

S&P Africa Sovereign Bond Index *Methodology*

December 2022

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Introduction

Index Objectives, Highlights and Family

The S&P Africa Sovereign Bond Indices track the market-value weighted performance of sovereign bonds from 13 countries within Africa. There are two main indices, the S&P Africa Sovereign Bond Index and S&P Africa Hard Currency Sovereign Bond Index.

S&P Africa Sovereign Bond Index. The index is comprised of a universe of sovereign bonds denominated in local currency. The index is a broad, transparent, and independent benchmark. The country level sub-indices include:

- S&P Botswana Sovereign Bond Index
- S&P Egypt Sovereign Bond Index
- S&P Ghana Sovereign Bond Index
- S&P Kenya Sovereign Bond Index
- S&P Mauritius Sovereign Bond Index
- S&P Morocco Sovereign Bond Index
- S&P Namibia Sovereign Bond Index
- S&P/FMDQ Nigeria Sovereign Bond Index
- S&P South Africa Sovereign Bond Index
- S&P Tanzania Sovereign Bond Index
- S&P Tunisia Sovereign Bond Index
- S&P Uganda Sovereign Bond Index
- S&P Zambia Sovereign Bond Index

S&P Africa Hard Currency Sovereign Bond Index. The index is comprised of bonds issued by African sovereign governments denominated in euros, Japanese yen, and U.S. dollars, from the 13 African countries listed above.

- S&P Africa Euro Currency Sovereign Bond Index
- S&P Africa Japanese Yen Sovereign Bond Index
- S&P Africa U.S. Dollar Sovereign Bond Index

Supporting Documents

This methodology is meant to be read in conjunction with supporting documents providing greater detail with respect to the policies, procedures and calculations described herein. References throughout the methodology direct the reader to the relevant supporting document for further information on a specific topic. The list of the main supplemental documents for this methodology and the hyperlinks to those documents is as follows:

Supporting Document	URL
S&P Dow Jones Indices' Fixed Income Policies & Practices Methodology	Fixed Income Policies & Practices
S&P Dow Jones Indices' Fixed Income Index Mathematics Methodology	Fixed Income Index Mathematics Methodology

This methodology was created by S&P Dow Jones Indices to achieve the aforementioned objective of measuring the underlying interest of each index governed by this methodology document. Any changes to or deviations from this methodology are made in the sole judgment and discretion of S&P Dow Jones Indices so that the index continues to achieve its objective.

Eligibility Criteria

Eligibility Factors

Currency. S&P Africa Sovereign Bond Index securities must be issued in local currency in the respective country (refer to *Table 1*). S&P Africa Hard Currency Sovereign Bond Index securities must be issued in euros, Japanese yen, or U.S. dollars.

Maturity. Except as noted below, each bond must have a maturity greater than or equal to one month from the rebalancing date. No bond matures in an index.

For the S&P Namibia Sovereign Bond 1+ Year Top 10 Index, each bond must have a maturity greater than or equal to one year from the rebalancing date. No bond matures in an index.

Country of Issue. Securities must be government-issued sovereign debt from one of the 13 African countries specified below:

- Botswana
- Egypt
- Ghana
- Kenya
- Mauritius
- Morocco
- Namibia
- Nigeria
- South Africa
- Tanzania
- Tunisia
- Uganda
- Zambia

Coupon Type. The following coupon types are included:

- Fixed
- Zero
- Step-Up
- Fixed-to-Float (provided they are fixed and one-month prior to their float date)

Exclusions. The following bond types are specifically excluded:

- STRIPS
- Inflation-linked
- Floating-rate issues
- Puttable bonds
- Sukuk bonds

Size. Criteria regarding minimum par amount outstanding differ for each country and bond type (refer to *Table 1*).

Optionality. Bullets, callable, and callable-perpetual (provided they are at least one month from the first call) are included. Fixed-to-floating rate securities also qualify provided they are callable within the fixed rate period and are at least one month from the last call prior to the date the bond transitions from a fixed to a floating rate security.

Duplicate Bonds. For issues with multiple tranches, instruments issued under Regulation S are considered for inclusion.

Settlement. Bonds issued prior to the rebalancing reference date (regardless of the settlement date). Standard index settlement convention is same-day (e.g. T+0), unless otherwise specified. For month-

ends that fall on a weekend, the interest accrued during the month will be reflected within the calendar month, regardless of settlement convention. For rates that are not available at month-end (e.g. a rate with an unknown reset), the accrual will be based on the current rate and adjusted the first business day of the next month.

Pricing. Bid Price - Refinitiv.

Table 1:

Country/Bond Type	Currency	Minimum Par Amount Outstanding
<i>S&P Africa Sovereign Bond Index:</i>		
Botswana	BWP	500 million
Egypt	EGP	1 billion
Ghana	GHS	100 million
Kenya	KES	1 billion
Mauritius	MUR	1 billion
Morocco	MAD	100 million
Namibia	NAD	500 million
Nigeria	NGN	1 billion
South Africa	ZAR	1 billion
Tanzania	TZS	1 billion
Tunisia	TND	100 million
Uganda	UGX	1 billion
Zambia	ZMW	50 million
<i>S&P Africa Hard Currency Sovereign Bond Index:</i>		
Euro	EUR	500 million
Japanese yen	JPY	20 billion
U.S. dollar	USD	500 million

Index Construction

Constituent Selection

Except for the S&P Namibia Sovereign Bond 1+ Year Top 10 Index, at each rebalancing all eligible securities are selected and form each index.

S&P Namibia Sovereign Bond 1+ Year Top 10 Index. At each rebalancing, the eligible bonds are ranked, in descending order, by par amount outstanding. The 10 largest issuances are selected and form the index.

Constituent Weightings

Except for the exceptions detailed below, the indices are market-value-weighted.

Capped Indices. For the following indices, no country's weight can exceed the listed weight cap at each rebalancing. Any excess weight is proportionally redistributed to uncapped countries, and this process proceeds iteratively until no country breaches the weight cap.

S&P Africa Sovereign Ex-Tanzania 15% Capped Bond Index, S&P Africa Sovereign Ex-Tanzania & South Africa 15% Capped Bond Index, and S&P Africa Hard Currency ex Tanzania (15% Capped) Bond Index. At each rebalancing, each country's weight is capped at 15% of the total index weight.

Index Calculations

The total return is calculated by aggregating the interest return, reflecting the return due to paid and accrued interest, and price return, reflecting the gains or losses due to changes in the end-of-day price and principal repayments.

For further details regarding Index Calculations, please refer to S&P Dow Jones Indices' Fixed Income Index Mathematics Methodology.

Index Maintenance

Rebalancing

The indices are reviewed and rebalanced on a monthly basis. The Index Committee, nevertheless, reserves the right to make adjustments to an index at any time that it believes appropriate.

Additions, deletions and other changes to the index arising from the rebalancing are made provided the security's reference information and pricing are available by designated pricing and data providers on the rebalancing reference date. Changes to the index are published on the announcement date and become effective on the rebalancing date. Information related to the rebalancing is obtained and disseminated after the close of business.

Rebalancing Schedule	
Rebalance Frequency	Monthly
Rebalancing Date	Last day of the rebalancing period (T)
Announcement Date	T minus 3
Reference Date	T minus 3

All days reflect after the close and count business days.

Ongoing Maintenance. The indices are also reviewed on an ongoing basis to account for the following:

- When an index bond is in default or misses an interest payment, the price reported by the pricing source is used. However, the Index Committee may determine that the bond be removed from the index at a different price and may specify a price of 0.00. The decision of the Index Committee is final.
- If an index bond is no longer priced by the pricing source, the last available price is used. However, the Index Committee may determine that a different price be used. The decision of the Index Committee is final. For clarity, index bonds that are no longer priced by the pricing source fail to meet the pricing eligibility factors and are removed at the next rebalancing date. If the bond is priced for at least one of the five business days prior to the rebalancing announcement date, the bond remains in the index. Otherwise, it is removed from the index at the subsequent rebalancing date.

Currency of Calculation and Additional Index Return Series

The S&P Africa Sovereign Bond Index and country level sub-indices are calculated in U.S. dollars as well as in local currency. In addition, the following indices are calculated in U.S. dollars only:

- S&P Africa Sovereign Ex-South Africa Bond Index
- S&P Africa Sovereign Ex-Tanzania Bond Index
- S&P Africa Sovereign Ex-Tanzania 15% Capped Bond Index
- S&P Africa Sovereign Ex-Tanzania & South Africa Bond Index
- S&P Africa Sovereign Ex-Tanzania & South Africa 15% Capped Bond Index

The S&P Africa Hard Currency Sovereign Bond Index is calculated in U.S. dollars as well as in local currency. Its named currency sub-indices are calculated in their respective named currency (i.e. U.S. dollars, euros or Japanese yen). In addition, the following indices are calculated in U.S. dollars only:

- S&P Africa Hard Currency ex Tanzania Bond Index

- S&P Africa Hard Currency ex Tanzania (15% Capped) Bond Index

For Further information, please refer to Index Dissemination.

WM/Refinitiv foreign exchange rates are taken daily at 4:00 PM London time and used in the calculation of the indices. These mid-market fixings are calculated by the WM Company based on Refinitiv data and appear on Refinitiv pages WMRA.

Additional currency and currency hedged versions of the indices, as well as maturity, sector, and rating-based sub-indices, may be available. For a list of available sub-indices and tickers, please refer to S&P Dow Jones Indices' Fixed Income Index Directory available at www.spglobal.com/spdji.

For more information on index calculation, please refer to S&P Dow Jones Indices' Fixed Income Index Mathematics Methodology.

For the inputs necessary to calculate certain types of indices, including decrement, dynamic hedged, fair value, and risk control indices, please refer to the Parameters documents available at www.spglobal.com/spdji.

Base Dates and History Availability

Index history availability, base dates, and base values are shown in the tables below.

Index	Launch Date	First Value Date	Base Date	Base Value
S&P Africa Sovereign Bond Index	11/25/2014	12/31/1999	12/31/1999	100
S&P Botswana Sovereign Bond Index	11/25/2014	11/30/2011	11/30/2011	100
S&P Egypt Sovereign Bond Index	11/25/2014	11/30/2009	11/30/2009	100
S&P Ghana Sovereign Bond Index	11/25/2014	04/30/2009	04/30/2009	100
S&P Kenya Sovereign Bond Index	11/25/2014	05/30/2008	05/30/2008	100
S&P Mauritius Sovereign Bond Index	11/25/2014	12/31/2012	12/31/2012	100
S&P Morocco Sovereign Bond Index	11/25/2014	08/31/2010	08/31/2010	100
S&P Namibia Sovereign Bond Index	11/25/2014	07/31/2012	07/31/2012	100
S&P Namibia Sovereign Bond 1+ Year Top 10 Index	03/15/2019	09/30/2016	09/30/2016	100
S&P/FMDQ Nigeria Sovereign Bond Index	11/25/2014	04/30/2007	04/30/2007	100
S&P South Africa Sovereign Bond Index	11/25/2014	12/31/1999	12/31/1999	100
S&P South Africa Sovereign Bond 1+ Year Index	08/7/2017	12/31/1999	12/31/1999	100
S&P Tanzania Sovereign Bond Index	11/25/2014	07/30/2010	07/30/2010	100
S&P Tunisia Sovereign Bond Index	11/25/2014	01/31/2017	01/31/2017	100
S&P Uganda Sovereign Bond Index	11/25/2014	08/29/2008	08/29/2008	100
S&P Zambia Sovereign Bond Index	11/25/2014	06/30/2010	06/30/2010	100
S&P Africa Sovereign Ex-South Africa Bond Index	11/25/2014	04/30/2007	04/30/2007	100
S&P Africa Sovereign Ex-Tanzania Bond Index	11/25/2014	12/31/1999	12/31/1999	100
S&P Africa Sovereign Ex-Tanzania 15% Capped Bond Index	11/25/2014	12/31/2012	12/31/2012	100
S&P Africa Sovereign Ex-Tanzania & South Africa Bond Index	11/25/2014	04/30/2007	04/30/2007	100
S&P Africa Sovereign Ex-Tanzania & South Africa 15% Capped Bond Index	11/25/2014	12/31/2012	12/31/2012	100
S&P Africa Hard Currency Sovereign Bond Index	11/25/2014	06/30/2014	06/30/2014	100
S&P Africa Euro Currency Sovereign Bond Index	11/25/2014	06/30/2014	06/30/2014	100
S&P Africa Japanese Yen Sovereign Bond Index	11/25/2014	06/30/2014	06/30/2014	100
S&P Africa U.S. Dollar Sovereign Bond Index	11/25/2014	06/30/2014	06/30/2014	100
S&P Africa Hard Currency ex Tanzania Bond Index	11/25/2014	06/30/2014	06/30/2014	100
S&P Africa Hard Currency ex Tanzania (15% Capped) Bond Index	11/25/2014	07/31/2014	07/31/2014	100

Index Governance

Index Committee

An Index Committee maintains the indices. All committee members are full-time professionals at S&P Dow Jones Indices. Meetings are held regularly.

The Committee oversees the management of the indices, including determinations of intra-rebalancing changes, maintenance and inclusion policies, and other matters affecting the maintenance and calculation of the indices.

In fulfilling its responsibilities, the Committee has full and complete discretion to (i) amend, apply, or exempt the application of index rules and policies as circumstances may require and (ii) add, remove, or by-pass any bond in determining the composition of an index.

The Committee may rely on any information or documentation submitted to it or gathered by it that the Committee believes to be accurate. The Committee reserves the right to reinterpret publicly available information and to make changes to an index based on a new interpretation of that information at its sole discretion. All Index Committee discussions are confidential.

The Index Committee is separate from and independent of other analytical groups at S&P Global. In particular, the Index Committee has no access to or influence on decisions by S&P Global Ratings analysts.

S&P Dow Jones Indices' Index Committees reserve the right to make exceptions when applying the methodology if the need arises. In any scenario where the treatment differs from the general rules stated in this document or supplemental documents, clients will receive sufficient notice, whenever possible.

In addition to the daily governance of indices and maintenance of index methodologies, at least once within any 12-month period, the Index Committee reviews the methodology to ensure the indices continue to achieve the stated objectives, and that the data and methodology remain effective. In certain instances, S&P Dow Jones Indices may publish a consultation inviting comments from external parties.

For information on Quality Assurance and Internal Reviews of Methodology, please refer to S&P Dow Jones Indices' Fixed Income Policies & Practices Methodology.

Index Policy

Announcements

Announcements of any relevant information pertaining to the indices are made after market close. Press releases are posted on the S&P Dow Jones Indices' Web site at www.spglobal.com/spdji.

Holiday Schedule

The indices are calculated on all business days of the year (Monday through Friday) except the following holidays:

- New Year's Day (January 1st)
- Christmas (December 25th)

A complete holiday schedule for the year is available on S&P Dow Jones Indices' Web site at www.spglobal.com/spdji.

Rebalancing

The Index Committee may change the date of a given rebalancing for reasons including market holidays occurring on or around the scheduled rebalancing date. Any such change will be announced with proper advance notice where possible.

End-of-Day Calculation

Index levels are calculated at the end of each business day, via S&P Dow Jones Indices' Web site. This may be subject to change.

Index Releases

Releases are issued by S&P Dow Jones Indices at the end of the business day.

Recalculation Policy

For information on the recalculation policy please refer to S&P Dow Jones Indices' Fixed Income Policies & Practices Methodology.

For information on Calculations and Pricing Disruptions, Expert Judgment and Data Hierarchy, please refer to S&P Dow Jones Indices' Fixed Income Policies & Practices Methodology.

Contact Information

For questions regarding an index, please contact: index_services@spglobal.com.

Index Dissemination

Index levels are available through S&P Dow Jones Indices' Web site at www.spglobal.com/spdji, major quote vendors (see codes below), numerous investment-oriented Web sites, and various print and electronic media.

Tickers

The table below lists headline indices covered by this document. All versions of the below indices that may exist are also covered by this document. Please refer to the [S&P DJI Methodology & Regulatory Status Database](#) for a complete list of indices covered by this document.

Index (Total Return Index)	Ticker	
	USD	LCL
S&P Africa Sovereign Bond Index	SPFIAFRT	SPFIAFD
S&P Botswana Sovereign Bond Index	SPFIBWU	SPFIBWT
S&P Egypt Sovereign Bond Index	SPFIEGU	SPFIEGT
S&P Ghana Sovereign Bond Index	SPFIGHU	SPFIGHT
S&P Kenya Sovereign Bond Index	SPFIKEU	SPFIKET
S&P Mauritius Sovereign Bond Index	SPFIMUU	SPFIMUT
S&P Morocco Sovereign Bond Index	SPFIMAU	SPFIMAT
S&P Namibia Sovereign Bond Index	SPFINAU	SPFINAT
S&P Namibia Sovereign Bond 1+ Year Top 10 Index	--	SPFNA1LT
S&P/FMDQ Nigeria Sovereign Bond Index	SPFINGU	SPFINGT
S&P South Africa Sovereign Bond Index	SPFIZAU	SPFIZAT
S&P South Africa Sovereign Bond 1+ Year index	SPFIZADT	SPFIZAAT
S&P Tanzania Sovereign Bond Index	SPFITZUU	SPFITZT
S&P Tunisia Sovereign Bond Index	SPFITNU	SPFITNT
S&P Uganda Sovereign Bond Index	SPFIUGU	SPFIUGT
S&P Zambia Sovereign Bond Index	SPFIZMU	SPFIZMT
S&P Africa Sovereign Ex-South Africa Bond Index	SPFIAFZT	--
S&P Africa Sovereign Ex-Tanzania Bond Index	SPFIAXTT	--
S&P Africa Sovereign Ex-Tanzania 15% Capped Bond Index	SPFIAXCT	--
S&P Africa Sovereign Ex-Tanzania & South Africa Bond Index	SPFIAZTT	--
S&P Africa Sovereign Ex-Tanzania & South Africa 15% Capped Bond Index	SPFIAZCT	--

Index (Total Return Index) (Currency)	Ticker
S&P Africa Hard Currency Sovereign Bond Index (USD)	SPFIGLAFT
S&P Africa Hard Currency Sovereign Bond Index (Local)	SPFIGLAD
S&P Africa Euro Currency Sovereign Bond Index (EUR)	SPFIGLAET
S&P Africa Japanese Yen Sovereign Bond Index (JPY)	SPFIGLAJT
S&P Africa U.S. Dollar Sovereign Bond Index (USD)	SPFIGLAUT
S&P Africa Hard Currency ex Tanzania Bond Index (USD)	SPFIGXTT
S&P Africa Hard Currency ex Tanzania (15% Capped) Bond Index (USD)	SPFIGXCT

Index Data

Daily index level data is available via subscription.

For product information, please contact S&P Dow Jones Indices, www.spglobal.com/spdji/en/contact-us.

Web site

For further information, please refer to S&P Dow Jones Indices' Web site at www.spglobal.com/spdji.

Appendix I – Methodology Changes

Methodology changes since January 1, 2015 are as follows:

Change	Effective Date (After Close)	Previous	Methodology Updated
Duplicate Bonds	11/30/2020	For issues with multiple tranches, instruments issued under 144A are considered for inclusion.	For issues with multiple tranches, instruments issued under Regulation S are considered for inclusion.
Index Name Change: S&P Nigeria Sovereign Bond Index	06/29/2018	The index name was S&P Nigeria Sovereign Bond Index.	The index name is S&P/FMDQ Nigeria Sovereign Bond Index.

Appendix II – EU Required ESG Disclosures

EXPLANATION OF HOW ENVIRONMENTAL, SOCIAL & GOVERNANCE (ESG) FACTORS ARE REFLECTED IN THE KEY ELEMENTS OF THE BENCHMARK METHODOLOGY¹	
1.	Name of the benchmark administrator. S&P Dow Jones Indices LLC.
2.	Underlying asset class of the ESG benchmark.² N/A
3.	Name of the S&P Dow Jones Indices benchmark or family of benchmarks. S&P DJI Fixed Income Indices Benchmark Statement
4.	Do any of the indices maintained by this methodology take into account ESG factors? No
Appendix latest update: February 2021	
Appendix first publication: February 2021	

¹ The information contained in this Appendix is intended to meet the requirements of the European Union Commission Delegated Regulation (EU) 2020/1817 supplementing Regulation (EU) 2016/1011 of the European Parliament and of the Council as regards the minimum content of the explanation of how environmental, social and governance factors are reflected in the benchmark methodology.

² The 'underlying assets' are defined in European Union Commission Delegated Regulation (EU) 2020/1816 supplementing Regulation (EU) 2016/1011 of the European Parliament and of the Council as regards the explanation in the benchmark statement of how environmental, social and governance factors are reflected in each benchmark provided and published.

Disclaimer

Performance Disclosure/Back-Tested Data

Where applicable, S&P Dow Jones Indices and its index-related affiliates (“S&P DJI”) defines various dates to assist our clients in providing transparency. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which the index is set to a fixed value for calculation purposes. The Launch Date designates the date when the values of an index are first considered live: index values provided for any date or time period prior to the index’s Launch Date are considered back-tested. S&P DJI defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company’s public website or its data feed to external parties. For Dow Jones-branded indices introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed “Date of introduction”) is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the Index’s public release date.

Please refer to the methodology for the Index for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations.

Information presented prior to an index’s launch date is hypothetical back-tested performance, not actual performance, and is based on the index methodology in effect on the launch date. However, when creating back-tested history for periods of market anomalies or other periods that do not reflect the general current market environment, index methodology rules may be relaxed to capture a large enough universe of securities to simulate the target market the index is designed to measure or strategy the index is designed to capture. For example, market capitalization and liquidity thresholds may be reduced. In addition, forks have not been factored into the back-test data with respect to the S&P Cryptocurrency Indices. For the S&P Cryptocurrency Top 5 & 10 Equal Weight Indices, the custody element of the methodology was not considered; the back-test history is based on the index constituents that meet the custody element as of the Launch Date. Back-tested performance reflects application of an index methodology and selection of index constituents with the benefit of hindsight and knowledge of factors that may have positively affected its performance, cannot account for all financial risk that may affect results and may be considered to reflect survivor/look ahead bias. Actual returns may differ significantly from, and be lower than, back-tested returns. Past performance is not an indication or guarantee of future results.

Typically, when S&P DJI creates back-tested index data, S&P DJI uses actual historical constituent-level data (e.g., historical price, market capitalization, and corporate action data) in its calculations. As ESG investing is still in early stages of development, certain datapoints used to calculate certain ESG indices may not be available for the entire desired period of back-tested history. The same data availability issue could be true for other indices as well. In cases when actual data is not available for all relevant historical periods, S&P DJI may employ a process of using “Backward Data Assumption” (or pulling back) of ESG data for the calculation of back-tested historical performance. “Backward Data Assumption” is a process that applies the earliest actual live data point available for an index constituent company to all prior historical instances in the index performance. For example, Backward Data Assumption inherently assumes that companies currently not involved in a specific business activity (also known as “product involvement”) were never involved historically and similarly also assumes that companies currently involved in a specific business activity were involved historically too. The Backward Data Assumption allows the hypothetical back-test to be extended over more historical years than would be feasible using only actual data. For more information on “Backward Data Assumption” please refer to the FAQ. The methodology and factsheets of any index that employs backward assumption in the back-tested history will explicitly state so. The methodology will include an Appendix with a table setting forth the specific

data points and relevant time period for which backward projected data was used. Index returns shown do not represent the results of actual trading of investable assets/securities. S&P DJI maintains the index and calculates the index levels and performance shown or discussed but does not manage any assets.

Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the Index or investment funds that are intended to track the performance of the Index. The imposition of these fees and charges would cause actual and back-tested performance of the securities/fund to be lower than the Index performance shown. As a simple example, if an index returned 10% on a US \$100,000 investment for a 12-month period (or US \$10,000) and an actual asset-based fee of 1.5% was imposed at the end of the period on the investment plus accrued interest (or US \$1,650), the net return would be 8.35% (or US \$8,350) for the year. Over a three-year period, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.10%, a total fee of US \$5,375, and a cumulative net return of 27.2% (or US \$27,200).

Intellectual Property Notices/Disclaimer

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