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BASIS FOR FORMULATING AN EXTERNAL DEPENDENCY INDEX. THE MOZAMBIQUE CASE

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João Mosca, Yara Nova and Rabia Aiuba[1]

1. INTRODUCTION

The objective of this paper is to propose a way of estimating the extent to which development/growth, macroeconomic stability, and levels of vulnerability to external shocks (conflicts, economic crises, pandemics, etc.) are related to/influenced by external factors and can generate external dependency. As this is an economic indicator, the variables selected for the External Dependency Index (IDEx) are fundamentally economic and financial.

There are several synthetic (or aggregate) indices for measuring the state and level of development of a society, such as the Human Development Index, the Multidimensional Poverty Index, the Gini Inequality Index (generally income), the Global Competitiveness Index (GCI), among others. These indices are the result of a combination of indicators/variables, which are considered to have the greatest determinism and best characterise a given social and economic dimension that is to be assessed and compared, either at different times within the same reality, or between realities (usually countries), regions, and continents, among others.

In IDEx, each sub-index results from the combination of variables (which can be called sub-indices), which are assigned weights (generally measured on a given score scale) according to their degree of influence (calculated, estimated, or presumed) on the variable to be measured/assessed (the index). Parameters are defined for each variable, considering qualitative and/or quantified situations/realities. The sum of the sub-index scores results in a score to be analysed. The scoring scales (better or worse) for each sub-index and variable vary: for example, in the corruption perception index, the closer to zero, the less corruption, in the inequality index (GINI index), the closer to zero, the less inequality and in the Human Development Index (HDI), the closer to zero, the worse. In the case of the proposed IDEx, the closer to zero the better (non-dependent economy) and the worse the closer to 100 (very dependent economy).

The authors consider that there is no index in the specialised literature to determine/measure the degree of external economic dependency of an economy, so they intend to present and suggest the index, which has been given the abbreviation IDEx.

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This essay comprises five sections: In addition to the introduction, the second section provides a brief theoretical framework; the third section presents and justifies the scales of the sub-indices and the variables of each sub-index that make up the IDEx and assigns reference parameters for each one. The reference parameters are considered to be the values or ranges of values that a sub-index and variable must present in order to measure its contribution to the IDEx.

In section four, an ("experimental") test is made of the application of IDEx and its sub-indices and variables, considering the year 2021 as an example and the evolution of IDEx and each sub-index for the years between 2015 and 2021 in the Mozambican economy. Finally, a summary and some considerations are made.

The secondary data sources (reports and databases) for this essay were obtained from national and international institutions, namely:

- Finance sub-index: World Bank (WB), Bank of Mozambique and Ministry of Economy and Finance (MEF);
- Trade Balance sub-index: Bank of Mozambique;
- General State Budget sub-index: Ministry of Economy and Finance (MEF) - National Budget Directorate (NBD);
- Economic Vulnerability Sub-index: National Statistics Institute (INE) and United Nations;
- Food Security sub-index: Food and Agriculture Organisation of the United Nations (FAO), Technical Secretariat for Food Security and Nutrition (SETSAN), Ministry of the Sea, Inland Waters and Fisheries (MMAIP) and World Bank (WB).

2. BRIEF THEORETICAL FRAMEWORK

Given the characteristics and scope of IDEx's analysis, the theoretical framework will be based on economic theories of development, with a greater emphasis on dependency theory. However, the authors understand its relevance in the context of most African countries, specifically in the case of Mozambique, where the historical, social, political, and economic dynamics and processes have aspects that can be understood using dependency theory.

Dependency theory focuses on the role of existing relations (political and economic) between nations and their influence on the process of economic growth and development[2].

Dependency and interdependence are concepts in economic literature, especially in the areas of development and underdevelopment[3]. It was within the framework of development issues that the first manifestations of dependency theorisation emerged around 1950. In general, for the proponents of this theory, "natural resources such as minerals, agricultural products and other raw materials flow from peripheral countries, namely poor countries, also known as underdeveloped or developing countries, to a group of rich countries, known as central or developed countries. The way in which these two groups of countries are integrated into the world system perpetuates dependency"[4], to the advantage of the rich countries and to the disadvantage

[2] Shrum, W. (2001). *Science and Development*. International Encyclopedia of the Social & Behavioral Sciences, 13607–13610. doi:10.1016/b0-08-043076-7/03165-x

[3] The most prominent authors of this current of thought include Amartya Sen, Arthur Lewis, Celso Furtado, Gunder Frank, Gunnar Myrdal, Samir Amin, Paul Baran, Paul Sweezy, Ragnar Wilhelm Nurkse, Raul Prebisch, Roseinstein-Rodan, Walt Rostow.

[4] Samir Amin and development discourse | Political Economy | thenews.com.pk

of the poor countries. It is based on this principle that dependency theorists try to explain the state of underdevelopment of many countries, examining the patterns of interactions between nations and arguing that inequality between nations is an intrinsic part of these interactions.[5].

There are two approaches to dependency theory, namely: (1) Marxist dependency theory (MDT), addressed mainly by Paul Baran, Paul Sweezy and Gunder Frank; and (2) structuralist dependency theory, developed by Raul Prebisch and Celso Furtado.

Although the Marxist theory of dependency presented similar principles to the structuralist theory of the Economic Commission for Latin America and the Caribbean (ECLAC) to explain the obstacles to development in Latin America, the theoretical foundation of the Marxist theory was centred on Karl Marx's theory of value and was based on the discussions at the time about unequal exchange. The perspective was essentially based on an analysis of the processes of subordinate integration of Latin America into the world capitalist economy, where there was an unequal relationship of control of the markets for factors of production by the central countries, which resulted in a systematic transfer of income from the periphery to the centre. As economic and social advances occurred (in the central countries), this unequal relationship of subordination (of the peripheral countries) intensified, perpetuating dependency in the periphery-centre direction (Féliz, 2021; Duarte, 2021)[6].

In this case, and considering the objective of this text, the authors have opted, fundamentally, for references to the structuralist and dependency theories of the ECLAC school[7], where Raul Prebish is one of the most prominent researchers. "For this school of thought, underdeveloped or developing economies would present structural obstacles specific to their historical conditions associated, among other factors, with the type of insertion in the international economic system. Some of these obstacles - primary-export specialisation; the deterioration of the terms of trade; the tendency towards a balance of payments imbalance; the vast contingent of underemployed labour in subsistence sectors; a great heterogeneity between productive and social sectors - could not be overcome without the promotion of structural transformations, both in the sense of a profound change in productive, commercial and scientific-technological terms, and in the configuration of macroeconomic instruments that would enable and enhance the full human, social and economic development of these regions[8]".

Celso Furtado, as an economic historian, has mainly studied the case of Brazilian and refers to the need for a historical framework in the following terms: "... the problem of economic development is an aspect of the general problem of social change in our society, and cannot be fully understood without giving it a historical content[9]".

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[5] Dependency Theory of Development, 6th Semester, by Prof. Pranim Rai.pdf (kharagpurcollege.ac.in).

[6] Féliz, M. (2021). Notes For a Discussion on Unequal Exchange and the Marxist Theory of *Dependency*. Historical Materialism. En Memoria Académica. Avalable in: https://www.memoria.fahce.unlp.edu.ar/art_revistas/pr.15906/pr.15906.pdf.
Duarte, P., H. E. (2021). Teoria marxista da dependência: a contribuição teórica de Ruy Mauro Marini Marxist dependency theory: the theoretical contribution by Ruy Mauro Marini. SciElo. DOI: 10.1590/0103-6351/5778.

[7] Economic Commission for Latin America and the Caribbean (ECLAC).

[8] Lima, Rodrigo Fernandes de (2012). *O Pensamento Estruturalista e o Desenvolvimento Econômico Brasileiro Recente*. Universidade Federal do Rio de Janeiro. Instituto de Economia.

[9] Furtado, C. (1969). "Formação de capital e desenvolvimento econômico". Em: AGARWALA, A. N.; SINGH, S. P. (Org.). *A economia do subdesenvolvimento*. Rio de Janeiro: Forense.
Furtado, C. (1964). *Dialética do Desenvolvimento*, Rio de Janeiro: Edições Fundo de Cultura.

"The ̀centre/periphery theory' states that the structure of underdeveloped economies determines a specific pattern of international insertion as the periphery of world capitalism - via the international division of labour. In this context, the underdeveloped economic structure is a producer of goods and services with a weak external demand; with regard to the internal market, it is an importer of goods/services with a rapidly expanding domestic demand, in addition to being an assimilator of consumption patterns and technologies that are suitable for the developed centre, but often not very suitable or completely unsuitable for the availability of resources and the level of income in the periphery.

Secondly, it resulted in the idea that the social and economic structure of the Latin American periphery determines a particular way of industrialising, introducing and spreading technical progress and growth, as well as a peculiar way of absorbing the workforce and distributing income. In other words, in their most decisive characteristics, the processes of growth and economic development, in all their key variables, would be different from what occurs in central countries.

The conditions underlying dependency on any country are as follows: (1) exporting companies are mostly owned by foreigners; (2) exports are dominated by one or a few commodities; (3) exports dominate the economy, and imports are higher in relation to GDP; and (4) mineral and oil products are produced under conditions of vertical integration[10].

The differences between developed and underdeveloped economic structures lie in the fact that the latter have a poorly diversified and technologically heterogeneous structure, in contrast to the situation observed in the former. The central countries have a more diversified production apparatus, homogeneous productivity throughout the production chain, in addition to having improved mechanisms for technological creation and diffusion and for the social transmission of its products, which are non-existent or barely functional for promoting development in the periphery[11]".

Hans Singer and Raul Prebisch, when analysing the terms of trade of underdeveloped countries in relation to developed countries, found that there was a deterioration over time, whereby underdeveloped countries bought fewer and fewer manufactured products from developed countries in exchange for a certain amount of their material exports. This resulted in the well-known Singer-Prebisch thesis or hypothesis[12]. The pattern of trade in the early days of market development or trade can also partly explain a country's dependency levels.

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[10] Sonntag, H. R. (2001). *Dependency Theory*. International Encyclopedia of the Social & Behavioral Sciences, 3501–3505. doi:10.1016/b0-08-043076-7/01890-8.

[11] Bielschowsky, R. (2010). *Evolución de las ideas de la CEPAL*. Revista de La CEPL, número extraordinário.

[12] "This hypothesis states that there is a secular tendency for the terms of trade to deteriorate in favour of industrialised goods. Traditionally, there have been four factors responsible for this phenomenon: (1) the existence of market power in the industrial sector in contrast to competitive markets in the commodities sector; (2) pressure resulting from the difference in income elasticities of demand for manufactured and primary products; (3) the inequitable distribution of human capital and knowledge; and (4) asymmetries in the labour market between the centre and the periphery." Dávila-Fernández, M. & Amado, A. (2015). Entre a lei de Thirlwall e a hipótese Prebisch-Singer: uma avaliação da dinâmica dos termos de troca em um modelo de crescimento com restrição no Balanço de Pagamentos. Economia e Sociedade, Campinas, v. 24, n. 1 (53), p. 87-119

According to ECLAC, the tendency for the terms of trade to deteriorate, following the industrialisation of the central countries in the 1870s, implied a transfer of income from the countries on the periphery of the capitalist system towards the centre of the world economy[13]". In other words, the flows of capital and goods are positive for the developed countries, which translates, according to the new approaches and concepts, into extractivism of different types (commodities, natural resources, the environment, capital, labour, etc.), supported by the deepening of the extroversion and financialization of economies, reproducing the characteristics of underdevelopment.

> "The deterioration in the terms of trade, in turn, stemmed from the fact that the countries of the industrialised centre had a well-structured industrial sector and a dynamic demand for labour, which led to a tendency for wages to rise, as well as encouraging technological innovations that replace the labour factor. However, the introduction of innovations was not accompanied by a reduction in wages - explained by the greater union organisation of industrial workers in the central countries - which would ultimately explain the deterioration in the terms of trade in favour of the prices of industrial products imported by the periphery, to the detriment of the prices of products exported by that region[14]".

An economy is dependent when it is related to other countries, regions, or the world, in a situation of subordination or disadvantage, not only in terms of political and economic decision-making, but also in terms of resources (human, financial and technological) for implementing a development plan/programme/strategy prepared with different levels of sovereignty.

Structuralists emphasise the development of technological innovation as a means of reconfiguring the economic structure, as well as the role of the entrepreneur (and innovation) developed by several authors, namely Joseph Schumpeter[15], who stated that "the entrepreneur is the one who destroys the existing economic order by introducing new products and services, by creating new forms of organisation or by exploiting new material resources", which he called creative destruction, and considered innovation as the engine of growth. In short, it was what he called "innovation and change occur through a spiral of mutual attraction (clusters), where a successful entrepreneur attracts another entrepreneur and thus the effects are multiplied".

Innovation starts with research, followed by the development of technologies and then innovation by entrepreneurs and public managers. For this reason, there are many R&D (Research and Development) programmes.[16].

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[13] Carcanholo, M. (2010) Neoconservadorismo com roupagem alternativa: a Nova Cepal dentro do Consenso de Washington. In: CASTELO, R (2010) (Org.): *Encruzilhadas da América Latina no século XXI*. Editora Pão e Rosas, RJ.

[14] Lima. Ibidem.

[15] See one of the main works: Schumpeter, Joseph A. (2021). The Theory of Economic Development. Routledge

[16] "R&D activities are those which focus on the development of a new product, process or service, or the introduction of technical improvements, and which require the presence of an appreciable element of novelty and the resolution of scientific and/or technological uncertainty" ...

... "These are long-term and/or future-orientated activities related to science or technology, which use techniques similar to the scientific method without predetermined results, but with general forecasts of some commercial benefit.

To summarise, there are several theories for interpreting underdevelopment and development, with dependency and its reproduction mechanisms being an important component of this debate. Most of these approaches have the following transversal theoretical underpinnings:

- Productive structures, technology, related efficiency and the international division of labour, based on labour productivity and materialised by unequal external economic relations, asymmetrical capital flows, the structure and nature of foreign trade and exchange relations with an unfavourable trend in the prices of primary goods produced in the less developed [17] economies, with long-term trends of worsening trade balance deficits and external debt.
- Capital flows, on the one hand, to the less developed countries, especially foreign investment, donations and loans and, on the other hand, the export of profits, the repayment of loans, the transfer of capital gains, taking into account imported and exported goods[18]. This reality can lead to an increase in foreign debt and, in extreme cases, default on international financial commitments and a poor rating by the rating agencies, which influences the image, especially of foreign investors.
- External cooperation and donations, especially those intended for direct support of the state budget, put a strain on government programmes, especially public investment in productive infrastructure and services, the modernisation and qualification of the administrative apparatus and, in some cases, the worsening of public debt and the high and growing budget deficit.
- Vulnerability measures whether the economy, faced with external shocks and therefore not managed by the national authorities, has the capacity to maintain growth rates and macroeconomic stability, employment, poverty levels and political and social stability on the basis of internal resources.

"The results of these activities are process improvement, market improvement, development of new or existing techniques or technologies, company growth through product and/or service extension in the same area or in new economic areas". https://reward.pt/o-que-sao-atividades-de-investigacao-e-desenvolvimento-id/.

[17] Emmanuel, Arghiri (1972), *Imperialismo y comercio internacional*, Siglo XXI de España Editores, S.A.

[18] According to the report published by a coalition of British and African organisations on the movement of financial flows, the world's poorest continent lost 203 billion dollars due to factors such as tax evasion, debt repayment and resource extraction. Despite the loans, remittances and aid received, totalling 161.6 billion dollars, the annual net financial deficit has exceeded 40 billion dollars. Development Finance International. https://development-finance.org/pt/noticias/747-5-june-new-study-on-financial-flows-in-sub-saharan-africa. Accessed on 28 June 2023.

Many important aspects of dependency, or that generate dependency, are innovation, technology and knowledge, the weak entrepreneurial tissue, entrepreneurship in the Weberian[19] sense and industrial culture, the inefficiency and lack of transparency of institutions, including market structures, erratic and inconstant public policies, and the presence of conflict of different types, are all factors that aggravate or mitigate dependency. On the other hand, some developing economies have integrated political and military geostrategies[20], reserving land, water, energy sources and biodiversity, considering the long-term depletion of these resources.

Thus, for the structuralists, dependent economies have the following main characteristics: (1) stagnation of agriculture and small industry; (2) concentration of activities in export-orientated agriculture and the exploitation of natural and mineral resources; (3) a rapidly expanding tertiary sector, accompanied by rising unemployment rates; (4) chronic balance of payment and trade deficits; (5) structural imbalances in political and social relations; (6) growing importance of state capitalism and indebtedness; (7) ups and downs and self-repeating economic cycles [21].

In the case of Mozambique, the weight of the primary sectors in the formation of GDP is evident, configuring a tapered and poorly diversified economic structure, weak industrial development and a market that is limited in terms of size and depth and which consumes mass goods, with a very small segment of consumption of differentiated goods, generally imported and distributed by international value chains.

The low agricultural productivity and competitiveness of the economy is largely based on the low innovation and technology of the productive tissue, which is stifled by extroverted and extractivist foreign capital. The general low productivity of the economy and the competitiveness resulting from the lack of modernisation in the business sector mean low wages and little job creation, which feeds back into poverty and food insecurity. This vicious cycle works to reproduce dependency and the structural characteristics of developing economies.

[19] The Protestant ethic and the spirit of capitalism, with which he began his reflections on the sociology of religion, according to Weber, Marx (2009), The Protestant ethic and the spirit of capitalism. http://hdl.handle.net/praxis/78, argues that "the spirit of capitalism is not characterised by the unbridled pursuit of pleasure and the pursuit of money for its own sake. The spirit of capitalism must be understood as an ethic of life, an orientation in which the individual sees dedication to work and the methodical pursuit of wealth as a moral duty. Weber clearly emphasises that the 'spirit' of capitalism should not be confused with the 'form' of capitalism. Weber understands capitalism as an economic system, the centre of which is represented by the capitalist company, the gathering of means of production, organised work and rational management. He clarifies that the variables dealt with in his book have to do with Protestant morality and the behavioural dimension (habitus) that underpins the system. The spirit of capitalism could only triumph by overcoming traditionalist forms of economic behaviour," https://repositorio.ufsc.br/handle/praxis/78.

[20] There is a combination of aspects in East Africa that make this Indian zone high-risk, considering the natural riches, the dominance of maritime routes, the availability of land and the confluence of religions and cultures that have historically been present in the area. In addition, there is the global security and military geostrategy of world powers such as China, the USA, France and India (in alphabetical order).

[21] https://www.egyankosh.ac.in/bitstream/123456789/8981/1/Unit-3.pdf.

The above-mentioned characteristics are reflected in the strong and growing sectoral concentration of the economy and foreign trade[22], the persistent and growing balance of payments deficit, internal and external debts, and the dependence of budget revenues on external resources, which limits the exercise of state functions and the respective level of sovereignty in public policy decisions and the deterioration of the terms of trade of foreign trade and the low coverage of the trade balance.

Food dependency as a result of the low domestic supply of essential goods and the crisis factors mentioned above, keeps a large part of the population in a situation of food insecurity and deficit or hunger and high levels of poverty, instability and loss of assets and productive capacity, and local conflicts of different types.

3. EXTERNAL DEPENDENCY INDEX (IDEX)

a) Proposal for indicators

According to the summary of the most influential theories on underdevelopment and development presented, the indicators chosen were considered the most important for measuring the degree of external dependency.

The variables chosen are those that represent and reflect, in essence, the economic, financial and commercial relations of an economy with the outside world, namely trade and external financing, the influence of external resources (donations and loans) on the public budget, and with tax revenues, food security and resilience against climatic shocks. All of these are interrelated and there are others that can be considered to be influenced by them, or that influence them (with cause-and-effect relationships). For example, Foreign Direct Investment (FDI) is related to capital flows and exports, and the latter to the rate of coverage and openness of the economy, to the terms of trade. Foreign trade is related to government revenue and capital flows, among others.

The economic vulnerability of the economy is associated with food dependency, which in turn is related to the concentration of foreign trade due to variations in international market prices for the main imported goods (such as food and agricultural commodities, oil and gas, coal and aluminium), external debt and total public debt. The latter two can affect FDI and capital flows, with possible consequences for national sovereignty through dependency on external resources for development. This dependency on external resources affects economic growth resulting from the development of markets and the weak national productive tissue, job creation, tax revenues, among other dimensions of the economy. In short, there are many variables that indicate external dependency, whose greater or lesser importance (degree of determinism) changes according to the realities. External dependency, when high (for example, the weight of financial responsibilities to the outside world and in particular debt, low savings, weak institutions, armed conflicts, among others), can imply major losses of sovereignty, such as economic and monetary policy decisions, sanctions of different kinds, military intervention, among others.

[22] See Mosca, João (2023). *Mozambican economy in the process of sectoral, territorial and social concentration. Destaque Rural Nº 199. OMR. Maputo*.
Aiuba, Rabia (2023). *Balance of payments in Sub-Saharan Africa, 2000-2021. Destaque Rural No. 244. OMR. Maputo.*

Institutions are fundamental for analysing the degree of competitiveness of the economy and the external vulnerability represented by some of the dimensions presented above, which can be translated into the state's fragility index.

There are variables that are "internal" dimensions of the economy, such as internal savings, credit to the economy and by productive sector and for consumption, productive and market structures, the effectiveness, efficiency and transparency of institutions, the qualification of human resources, the level of services to companies and citizens, among others, which can attenuate or aggravate external dependency.

The institutional aspects that, in principle, have the greatest impact on an economy's competitiveness are summarised in some business environment indicators:

- The conditions for internal and external investment (taxation, repatriation of capital, flexible labour law and market, swift justice, etc.);
- The efficiency, transparency and competence of the public administration;
- The existence of markets undistorted by exogenous interventions and competition structures;
- Investor confidence in the economy (macroeconomic stability, monetary policy, external debt, fulfilment of financial commitments, etc.), summarised in the index used by rating agencies;
- Stability and investor confidence in the country's politics (political regimes, conflicts of different types), social and labour environment and democracy.

Not least is the competitive capacity of the national economic tissue and inter-sectoral relations for the generation of accumulation and domestic added value and the provision of services within the framework of the concept of clusters (measured by the Mozambique Competitiveness Index). This dimension can also be assessed by the structure of the business sector (size of companies), the economic sectors with the greatest weight in the business structure and GDP, the proportion between the formal and informal economy and Mozambique's position in the international innovation ranking.

In the context of IDEx, individuality is attributed to food dependency, not only because of the import values, but also because of the weight of its volumes in the domestic supply of essential goods in the diet of the majority of the urban population, such as rice, cooking oil, fish and wheat. Vegetables (tomatoes and onions) and some fruit also account for a high percentage of the supply, especially in the larger population centres. Food dependency, as well as being permanent, exists with great frequency and importance (in terms of the volume of imports and the people affected by food insecurity), due to prolonged armed conflicts, resettlements and the effects of extreme climatic events.

Environmental phenomena are increasingly important and generate high and diverse vulnerabilities (displacement of people and means of survival, loss of production, destruction of infrastructure, social conflicts in the displacement of people, among others). From a long-term perspective, these phenomena are increasingly violent and more frequent over time. Mozambique is a country highly exposed to climate shocks. As part of this work, the UN Environment Vulnerability Index was included as a sub-index of the IDEx.

The IDEx with the sub-indices presented below may not reflect the dependency levels of all realities, but for comparative purposes it is important that there is a single way of calculating the variables and scores.

Private (macro) and public (State Budget) finances, as a way of estimating the degree of dependency on national investment capacity (private and public), through internal resources, compared with national savings, the percentage of national direct investment (NDI) over total investment in the country, the budget balance and the flow of capital extracted from the balance of payments.

The balance of payments expresses the nature and extent of commercial and economic relations, which translates/synthesises various fundamentals of the theories presented, including how dependent economies concentrate foreign trade in a few exported and imported goods and services, unfavourable terms of trade and capital inflows for foreign direct investment and, in some cases, as revenue for state budgets.

b) Justification of the sub-index variables

As explained in the previous section, the variables chosen are those which, in general, show the greatest relations with the outside world and which can most influence the behaviour of economies. The sub-indices, in turn, have variables with multiple correlations between them. The weight (degree of influence or correlation) between the variables that make up the sub-indices differs depending on the reality being studied.

As mentioned above, the sub-indices and variables selected are as follows:

- Finance: (1) FDI/total investment; (2) capital inflows/external revenue; (3) debt stock/GDP; and (4) rating agency classification[23].
  These sub-indices and their respective variables are those normally used by neoclassical and neo-Keynesian economic theory to assess the capacity of economies to have certain levels of investment and their respective sources of finance (internal and external), and how the debts created (FDI, donations and co-operation) hinder or facilitate economic growth. The rating agency's classification mainly conveys a qualitative assessment of the level of default on debts and other financial commitments. A bad rating discourages investment, both domestic and foreign.
- Trade balance, in particular: (1) coverage ratio (exports/imports); (2) openness of the agricultural and food trade balance (weight of the external sector in GDP formation - (agricultural imports + exports) / agricultural GDP and of the economy, calculated by the expression (exports + imports) / GDP; concentration of the five main imports and exports over the respective exports and imports and evolution of the terms of trade. "The terms of trade are defined as the relationship between the prices of the country's exports (PX)

[23] "Rating agencies, as financial rating agencies are commonly called, are companies that assess the financial risk (such as credit repayment) of a country, company or even a financial product. "The three main rating agencies are Standard & Poor's, Moody's and Fitch" ... "The financial rating can be calculated according to a number of elements, including the history, amount and regularity of payments. It also takes into account the number of overdue accounts, current indebtedness and the company's results," https://www.google.com/search?client=firefox-b-d&q=agencia+d+erating.
For example, Moody's rates it as follows: Aaa - Highest quality; Aa1, Aa2, Aa3 - Very high quality; A1, A2, A3 - High quality; Baa1, Baa2, Baa3 - Good quality; Ba1, Ba2 - Speculative; B1, B2, B3 - Highly speculative; Caa1, Caa2, Caa3 - Substantial risk; Ca - Very high risk.

and those of its imports (PM). An improvement in the terms of trade - that is, an increase in the PX/PM ratio - all other things being equal (economic variables), increases real income[24]".

These sub-indices reveal the extent to which external trade relations are important and weigh on a given economy (coverage and openness rates), how they reflect the domestic economic structure (concentration of imports and exports and the nature of the goods exchanged), their more or less dependent and underdeveloped nature and the extent to which the evolution of international prices benefits the economy, which is reflected in the terms of trade.

- General State Budget, with the following indicators: (1) external revenue (including loans and donations) / total public expenditure; (2) public debt servicing / GDP; (3) public deficit / total state revenue; and (4) state fragility (international ranking)[25]. These sub-indices are important as they can intervene in the autonomy/independence of political, economic, and national sovereignty decision-making centres, in addition to revealing the state's capacity to take out new loans and the respective charges and conditions of the loans, due to interest on the debt, etc. Permanent deficits and high debts reduce the ability to offer services to citizens, the ability to invest in and maintain public infrastructure, guarantee the security of citizens and the defence of the territory. These and other sub-indices can be summarised in the concept of state fragility, which summarises the state's inability to fulfil its rights and duties towards its citizens, development, and political and military sovereignty.
- The sub-index of vulnerability to external crises and environmental shocks is measured, as mentioned above, by the Environment Vulnerability Index. In addition, the resilience/resistance of the economy can also be weighted with: (1) the variation in economic growth in the three years after the climate shock; (2) Mozambique's position in international rankings (variation in economic growth - GDP, in periods of crisis). Mozambique is classified as one of the countries in the world with the greatest vulnerability, to which is added a very weak resilience and relief capacity in disaster situations resulting from shocks.

  This sub-index is important as climate shocks are becoming increasingly intense and frequent, which can cause economic instability, loss of infrastructure, displacement of people, food crises and social instability among those affected and the populations

[24] Bastos, Estêvão Kopschitz Xavier (2015). *Termos de troca, ganhos de comércio e crescimento da renda interna bruta real no Brasil de 2001 a 2014*. Instituto de Pesquisa Económica Aplicada (IPEA). Brasil, Governo Federal.

[25] "According to an OECD definition, "a fragile region or state has weak capacity to carry out basic governance functions and lacks the ability to develop mutually constructive relations with society". "A state is considered fragile when it cannot meet the expectations of its populations or manage changes in expectations and capacity through the political process. Fragility therefore arises from the substantial imbalance in relations between state and society. It has many underlying causes, both chronic and acute, and can produce various consequences, the most worrying of which are vulnerability to internal conflict, inability to cope with humanitarian disasters and the high risk of state collapse." https://inee.org/pt/eie-glossary/estado-fragil.
"The way in which "state fragility" is defined in the political community loses sight of the enormous distance that needs to be crossed between, on the one hand, conditions of fragility and "stagnant resilience" and, on the other, a situation where the state achieves accelerated growth and a reduction in poverty". https://www.google.com/search?client=firefox-b-d&sa=X&sca_esv=585931027&sxsrf=AM9HkKm3w39LR0Z5c0CcVED6PUuNjAq32w:1701182964797&q=O+que+%C3%A9+o+%C3%ADndice+de+fragilidade+dos+Estados%3F&ved=2ahUKEwik78Gy-OaCAxWbXUEAHQMQBDsQzmd6BAgQEAY&biw=1280&bih=595&dpr=1.5 CHECK THIS LINK
Internationally, the fragility of states is measured by the Fragile States Index (FSI).

receiving the displaced. In these cases, the state has shown a high level of organisational and operational incapacity, a lack of resources and a shortage of technical means, invariably resorting to external and humanitarian cooperation and aid.
Essentially, the measures are aimed at the post-shock period and not at preventative actions to create greater resilience, such as the construction and maintenance of defence and drainage dams for rivers, low-lying areas and irrigation systems, wind and flood-resistant construction, urban sanitation, tree planting around agricultural fields and in coastal areas, among others.

- Food dependency: (1) total food imports / total food needs; (2) levels of food insecurity; and (3) emergencies (response capacity - food, housing, transport, health, etc.). Food insecurity and hunger are one of the first effects of poverty, which has self-reproducing mechanisms, especially employment and wage levels, agricultural productivity and, in particular, of essential food products and levels of commercialisation and post-harvest losses, educational levels and demographic growth, family structure (especially the age structure of families) and migration, which puts pressure on natural resources (land, forests, water) and conflicts between traditional residents and immigrants.
  Food dependency is also related to changes in diets, both due to the effects of urbanisation and the increase in household income and associated social inequalities. Nutritional education and the conservation of goods are important at household level.
  The shortfall in food supply is partly covered by imports, with a growing deficit in the food trade balance, especially affecting food consumed in urban centres: rice, all wheat, a large part of cooking oil, potatoes and some vegetables.
- In addition to the fragility of institutions being reflected in the state's ability to carry out its political, economic, social and sovereignty functions, it also has the consequences of weak enforcement of laws, the slowness and partisanship of institutions (including the judiciary), tax collection, the fight against corruption, customs control, the control of money laundering and the various forms of trafficking (human beings, human organs, drugs, minerals, timber, etc.).) The centralisation and concentration of powers, partisanship and corruption in the institutions are aspects that influence the ineffectiveness and inefficiency of state administration. On the other hand, there are strong weaknesses in the corporate organisations of companies, workers, agricultural producers, social groups, the local population ("communities") and civil society

c) Calculation of IDEx

To each sub-index, the authors assign a score scale, which reflects the weight (relative influence) of this sub-index in the IDEx. These weights ("weights") must also take into account the comparative importance of the weights in the economic dimensions of the other sub-indices in the total IDEx. Some indices are included in or depend heavily on others, which is reflected in the score of one or more of them.

As with most known indices, the scores assigned to the sub-indices are subjective or based on theory (some of which is mentioned above) or, in some cases, on statistical studies to assess and measure the importance of the sub-indices and their variables. Thus, the points awarded for calculating the IDEx are weighted, with a higher score being given to the sub-indices that are supposed to have a greater influence on each other and on the economy.

Table 1 shows the sub-indices and respective variables to be taken into account when valuing the IDEx.

Table 1
External Dependency Index-
Table of scores for each sub-index and variable

Sub-index	Points	Variables	Points
Finance	32,5	FDI / Total investment [1]	10,0
		(Net capital flow-IDE) / Total net capital flow [2]	5,0
		Total external debt stock / GDP	10
		Rating agency classification [3]	7,5
Trade Balance	25	Total trade balance coverage rate [4]	7,5
		Total trade balance opening rate [5]	5,0
		Top five imported goods / Total imports	2,5
		Top five exported goods / Total exports	2,5
		Terms of trade of the country's foreign trade [6]	7,5
State and General State Budget	17,5	External revenues [7] / Total public expenditure	5,0
		Public debt service / Total public revenue	2,5
		Public deficit / GDP	2,5
		Fragility of the state [8]	7,5
Economic and environmental vulnerability	12,5	Change in economic growth (GDP) [9]	5,0
		Mozambique's position in the international EVI ranking [10]	7,5
Food security	12,5	Total food imports / Total food needs [11]	7,5
		Percentage of the population in food insecurity	5,0
Total IDEx	**100**		**100**

Notes:
(1) Total investment = Foreign investment (FDI + Portfolio investment + Other) + Bank loan for investment.
(2) Total capital inflow = Foreign Investment + Remittances (Expatriates/Emigrants + Profits + Income).
(3) Ratings are evaluations issued by credit rating agencies on credit quality. "The agencies assess the ability of an issuer (banks, financial institutions, companies, etc.) to honour its financial obligations in full and on time." The rating agencies are Fitch, Moody's and Standard & Poor's.
(4) Coverage rate = Export / Import.
(5) Openness rate = (Exports + Imports) / GDP.
(6) Terms of trade of the country's foreign trade - is calculated as the percentage ratio between the export unit value indices and the import unit value indices, measured in relation to the base year of 2015 (World Bank database).
(7) External revenue refers to support for the state budget from external sources (donations and credit).
(8) "A state is considered fragile when it cannot meet the expectations of its populations or manage changes in expectations and capacity through the political process. Fragility therefore arises from the substantial imbalance in relations between state and society. It has many underlying causes, both chronic and acute, and can produce various consequences, the most

worrying of which are vulnerability to internal conflict, inability to cope with humanitarian disasters and the high risk of state collapse." https://inee.org/pt/eie-glossary/estado-fragil.
State fragility is measured using the Fragile States Index (FSI).
"Ulrich Schneckener's stage model (2006) defines three fundamental elements: monopoly of violence, legitimacy and the rule of law. The typology is based on the first logic of security and therefore shows the relevance of the monopoly of violence in comparison to the other two while acting as the precondition for a functioning state. His four types of sovereignty are: (1) consolidated and consolidating states, (2) weak states, (3) failing states and (4) collapsed / failed states. https://pt.wikipedia.org/wiki/Estado_falido.
(9) Resilience of the economy to external and internal shocks, measured by growth behaviour up to three years after the climatic event. Authors' definition.
(10) Environmental Vulnerability Index (EVI): "Environmental vulnerability is understood as the susceptibility of a system to environmental degradation, considering: the exposure of the system to environmental pressures typical of agro-industrial activities, evaluated by indicators that show the anthropogenic pressure exerted on the system" - South Pacific Applied Geoscience Commission (2004). The Environmental Vulnerability Index (EVI) 2004.
(11) Food needs were calculated on the basis of the products in the national food basket (national diet) defined by SETSAN (daily diet per inhabitant x 365 days x population). The indicator represents the proportion of total food imports over calculated food needs.

Source: The authors.

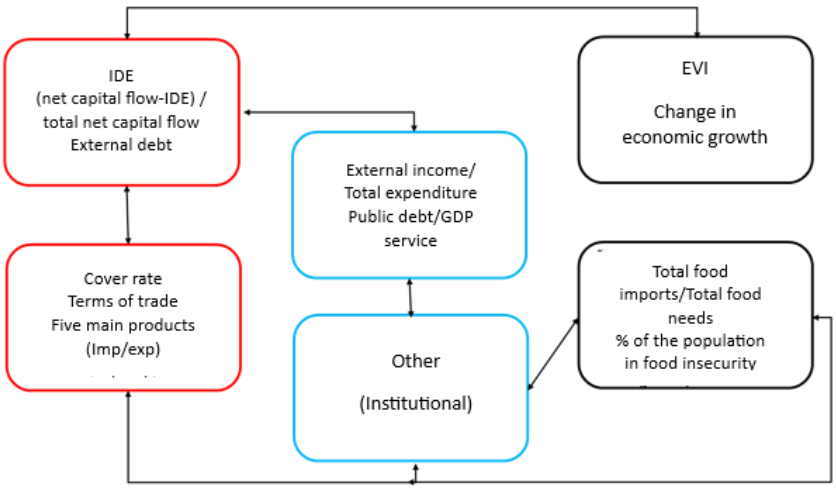
The multiple causal relationships between the sub-indices and variables are summarised in Diagram 1. By way of example, national investment is related to domestic savings, the latter to income levels and their social distribution, affecting public revenues and the state's ability to carry out its redistributive functions (political, economic, social and others), ending with the greater or lesser need to mobilise external resources, both private and to support the state (aid and cooperation), difficulties in dealing with resettlements, greater environmental vulnerability and the consequent fragility of the state, etc. If the deficit is large and persists, public debt, both internal and external, increases with consequences for domestic production, dependency on foreign investment, trade balance deficits and the lack of structural transformation of the economy.

For Figure 1, the sub-indices with the highest weight in the IDEx were selected, which are those directly related to the external sector (red outlines), the General State Budget and institutions (blue outlines) and the environment and food security (black outlines). Of the 17 variables listed in Table 1, 8 stand out as having the greatest weight (47.1% with 7.5 and 10 points), totalling 65 of the 100 total IDEx points. The sub-indices directly related to the external sector add up to 77.5 points.

Many of the variables are directly related to institutions. Macroeconomic balances appear in different links (external revenue from the State Budget, public and external debt servicing, the environment, food security).

As it is a diagram, it necessarily simplifies these relationships, although it does have the virtue of visualising the most important ones.

Figure 1
Relations of influence between sub-indices



Source: The authors.

d) IDEx parameters

The points assigned to each sub-index indicate, according to economic literature, the "ideal". The closer the value is to the "ideal", the lower the score, and therefore the less it contributes to the sum of the IDEx (the closer to 100, the worse) - see table 2 and table 1.

Table 2 is interpreted as follows: IDEx is broken down into sub-indices and the variables are integrated into each sub-index. Each sub-index is given a score. The sum of the scores of all the sub-indices results in the total IDEx (100 points) and the total of the scores of the variables in each sub-index totals the score assigned to it. For each variable, scales are established to give the score of each variable, also in an "ideal" way and according to the supposed determinism of the variables in the IDEx.

As mentioned above, the maximum score for each sub-index corresponds to what the literature indicates as a "desirable", "balanced" or "ideal" situation. The reference score for each sub-index was assigned by the authors, indicating the perception of a ("balanced") situation. As with most other indices, the scores for the sub-indices can be qualitative and/or quantitative.

In the case of IDEx, the authors considered that the closer the score is to 100, the more economically dependent the country is on foreign countries.

Table 2
IDEx scales and scores

Sub-index	Points	Points per variable	Variables	Scale	Score
Finance	32,5	10,0	FDI / Total investment	0% to 25%	0,0
				25% to 75%	5,0
				75% to 100%	10,0
		5,0	(Net capital flow - FDI) / Total net capital flow	Up to 50%	2,5
				More than 50%	5,0
		10,0	Total external debt stock / GDP (ideally less than 30%)	Up to 30%	0,0
				From 30% to 60%	5,0
				More than 60%	10,0
		7,5	Rating agency classification [1]	From A- to 1+	0,0
				From A-1 to A-3	2,5
				Between B and C	5,0
				Greater than or equal to D	7,5
Trade Balance	25,0	7,5	Total trade balance coverage rate	Up to 50%	7,5
				From 50% to 100%	5,0
				More than 100%	0,0
		5,0	Total trade balance opening rate	Up to 50%	0,0
				From 50% to 100%	2,5
				More than 100%	5,0
		2,5	Top five imported goods [2] / Total imports	Up to 50%	0,0
				From 50% to 100%	2,5
		2,5	Top five exported goods [3] / Total exports	Up to 50%	0,0
				From 50% to 100%	2,5
		7,5	Terms of Trade of the country's foreign trade	Greater than 1.0	0,0
				From 0.7 to 1.0	5,0
				Less than 0.7	7,5
State and General State Budget	17,5	5,0	Foreign revenue / Total public expenditure	Up to 20%	0,0
				From 20% to 40%	2,5
				Over 40%	5,0
		2,5	Public debt service / Total public revenue (ideal 14%) [4]	Up to 14%	0,0
				More than 14%	2,5
		2,5	Public deficit/GDP [5]	Less than 3%	0
				More than 3%	2,5
		7,5	State fragility [6]	Up to 30	0,0
				30 - 60	2,5
				60 - 90	5,0
				More than 90	7,5

Sub-index	Points	Points per variable	Variables	Scale	Score
Economic and environmental vulnerability	12,5	5,0	Change in economic growth (GDP)) [7]	More than 3%	0,0
				From 0% to 3%	2,5
				Negative	5,0
		7,5	Mozambique's position in the international EVI ranking [8]	Up to 215	0,0
				From 215 to 315	2,5
				From 315 to 365	5,0
				More than 365	7,5
Food Security	12,5	7,5	Total food imports / Total food needs	Less than 50%	0,0
				From 50% to 80%	5,0
				More than 80%	7,5
		5,0	Percentage of the population in food insecurity	Less than 10%	0,0
				From 10% to 60%	2,5
				More than 60%	5,0

Notes:

(1) Among the existing rating agencies, the Fitch ratings agency was chosen to calculate the IDEx, as it had the ratings results available for the series under analysis.
(2) Five main imported products: machinery (capital goods), fuel, construction materials (except cement, raw aluminium and cars).
(3) Five main exported products: aluminium, coal, heavy sands, natural gas and tobacco.
The products and values refer to 2021, but there are no changes to take into account over the last few years.
(4) According to the debt analysis report, for external debt liquidity indicators, the maximum limit for considering debt service sustainable in relation to total revenues is 14% (considered a new limit as of 2018).
(5) According to the OECD, the budget deficit-to-GDP ratio can only exceed a reference value of 3% of GDP in exceptional circumstances.
(6) Based on the State Fragility Index scale, the following scale was drawn up for the IDEx: Up to 30 points - Consolidated state; From 30 - 60 points - Stable state; From 60 - 90 points - Endangered state; and, More than 90 points - Failed state.
(7) From a medium- to long-term perspective, growth is considered stable when it continues at around 3%. An economy is in a state of "retraction" / "deceleration" / "slowdown" when growth in one period is lower than in the previous period. There is an economic crisis when the downturn lasts for more than 6 months. GDP growth is negative when it is less than 0%.
(8) The Environmental Vulnerability Index is an index calculated on the basis of 50 indicators and then evaluated on a scale of 1 to 7. For the calculation of the IDEx, it was adjusted/adapted to a scale of 4, namely: Up to 215 = Resilient; From 215 - 315 = at risk; 315 - 365 = vulnerable; and, More than 365 = extremely vulnerable.
Based on the State Fragility Index scale, the following scale was drawn up for IDEx: Up to 30 points - Consolidated state; From 30 - 60 points - Stable state; From 60 - 90 points - Endangered state; and, More than 90 points - Failed state. Mozambique is considered a state at risk.

The boxes marked in grey represent the maximum score for each variable.

Source: The authors.

Table 3
Classification of IDEx according to the points attributed to the index

	Points
Non-dependent economy	0-30
Moderately dependent economy	30-50
Dependent economy	50-70
Highly dependent economy	More than 70

Source: The authors.

A score of 0 to 30 points is considered non-dependent, 30 to 50 points moderately dependent, 50 to 70 points dependent and over 70 points very dependent. However, it is important to note that non-dependent economies can establish economic relations of interdependence or with the freedom to opt for other external or internal alternatives.

Analysing the degree of dependency must be weighed up with realities in the context of prolonged crises caused by political, military and social conflicts, pandemics, intense and frequent climatic shocks (with major consequences on the damage to productive and urban infrastructures, displacement of people and serious humanitarian situations) or due to variations in international markets, especially when economies depend on exporting or importing a small number of goods. These aspects are more serious when the starting condition for crises is high dependency on the economy and fragility of institutions and limited resources generated internally by the economy. These factors can substantially change the dependency index and the level of sovereignty of a State.

4. IDEX: AN ESSAY ON THE CASE OF MOZAMBIQUE

a) Year 2021[26]

As an example of an exercise to be carried out to calculate the IDEx, the table below is presented.

[26] The year 2021 was chosen for the simple reason that it is the last year in which most statistical data is available

Table 4
IDEx score, Mozambique 2021

Sub-index	Maximum score	Variables	Scale	Scores	Statistics (2021)	Score for IDEx
Finance	32,5	FDI / Total investment	0% to 25%	0,0	92%	10,0
			25% to 75%	5,0		
			75% to 100%	10,0		
		Net capital inflow - FDI) / Total net capital inflow	Up to 50%	2,5	-5%	2,5
			More than 50%	5,0		
		Total external debt stock / GDP	Up to 30%	0,0	46,5%	5,0
			From 30% to 60%	5,0		
			More than 60%	10,0		
		Rating agency classification	A- to 1+	0,0	CCC	5,0
			A-1 to A-3	2,5		
			Between B and C	5,0		
			Greater than or equal to D	7,5		
Sub-total (Finance)					**-**	**22,5**
Trade Balance	25,0	Total trade balance coverage rate	Up to 50%	0,0	71%	5,0
			From 50% to 100%	5,0		
			More than 100%	7,5		
		Total trade balance openness rate	Up to 50%	5,0	85%	2,5
			From 50% to 100%	2,5		
			More than 100%	0,0		
		Top five imported goods / Total imports (12)	Up to 50%	0,0	42%	0,0
			From 50% to 100%	2,5		
		Top five exported goods / Total exports (13)	Up to 50%	0,0	65%	2,5
			From 50% to 100%	2,5		
		Terms of trade of the country's foreign trade	Greater than 1.0	0,0	128,8	0,0
			From 0.7 to 1.0	2,5		
			Less than 0.7	5,0		
Sub-total (Trade balance)					**-**	**10,0**
State and General State Budget	17,5	External revenue / Total public expenditure	Up to 20%	0,0	11%	0,0
			From 20% to 40%	2,5		
			More than 40%	5,0		
		External public debt servicing / Total public revenue	Up to 14%	0,0	9,3%	0,0
			More than 14%	2,5		
		Public deficit / GDP	Less than 3%	0,0	6,0%	2,5
			More than 3%	2,5		
		State fragility	Up to 30	0,0	93,9	7,5
			From 30 - 60	2,5		
			From 60 - 90	5,0		
			More than 90	7,5		
Sub-total (State and General State Budget)					**-**	**10,0**
Economic and environmental vulnerability	12,5	Variation in economic growth (GDP)	More than 3%	0,0	2,3%	2,5
			From 0% to 3%	2,5		
			Negative	5,0		
		Mozambique's position in the EVI international rating	Up to 215	0,0	227,0	2,5
			From 215 - 315	2,5		
			From 315 - 365	5,0		

Sub-index	Maximum score	Variables	Scale	Scores	Statistics (2021)	Score for IDEx
			More than 365	7,5		
Sub-total (Economic and environmental vulnerability)					**-**	**5,0**
Food Security	12,5	Total food imports / Total food needs	Less than 50%	0,0	67%	5,0
			From 50% to 80%	5,0		
			More than 80%	7,5		
		Percentage of food insecure population	Less than 10%	0,0	24%	2,5
			From 10% to 60%	2,5		
			More than 60%	5,0		
Sub-total (Food security)					**-**	**7,5**
TOTAL	**100,0**	**-**			**-**	**55,0**

Sources: The authors.

The table above shows the following in general/global terms for 2021:

- Mozambique was a dependent country in 2021.
- Finances and the trade balance are the sub-indices in which Mozambique shows the greatest dependency: 22.5 points out of 32.5 in the first case; 7.5 points out of 12.5 for Food Security and 10.0 points out of 17.5 for the State and State Budget

Based on the reality and the reading of the sub-indices variables and the index in general, there are important aspects to consider:

- The country is heavily dependent on external investment, concentrated in major investments (" major projects")[27], which influence other related investments, especially in infrastructure (roads, railways and ports and airports), also financed by external resources, and generally associated with major investments. Domestic investment is very low and that made, for example, in infrastructure (communication, dams, irrigation, etc.), in the school and health networks, is financed externally, through direct budget support or through donations from civil society organisations and non-governmental organisations (external or internal), in the latter case with external financial donations. A large percentage of national investment is complementary to major foreign investment projects, such as roads and bridges, property construction, hotels, freight and passenger transport, and other services for multinationals.
  It is also important to note that some economic or policy measures influence the selected variables, and consequently the IDEx, such as the Debt Service Suspension Initiative (DSSI) in 2020, which culminated in a temporary 1-year moratorium on debt repayments, with payments resuming from 2022. Mozambique's total or partial debt cancellation was also carried out by countries with economic interests in Mozambique.
- The trade balance has a relatively low coverage rate and vulnerability is measured by the concentration of exports and imports in a few products[28]. These reveal the underdeveloped structure of the economy and high vulnerability to price variations on the international market, such as, in the case of Mozambique, oil products, coal and gas and some agricultural commodities.
- With regard to the General State Budget sub-index, especially after the hidden debts became known in 2016, direct budget support was suspended, although support for

[27] Out of the total FDI between 2001 and 2021, around 70% is realised through major projects in the natural resources sector. Mosca, João and Nova, Yara (2023). The agrarian counter-transformation in Mozambique. OMR. Maputo

[28] Mosca, João (2023). Mozambican economy in the process of sectoral, territorial and social concentration. Destaque Rural Nº 199. OMR. Maputo.

projects (such as water, sanitation, agriculture, health, emergency humanitarian assistance, etc.) was maintained, which did not mean that a significant part of the funds came in as direct support for projects and through other forms of external support. Alternatively, the state has incurred internal debt[29] (almost entirely from the banking system) to finance the constant and growing budget deficit.

- Mozambique's economy is, as a general rule, highly sensitive to exogenous variations (economic crises, wars, climatic shocks and pandemics), requiring large additional external and emergency resources (including foreign military presence).
- With regard to food security, the main considerations are as follows: (1) of the total domestic production, a small proportion is commercialised, considering the high percentages of self-consumption of more than 60% of the population living in rural areas, whose income depends mainly on agricultural production, especially in the case of maize, rice and cooking oils in the group of goods considered in addition to the domestic supply of processed goods commercialised through large-scale food distribution in urban centres and which respond to the demands of the emerging middle class; (2) in situations of instability, caused by conflicts, environmental disasters and the forced resettlement of populations, the food insecurity of these populations is only covered, and usually not fully, by emergency imports from international organisations, which reveals the food vulnerability of the country which lacks food reserves, logistics, infrastructure and financial resources for this purpose; (3) wheat, which is entirely imported, is largely consumed in urban centres and, to a lesser extent, imported rice is also consumed in the larger population settlements; (4) with the exception of crustaceans, a significant part of the fish in the coastal zone and inland waters is self-consumed or commercialised locally, to the detriment of the export of more commercially valuable fish; (5) consumer goods for the middle and upper classes are mostly imported as a result of the almost non-existent food industry, with the exception of the industry that processes imported goods for final consumption. It can therefore be seen that, in reality, the country's food dependency and vulnerability is greater than that reflected in the IDEx, varying according to crisis cycles and differences between rural and urban areas and between social groups.[30]

b) IDEx for Mozambique, 2015-2021

Based on the calculation form presented in Table 4, the degree of dependency was estimated for the period 2015 to 2021.

[29] Public debt rose from 13. 5% of total debt in 2014 to 21. 9% in 2020, having increased by 58. 3% in percentage terms (2020/2015). Debt continued to rise until 2023. Ministry of Economy and Finance website.
[30] The five considerations presented may not correspond with the score given to food dependency. The reason is that the variables total food imports / total food needs were used, whose values are strongly influenced by self-consumption, especially in family economies based on small farms. If the denominator were the total market supply of food products, it would reflect a different reality. The authors consider the variable used to be more "universal".

Table 4
IDEx Mozambique, 2015 – 2021

Sub-index	Variables	IDEx 2021	IDEx 2020	IDEx 2019	IDEx 2018	IDEx 2017	IDEx 2016	IDEx 2015
Finance	FDI / Total investment	10,0	5,0	5,0	5,0	5,0	10,0	5,0
	(Net capital flow - FDI) / Total net capital flow	2,5	2,5	2,5	5,0	2,5	2,5	2,5
	Total external debt stock / GDP	5,0	5,0	10,0	10,0	10,0	10,0	5,0
	Rating agency classification (Fitch).	5,0	5,0	5,0	7,5	7,5	7,5	5,0
Sub-total (Finance)		**22,5**	**17,5**	**22,5**	**27,5**	**25,0**	**30,0**	**17,5**
Trade balance	Total trade balance coverage rate	5,0	5,0	5,0	5,0	5,0	5,0	7,5
	Total trade openness rate	2,5	2,5	2,5	2,5	2,5	2,5	2,5
	Top five imported goods / Total imports	0,0	2,5	2,5	2,5	2,5	2,5	2,5
	Top five exported goods / Total exports	2,5	0,0	0,0	0,0	0,0	0,0	0,0
	Terms of trade for the country's foreign trade	0,0	2,5	0,0	0,0	0,0	0,0	2,5
Sub-total (Trade Balance)		**10,0**	**12,5**	**10,0**	**10,0**	**10,0**	**10,0**	**15,0**
State and General State Budget	External revenue / Total public expenditure	0,0	2,5	0,0	0,0	2,5	2,5	2,5
	Public debt servicing / Total public revenue	0,0	0,0	0,0	2,5	2,5	2,5	0,0
	Public deficit / GDP	2,5	2,5	2,5	2,5	2,5	2,5	2,5
	State fragility	7,5	7,5	5,0	5,0	5,0	5,0	5,0
Sub-total (State and State Budget)		**10,0**	**12,5**	**7,5**	**10,0**	**12,5**	**12,5**	**10,0**
Economic and environmental vulnerability	Variation in economic growth (GDP)	2,5	5,0	2,5	2,5	0,0	0,0	2,5
	Mozambique's position in the international EVI ranking	2,5	2,5	2,5	2,5	2,5	2,5	2,5
Sub-total (Economic and environmental vulnerability)		**5,0**	**7,5**	**5,0**	**5,0**	**2,5**	**2,5**	**5,0**
Food Security	Total food imports / Total food needs	5,0	5,0	0,0	0,0	0,0	0,0	0,0
	Percentage of food insecure population	2,5	2,5	2,5	2,5	2,5	2,5	2,5
Sub-total (Food security)		**7,5**	**7,5**	**5,0**	**5,0**	**2,5**	**2,5**	**2,5**
TOTAL		**55,0**	**57,5**	**47,5**	**55,0**	**52,5**	**57,5**	**50,0**

Sources: Authors.

The table above shows the following:

- The IDEx has varied slightly, remaining in the dependent economy category.
- The years in which the index has increased coincide with the effects of the discovery of the hidden debts (reduction in financing for the economy, the General State Budget and foreign investment), with the COVID-19 pandemic causing a reduction in foreign trade and national economic activity and a general rise in prices, conforming to high external vulnerability and low response capacity based on internal resources. The effects of the NATO/Ukraine-Russia war are after 2021.

5. CONCLUSION

Mozambique is a structurally and long-term dependent country, with external economic relations contributing most to this classification (direct investment and other capital inflows, trade balance and direct financing of the State Budget or specific projects). However, due to climatic shocks, external and internal economic crises, conflict situations, etc., Mozambique can be considered to be a country at permanent risk of being very dependent in the short term.

Despite the general level of dependency estimated and measured by IDEx, the situation can worsen when phenomena cause imbalances, even if they are short-term (less than three years), such as the COVID-19 pandemic[31], hidden debts, high intensity, and frequent climate shocks (cyclones and droughts), armed conflicts[32] and the NATO/Ukraine-Russia war[33]. During these periods, dependency levels increase cyclically, resulting in emergency food aid, economic growth slows down (or becomes negative), employment and poverty increase[34], inflation skyrockets, macroeconomic imbalances emerge (INE and the Bank of Mozambique), which reveals a limited capacity to respond to external shocks through internal resources. Mozambique's ranking must be considered because investment, macroeconomic growth and stability, poverty and emergency food supplies largely depend (according to the influence of the sub-indices on the IDEx) on external factors.

Institutions, especially the state, are highly inefficient and ineffective, with a lack of transparency, misappropriation or misapplication of funds and corruption, which greatly exacerbates dependency by stunting economic development, the business sector, the tapering of the productive structure and accumulation abroad, increasing poverty and social and territorial inequalities[35]. The essential issue lies in the alliances between foreign capital and the interest groups that dominate the political and economic decision-making centres based on the internal distribution of resources and the implementation of public policies, without considering a global development strategy that benefits the country and its citizens.

This self-dependency is reproduced in a vicious circle, where internal economic interests and the national economy support the mechanisms of extroversion/externalisation through the financialization of foreign capital and extractivist models with limited benefits for the national

[31] Mussagy, Ibraimo Hassane and Mosca, João (2020). Micro-simulations of the impacts of COVID-19 on poverty and inequality in Mozambique. Observador Rural Nº 96.OMR. Maputo.
Tibana, Roberto J. (2021). The dynamics of the COVID-19 pandemic in Mozambique. Destaque Rural Nº 115. OMR. Maputo.
Mozambique's economy: analysing the pre-COVID-19 situation. Observador Rural No. 94. OMR. Maputo.
[32] Highlights include the 16-year civil war, the three-year post-election war and the war in Cabo Delgado, which has been going on for five years.
[33] Mosca, João (2021) Inflation 2022: "Ukraine" and counterproductive domestic policies. Destaque Rural Nº 184. PMR. Maputo.
[34] Mussagy, Ibraimo Hassane and Mosca, João. Ibidem.
[35] Dadá, Yasser Arafat and Mosca, João (2023). Socio-economic inequalities between provinces and between rural and urban areas. Destaque Rural Nº 216. OMR. Maputo.
The bottom decile of the population concentrated 59.8 % of the national wealth in 2000 and in 2020 it rose to 64.6 %. The 10% with the lowest incomes retained 0.2% and 0.1% of the country's wealth. There is a strong concentration of wealth and a worsening of social inequities. Yasser Arafat Dadá, doctoral thesis awaiting defence. University of Lisbon.

economy and citizens[36]. The change in trajectory (financialization and extroversion) of recent decades certainly implies:

- New ways of financing agricultural and economic development, prioritising sources of domestic savings and investment options that reduce dependency on external capital and financing, maximising, in some areas, the use of local resources for the construction of roads, bridges, small irrigation schemes, housing, schools, health posts, etc.);
- Development of internalised value chains, mainly with domestic capital and accumulation and for the domestic market, as is the case with soya which supplies the animal feed industry or, for reasons of cancellation of external financing, for primary production;
- Sovereign foreign relations supported by stable domestic public policies;
- Reforms to the political system, modernisation and depoliticization of the state.

This text is an essay that needs to be substantiated with an econometric model that presents the levels of determinism of the variables considered (and others) in what is considered to be the dependent variable (IDEx). At the same time, this text will be discussed by experts with a view to improving it and possibly adopting it in different institutions.

[36] Mosca, João and Dadá, Yasser (2023). Financing and agrarian extroversion in Mozambique. Destaque Rural Nº 202. OMR. Maputo.

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