

Structured finance, a key financing instrument in the development strategy of our ports

M El Hadj Mbacké FALL , PCA
Invictus Capital & Finance & KF TITRISATION

Management and Intermediation Company



CTCF Management Company



ABSTRACT

Increased economic activity in sub-Saharan Africa (SSA) has given rise to increased demand for port development.

Given the often scarce availability of national public funding, port institutional reform programmes have been implemented to pave the way for the inclusion of external port investors.

Notwithstanding this fact, some sub-Saharan African Governments remain institutionally locked into the notion that state-owned enterprises remain an appropriate vehicle for port terminal operations.

This, despite the fact that terminal operational concessions globally and within the continent of Africa are increasingly being managed by global terminal operators. Given this context, this study aims to evaluate different port valuation and funding strategies.

Two research questions form the core of this research:

what is the financial value of a concession?

What is the most cost advantageous funding strategy?

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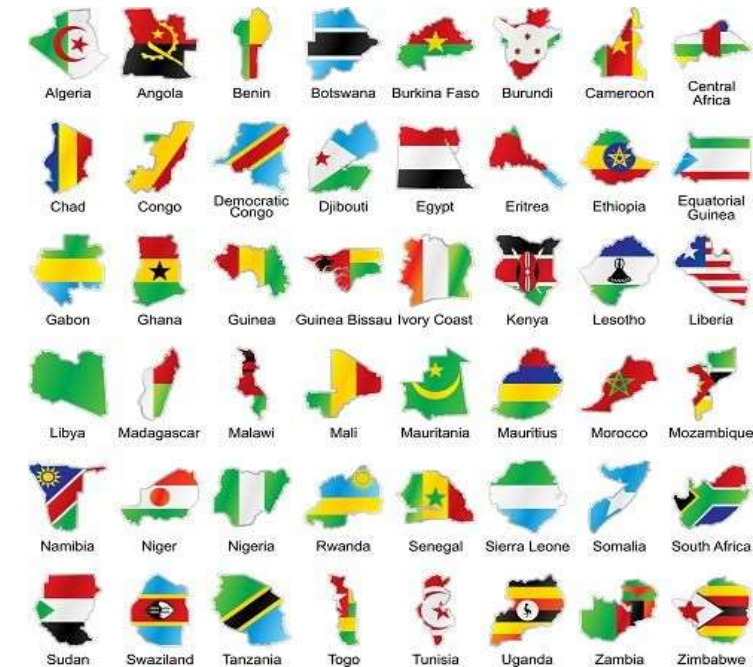


OVERVIEW OF THE AFRICAN CONTINENT



Introduction

Seaports are crucial to the growth of regional economies and international trade. Governments and market players are involved in a wide range of port expansion and reconversion projects that should secure additional port infrastructure capacity to cope with anticipated growth in port demand. Port infrastructure investments typically bear specific characteristics (Musso et al., 2006). The planning, design and development time of port infrastructure projects take a lot of time (typically 5 to 15 years for large port projects). Combined with the long economic life of these structures (50 years or more), this leads to a time lag between costs and revenues, a long payback period and high risks and uncertainty associated with revenues and costs (e.g. cost overruns are common). Furthermore, port infrastructures often represent sunk costs, i.e. lost whenever the investor decides to withdraw from the market. Port infrastructure profitability is partly indirect as port infrastructures act as economic engines for the development of other activities (positive externalities). However, they also generate negative externalities such as environmental costs.





OVERVIEW OF THE AFRICAN CONTINENT



Generally, ports have control over their infrastructure but must compete for funding to improve them. In many parts of the world, a long-standing debate exists over how to fund new seaport infrastructure and development (Cook, 2010 on the situation for US ports). Typical funding options include public-private partnerships (PPPs), public bank loans (e.g. The World Bank), community and regional development funds, private bank loans, equity and initial public offerings (IPOs, Satta et al., 2017). Port infrastructure finance is also a key issue in Africa (Farrell, 2014). There has been a considerable increase in African port developments following the sustained growth in gross domestic product levels on the continent in the past decade. Institutional reforms at the port level were/are often required to widen the funding options available to African ports. While some studies have demonstrated the impact of institutional reform programmes on port efficiencies (e.g. the application of efficiency measures such as production frontier models (Trujillo et al., 2013) and the quantitative application of Malmquist productivity indexes (Cheon et al., 2010)), there is scope to explore the practical implication of port concessioning as it pertains to the financial valuation and funding aspects relating to port terminal concessions. This is particularly interesting in an African context in which some governments remain institutionally locked into the notion that state-owned enterprises remain an appropriate vehicle for port terminal operations. This study analyses and evaluates the implications of different funding strategies associated with the development of a two-berth port terminal in sub-Saharan Africa (SSA) within the specific institutional context whereby government state-owned entities own and operate port infrastructure and superstructure.





PORT INFRASTRUCTURES IN AFRICA



Contextual setting: the sub-Saharan port system and its infrastructure deficit

Geographically, SSA is the area on the continent of Africa south of the Sahara desert. According to IMF's October 2019 global activity economic growth projections, the SSA region's economic growth in pre-COVID-19 times was projected to increase from 3.6% in 2020 to 4.2% in 2024. For South Africa, however, (one of the region's largest economies) the growth outlook remains subdued with growth projections below 2%. This is compared to two-fifths of the region's expected average growth rate which is projected to exceed 5% over the medium term. The World Bank (2020) estimated that the COVID-19 pandemic will cost the SSA region between USD 37 and USD 79bn in output losses in 2020. The newest figures point to an economic contraction from 2.4% in 2019 to between -2.1 and -5.1% in 2020. The COVID-19 pandemic is also affecting the largest economies in the region, i.e. Nigeria, South Africa and Angola with South Africa having the largest number of confirmed cases in the region.



The lack of port and transportation infrastructure in many SSA countries remains one of the primary limiting factors towards the achievement of the region's true growth potential. Underdeveloped, poorly maintained and inadequate port, road and rail infrastructure networks inhibit trade, the flow of goods and the mobility of people. This constrains the true growth potential of the resource-rich region. While the presence of freight transport infrastructure alone does not guarantee economic transformation (other dependencies such as operational efficiencies and effective management are also required), it certainly does provide the basis on which sustainable growth and economic development can thrive. *Ceteris paribus*, increasing port capacity enhances service quality and should, therefore, attract and accommodate more traffic to the port (Xiao et al., 2012; Fraser and Notteboom, 2015a). Port capacity investments, however, are very costly given their capital-intensive nature (Haralambides, 2002) and as such unaffordable to many financially constrained governments in SSA.

A rather recent trend in SSA is the stronger involvement of Chinese state-owned companies and Dubai in port investments.



Notwithstanding the wide variety in investment modes and investors' background and profiles, quite a few port developments in SSA are guided by (terminal) concessions. Under the concession system, the concessionaire obtains the right to use portland, infrastructure and facilities for a limited period of time, in exchange for the obligation to provide port (cargo handling) services (Farrell, 2012). The key features of a private concession are that the basic terminal infrastructure remains in public ownership, while terminal operations are controlled by a separate entity which is at least partly owned by private companies. The operator is given the right to use public assets for a specific period of time and operates with a large degree of commercial freedom (defined in the initial contract). In many but not all cases the operator also has the right (and often the obligation) to invest in the terminal. The adoption of concessions in SSA has necessitated various port institutional reform programmes which became a prerequisite for the inclusion of external investment partners interested in port or port terminal development concessions in the region.



In practice, many SSA ports have adopted some sort of landlord port authority model. Under this model, the landlord port authority typically is a separate entity under public law established by specific legislation with the capacity to conclude contracts, enforce standards and to make rules and regulations applicable within the port area. Port operations (especially cargo-handling) are carried out by private companies (Verhoeven, 2010). Landlord port authorities are challenged to develop effective terminal awarding procedures in view of attracting private terminal operating companies. At the same time, a well-designed concession policy allows port authorities to retain some control on the organisation and structure of the supply side of the port market while optimizing the use of scarce resources (Notteboom, 2007). Theys et al. (2010) reviewed important questions related to the procedures in view of selecting the most appropriate operators for their scarce land and the conditions under which these companies can be given the right to operate the facilities. It is widely recognised that the awarding of port services to private operators has become one of the most important means for landlord port authorities to influence the prosperity of the port community (Pallis et al., 2008).



3. Terminal valuation approaches and funding strategies

To fully appreciate a potential port investment opportunity, interested external investment partners/funders will need to have the assurance of the value of the business prior to determining the affordability of funding for the prospective investment. A robust business valuation is, therefore, necessary to inform the amount of funding required. PPP has been a popular instrument in SSA used by investors to unlock funding required for port infrastructure projects. This section provides an overview of the valuation methods and funding strategies available to concessionaires and outlines the theoretical framework on which this work's financial model is built.

3.1 Business valuations methods

Three main approaches to business valuations can be distinguished, namely:

1. Asset-based;
2. Income-based; and
3. Cash flow-based.



In essence, asset-based valuations estimate a business as being worth the value of its total net assets. There are, however, three common methods of applying the asset-based approach, namely, the book value, net realisable values and replacement value methods

The second approach to entity valuation is income-based. Fundamentally, these methods consider the earning capability/potential of an entity during valuation. The method of price-earnings (P/E) ratios rely on finding listed companies in similar businesses to the company being valued (the target company) and then evaluates the relationship between the share price and earnings to determine the value of the company. The P/E ratio is the price per share divided by the earnings per share and shows the number of years' worth of earnings paid for at the share price. The fundamental disadvantage with this approach is that it is based on speculative external historical market information of listed companies/industries which may not adequately represent the unlisted entity value being evaluated.



The cash flow-based valuation approach typically relies on the discounted cash flow method (DCF). The DCF method essentially applies prospective data using a relatively large number of assumptions related to (for example) future revenue, operational capital and funding costs, as well as general economic variables to determine the value of a business entity. The DCF analysis is a very powerful tool that is not only used to value companies but also to price IPOs and other financial assets. The method is widely used by professionals in investment banks, consultancies and managers around the world for a range of tasks and is even referred to as “the heart of most corporate capital-budgeting systems”



FUNDING

3.2 Funding options

Once the value of the organisation is determined using an appropriate valuation method, the next step is to determine the cost-effectiveness of the funding model to the Port Operator. In their study on port development and investment challenges in Southern Africa, Fraser and Notteboom (2015a) outlined generic sources of port funding (lending at no interest) and financing (lending regarded as an investment at a cost). Financing can be either through debt only, equity-only or a combination of debt and equity. Debt is generally considered a cheap source of finance. The cost of debt is lower than the cost of equity due to the assumed lower risk, lower expected returns and a tax shield/advantage. It is important to note that the cost of equity equals business risk plus financial risk. Business risk is dependent on the nature of the business. Financial risk is the risk that relates to the borrowing of long-term/short-term loans. Financial gearing (taking on debt finance) improves the return to shareholders during good economic periods but may lower the return when the economy is struggling (Skae et al., 2012).

The traditional theory takes the view that debt finance is acceptable and will lower the overall company cost of finance as long as the company does not take on too much debt. The second theory, the Miller and Modigliani theory state that debt finance brings financial risk such that the cost of equity will increase (Skae et al., 2012, pp. 79–83). Investors, however, would expect a higher return on equity given high debt in the entity to offset the risk carrying liabilities. While debt funding retains ownership rights by the entity owners and may provide a tax benefit through the allowance of finance costs (as a business expense deduction), the borrowing comes with the financial burden to refund the loan capital within the agreed terms. Importantly also, finance costs/interest is also capitalised to the procured assets, which increases the asset base value. From a financial risk perspective, any breaches of loan covenants may have consequences such as an increase in finance costs, order payback or order liquidation. In addition, loans may require fixed monthly payments that may not match with the unpredictable business cash flows, thus placing the high financial risk on the company and its owners. Finally, loan repayments take funds out of the company, reducing the funds needed to finance growth.



As mentioned in the introduction, there are various funding sources for major developments such as ports. Some may be provided by the Development Finance Institutions (DFIs) in the region or other government organisations in the form of loans or grants.

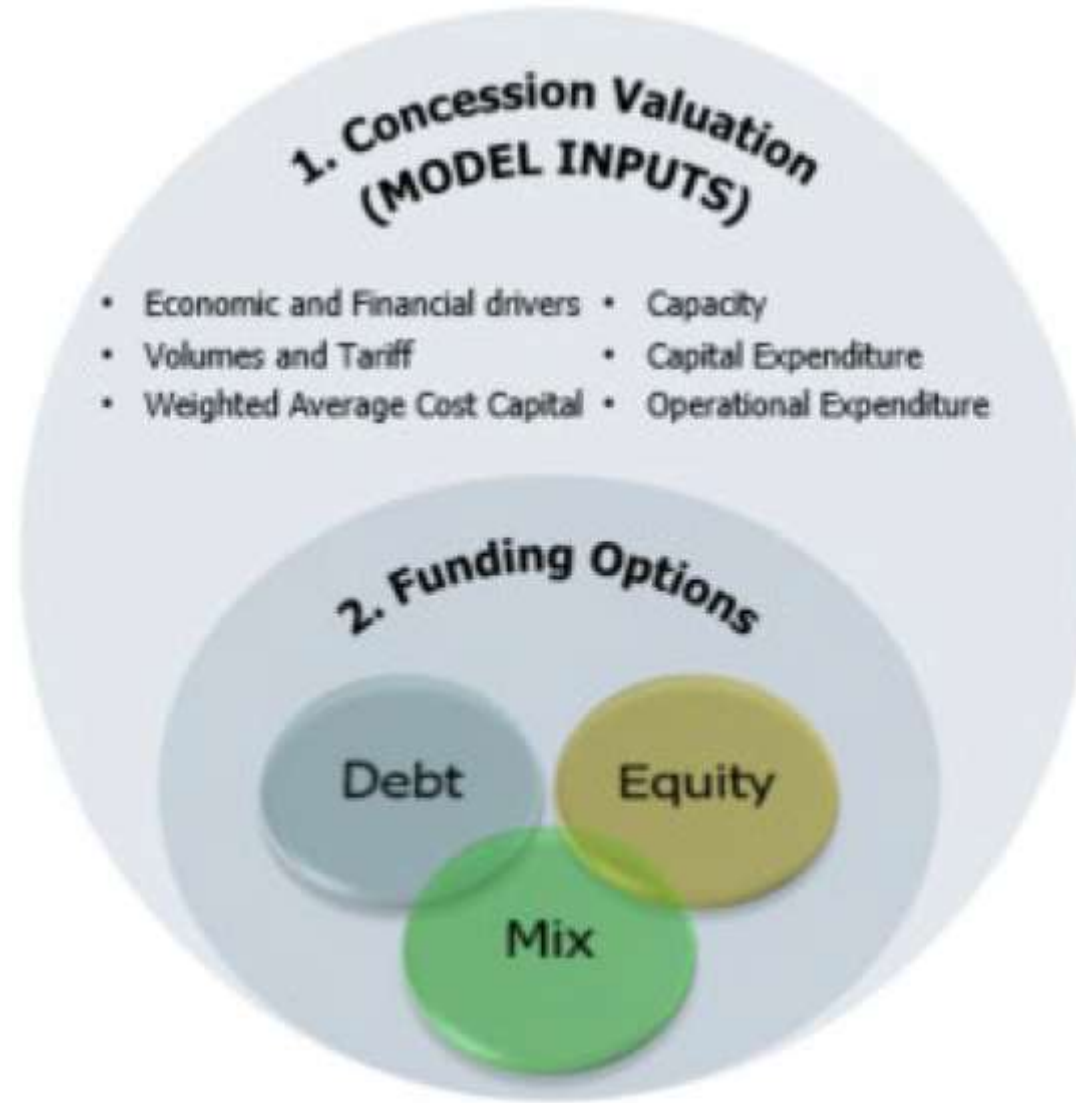
More specifically, port operator concessionaires have the following main funding and finance options: development loan, equity and private or public grant funding.

Development loans are available from African DFIs. Borrowing in Africa and in other emerging markets is generally assessed as riskier than that of developed markets due to the greater perceived financial and business risks. Notwithstanding this fact, each potential investment is assessed and reviewed based on merit. The main advantage of a loan/debt is that the investor's ownership and/or dividends are not diluted. Conversely, the disadvantage is that repayments have strict contractual obligatory requirements/terms irrespective of how the business is performing financially.

In the case of equity, the investor responding to the port operator concession may from its reserves provide the capital to start up the operation. Equity is normally raised from the public issue of shares/securities. The listing of securities is regulated and at a minimum will require the sharing of voting rights effectively permanently selling ownership. With concessions, it is not usually the intention of the landlord to give ownership to the public. In addition, given this port terminal concession scenario, a given concession with a limited lifespan (years) may not attract the optimal number of investors to raise the funds required via a listed securities financing instrument.

Another available option consists of public or private grant funding. In a developing regional context, a grant can be a more attainable funding mechanism if the investment (or in this case) the concession agreement meets the generally strict qualification criteria stipulated by the grant. The main advantages of a grant are that no repayment is required and that there is no dilution of ownership for the potential investor. The availability of grants, however, is extremely constrained and the application process is both onerous and time-consuming. Grants often come with restrictions on the use of funds and in some cases require the investor to match the value of the grant with alternatively sourced financed funding (Grant, 2010).

There is an important link between port institutional arrangements and funding options available for port development. State-owned and operated ports with a 100% government ownership interest mandate are consequently constrained to debt funding options. Similar institutional arrangements, which, however, permit the introduction of private sector participation and dilute ownership provide broader funding options and introduce new risks and rewards for port development and future operations.





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M. El Hadji Mbacké FALL
Chairman of the Board of Directors of Invictus Capital &
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