

A Model of Portfolio Investment Management of The Islamic Endowment Funds Using System Dynamics Methodology

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Abstract

This research tries to find out the potency of endowment funds as an innovation financial instrument, especially cash waqf, to alleviate the poverty in Indonesia. This research also tries to offer a design of the endowment funds management system in a system dynamics model. Using the system dynamics methodology, we try to know the structure of the endowment funds management system and simulate the behaviour of endowment funds.

Cash Waqf, a special charitable endowment fund, is expected to become one of the alternative instruments for the poverty alleviation programs in Indonesia. These programs require huge amount of fund that cannot be provided thoroughly by the government. Therefore, initiation of new sources of fund for such a program is inevitable. In the Islamic socio-economic concept, there is a source of social fund that is economically and politically free of charge, namely cash waqf (*wakaf tunai*). In this concept, *Nadzir* (cash waqf fund manager) collects the fund from *Waqif* (cash waqf payer) and invest the money in the real sector (mainly Small & Medium-sized Ventures) and in any *syariah*-based investment opportunities.

Nadzir will then allocate all profits and returns gained from the investments to any poverty alleviation programs to enhance the quality of poor people's life, such as free education and health service, cheap basic food, etc. *Nadzir* is obliged to maintain the amount of fund in such a way that it does not go below the initial amount. Therefore, *Nadzir* not only should be highly capable, but also needs a financial institution, which has been proven to be experienced, highly capable and effective in helping SMEs development efforts, since such a microfinancing program is considered as the most vital portfolio in the poverty alleviation program. Therefore, it's necessary to design an instrument which is able to control the endowment funds management especially cash waqf.

Keywords: *the endowment funds, cash waqf, portfolio investment, poverty alleviation, system dynamics*

1. Preface

In the end 2005, the Indonesian poverty rate has been still discouraging. The poverty indices are still higher than those of the previous years. The economic crisis beginning in 1997, does not end until now. In addition, the Tsunami Disasters destroyed two provinces in Indonesia i.e Nanggroe Aceh Darussalam and North Sumatra in the end of the year 2004. Based on the Statistics Central Bureau (BPS)'s data, there are about 40 million Indonesian people who are under the poverty line.

Indonesia has come into debt trap made by the Indonesian government and the private sectors. Large amount of debt has weakened Indonesian economy for the past seven years. Meanwhile, the government has been confronted with the deficit budget almost every year since 1997, which means that the government may find it difficult to cover its routine expenditures¹.

Those regular balance sheet items require so large amount of fund that government cannot provide adequate fund for other strategic needs, such as good education, appropriate health, poverty, and SME's development. Mismanagement of debts is the largest of all factors that make Indonesia go into crisis. Consequently, all of citizens and their offsprings have to carry the heavy burden of that debt.

2. Problem Identification

One of potential solutions to the necessity of sufficient fund for public needs is a special endowment fund, cash waqf, from people's donation. People donate their money as cash waqf by purchasing cash waqf certificate. The gathered fund will be then invested in various investment portfolio and the profit of which can be spent for the above mentioned public necessities. The gained profit will also be used for funding poverty alleviation programs, while the principal of funds will be reinvested in various highly profitable investment opportunities.

¹ Baswir, Revrison, *Indonesian Foreign Debt*, satunet column, 2000.

Waqif donates his/her money as waqf fund to *Mauquf'alaih* (a person who is entitled to get benefit from waqf fund) through *Nadzir* (a person/an institution being in charge for managing waqf fund and distributing returns of waqf investment). Only gains of the invested waqf fund will be delivered to *Mauquf'alaih*². The principal of funds keep being invested in potential investment opportunities. In relation to its role as waqf fund investment manager, *Nadzir* on behalf of Waqf Institution may allocate some waqf funds to financial portfolio and finance SMEs' businesses on the basis of profit-loss sharing system.

The larger the investment returns, the more fund can be allocated to poverty alleviation program. In some countries, waqf fund management has reduced poverty effectively and enhanced people's welfare, by providing additional fund for education & health development programs, cheap houses & public facilities development programs, and so forth.

3. Objectives of Research

This research is expected to be able to find out the potency of an Islamic innovation financial instrument, especially cash waqf, to alleviate the poverty in Indonesia. This research also tries to offer a design of the endowment fund management system in a system dynamics model. Using the system dynamics methodology, we try to know the structure of cash waqf system and simulate the behaviour of it.

On the next part of this paper, we will discuss definition, law, and history of a special endowments fund, cash waqf, to recognize the concept and its potential benefit.

4. Problem Definition : Cash Waqf

Previously, waqf of building and land are the most popular forms of waqf. Nowadays, cash waqf has become increasingly well-known, particularly because of its flexibility, which allows distribution of the waqf's potential benefit to be benefited by the poor anywhere³.

Cash waqf was firstly introduced in Ottoman era in Egypt. Professor Mannan then socialized cash waqf in Bangladesh through Social Investment Bank Limited (SIBL). SIBL issues Cash Waqf Certificate to collect funds

from the rich and distributes gains of the managed funds to the poor⁴.

Like those of Bangladesh, most of Indonesian people are poor. Characteristic of communities in both countries are also similar. Therefore, effectiveness of cash waqf certificate program to help reduce poverty in Bangladesh gives hope that analogous program can be successfully implemented in Indonesia. Therefore, *Fatwa Commission, Board of Indonesian Moslem Scholars (MUI)*, responded the necessity of cash waqf program in Indonesia by issuing a *fatwa* (dated on 11 May 2002) about cash waqf .

5. Research Methodology

This research used system dynamics methodology to capture dynamic phenomenon of a system, in which variables change simultaneously as time moves⁵. *System Dynamics* is a method of dealing with questions about the dynamic tendencies of complex systems, that is, the behavioral patterns they generate over time⁶.

System dynamics is a powerful tool in the creation of feedback theories. Since its beginnings, the founders of the field have developed a series of guidelines for the model building process (Randers 1980; Richardson and Pugh 1981; Roberts et al. 1983; Wolstenholme 1990; Sterman 2000) and a series of tests to build confidence in the models created (Forrester and Senge 1980; Sterman 2000)⁷.

In 2000, I carried out a survey on possible implementation of cash waqf in Jakarta and West Java, Indonesia. The survey concluded that most people did not trust any existing government institution to manage cash waqf fund and control its investment activities, especially because cash waqf management will involve large amount of endowment funds⁸. Most of them also recommend that if a special purpose institution is established to manage cash waqf fund, it has to be highly capable of detecting any potential dishonesty and assessing performance of cash waqf fund manager, i.e. *nadzir*. Therefore, it's

⁴ Mannan, M.A.Abdul, *Cash Waqf, Enrichment of Family Heritage Generation to Generation*, Social Investment Bank Publication Series no. 1, 1st edition, 1998

⁵ Tasrif, Muhammad, *System Thinking & Dynamics Modeling*, ITB 1996

⁶ Meadows, Donella H., "*The Unavoidable A Priori*", MIT Press 1980.

⁷ Sterman, John. *Business Dynamics: system thinking & modeling for a complex world*, Mc Graw-Hill, 2000.

⁸ Masyita, Dian, *Preliminary Implementation Model Design of Cash Waqf Certificate as Alternative Instrument for Poverty Alleviation in Indonesia using System Dynamics Methodologi*, Thesis, ITB, 2002

² Utomo, Setiawan Budi, *Fiqh on Waqf and Cash Waqf*, Presentation in Monthly Discussion for Cash Waqf Implementation in Indonesia, MUI Commission of Economy, 2001

³ Mannan, M.A.Abdul, *Cash Waqf Certificate- an Innovation in Islamic Financial Instrument: Global Opportunities for Developing Social Capital Market in the 21st Century Voluntary Sector Banking*", Presentation at the Third Harvard University Forum on Islamic Finance, October 1, 1999

necessary to design an instrument which is able to control the cash waqf management.

Based on the survey's result, using exclusively designed computer program then simulated with system dynamics methodology, some scenarios of cash waqf implementation to formulate some policy concepts applicable in Indonesia. The computer program was designed to help the policy makers (1) estimate cash waqf potential in alleviating poverty in Indonesia, (2) supervise performance of *nadzir* or waqf fund management institution, and (3) identify appropriate policies conducive to poverty alleviation programs. Since there was no similar study preceding the research, some assumptions were applied. The ability of three national TV corporations (RCTI, SCTV, and Indosiar) to collect donation amounting 2 billions Rupiah in two nights in 2000 and the other charity programs to collect donation in 2001-2005 were used as an assumption basis of amount of fund could be gathered by cash waqf management institution⁹. This research also used data supplied by *Biro Pusat Statistik* Republik of Indonesia (National Beaurau for Statistics), *BKKBN* Republic of Indonesia (National Coordinating Agency for Family Planning) and *Islamic* Financial Institution.

5.1 Limitation of Research

This research put more emphasized on financial management especially raising and investing of cash waqf funds. The duties of Nazir, as a cash waqf fund manager, are to increase the cash waqf funds and invest those funds in profitable portfolios. As we know, the poverty alleviation problems are complicated. However, they need multidiscipline knowledge to formulate and figure out the solutions. With this research we want to try to make an early design of poverty alleviation in the financial viewpoint using system dynamics modeling.

6. General Description of System Conceptualization

The system conceptualization involves establishing model boundary, identifying causal relationships and policy framework¹⁰. In this research the model boundary includes all relevant factors that are considered important in the problem context. The model comprises six interrelated components in the cash waqf management as shown as Figure 1.

⁹ PIRAC (Public Interest Research and Advocacy Center), "Rate of giving of Indonesian Community". Based on survey from Agustus 2000 to Agustus 2001.

¹⁰ Sushil (1993), *System Dynamics "A Practical Approach for Managerial Problems"*, Wiley Eastern Limited.

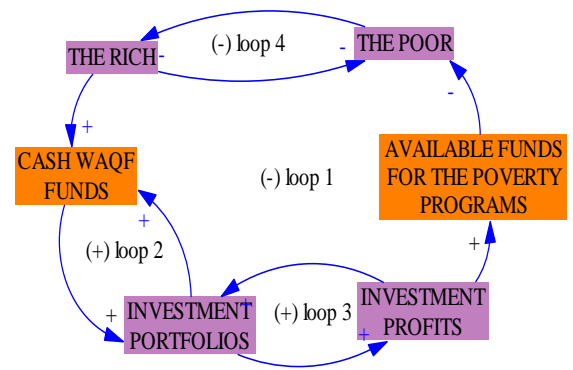
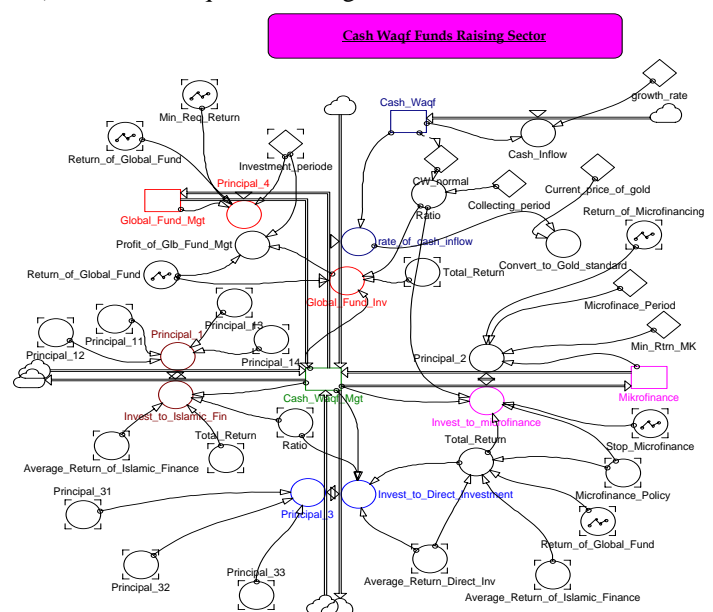


Figure 1. A Macro-view of Model

A general system of cash waqf model, derived from a macro-view of model above, consists of six sectors i.e:

- 1). The cash waqf fund raising sectors



- 2) The Islamic financial portfolios sectors,

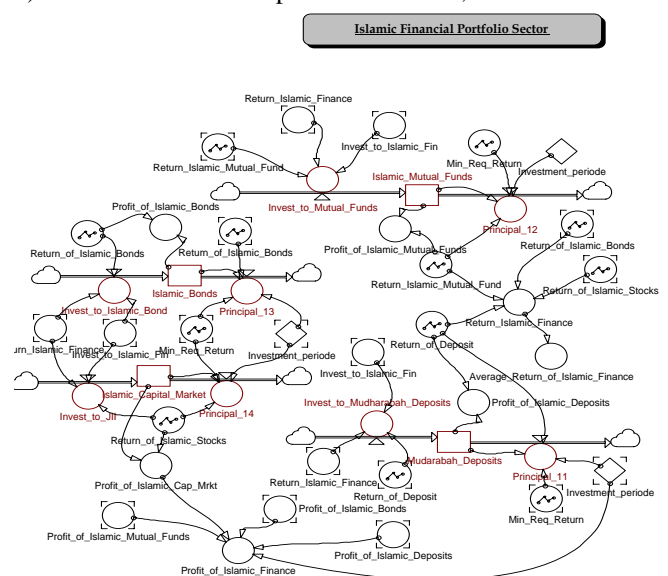
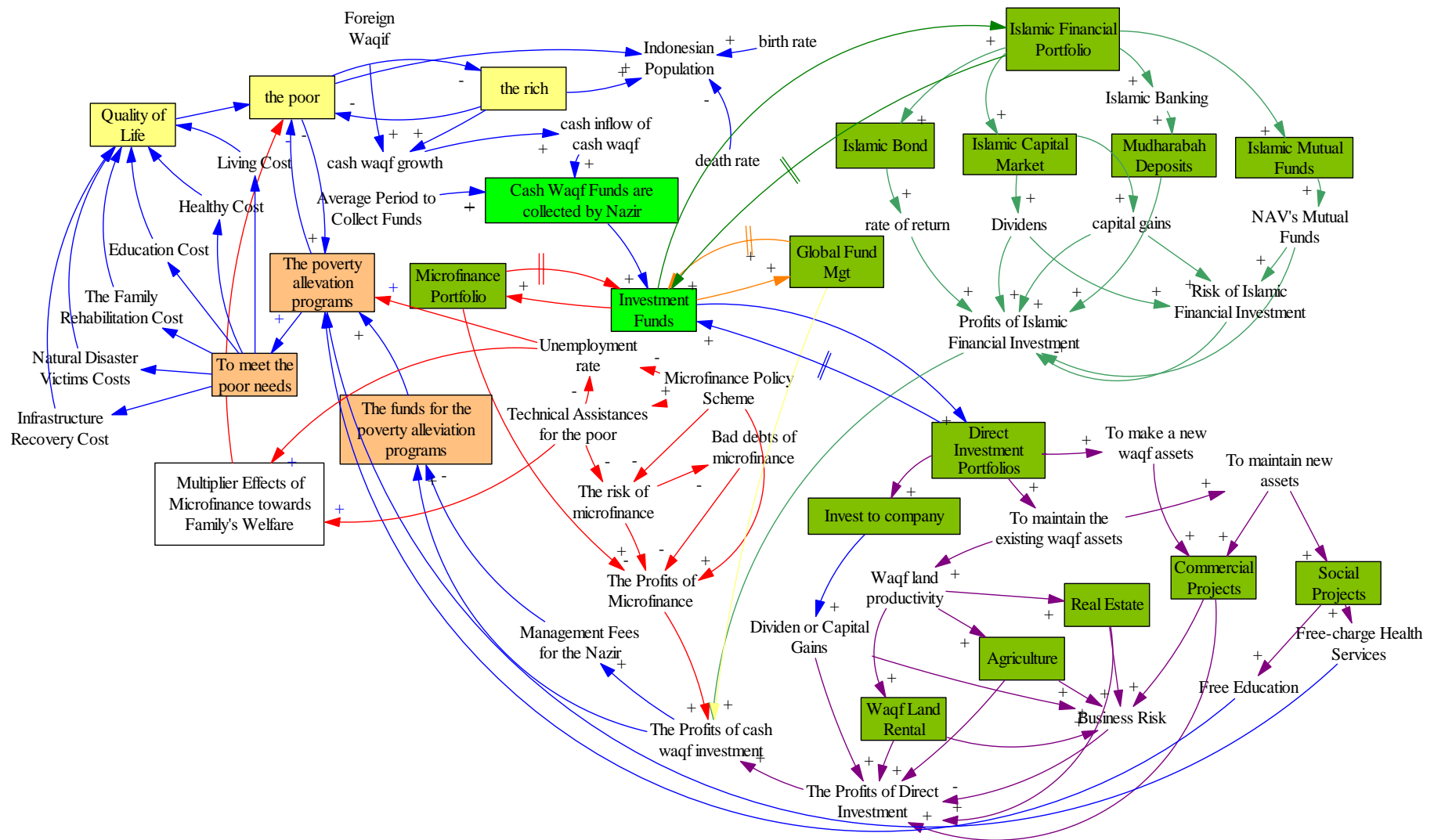


Figure 2. The Interrelationship Among Variables in the General System



assumption basis of amount of fund could be gathered by cash waqf management institution.

It was then assumed that the cash waqf institution could obtain 20 millions Rupiah a day in form of cash waqf from various components of Indonesian people. The study also assumed that the gathered fund would grow 25% annually and it would be invested in Islamic financial products with profit sharing- based various rate of return.

Using the above assumption and data supplied by Biro Pusat Statistik (*National Beaurau for Statistics*), BKKBN (*National Coordinating Agency for Family Planning*) and syariah financial institution in Indonesia, the computer-based data process resulted. Such an amount of fund is expected to be available for the poverty alleviation efforts in Indonesia, especially through microfinance distribution program. If this plan can be implemented smoothly and if those assisted micro enterprises can get well run maximum of 8 years after being financed, it will take approximately 12500 days (35 years) to eliminate poverty and 22400 days (63 years) to increase quality of live for Indonesian population. (see figure 5a-b) Poor people, in this study, are those with very low quality of life. In other words, poor people are not only those who cannot feed once a day, but also those who cannot afford proper health and education services.

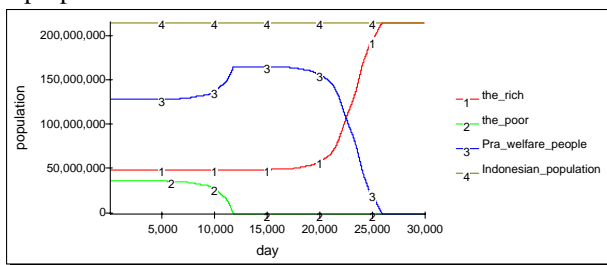


Figure 5a. The Simulation Result (based on Rp 20 million a day)

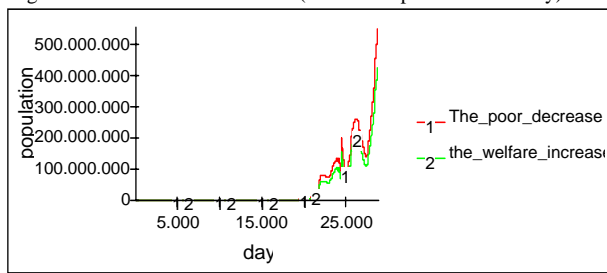


Figure 5b. The Simulation Result (based on Rp 20 million a day)

Based on the study result above and various scenarios proposed, if the gathered fund through cash waqf certificate increase i.e. Rp 50 million in a day , it will take approximately 11000 days (30 years) to eliminate poverty and 21000 days (57 years) to increase quality of live for Indonesian population. (see figure 6a)

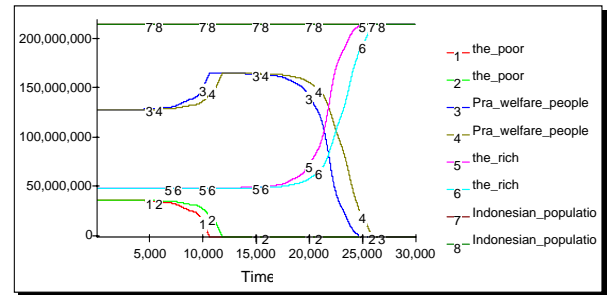


Figure 6a. Simulation Result (based on Rp 50 million in a day compare with Rp 20 million in a day)

10. Conclusions

This work is an attempt to provide Board of Indonesian Waqf and policy makers in Indonesia with a “microworld” in which they can experiment with their policy options, prior to adoption. This helps them test their mental models regarding the solutions they see for the problems associated with portfolio of Islamic endowment funds investment management. The model could be used a basis for other cycle model of donation funds. We would expect that expanding our model to include all players in the endowment funds and donation funds such as Zakat, infaq, shadaqah etc. and linking it with a macroeconomic model, would probably reinforce the cyclical behaviour.

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