

- ♠ DASFLY
- **#** www.aisdaq.com www.dasfly.com
  - Reconstructing the World

## **Thesis**

An Innovative Solution for Debt Trap and booming the economy of the developing country by Advanced AI and Quantum Financial Technology

> Qi Zhang zhangqi@alum.mit.edu

I are writing the thesis to fix the debt trap and promote economy for developing countries through cutting-edge Financial technology and innovate economic and business models Based AI and Quantum.

In 2022 I went to Africa and passion for my project called AiAfrica.info which try to power the infrastructure of Africa by AI driven technology including power the Inga Dam and the grid which connect the Dam with The developing country. But I found All Africa countries are passion for the infrastructure and new Energy except the oil and raw material but most of them are in the debt trap. Also they are struggling for paying off the debt.

Many developing countries of Africa and Latin-Middle America strongly relies on the debt from the IMF, World Bank, or other developed countries, Some of them the Debt is over 80% of GDP. it would encounter the issue of falling into a debt trap, where the interest payments surpass and eat the GDP allocations for health and education.

The issue of mounting debts surpassing GDP and tarnishing the credit of developing countries has gained significant attention in the global media.

As Bloomberg reported Gross debt of The South Africa is set to exceed 6 trillion rand by March 2026, meanwhile According to the "The South Africa's energy transition Plan" released in Oct 2022, The South Africa government plans to invest US\$46.5 billion to kick-start the transition from coal to renewable energy. It is five times the \$8.5 billion western nations have pledged to the project over the next three to five years while the whole pan needs \$84 billion over the next five years.



- ♠ DASFLY
- www.aisdaq.com www.dasfly.com
- **Neconstructing the World**

However, a significant financing gap remains there even Africa Bank and World Bank experts suggest some optional financing solutions that are traditional and unusual, there is still too much uncertainty, and it is easy to fall into the debt trap deeper and deeper.

So it is very important to fix the debt trap and find a balance between Infrastructure and debt.

Also It is need to find a solution to help the government to gain profit quickly and Finally, work together to finance world-level & large-scale Infrastructure projects and Advanced Science that are powering the world but are experiencing a funding shortfall. After one year research and analysis I figure out that the cutting-edge Finance Technology or build a financial center will be the best solution for it.

The reason for starting with the fin-tech and center is as follows:

While debt, financial aid, or loans from the World Bank and developed countries can be helpful to build the. Infrastructure projects to support the economy projects funded by debt often need help to generate profits, making it challenging to repay the debt. The construction and return periods are often too long, resulting in the debt and interest growing more prominent while the credit deteriorates due to delayed repayments.

The Fin-Tech can hedge profits, risks, and credit using advanced quantum technology to address these challenges. It will be much more stable and reliable and profitable than traditional industries.

Here is the proposed solution:

1 Hedge profits by industries: Balance profitable industries with long-term or non-profitable industries.

2 Hedge risks by time: Offset short-term risks with long-term opportunities.



- ♠ DASFLY
- **#** www.aisdaq.com www.dasfly.com
- **The Reconstructing the World**

3 Hedge credit: Establish and rapidly build short-term credits to form a long-term credit foundation.

The solution involves hedging the financial industry with the new energy industry and infrastructure. By hedging short-term financial investments with long-term financial investments, The developing country can balance the debt and the infrastructure like new energy and grid, ultimately positioning itself as taking full advantage of debt and keeping on good credit.

In the United States, the financial industry is as developed as the IT industry, and the two sectors mutually promote each other. Over the past decade, tech-quant financial companies with expertise in mathematics and computer skills have outperformed traditional long-term investment companies.

For instance, Jim Simons, an MIT alumnus, founded Renaissance's Medallion fund, which achieved an average annual return of 39% from 1988 to 2018. Warren Buffett's Berkshire Hathaway delivered a 21% annual return from 1965 to 2018, while Ray Dalio's Pure Alpha fund achieved a 12% return from 1991 to 2018.

What is the average return of the U.S. stock market? The answer accepted as an undeniable truth among investors is that the average annual return is around 10%. The annualized return of the most followed U.S. large-cap equity index between Jan 1st, 1920 and Dec 31st, 2021 is 10.63% (dividends included). However, it is important to note that very few public companies have survived for over 100 years, with many going out of business or being acquired by competitors. In fact, the single most frequent outcome for individual common stocks over their lifetimes is a loss of 100%.

Only 4% of public companies in the U.S. have generated all the returns of the entire stock market, while the remaining 96% either provided negative results or maintained their original values.



- **♠** DASFLY
- Reconstructing the World

Shockingly, just 0.36% of all companies generated over 50% of all stock market returns between 1926 and 2016.

The highest 5-year total returns in the U.S. stock market:

Etsy (56.4%), Square (47.8%), PayPal (39.7%), Amazon (38.7%), and Netflix (35.9%).

All of them are IT companies.

According to a report by Statista, the average annual investment return of selected sovereign wealth funds (SWFs) worldwide was 7% in 2022. However, SWF returns can vary significantly yearly, with a negative average return of 2.2% in 2020. From 2015 to 2022, the average return of the selected 10 SWFs was 6.88%.

By implementing the proposed solution and leveraging advanced technology, The developing country can hedge financial risks, generate profits, and rebuild its credit. This will pave the way for the country's successful realization of the new energy system, infrastructure, and economic growth.

|         | NZ Super (New Zealand) | Future Fund (Australia) | NBIM (Norway) | CIC* (China) | Alaska PFC (US - AK) | KIC* (South Korea) | Temasek (Singapore) | GIC (Singapore) | HKMA EF (HK - China) | ADIA* (UAE - AD) |         |
|---------|------------------------|-------------------------|---------------|--------------|----------------------|--------------------|---------------------|-----------------|----------------------|------------------|---------|
| 2015    | 14.60                  | 15.40                   | 2.70          | -3           | 4.90                 | -3                 | 19                  | 6.90            | -0.60                | -6.80            | in %    |
| 2016    | 1.90                   | 4.80                    | 6.90          | 6.20         | 1                    | 4.40               | -9                  | 9.20            | 2                    | 2.30             | in %    |
| 2017    | 20.70                  | 8.70                    | 13.70         | 17.60        | 12.60                | 16.40              | 13                  | -8.80           | 7.40                 | 18.80            | in %    |
| 2018    | 12.40                  | 9.30                    | -6.10         | -2.40        | 10.70                | -3.70              | 12                  | 11.20           | 0.30                 | -10.30           | in %    |
| 2019    | 7                      | 11.50                   | 20            | 17.40        | 6.30                 | 15.40              | 1.50                | 7.50            | 6.60                 | -1.60            | in %    |
| 2020    | 1.70                   | -0.90                   | 10.90         | 14.10        | 2                    | 13.70              | -2.30               | 1.90            | 5.30                 | 20.90            | in %    |
| 2021    | 29.60                  | 22.20                   | 14.50         |              | 29.70                |                    | 24.50               | 37.50           | 3.60                 |                  | in %    |
| 2022    | -6.99                  | -3.70                   | -14.10        |              | -1.32                | -14.40             | 5.81                | 7               | -4.50                |                  | in %    |
|         | 80.91                  | 67.30                   | 48.50         | 50           | 65.88                | 29                 | 65                  | 72.40           | 20.10                | 23.30            |         |
| years   | 8.00                   | 8.00                    | 8.00          | 6            | 8.00                 | 7                  | 8.00                | 8.00            | 8.00                 | 6.00             |         |
| average | 10.11375               | 8.4125                  | 6.0625        | 8.31666667   | 8.235                | 4.114285714        | 8.06375             | 9.05            | 2.5125               | 3.883333333      | 68.7642 |
| funds   |                        |                         |               |              |                      |                    |                     |                 |                      |                  | -\-1    |
|         |                        |                         |               |              |                      |                    |                     |                 |                      |                  | 6 87641 |



CIC\* (China)

Temasek (Singapore)

ADIA\* (UAE - AD)

Between 2010 and 2022, the return rate on crude oil investments jumped between losses of over 45 percent and gains of 55 percent. **The average return rate is 4.28%** 

→ Alaska PFC (US - AK)

GIC (Singapore)

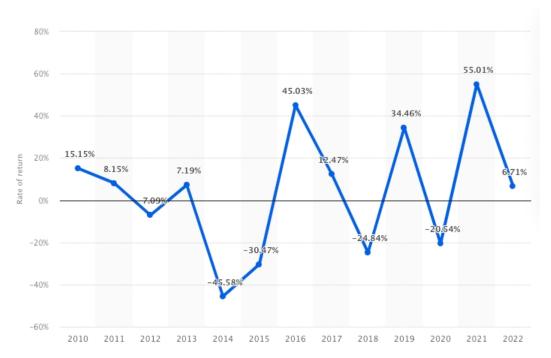
KIC\* (South Korea)

- HKMA EF (HK - China)





- DASFLY
- www.aisdaq.com www.dasfly.com
- Reconstructing the World



Based on the data provided, it can be concluded that the most profitable companies are IT-based financial companies and IT companies, which yield higher returns than renowned investors like Warren Buffett and sovereign wealth funds. However, it is essential to note that this data is specific to the USA, the world's most powerful country. As a developing country, It cannot replicate the USA's trillion-dollar investments in various industries and scientific endeavors to achieve similar success. Therefore, The developing country must strategically prioritize the quickest and most effective initiatives to avoid long-term unprofitable ventures and falling into a debt trap. So, the fin-tech based on AI and Quantum may be the best choice for The developing country instead of trying everything the USA has already done in the last 3 hundred years.

To this end, I propose that the developing country establish an IT-based financial industry or center. By doing so, the finance industry can generate profits and credit, empowering The developing country. With the support of our Aisdaq platform and our IT and quantum technology team, The developing country can establish its own new generation Sovereign Wealth Fund. This fund will enable The developing country to leverage and hedge long-term debt and aid from the international community while rapidly generating profits through our IT technology and financial operations support. These profits will be sufficient to cover interest payments on the debt and



- ♠ DASFLY
- Reconstructing the World

build a strong credit record, which will be taken seriously by international organizations such as the IMF and World Bank.

An additional advantage is the remarkably short return term. With monthly progress, The developing country can witness tangible improvements and showcase the success on the global stage.

Due to its excellent credit standing, by successfully hedging the risk of long-term debt and infrastructure investments, The developing country will attract more organizations willing to provide more extensive and longer-term funds. Once The developing country succeeds in this initial step, other private and profitable sectors, such as the oil industry, will gain confidence to invest. This will further increase capital and investment in The developing country, allowing for the injection of funds into various sectors. Ultimately, this will establish The developing country as financial industry powered new economic entity with high performance infrastructure.

By harnessing the power of the financial technology, The developing country has the potential to. achieve not only the goals outlined by the plan but also jump out of debt.

Implementing our solution will attract more capital into The developing country, fueling the development of its industries and the overall economy. Once activated, the engine of the Finance Center will lead to a significant economic boom in The developing country, establishing its advantage of modern industry.

By successfully attracting investments and effectively utilizing financial resources, The developing country can bridge the financing gap and ensure the successful execution of the new energy transition and infrastructure Plan . This will positively impact various sectors, including infrastructure development, social welfare, education, healthcare, and economic growth.



- ♠ DASFLY
- **The Reconstructing the World**

In conclusion, the proposed solution of leveraging the power of the financial technology presents a promising method to address the financing gap in the Plan Energy Transition and infrastructure. By attracting more capital and activating the engine of Finance Center, The developing country can achieve its ambitious goals and experience significant economic growth.

I am looking forward to make a positive contribution to The developing country and its people based on this thesis and proposal.

| The Rates<br>Milestone | Name                  | Rates  |
|------------------------|-----------------------|--------|
| 1                      | IMF interest Rate     | 4.159% |
| 2                      | crude oil investments | 4.28%  |
| 3                      | sovereign wealth      | 6.88%  |
|                        | funds                 |        |
| 4                      | U.S. stock market     | 10%    |
| 5                      | Pure Alpha            | 12%    |
| 6                      | Warrant Buffett       | 21%    |
| 7                      | Medallion of          | 39%    |
|                        | Renaissance           |        |





- **♠** DASFLY
- Reconstructing the World

Qi Zhang

27th Sep,2023

@Cambridge, Massachusetts, United States

Edited at 27<sup>th</sup> Nov, 2023

@Cambridge, Massachusetts, United States

## Qí Zhang



