each party such as the government, *waqif*, *waqf* management agencies (*Nadzhir*), etc. This is the objective and main motivation of the research. The paper will answer the following research questions: (i) What is the quantitative formula of SWI model especially SWI issuers and holders? What is the formula of the optimal impacts of SWI model, taking into account two types of *waqif*? Finally, what is the optimal formula for project financing, given the total cash *waqf* investment? Then, the paper technically constructs and develops the quantitative formulas of SWI instrument namely BWI, Ministry of Finance (MoF), *waqf* management agencies (*Nadzhir*), partners of *Nadzhir* and *waqf* investors (*waqif*). SWI formulation is derived based on SWI's terms and conditions, cash flow, intentions of *waqf* investors and tenor of SWI. Later, the optimal impacts of SWI are measured by formulating the present and future values of *waqf* investment to assess the Net Present Value (NPV) and limit theories to find variables determining the optimal SWI impacts on the public via project financing taking into account two types of *waqif* namely temporary *waqif* and permanent *waqif*. Finally, the paper contributes to the academic assessment of CWLS model (SWI instrument) particularly, it identifies variables determining the

optimal implementation of CWLS model which might benefit the *waqf* stakeholders.

Keywords: *Cash Waqf, Sukuk, Nadzhir, CWLS Model*

1. Background

The modern approach to managing Islamic endowment (*waqf*) is allowing cash as another type of *waqf*. Practically, *waqf* takes the form of physical assets such as land, house, car and, buildings but lately, other types of assets such as Islamic securities, insurance, including cash are being accepted as *waqf*, as long as they are used for public benefits and comply with Islamic principles. In Indonesia, cash *waqf* is stipulated in: (i) Indonesia Islamic Council (Majelis Ulama Indonesia – MUI) verdict (*fatwa*) number 29 the year 2002 on Cash *waqf* and, (ii) National *Waqf* Body (BWI) regulation number 1 the year 2009 on Guide for Cash *waqf* Development¹.

Fortunately, Indonesia has a huge potential for cash *waqf*. At least, its amount is between IDR20 billion – IDR25 billion or USD1.42 billion – USD 1.78 billion coming from potential *waqf* donors (companies, private including individuals and government)². This cash *waqf* fund is available to finance public infrastructures such as public hospitals, state schools, mosques, and, traditional markets³. A huge amount of cash *waqf* can even potentially finance some public infrastructures such as airports and, sports centers (football fields).

Assuming that the Government is the one to provide the public (social) facilities, compared to financing it with commercial funds (which require a return to be paid by the government to the investors), financing with cash *waqf* can give some benefits to the government, particularly; cash *waqf* does not require any payment of return as *waqf* itself is one of the charity (gracious) instruments in Islam⁴. A return paid in *waqf* contract (if any) is considered a kind payment of return in order just to appreciate the social investors (*waqf* investors or *waqif*). Hence, occupying cash *waqf* can lessen the government budget particularly to pay for compensation (for example: return, interest) of the commercial funds.

BWI and the government (ministry of finance) of Indonesia have a model called Cash *Waqf* Linked *Sukuk* (CWLS) and has issued the sovereign *Sukuk* (Islamic securities) namely *Sukuk Waqf* Indonesia (SWI) in 2020⁵ as a realization of the CWLS model. CWLS is derived from the experience of Indonesia in developing *waqf*, optimizing cash *waqf* and at the same time diversifying *Sukuk* instrument in the Islamic financial market. BWI attempts to increase the collection and utilization of cash *waqf* by constructing CWLS model and fortunately, the government of Indonesia is also willing to

diversify its sovereign *Sukuk* series by issuing a new series named SWI, which is *waqf* based sovereign *Sukuk*.

Even though CWLS has had a verdict (*fatwa*) from the National *Sharia* Board (DSN) to approve the *Sharia* aspect of the model, there has been no academic assessment or theoretical formulation to formulate and assess CWLS model or to measure the optimal impact of SWI in assisting the government to construct social projects. Moreover, no secondary data of SWI is available since it has been issued only one time so far; in March 2020. In fact, it is very crucial to assess the feasibility of the CWLS model as a new sovereign *Sukuk* instrument in the market despite its *sharia* compliant instrument. As such, the paper attempts to comprehend the *Sharia* aspect of the model (*fatwa*) by conducting the academic assessment by formulating the SWI model, and determining the optimal level of each party; the government, *waqif*, *waqf* management agencies (*Nadzhir*), etc.

Particularly, the paper will answer the following research questions: (i) What is the quantitative formula of SWI model, especially SWI issuers and holders? What is the formula of the optimal impacts of SWI model, taking into account two types of *waqif*? and finally, what is the optimal formula for project financing given the total cash *waqf* investment?

The paper endeavours to conduct an academic assessment, especially to develop the quantitative formula of SWI to assist its application in the economy by considering the benefits of cash *waqf* and the need of the government to build public (social) projects (facilities). The CWLS model involves some parties namely National *Waqf* Body (BWI), Ministry of Finance (MoF), *waqf* management agencies (*Nadzhir*), and partners of *Nadzhir* and *waqf* investors (*waqif*). Following the formulations of CWLS model, the paper measures the optimal impacts of the model, taking into account the two types of *waqifs* namely; temporary *waqif* (who invest in CWLS temporarily) and permanent *waqif* (who invest in CWLS permanently).

2. Literature Review on Cash *Waqf* and *Sukuk*

Indonesia has some potential in *waqf* for examples⁶: (i) there are 414,829 locations of *waqf* land with the total areas of 55,259 hectares, (ii) the total amount of *waqf* assets is IDR2050 trillion and, (iii) total collections of cash *waqf* is amounted IDR180 trillion per year. However, there are some challenges in utilizing cash *waqf* in Indonesia, mainly⁷:

1. Lack of public understanding on cash *waqf* and hence the need for BWI to intensify *waqf* socialization and promotion programs.
2. Less professional *waqf* management agencies (*Nadzhir*) which leads to less optimal cash *waqf* management to be used to finance the social projects.
3. Less performed cash *waqf* collectors which include BWI and Islamic financial institutions as *waqf* collectors (simply called LKS-PWU).

The development of CWLS model and issuance of SWI are solutions to increase the public understanding on cash *waqf* and to improve the performance of *nadzhir*, since CWLS model requires professional *nadzhir* and to accelerate cash *waqf* collections via Sukuk issuance (SWI issuance). Referring to MUI *fatwa* number 29 year 2002 on Cash *Waqf*, terms and conditions of cash *waqf* are as following⁸:

1. Cash *waqf* is a charitable action conducted by a person, an institution or legal institution in the form of cash money.
2. Included in the term of money are the Islamic securities.
3. Cash *waqf* is lawful in Islamic law.
4. Cash *waqf* can only be utilized for *Sharia* (Islamic jurisprudence) based activities.
5. Principle of cash *waqf* has to be guaranteed: non tradable, not to be given and not to be inherited.

Furthermore, some of the most important points of BWI regulation number 1 year 2009 in relation to CWLS are:

1. Article 3: *waqf* funds are accepted either permanently or temporarily (at least 5 years).
2. Article 5: *waqf* funds can be paid to Islamic financial institutions which are legally permissible to receive *waqf* funds (simply called LKS-PWU).
3. Article 8: LKS-PWU issues both temporary and permanent *waqf* certificates depending on types of *waqf* funds.
4. Article 10: *waqf* funds should be managed for productive projects for the sake of the public, directly and indirectly.
5. Article 13: Benefits (charitable monetary compensation) can be extended to other social projects (public empowerment), directly or indirectly.

In addition to those two references, the National *Sharia* Board (DSN) of the Indonesia Islamic Council (DSN-MUI) has issued the DSN opinion with regard to the idea of CWLS from BWI, which is DSN opinion number B-109/DSN-MUI/II/2019 regarding the compliance of CWLS with Islamic principles⁹. Based on DSN letter, in principle, CWLS idea has complied with Islamic principle as long as it follows: (i) terms and conditions of cash *waqf* principles (the one stipulated in MUI verdict number 29 year 2002 on Cash *waqf*) and, (ii) requirement to manage *waqf* funds as regulated in BWI regulation number 1 year 2009. Those three references are followed and become the basis in the formulation of CWLS model in order to make it *sharia* compliance.

Since cash *waqf* is linked with *Sukuk* (Islamic securities), some requirements of *Sukuk* have to be considered, particularly¹⁰:

1. Every *Sukuk* issuance has to have a real project, in this case, a public (social) project becomes the underlying of *Sukuk* issuance.
2. *Sukuk* issuer can be the obligor. And in a CWLS model, government is the issuer of CWLS.
3. *Sukuk* can generate income for its investors. Since CWLS is a social (charity) based *Sukuk*, return (coupon) is not compulsory.
4. In maturity of *Sukuk*, its principal needs to be returned to the investors.

CWLS (referring to *waqf* verdict and regulation) can return the principal to its investors (*waqif*) if it is a temporary *waqf* or does not return it to its investors if it is permanent *waqf*. In addition to some facts from the previous studies and verdicts above, there are two types of cash *waqf* namely temporary and permanent cash *waqf* with some unique features based on *Waqf* Act number 41 year 2004, which are¹¹:

NO	FEATURES	TEMPORARY CASH WAQF	PERMANENT CASH WAQF
1	Tenor (duration)	5 years	No minimum duration
2	Nominal	Minimum IDR10 million	No minimum amount
3	Investment	Investment product of LKS-PWU	Islamic investment product

4	Principle amount	Paid back to investor	Never returned to investor
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Lately, some researches on CWLS have been conducted to stress on some points; Firstly, the integrated CWLS model for community food security by modifying the central bank of Bahrain *Sukuk* model with a salam contract¹²; It constructs and proposes the design of CWLS model but does not produce the optimal formula of the *Sukuk* issuance.

Secondly, the paper conducts a research on the model of Cash *Waqf* Linked *Sukuk* (CWLS) as the Instrument for food security in Indonesia SDGs and limits its assessment to only analyzing CWLS for food security in the SDG context but not for other purposes¹³.

Thirdly, an analysis of CWLS model as a financing instrument for economic recovery from the impacts of COVID-19 pandemic¹⁴. This research adopts a descriptive qualitative method to find out whether that CWLS can become a sustainable Islamic financing instrument to finance the economy after the pandemic. However, it does not assess each party (i.e. *Nadzhir*, *Waqif*, LKS-PWU, etc) which is involved in CWLS.

Fourthly, there is another paper which assesses CWLS for the economic security during the pandemic period¹⁵. But again, it focuses only on the pandemic period and is not large enough to capture the general purposes of CWLS.

Fifthly, a paper on evaluation of the issues, challenges and future direction of CWLS (namely SWR 001) issuance. It finds that issues and challenges of CWLS are new product announcement, limited partners for *waqf* distribution, low coupon rate, lack of public understanding and, incomplete literacy¹⁶. For the future CWLS issuance, the paper suggests that *waqf* stakeholders need to improve communication strategies, ease of service and professionalism of *Nadzhir*¹⁷. Nevertheless, the same as the previous researches, the paper does not develop and provide formulas of the optimal *waqf* investments by *waqif*.

Regarding financing the government project, Sixthly, the research explores Cash *Waqf* Linked *Sukuk* (CWLS) as an alternative instrument for infrastructure financing. But, this paper merely adopts a qualitative method to propose a CWLS model without providing quantitative formulas of the optimal social (*waqf*) infrastructure projects, managed by *Nadzhir*¹⁸.

However, the paper at hand is very different and more specific than the six researches above in terms of:

1. using parties involved in CWLS issuance and employing a quantitative method which is mathematical formulation based on net present value (NPV) concept and project finance theory to calculate the financial implication of CWLS investment,
2. deriving optimal formulas of SWI issuance, SWI holders and *waqif* investments both temporary *waqif* and permanent *waqif* and,
3. identifying optimal conditions of the CWLS investments.

3. Research Objectives and Method

3.1. Research Objectives

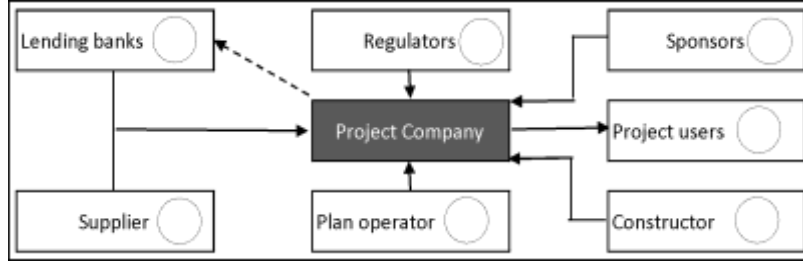
The paper conducts an academic assessment especially to develop the quantitative formula of SWI instrument to assist its application in the economy by considering the benefits of cash *waqf* and the need of the government to build public (social) projects (facilities) taken into account parties involved in the model namely the National *Waqf* Body (BWI), Ministry of Finance (MoF), *waqf* management agencies (*Nadzhir*), partners of *Nadzhir* and *waqf* investors (*waqif*). Then, it finds the optimal formula for the amount of cash *waqf*, project financing and both temporary and permanent *waqf* by using finance formula since this also answers the research questions listed previously.

3.2. Research Method

Technically, the paper adopts project finance theory as it constructs a financing model for project financing using cash *waqf*. Project finance has two phases namely; construction and development phase and, operation phase. It then engages some parties such as: (i) project sponsors (entities that manages the project), (ii) borrower as the user of funds, (iii) financial advisors, (iv) lender which lends fund (liquidity) to finance the project and, (v) construction company which construct the project¹⁹.

Figure 1 below describes parties engaged in the project finance. In relation to the case of the paper, the first party is the regulator or BWI which regulates the *waqf* project. The second and the seven parties are the lending bank and sponsors which is *waqif* (*waqf* investors), the third party is the suppliers of raw materials for the project construction, the fourth party is the plan operator or ministry of finance (MoF) which manages and operates the *waqf* project. The fifth party is the constructor which is hired by MoF to

construct the *waqf* project. The sixth party is the project user or the public (*Mauquf 'alaih*).



Source: modified from⁴

Figure 1: Parties Engaged in Project Finance

In essence, BWI is very important, especially to ensure that the *waqf* project complies with the state's rules on *waqf* and sharia (Islamic jurisprudence) principles for *waqf*. Lending bank and sponsors take part as fund providers to finance the *waqf* project. Next, supplier of raw materials, plan operators and constructor are parties determining the construction and development of the project such as duration of the project, quality of the infrastructure, etc. Finally, project users are the public who will benefit from the project.

Further, quantitative method which is, formulating quantitative equation based on cost of equity function and, net present value (NPV) formula, is employed. Cost of equity (K_e) is formulated as $K_e = r_f + (r_m - r_f)\beta$ in which r_f is the return coming from risk free asset, r_m is the market return and β is risk of the securities²⁰. The cash flow of the project finance is determined by gross revenue minus gross expenditures (such as operating cost, taxes, pre debt service, drawdown, debt and interest repayments). Technically, the future value of the project (FV) is formulated as

$$FV = CF \sum_{t=1}^n (1 - r)^{n-t}$$

in which CF is the cash flow of the project and r is the rate of return of the project²¹. The optimal future value comes from the partial derivative of the FV equation. Taking into account project financing and cash flow of the project, the paper constructs formula of SWI in the following section.

Even though investors of CWLS are social investors who do not expect any return from *waqf* investment, measuring the value of

current investment with respect to the future values (simply called the Present Value or PV) is always requested and formulated as:

$$PV = \frac{1}{(1+r)^n} \quad ^{22}.$$

Then, the net present value (NPV) represents the net value (differencies) between the future and present values. The prospective project or asset is shown by a positive NPV while the negative or zero NPV is the less prospective or even can be perceived as the worst project.

Since the CWLS model is composed of temporary and permanent *waqf* investments, the optimal investment of the latter is assumed to be continuous random investment, independent and identically distributed (i.i.d) variable, and is counted with the infinite limit formulation of: $\lim_{p \rightarrow \infty} W_p \sim P(\mu, \sigma^2)^{23}$. This means that when p approaches infinity, the sum converges to normal distribution.

4. Cash Waqf Linked Sukuk (CWLS) Model and SWI Instrument

To answer a set of research questions before, the next sub sections constructs the quantitative formulas of the SWI model, SWI issuance, SWI holders and finally the optimal impact of SWI model.

4.1. Formulation of SWI Model

In addition to *Sukuk* requirements mentioned above, even though SWI is not yet being issued by the government, formulation of CWLS model still has to consider its terms and conditions which are:

1. SWI is issued by Ministry of Finance.
2. SWI is offered via private placement only to BWI (*Nadzhir*) which collects *waqf* funds from *Nadzhir* partners.
3. The minimum amount of private placement is IDR50 billion.
4. Tenor of SWI is 5 years and renewable upon requested.
5. The government pays coupon to SWI holders (*waqif*) just to appreciate for their social investment in SWI.
6. Upon agreement by *waqif*, SWI coupon is used to finance other (supporting) social projects, related directly or indirectly to the SWI project.

As in figure 2, CWLS model starts from *waqf* investors (*waqif*), both permanent *waqif* and temporary *waqif* who invest in

CWLS model (SWI instrument) and place the funds in *Nadzhir* partners (both LKS-PWU or non LKS-PWU) (arrow number 1) who are receivers of *waqf* funds. The funds are then placed by *Nadzhir* partners in *Nadzhir* (BWI), (arrow number 2a) and followed by the issuance of CWLS certificate (arrow number 2b). When the *waqf* funds have exceeded the minimum amount of private placement in SWI, BWI (*Nadzhir*) places them in SWI, issued by Ministry of Finance (arrow number 3a). The government then issues SWI certificate to BWI as the legal document for placing fund in SWI (arrow number 3b).

Basically, the government has a list of social projects (facilities, infrastructures, etc) to be financed by *waqf* funds under SWI instrument. Once *waqf* funds are received, the government determines social project to be financed which complies with *waqf* criteria as well (arrow number 4). As the government intends to appreciate *waqif* (*waqf* investors), it pays coupon to SWI holders (arrow number 5).

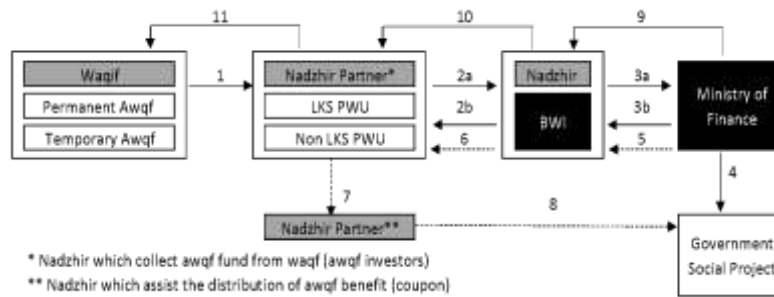


Figure 2: Cash *Waqf* Linked *Sukuk* (CWLS) Model and SWI Instrument

Upon receiving coupon payment, BWI leaves it to *Nadzhir* partners (distributor of *waqf* funds) (arrow number 7) to reconfirm if such a coupon is agreed to be used upon for supporting the related social projects (arrow number 8). In the maturity time, the government (ministry of finance) returns the principal of SWI to BWI (arrow number 9) which is then extended to *Nadzhir* partners (arrow number 10). For temporary *waqif*, *Nadzhir* partners return the principal after which, they may decide to continue or end the social investment (*waqf*). Whilst, for the permanent *waqif* (arrow number 11), the principal is non-returnable as they have already released the ownership of the cash *waqf*, as such *Nadzhir* (BWI) can keep rolling over it in CWLS model.

4.2. Formulation of SWI Issuance

Based on SWI model above, the issuance of SWI (W_t) comes from both temporary *waqf* (w_s) and permanent *waqf* (w_p) or $W_t = w_s + w_p$. Social project (P_t) is financed from SWI funds after deducting some funds for liquidity (L_t) purposes (such as non-operation cost, miscellaneous cost, etc) or $P_t = W_t - L_t$. Given the certain tenor of SWI, P_t is formulated as:

$$P_t = \theta p_1 + \theta p_2 + \theta p_3 + \dots + \theta p_n \quad (1)$$

θp is proportion of P_t from the beginning up to the end of period of SWI, or simply

$$P_t = \sum_1^n \theta p_n \quad (2)$$

Meanwhile, liquidity (L_t) connects with the amount of *waqf* funds and can be formulated as

$$L_t = \alpha w_1 + \alpha w_2 + \alpha w_3 + \dots + \alpha w_n \quad (3)$$

OR

$$L_t = \sum_1^n \alpha w_n \quad (4)$$

Hence, the optimal social projects P_t is $P_t = \max (W_t - L_t)$.

4.3. Formulation of SWI Holders (Waqf Investors or *Waqif*)

As *waqf* investors, both types of *waqif* (permanent and temporary) invest preliminary as I_0 (initial social investment) which is $I_0 = W_0$. During the *waqf* period, they will get coupon (M_t) regularly (for example yearly) or simply formulated as:

$$M_t = m_1 + m_2 + m_3 + \dots + m_n \quad (5)$$

Whilst, m is determined as a certain portion of the *waqf* investment or $m_n = \beta w_n$ as such:

$$M_t = \beta w_1 + \beta w_2 + \beta w_3 + \dots + \beta w_n \quad (6)$$

OR

$$M_t = \sum_1^n \beta w_n \quad (7)$$

Thus, in the maturity time of SWI (I_m), the government will pay the temporary *waqif* the principal of *waqf* (W_{sm}) plus coupon (essentially, the *waqif* released the coupon back to the project as mentioned before):

$$I_{sm} = W_{sm} + M_t \quad \text{because } (W_{sm} = W_0) \quad (8)$$

then

$$I_{sm} = W_0 + \sum_1^n \beta w_{tm} \quad (9)$$

and practically it is only $I_{sm} = W_0$

I_{sm} is the value of the matured investment of the temporary *waqif*. For the permanent *waqif*, they will not get either (principal and coupon) because all of them have been released to the *Nadzhir* for the sake of the public. But, the government counts their social investment as:

$$I_{pm} = w_{p1} + w_{p2} + w_{p3} + \dots + w_{pn} + \beta w_{p1} + \beta w_{p2} + \beta w_{p3} + \dots + \beta w_{pn} \quad (10)$$

OR

$$I_{pm} = \sum_1^n w_{pn} + \sum_1^n \beta w_{pn} \quad (11)$$

4.4. Optimal Impact of SWI

a. From Temporary *Waqif*

As they invest temporarily, these type of social investors have specific tenor of investment. Assuming they only invest one time (no roll over at the end of the SWI contract), their period of SWI is only 5 years. Further, principal of *waqf* will be taken in the maturity time while coupon is used for supporting the social project. Then, formulations of this type of *waqif* are below:

Waqf activities are

$$W_t = w_{s1} + w_{s2} + \dots w_{sn} + \beta w_{s1} + \beta w_{s2} + \dots + \beta w_{sn} \quad (12)$$

OR

$$I_{sm} = W_t + \sum_1^n \beta w_n \quad (\text{similar to equation 9}) \quad (13)$$

Liquidity spending in the tenor is

$$L_t = \sum_1^n \alpha w_n \quad (\text{similar to equation 4}) \quad (14)$$

Whilst project financing is $P_t = W_t - L_t$, then

$$P_t = \left(W_t + \sum_1^n \beta w_n \right) - \left(\sum_1^n \alpha w_n \right) \quad (15)$$

OR

$$P_t = \left(W_t + \beta \sum_1^n w_n \right) - \left(\alpha \sum_1^n w_n \right) \quad (16)$$

As assumed, they invest only in 1 round (5 year), the formulations above become:

$$W_5 = w_{s1} + w_{s2} + \dots w_{s5} + \beta w_{s1} + \beta w_{s2} + \dots + \beta w_{s5} \quad (17)$$

$$I_5 = W_5 + \beta \sum_1^5 w_n \quad (18)$$

$$L_5 = \alpha \sum_1^5 w_n \quad (19)$$

Then,
$$P_5 = \left(W_5 + \beta \sum_1^5 w_n \right) - \left(\alpha \sum_1^5 w_n \right)$$

OR

$$P_5 = (5w_t + 5\beta w_t) - (4\alpha w_t) \quad (20)$$

The optimal condition of the investment in this period is:

$$\frac{\partial P_5}{\partial w_t} = 5(1 + \beta) - 4\alpha \quad (21)$$

and this is achieved if:

$$\beta = \frac{4\alpha - 5}{5} \text{ and } \alpha = \frac{5(1 + \beta)}{4} \quad (22)$$

b. From Permanent *Waqif*

As they invest permanently, these type of social investors do not have specific tenor of investment and have even released their ownership forever for the sake of the public benefit. Assuming the investment keeps rolling over and coupon is also used for supporting the social project. Then, formulations of this type of *waqif* are below:

Waqf activities are

$$W_t = w_{p1} + w_{p2} + \dots w_{pn} + \beta w_{p1} + \beta w_{p2} + \dots + \beta w_{pn} \text{ or} \quad (23)$$

$$I_{pm} = \sum_1^n w_{pn} + \beta \sum_1^n w_{pn} \quad (24)$$

Liquidity spending in the tenor is

$$L_t = \sum_1^n \alpha w_n \quad (\text{similar to equation 4}) \quad (25)$$

Whilst project financing is $P_t = W_t - L_t$, then

$$P_t = \left(\sum_1^n w_{pn} + \sum_1^n \beta w_n \right) - \left(\sum_1^n \alpha w_n \right) \quad (26)$$

OR

$$P_t = \left(\sum_1^n w_{pn} + \beta \sum_1^n w_n \right) - \left(\alpha \sum_1^n w_n \right) \quad (27)$$

As the permanent *waqif* permanently invest in SWI, the optimal impact is:

$$P_{\infty} = \lim_{p \rightarrow \infty} f(w_p) + \beta \lim_{p \rightarrow \infty} f(w_p) - \alpha \lim_{p \rightarrow \infty} f(w_p) \quad (28)$$

Considering the very last permanent investment is W_p , then:

$$\begin{aligned} \text{a.} \quad & \lim_{p \rightarrow W_p^+} f(w_p) = W_p \quad \text{and} \quad \lim_{p \rightarrow W_p^-} f(w_p) = W_p \quad \text{thus} \\ & \lim_{p \rightarrow W_p} f(w_p) = W_p \end{aligned} \quad (29)$$

$$\text{b.} \quad \beta \lim_{p \rightarrow W_p^+} f(w_p) = \beta W_p \quad \text{and} \quad \beta \lim_{p \rightarrow W_p^-} f(w_p) = \beta W_p$$

$$\text{thus} \quad \beta \lim_{p \rightarrow W_p} f(w_p) = \beta W_p \quad (30)$$

$$\begin{aligned} \text{c.} \quad & \alpha \lim_{p \rightarrow W_p^+} f(w_p) = \alpha W_p \quad \text{and} \quad \alpha \lim_{p \rightarrow W_p^-} f(w_p) = \alpha W_p \quad \text{thus} \\ & \alpha \lim_{p \rightarrow W_p} f(w_p) = \alpha W_p \end{aligned} \quad (31)$$

$$\text{d.} \quad P_{\infty} = W_p + \beta W_p - \alpha W_p \quad \text{or} \quad P_{\infty} = W_p(1 + \beta - \alpha) \quad (32)$$

Finally, as stipulated in the terms and conditions of SWI, the minimum placement of *waqf* funds in SWI are IDR50 billion and if the permanent *waqif* permanently place IDR50 billion in SWI, then the permanent impact would be:

$$P_{\infty} = \lim_{p \rightarrow 50} f(w_p) + \beta \lim_{p \rightarrow 50} f(w_p) - \alpha \lim_{p \rightarrow 50} f(w_p) \quad \text{then,} \quad (33)$$

$$P_{\infty} = 50 + 50\beta - 50\alpha \quad \text{or} \quad P_{\infty} = 50(\beta - \alpha) \quad (34)$$

5. Findings of the Research: the Optimal Features of SWI

From the formulations and calculations above, some findings of the optimal features of SWI in relation to maximum project financing, impacts of the temporary *waqif* and permanent *waqif* are in the following:

No	Main Features	Formulas
1	Total cash <i>waqf</i> invesment	$W_t = w_s + w_p$
2	Max Project financing	$P_t = \max (W_t - L_t)$

3	Max impact temporary <i>waqif</i>	$P_t = \left(W_t + \beta \sum_1^n w_n \right) - \left(\alpha \sum_1^n w_n \right)$
4	Max impact permanent <i>waqif</i>	$P_\infty = \lim_{p \rightarrow \infty} f(w_p) + \beta \lim_{p \rightarrow \infty} f(w_p) - \alpha \lim_{p \rightarrow \infty} f(w_p)$

Table 1: Formulas of the Optimal CWLS Features

Table 1 shows key success formulas in applying CWLS program by issuing SWI. First, the key success in the issuance of CWLS depends on both the values of temporary *waqf* and permanent *waqf*. Certainly, the permanent *waqf* promises a more optimal *waqf* project financing than the temporary one. However, considering that *waqf* is not yet well educated and socialized among social investors (*waqif*), it needs intensive promotion of CWLS program particularly investment in SWI. Thus, more issuance of SWI is highly recommended to generate the optimal *waqf* project financing. The Ministry of Finance (MOF) and BWI play an important role to ensure more frequent issuances of SWI and social projects to be financed by the instrument.

Second, the max project financed by cash *waqf* relies on the max values of the total collected cash *waqf* minus liquidity to be reserved. In this case, an efficient usage of liquidity (such as efficient construction, cost efficiency, robust liquidity management including liquidity risk mitigation) can maximize *waqf* project financing. However, since CWLS program is the brand new type of sovereign *Sukuk* in Indonesia, an optimal liquidity management requires strong commitment of the government, BWI, *Nadzhir*, LKS-PWU, constructor of the projects and other related parties. This commitment can be realized by having (for example) a memorandum of understanding (MoU) among parties for the mid and long terms project financing (financed by SWI issuances).

Third, the max impact of temporary *waqif* is determined by the total *waqf* and coupons coming from *waqf* investment minus liquidity for the executing the project. In this sense, the Ministry of Finance (MoF), BWI and related parties in construction and operation of the *waqf* project have to optimally utilize it in order to receive maximum benefits and pay well expected coupon to the temporary *waqif*. Even though temporary *waqif* are expected to re-donate their return (coupon) to further support the needies (users of the *waqf* project).

The last but not the least, the max impact of the permanent *waqif* is the combination of the unlimited allocation of both regulator

waqf and coupon minus liquidity to do the project. Similar to optimizing the temporary *waqf* investment, maximizing the utilization of *waqf* project becomes one of the key success factors to increase the contribution of permanent *waqif*. Then, a well communicated CWLS model to the public is a must to prolong the maximum impacts of SWI in the public.

6. Conclusion

SWI instrument as the implementation of CWLS model promises benefits for the government (Ministry of Finance) as the issuer of SWI. These are as follows:

1. SWI might ease the government budget spending, especially to provide public (social) facilities such as public school projects and public hospitals because cash *waqf* is a zero cost of fund financing instrument. The coupon paid by the government is purely and simply a form of an appreciation of the government to both permanent and temporary *waqif*.
2. SWI does not require any payment of return and thus the project can potentially be optimized for the sake of the users (public) which are both Muslim and Non-Muslim.
3. SWI coupon paid to temporary *waqif* can even be reused to support the public projects, which gives a double social impacts to the society. The temporary *waqif* only expects to receive their initial *waqf* investment at the end of the SWI period.
4. Permanent *waqif* permanently places their funds in the instrument. Hence, its social investment impact is even more significant to the economy and society (public) than the temporary *waqif*.

Formulating the SWI instrument suggests that optimization of SWI is mostly determined by the amount of *waqf* funds placed in SWI, coupon rate as it re-supports the project financing and less liquidity ratio besides the length (tenor) of SWI. However, taking into account, the outputs of the paper, SWI can potentially be a new Islamic based fiscal instrument to serve the public and take part in the national economic development of a country. Even though this is initiated by Indonesia, other countries having similar interest and Islamic finance industry such as Malaysia, Pakistan, Bangladesh and Middle Eastern countries, might consider this *Sukuk* innovation and take benefit from this assessment.

7. Limitation of the Research

The paper limits its assessment on the formulation of CLWS model, particularly the SWI instrument and finds the optimal

formulas for *waqf* investment, project financing and the impacts of both temporary and permanent *waqf* to complement the stakeholder's understanding when executing the CWLS model. Nevertheless, it does not capture the market and investors sides such as market and investors' perceptions and expectations and the social impacts of CWLS model. This might become areas for the future research.

Notes and References

- ¹Badan Wakaf Indonesia (BWI), "regulation number 1 year 2009 on Guide for Cash *Waqf* Development" accessed January 7, 2020, <https://www.bwi.go.id/3652/2019/09/regulasi-wakaf/peraturan-bwi-no-1-tahun-2009-tentang-pedoman-pengelolaan-dan-pengembangan-wakaf-uang/>.
- ²Bank Muamalat Indonesia, "Cash *Waqf* Linked *Sukuk* (CWLS)" accessed January 10, 2020, <https://www.bankmuamalat.co.id/ziswaf>.
- ³Kompas, "How big the potential of Indonesian *waqf* Funds is?" accessed January 7, 2020, <https://money.kompas.com/read/2018/10/15/193728426/seberapa-besar-potensi-wakaf-uang-di-indonesia>.
- ⁴Muhammad L. Hamidi, Andrew Worthington, Tracey West and Rifki Ismal, "The Prospect for Islamic Social Banking in Indonesia," *Journal of Islamic Monetary, Economics and Finance* 3, no. 2 (2019).
- ⁵Republika, "The Success of CWLS: Due to Commitment of Many Parties" accessed January 7, 2020, <https://republika.co.id/berita/q70qyl383/cwls-sukses-kemenkeu-berkat-sinergi-banyak-pihak>.
- ⁶KNKS, "The Digital Development and Integration of the National *Waqf* Data" accessed May 26, 2022, <https://knks.go.id/isuutama/29/pengembangan-digitalisasi-dan-integrasi-data-wakaf-nasional#:~:text=Berdasarkan%20data%20Sistem%20Informasi%20Wakaf,mencapai%20Rp180%20triliun%20per%20tahun>.
- ⁷Diah Sulistyani, Nur Asikin, Soegianto and Bambang Sadono, "The Implementation and Development of Cash *Waqf* in Indonesia," *Jurnal USM Law Review* 3, no. 2 (2022).
- ⁸Majelis Ulama Indonesia (MUI), "Indonesia Ulama Council (MUI) Verdict Number 29 Year 2002" accessed January 7, 2020, <http://mui.or.id/wp-content/uploads/files/fatwa/29.-Wakaf-Uang.pdf>.
- ⁹National *Sharia* Board (DSN) opinion number B-109/DSN-MUI/II/2019 regarding the compliance of CWLS with Islamic principles", *Indonesia National Sharia Board unpublished document* (2019).
- ¹⁰International *Sharia* Research Academy (ISRA), "*Sukuk: Principles and Practices*," (Kuala Lumpur: ISRA and SC Publication, 2017).
- ¹¹Junaidi Abdullah, "Mechanism and Cash *Waqf* Development in Indonesia," *Jurnal Zakat dan Wakaf (ZISWAF)* 4, no. 1 (June 2017).
- ¹²Patria Yunita, "Cash *Waqf* Linked *Sukuk* (CWLS) Model: for Indonesia Sustainable Food Security," *Al Awqaf: Jurnal Wakaf dan Ekonomi Islam* 13, no. 1 (2020).
- ¹³Kiki H. Siregar, Chon C. R. Manday, Bakhtiar Efendi, "Model of Cash *Waqf* Linked *Sukuk* (CWLS): the Indonesia Food Security Instrument SDG," *Jurnal Kajian Ekonomi dan Kebijakan Publik* 6, no. 2 (July 2021).
- ¹⁴Muhammad Idhiel, Fitriawan Rahman, Nurwahidin, Naif Adnan, "An Analysis of Cash *Waqf* Linked *Sukuk* (CWLS) Model as a Financing Instrument for Economic Recovery from Covid-19 Pandemic Impacts", *Jurnal Bimas Islam* 14, no. 1 (2021).
- ¹⁵Nur Sa'idatulrohman, "Cash *Waqf* Linked *Sukuk* (CWLS) for Economic Security During Covid-19 Pandemic," *ADILLA Jurnal Ekonomi Syariah* 5, no. 1 (January 2022).
- ¹⁶Muhammad Abdul Mannan, "Linking Islamic Commercial and Social Finance with Special Reference to Cash *Waqf* as New Strategy of Interest-Free-Micro-Credit for Family Empowerment of the Poor Towards Establishing World Social Bank: A Case

Study Approach”, *Journal of Islamic Monetary, Economics and Finance* 3, (2018): 1 - 24.

¹⁷Rozaq Muhammad Yasin, “Cash Waqf Linked Sukuk: Issues, Challenges and Future Direction in Indonesia,” *Jurnal Ekonomi dan Bisnis Islam* 7, no. 1 (January - June 2021): 100 – 112.

¹⁸Ubaidillah, Masyhuri, Nanik Wahyuni, “Cash Waqf Linked Sukuk (CWLS): An Alternative Instrument for Infrastructure Financing,” *Indonesian Interdisciplinary Journal of Sharia Economics (IIJSE)* 4, no. 1 (July 2021): 35-49.

¹⁹Andrew Fight, *Introduction to Project Finance* (Oxford: Butterworth Heinemann, Elsevier, 2006).

²⁰Stefano Gatti, *Project Finance in Theory and Practice: Designing, Structuring, and Financing Private and Public Projects*, (London: Academic Press, Elsevier, 2008).

²¹Ing Petr Jiricek and Mgr Zdenka Dostalova, *Financial Management*, 2nd edition, (Czech Republic: Vysoka Skola Polytechnicka Jihlava, Jihlava University of Technology, 2010).

²²Pamela Peterson Drake and Frank J. Fabozzi, *The Basic of Finance: An Introduction to Financial Market, Business Finance and Portoflio Management* (USA: John Wiley and Sons, 2010).

²³Michael B. Miller, *Mathematics and Statistics for Financial Risk Management* (USA: John Wiley and Sons, 2012).