BMI Research
A FitchGroup Company

Q4 2016

www.bmiresearch.com

TANZANIA

FREIGHT TRANSPORT & SHIPPING REPORT

INCLUDES 5-YEAR FORECASTS TO 2020

Published by:BMI Research

Tanzania Freight Transport & Shipping Report Q4 2016

INCLUDES 5-YEAR FORECASTS TO 2020

Part of BMI's Industry Report & Forecasts Series

Published by: **BMI Research**

Copy deadline: August 2016

ISSN: 2397-3234

BMI Research
Senator House
85 Queen Victoria Street
London
EC4V 4AB
United Kingdom
Tel: +44 (0) 20 7248 0468
Fax: +44 (0) 20 7248 0467
Email: subs@bmiresearch.com
Web: http://www.bmiresearch.com

CONTENTS

BMI Industry View

BMI View: *A rapidly expanding economy and increasing consumption is benefiting freight transport in Tanzania, accounting for our healthy forecasts across freight modes in 2016 and throughout the medium term. Ongoing and future infrastructure improvement projects in air, rail, road and the country's largest port Dar es Salaam will accommodate the anticipated growth, with foreign investment playing an important role in funding several projects. Enhanced trade relations and Tanzania's gateway role to landlocked East African countries also support our positive outlook.*

Latest Forecasts And Updates

- The Mwalimu Julius Nyerere International Airport expansion project by Swissoport is expected to be ready by the end of May 2016, with the terminal's handling capacity increasing to 80,000 tonnes.
- The building of a 242km highway connecting Tanga City to Bagamoyo will start in 2017, as announced by the Minister for Works, Transport and Communication in April 2016, while the Kigamboni Bridge is now operational and links the central business district of Dar es Salaam to the Kigamboni ward.
- Tanzania is cooperating with Burundi and Rwanda to construct a shared railway through the Central Corridor, and the target is to commence the project in 2017.
- Dar es Salaam Port will undergo major infrastructure improvement following the recent acquisition of a USD600mn loan from the World Bank.
- Tanzania has been working on improving international trade relations through meetings and agreement negotiations held over the past months with trade partners such as Russia and Rwanda.
- For 2016, we forecast road freight to increase by 3.8% to 228.6mn tonnes, air freight to increase by 4.6%, rail freight to increase by 4.3% to 432,510 tonnes, Port of Dar es Salaam tonnage throughput growth at 8.2% and total trade real growth at 8.1%.

Table: Trade Overview (Tanzania 2013-2020)

	2013	2014e	2015e	2016f	2017f	2018f	2019f	2020f
Imports, real growth, % y-o-y	11.00	2.90	2.50	6.70	5.40	5.80	5.20	5.10
Exports, real growth, % y-o-y	0.60	17.70	18.50	9.50	6.10	6.00	6.60	5.70
Total Trade, real growth, % y-o-y	5.80	10.30	10.50	8.10	5.70	5.90	5.90	5.40
Imports, USDbn	13.60	14.30	13.10	13.40	14.00	14.60	15.30	16.00
Import growth, % y-o-y	6.30	4.70	-8.50	2.60	4.40	4.80	4.20	4.60
Exports, USDbn	7.70	9.30	10.10	10.70	11.40	12.10	12.90	13.70
Export growth, % y-o-y	-6.00	20.10	8.50	6.30	6.10	6.00	6.60	6.20
Total trade, USDbn	21.40	23.60	23.20	24.10	25.40	26.70	28.10	29.60
Total trade growth, % y-o-y	1.50	10.30	-1.80	4.20	5.10	5.30	5.30	5.30

e/f = BMI estimate/forecast. Source: National Sources/BMI

SWOT

Strengths	▪ Strong focus on agricultural production is boosting road freight volumes. ▪ Good regional connectivity is driving growth in maritime, road and rail freight as landlocked states rely on Dar es Salaam. ▪ High demand for fuel imports is benefiting maritime and rail freight. ▪ A developing economy is supporting demand for lightweight luxury items, benefiting air freight. ▪ Tanzania is a regional gateway and well-placed for trade with Rwanda, Uganda, the DRC and Burundi, supporting the port throughput volumes.
Weaknesses	▪ Poor-quality roads increase delivery times and costs. ▪ An inadequate rail network plagued by delays and outages deters supply chains. ▪ Lack of investment has decreased the country's competiveness in the freight industry, with ground lost to foreign rivals. ▪ Dearth of cargo-focused airport infrastructure renders sector's freight role minimal. • The country's port infrastructure is inefficient and despite modernisation, severe congestion increases delays and costs for supply chains.
Opportunities	▪ Booming economy will drive demand for lightweight consumer products, and once airport infrastructure is improved it will be able to cater to higher demand. ▪ Strong government support to improve TAZARA could improve rail freight volumes in the medium term. ▪ The extensive transport infrastructure development programme will also improve the quality and extent of available infrastructure. ▪ The refurbishment of existing rail networks and regularisation of disparate gauges will reduce delays to supply chains.

- Continued

- The expansion of existing port facilities and the construction of new ports should enable Tanzania to rival the attractions of Kenyan ports.

Threats

- Alternative routes to Kenya's ports could siphon off road, rail and maritime cargos from Tanzania.
- Domestic hydrocarbon production could reduce imports and freight requirements.
- Continued weakness of the shilling against the dollar would constrain import growth.
- Better rail infrastructure and cross-border connections could divert road freight cargos.
- The country's agricultural exports are vulnerable to price fluctuations, as are mineral commodities exports, which could result in a steep decline in supply at short notice, reducing the volume of cargo passing through the ports.

Industry Forecast

Trade Forecast

BMI View: *Rapid economic expansion allied with increased private and government consumption will boost Tanzania's trade volumes throughout the coming years. The agriculture, construction and manufacturing sectors have promising growth trajectories that support our optimistic outlook, with significant gas discoveries to sustain economic growth in the future.*

Latest Updates

- Tanzania and Rwanda are working on improving business relations and trade links, with the first Tanzania Rwanda Trade Forum (TRTF) to be held in 2016. The aim of this initiative is to increase cross border trade and investments.
- Russia and Tanzania are close to agreeing an economic pact focusing on trade in 2016, with Tanzania's Industry, Trade and Investment Minister and the Minister of Trade and Industry of the Russian Federation to sign an agreement within the year. Russian investors are eyeing opportunities in Tanzania that will boost trade volumes.
- We forecast total trade real growth at 8.1% in 2016, with exports achieving higher rates (9.5%) than imports (6.7%). Over the medium term (2016-2020), total trade will increase by an average of 6.2%.

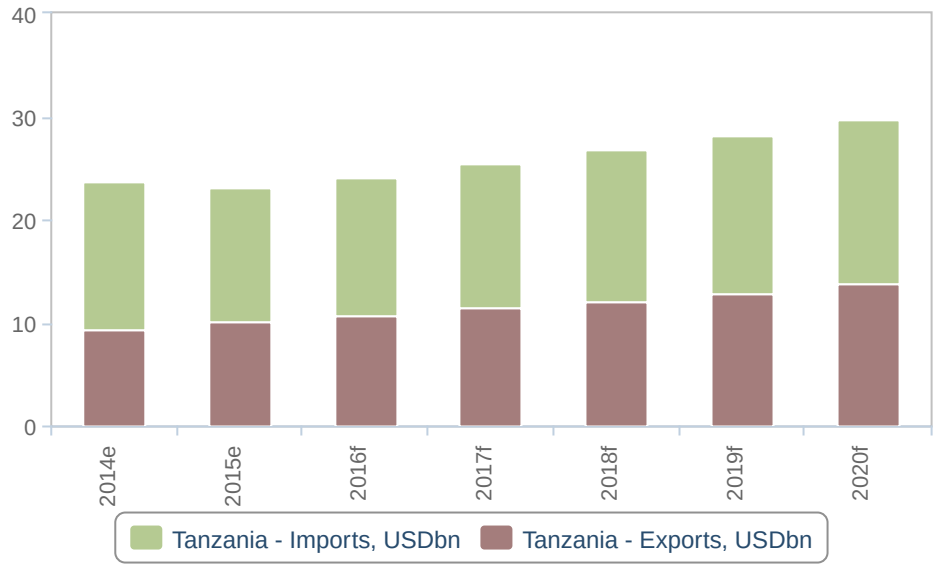
Chemical, industrial and fuel products remain the highest imports in terms of value, though the strongest growth will be in the import of machinery. In terms of exports, metals remain the biggest output, while chemicals and fuel show the strongest growth. Tempering growth somewhat is the news that Tanzania's gold sector will remain pressured by low gold prices, which will discourage production growth over coming years, thus having an impact on freight modes as volumes reduce. Beyond our forecast period to 2020, the country's mining sector could diversify as various miners are looking to invest in the country's nickel, coal and uranium resources.

The medium-term trade outlook is good, with the country looking set to benefit from increased activity in natural gas and other energies. There is also likely to be increased production of metals, especially gold, with coal, uranium, nickel and iron ore also providing trade opportunities in the coming years. The ICT sector should also see some growth as demand increases for secure and efficient communications.

Economic growth in Tanzania will pick up in 2016, with real GDP growth increasing from 6.0% in 2015 to 6.5% in 2016 according to our forecasts. The TZS will remain weak against the dollar over the period. However, investment in infrastructure will boost growth in the country in the medium to long term, with the transport sector well positioned to benefit from much-needed development and expansion.

Rising Consumption Boosts Trade Volumes

Imports and Exports Value (2014-2020)



e/f = BMI estimate/forecast. Source: UN, BMI

Global freight and shipping company **Maersk** confirmed its interest in the region, predicting a 10% increase in freight in the East Africa region in 2015 as economic growth and better shipping efficiencies fuelled growth. The combination of a more stable political situation, as well as a growing middle class, investment in infrastructure and the advances in oil and gas exploration were credited by Maersk for trade growth in the region.

Agriculture will continue to form the main trade activity in the country, accounting for a large proportion of its GDP, with the main exports including coffee, tea, cotton and cashews. Government strategy to modernise farming is in full swing as part of 'Vision 2025' to make Tanzania a middle-income country. The establishment of the Tanzania Agriculture Development Bank in 2015 was aimed at helping the government with this strategy. Investment in technology and access to finance will be key to increasing growth opportunities, and collaborations with foreign partners, such as in the European Union, have already opened up opportunities for further development in commercial scale farming in the country. Growth in the sector will have a positive impact on all sectors within the freight mix.

Table: Trade Overview (Tanzania 2013-2020)

	2013	2014e	2015e	2016f	2017f	2018f	2019f	2020f
Imports, real growth, % y-o-y	11.00	2.90	2.50	6.70	5.40	5.80	5.20	5.10
Exports, real growth, % y-o-y	0.60	17.70	18.50	9.50	6.10	6.00	6.60	5.70
Total Trade, real growth, % y-o-y	5.80	10.30	10.50	8.10	5.70	5.90	5.90	5.40
Imports, USDbn	13.60	14.30	13.10	13.40	14.00	14.60	15.30	16.00
Import growth, % y-o-y	6.30	4.70	-8.50	2.60	4.40	4.80	4.20	4.60
Exports, USDbn	7.70	9.30	10.10	10.70	11.40	12.10	12.90	13.70
Export growth, % y-o-y	-6.00	20.10	8.50	6.30	6.10	6.00	6.60	6.20
Total trade, USDbn	21.40	23.60	23.20	24.10	25.40	26.70	28.10	29.60
Total trade growth, % y-o-y	1.50	10.30	-1.80	4.20	5.10	5.30	5.30	5.30

e/f = BMI estimate/forecast. Source: National Sources/BMI

Table: Key Trade Indicators (Tanzania 2013-2020)

	2013	2014e	2015e	2016f	2017f	2018f	2019f	2020f
Food and agricultural products import, USDmn	1,025	1,174	1,081	1,107	1,152	1,203	1,251	1,305
Food and agricultural products import, % y-o-y	-17.6	14.5	-8.0	2.4	4.1	4.4	4.0	4.3
Food and agricultural products export, USDmn	1,368	1,498	1,596	1,675	1,757	1,841	1,941	2,040
Food and agricultural products export, % y-o-y	-13.8	9.5	6.6	4.9	4.9	4.8	5.4	5.1
Chemical, industrial and fuel products import, USDmn	5,977	5,586	5,104	5,239	5,470	5,734	5,979	6,258
Chemical, industrial and fuel products import, % y-o-y	24.8	-6.5	-8.6	2.6	4.4	4.8	4.3	4.7
Chemical, industrial and fuel products export, USDmn	634	904	1,055	1,176	1,302	1,432	1,584	1,737
Chemical, industrial and fuel products export, % y-o-y	-43.1	42.7	16.7	11.5	10.7	10.0	10.7	9.7
Manufactured consumer goods import, USDmn	1,439	1,469	1,348	1,382	1,440	1,506	1,567	1,637
Manufactured consumer goods import, % y-o-y	3.1	2.1	-8.2	2.5	4.2	4.6	4.1	4.5
Manufactured consumer goods export, USDmn	434	486	539	581	625	670	723	776
Manufactured consumer goods export, % y-o-y	-16.0	12.0	10.8	7.8	7.5	7.2	7.9	7.4
Metals and articles thereof import, USDmn	1,161	1,040	950	975	1,018	1,068	1,114	1,166
Metals and articles thereof import, % y-o-y	37.8	-10.4	-8.7	2.7	4.5	4.9	4.3	4.7
Metals and articles thereof export, USDmn	1,712	1,895	2,061	2,193	2,330	2,472	2,639	2,807
Metals and articles thereof export, % y-o-y	-14.9	10.7	8.7	6.4	6.3	6.1	6.8	6.3
Machinery and complex manufactured products import, USDmn	2,923	3,323	2,992	3,084	3,243	3,424	3,592	3,784
Machinery and complex manufactured products import, % y-o-y	-15.1	13.7	-10.0	3.1	5.2	5.6	4.9	5.3

Key Trade Indicators (Tanzania 2013-2020) - Continued

	2013	2014e	2015e	2016f	2017f	2018f	2019f	2020f
Machinery and complex manufactured products export, USDmn	264	298	329	354	381	407	439	471
Machinery and complex manufactured products export, % y-o-y	-17.0	12.7	10.5	7.6	7.3	7.1	7.8	7.2

e/f = BMI estimate/forecast. Source: BMI/TradeMap

Table: Top 5 Trade Partners - Product Imports (2008-2013), USDmn

	2007	2008	2009	2010	2011	2012	2013	2014
China, Mainland, USDmn	655	1,034	1,006	1,376	1,827	2,300	3,454	4,280
China, Mainland, USDmn, % of total	12	13	15	17	17	20	24	28
India, USDmn	564	1,183	975	1,237	1,975	1,756	3,506	3,806
India, USDmn, % of total	10	15	15	15	18	15	24	25
United Arab Emirates, USDmn	321	422	294	385	489	535	538	554
United Arab Emirates, USDmn, % of total	6	5	5	5	5	5	4	4
South Africa, USDmn	421	555	494	614	634	661	561	544
South Africa, USDmn, % of total	8	7	8	8	6	6	4	4
Kenya, USDmn	362	485	415	445	508	590	518	527
Kenya, USDmn, % of total	7	6	6	6	5	5	4	3
TOTAL	5,562	7,687	6,516	7,996	10,791	11,430	14,333	15,487
TOTAL, top 5 countries, USDm	2,324	3,679	3,183	4,058	5,433	5,843	8,576	9,711
% from top 5 trade partners	42	48	49	51	50	51	60	63

Source: Trade Map

Table: Top 5 Trade Partners - Product Exports (2008-2013), USDmn

	2007	2008	2009	2010	2011	2012	2013	2014
India, USDmn	134	179	227	259	232	476	770	843
India, USDmn, % of total	8	9	12	10	7	15	20	21
China, Mainland, USDmn	181	120	176	365	428	347	509	398
China, Mainland, USDmn, % of total	10	6	9	14	14	11	13	10
Japan, USDmn	69	124	127	142	232	193	179	214
Japan, USDmn, % of total	4	6	7	6	7	6	5	5
Germany, USDmn	114	97	92	94	200	159	154	189
Germany, USDmn, % of total	6	5	5	4	6	5	4	5
Kenya, USDmn	90	101	89	117	159	153	121	187
Kenya, USDmn, % of total	5	5	5	5	5	5	3	5
TOTAL	1,777	2,028	1,942	2,520	3,116	3,225	3,846	4,073
TOTAL, top 5 countries, USDm	589	621	712	976	1,251	1,327	1,733	1,830
% from top 5 trade partners	33	31	37	39	40	41	45	45

Source: Trade Map

Road Freight Forecast

BMI View: *A number of road infrastructure projects currently underway in Tanzania will ensure healthy growth in 2016 and throughout the medium term. Increasing domestic consumption and the sector's role in providing transit for landlocked African countries also support this view.*

Latest Updates

- The presidents of Kenya and Tanzania performed the groundbreaking for construction of the Arusha - Tengeru Dual Carriageway and Arusha Bypass Road at Tengeru in March. The road is a section of a larger multinational road network in East Africa and runs 234km long. The Tanzanian part of the project will cost USD353mn, including a dual carriageway and bypass, while Kenya will invest USD85mn. The road will address congestion and promote trade by road between the two countries.
- Tanzania's Minister for Works, Transport and Communication announced in April 2016 that construction of a 242km highway connecting Tanga City to Bagamoyo will start in 2017, and plans include a bridge over the Pangani River. An improved road network will accommodate growth in road freight over the medium term.
- The Kigamboni Bridge was competed in April 2016, connecting the Dar es Salaam central business district to the Kigamboni ward across Kurasini, offering an alternative connection. The 680 meters toll bridge has six lanes and signals the government's intentions of enhancing domestic road infrastructure that will facilitate higher volumes of freight transport.
- We forecast road freight to increase by 3.8% to 228.6mn tonnes in 2016 and growth to average 3.7% over the medium term (2016-2020).

Short Term

Our forecast is for road haulage volumes to expand by 3.8% in 2016 and 3.6% in 2017, which, if realised, would see 228.6mn and 236.8mn tonnes handled in these respective years. The sector is overwhelmingly the most important in the Tanzanian freight mix, with volumes dwarfing both air and rail freight. Importantly, the sector does not only cater for domestic volumes, but also, given Tanzania's coastline, it is an important transit route for landlocked African states, including Rwanda, Burundi, the DRC and Zambia. However, there is plenty of room for improvement in the road freight mode as it is ranked a lowly 92nd in the World Economic Forum's Global Competitiveness Report 2015-16.

Looking at the domestic picture first, this is driven largely by private consumption demand. We expect private consumption to be the main engine of economic growth in 2016 and 2017, contributing 4.3 percentage points (pp) to headline growth in 2016. Growth in real GDP will pick up from 6.0% in 2015 to 6.5% in 2016, as in much of the region, the collapse in oil prices has translated into lower fuel costs in Tanzania, and this will contribute to lower average annual inflation in 2016, bolstering consumer

purchasing power. While headline inflation has edged steadily higher in recent months, it remains low and we expect price conditions to remain broadly benign over the coming months.

e/f = BMI estimate/forecast. Source: BMI Estimate

Medium Term

The upshot of lower fuel costs will be more cash in consumers' pockets, which should in turn translate into increased spending on other goods and services. In addition to benefiting from increased consumer spending power, consumer-focused companies will see their own transport costs reduced.

In addition, Tanzanian road freight companies benefit from demand from countries such as the DRC and Rwanda. Road freight firms continue to benefit from Rwandan trade flows. In 2013, almost 50% of all of Rwanda's trade imports passed through the port of Dar es Salaam via the Central Corridor route, which is 200km shorter than the northern alternative. Moreover, Tanzania's limited rail networks mean that roads provide the main source of transportation for domestic supply chains, and there have been a number of investments into improving the facilities for storing and loading trucks in order to reduce delays and

improve delivery times. We expect further developments such as this will continue to contribute to the road freight sector's attractiveness for supply chains in 2016 and through to 2020.

Over the medium term, we see Rwandan imports continuing to boost road freight tonnage in Tanzania. This is largely based on our expectations that the promise to remove all bottlenecks along the central corridor will prove to be a boon for Rwandan long haul truck firms (and their customers), which face numerous non-tariff barriers, such as roadblocks and weigh bridges. The bottlenecks mean that it currently takes 3.5 days to transport goods between the Rusumo border and Dar es Salaam.

The government's plan to improve security should start to deal with another disincentive, namely the threat of theft and murder in some areas of the corridor following the killings of three truck drivers (two from Burundi and one from Tanzania, in 2014). As the connecting infrastructure improves, and transit times are reduced by various means, we believe that the volume of Rwandan-bound freight will continue to grow. In particular, the current advantages of a 200km shorter route, and the introduction of one-stop border controls, will prove particularly appealing to logistics firms and supply chains - as will the reduction in the number of weigh bridges and the continued streamlining of bureaucratic requirements.

The introduction of inland container depots and car freight stations inland, although developed to benefit the maritime freight sector, also offer opportunities for other modes, in our view, as the connections between these inland sites and the ports have been expanded or developed from scratch, providing additional bonus for road and rail freight operators in the form of increased traffic and better infrastructure. Moreover, construction has been completed on a 228km highway project, which links the towns of Tunduma, Laela and Sumbawanga in Tanzania. The upgraded road will improve road freight access to Malawi, Zambia and the DRC. This contributes to our positive medium-term road freight outlook, and we forecast that growth in total road freight will average 4.2% annually over our medium-term forecast period to 2020, rising to 271mn tonnes.

Long Term

Given that Dar es Salaam is the economic hub of Tanzania, even if it is not the capital, it is essential to freight transport, with much of the country's road haulage volumes originating from, going to, or passing through or close to the city - the port of Dar es Salaam is the key entry point to Tanzania and its hinterland. The city's smooth-running is therefore important for the efficient transportation of goods in the country. This efficiency will be boosted by recently announced government plans to spend TZS4.39trn (USD2bn) to build new roads and a bus rapid transit system to tackle with the crippling traffic problem in the city, according to a senior official. Works Minister John Magufuli stated in parliament in May 2015 that

budgetary allocations in the next financial year had been made to ease road congestion in the city through several projects, including the construction of flyovers and bridges.

Construction has started on a USD10bn port and economic zone at Bagamoyo that will also involve road and rail development as the country competes with Kenya to supply the inland countries of Africa with efficient transport links to the sea.

Table: Road Freight (Tanzania 2013-2020)

	2013	2014	2015e	2016f	2017f	2018f	2019f	2020f
Road Freight Tonnes (000)	202,625	219,458	220,112	228,557	236,758	245,581	254,462	263,639
Road freight tonnes, % y-o-y	4.4	8.3	0.3	3.8	3.6	3.7	3.6	3.6

e/f = BMI estimate/forecast. Source: BMI Estimate

Rail Freight Forecast

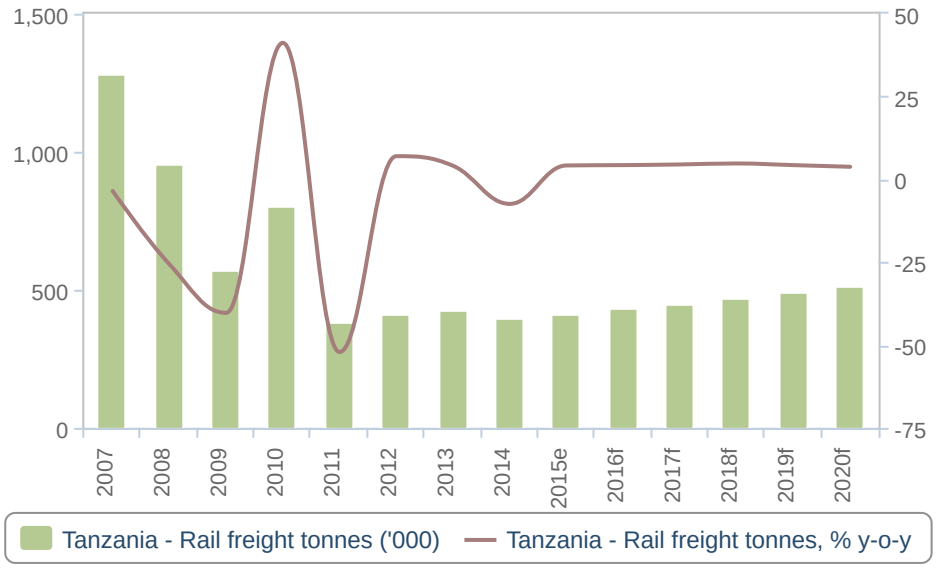
BMI View: *Rail freight will enjoy healthy growth in 2016 and throughout the medium term, with the mode mainly facilitating transport for the country's largest industry, agriculture. The projected increase in tonnage transported by rail is further supported by ongoing public and private investment in the sector.*

Latest Updates

- Tanzania is in talks with Rwanda and Burundi for construction of a shared railway through the Central Corridor. Officials responsible for Tanzanian infrastructure projects held a series of meetings with their Rwandan and Burundian counterparts in April 2016 to discuss the details, with the aim to commence the project next year. New railway connections in the East African region will encourage rail freight transport.
- The Tanzania-Zambia Railway Authority (Tazara) is set to be taken over by China, with privatisation the strategy chosen to revive the 1,860km single-track railway line constructed in the 1970s.
- We forecast rail freight to increase by 4.3% in 2016 to 432,510 tonnes and growth to average 4.3% over the medium term (2016-2020).

On The Right Track

Rail Freight Tonnage (2007-2020)



e/f = BMI estimate/forecast. Source: National Sources, BMI

Short Term

In 2016, we forecast Tanzania's rail freight handling to expand by 4.3% to 432,510 tonnes, with the sector putting the contraction of 2014 (7.4%) firmly behind it. In 2017, growth will accelerate again, albeit only moderately, to 4.5%. This outlook is predicated in part on our view that real GDP growth will rise from 6.0% in 2015 to 6.5% in 2016, as economic activity this year will be slowed by the withholding of donor funds over a scandal in the power sector. Over our medium-term forecast period to 2020, we project that growth in rail freight volumes will average 4.3% annually, rising to approximately 512,000 tonnes in 2020. This is on the back of increasing investment in the sector, low statistical base effects, and ongoing robust economic growth. However, there remain significant risks to this outlook.

In terms of what is carried on the rail network, this is largely minerals and agricultural produce. Looking first at agricultural goods, we see little scope for growth in traditional exports such as coffee, tobacco and cashew nuts in the near term, as a lack of investment and competitiveness continue to hinder productivity. While agriculture accounts for a sizeable proportion of the economy, growth is constrained by a number of factors, such as outdated farming techniques. Despite its size, outstanding credit to the sector is tiny by comparison, reflecting the challenges it faces.

In terms of exports, the mining sector also makes use of the rail network. The primary Tanzanian mineral export is gold, which does not generate huge volumes, with equally volume-light diamonds also important. However, the country also has reserves of bulkier minerals such as coal, nickel and uranium, and our Mining team expects that these commodities to drive renewed growth in Tanzania's mining sector over the coming years. In addition, the rail freight sector currently benefits from imports from Zambia and the DRC, predominantly copper and other natural resources, which are transported to the port of Dar es Salaam by rail (though in the DRC's case, products are largely shipped over to meet the central line at Kigoma first).

Despite the decline in production growth, Tanzania's mining industry will remain relatively significant in regional terms as the country is Africa's fourth-largest producer of gold and continues to produce growing numbers of diamonds. Beyond our forecast period, the sector will be boosted by increasing coal, nickel and uranium production, which is welcome news for the rail freight mode.

Tanzania's railways are in poor condition (ranking 89th in the World Economic Forum's Global Competitiveness Report 2015-16), with breakdowns and cancellations of already infrequent services common. The rail freight sector is hampered by limited development and coverage and various issues with the TAZARA link. However, substantial investment into the rail networks will continue to boost its appeal

for supply chains, and this is one of the main drivers for our forecast of continued growth over the medium term.

Medium Term

In March 2015, it was reported that the Tanzanian government planned to invest USD14.2bn over the next five years in the construction of a rail network, according to Tanzanian Transport Minister Samuel Sitta. Sitta stated that the new railway network will cater to the demand for cargo transportation to landlocked neighbouring countries such as the Democratic Republic of the Congo, Rwanda, Burundi and Uganda, and also meet domestic needs. The project includes a 2,561km standard gauge railway that will be constructed with an investment of USD7.6bn to connect the port at the Tanzanian city of Das es Salaam to Rwanda and Burundi. In addition, two more lines, costing USD6.6bn, will be set up to connect Dar es Salaam to the coal, iron ore and soda ash mining regions in the country's north and southern parts. The projects will be financed through commercial loans from a consortium of banks under a 20-year repayment period, Sitta said. This investment will support growth beyond the scope of our medium-term forecast period.

Following years of underinvestment, government support to shore up the Tanzania to Zambia TAZARA line will be welcome news if the rail company is to reduce its debts and pay its workers regularly. Investment from China will also see funding for new rolling stock, which will increase the railway's capacity and improve connections for the transport of copper through the region.

A **China Railway Materials Company** (CRM)-led consortium will build the proposed 2,561km standard gauge railway line linking the Port of Dar es Salaam in Tanzania to the country's landlocked neighbours along the Central Corridor. The consortium, chosen by the ministry of transport, will provide 10% of the financing for the USD7.6bn project. Work on the 2,561km line was scheduled to start in June 2015, according to Transport Minister Samuel Sitta, speaking that month. The Tanzanian government also signed a framework agreement with **China Railway No.2 Engineering Group Co.** to develop a 1,000km standard gauge railway line from the coal and iron ore mines in Ludewa, Njombe Region, to the Mtwara Port. The Njombe-Mtwara line is estimated to cost about TZS2.52trn

Long Term

Infrastructure developments for the rail sector will also boost its attractiveness to supply chains, and factors such as this support our comparatively positive outlook for the wider freight sector. For example, there are plans to rehabilitate the closed line from Tanga, to Kenya, along with plans to overhaul the central line,

which will improve efficiency in Tanzania's rail network and boost regional connectivity. Better connectivity within the country, as well as the improvement in its trans-national connections will substantially boost the sector's attractiveness to supply chains and drive up tonnage volumes. In addition, as new ports come online, and the planned Mtwara hydrocarbon port expansion is completed, in conjunction with the production of Tanzanian offshore oil, there will be increased volumes of domestic oil and gas available, which will need to be transported around the country.

However, in spite of an extensive project pipeline to improve the country's transport infrastructure, we believe that a number of these projects will be cancelled or suffer severe delays due to financial or political issues. Additional risks stem from the continued rail worker strikes due to non-payment. This not only halts transportation of goods, driving up costs and delays for supply chains, but will also potentially result in certain groups looking to other freight methods, or even opting to switch to other country's ports altogether.

Table: Rail Freight (Tanzania 2013-2020)

	2013	2014e	2015e	2016f	2017f	2018f	2019f	2020f
Rail freight tonnes ('000)	430	398	414	432	451	473	494	512
Rail freight tonnes, % y-o-y	4.1	-7.4	4.2	4.3	4.5	4.8	4.3	3.8
Rail freight tonnes-km (mn ton km)	886	904	923	948	973	1,000	1,027	1,055
Rail freight tonnes-km, % y-o-y	3.3	2.0	2.1	2.8	2.6	2.8	2.7	2.7

e/f = BMI estimate/forecast. Source: National Sources/BMI

Air Freight Forecast

BMI View: *We project growth in Tanzanian air freight in 2016 as well as throughout the medium term. Nevertheless, air transport will only hold a very small share of the country's freight mix as the mode is underdeveloped and faces lack of investment by the national carriers. However, this also suggests great scope for expansion and an opportunity for strong growth in the future.*

Latest Updates

- **Swissport** is Tanzania's leading aviation services company and is investing in the country's air sector with USD13mn for an import cargo facility at Mwalimu Julius Nyerere International Airport (JNIA). The project will be ready by the end of May and the terminal's extended handling capacity will reach 80,000 tonnes. New technology will also be introduced, with the company aiming to provide the necessary infrastructure for the air industry to grow.
- We project air freight to increase by 4.6% in 2016 and growth to average 4.6% over the medium term (2016-2020)

In 2016, we forecast that Tanzanian air freight volumes will expand by 4.6% to just 40 tonnes, followed by growth of 4.8% in 2017. The sector will be boosted by a relatively bright outlook for private consumption, although growth is coming primarily from the extremely low statistical base. At present, air freight is an extremely small aspect of the Tanzanian freight sector, and accounts for less than 0.01% of the total tonnage. This is due to a lack of expansion in airline fleets, as well as extremely limited airport infrastructure, as although there are 26 mainland airports these are largely focused on tourist traffic rather than freight and offer little in the way of cargo facilities. Demand for air freight is low, and until sustained investment is made into improving and expanding the airport infrastructure, airfreight tonnage will remain subdued. Nevertheless, consumption levels will enjoy robust growth over the next several years, supporting an expansion in air freight volumes.

In Tanzania, the unemployment rate is extremely low, at just 4.7% in 2016, and the population is set to rise by around 3% a year through to 2018, growing from 52mn to 57mn during this period. Of this, the majority falls into the key retail demographic of the 20-40 age bracket, which drives retail expansion and combines the demand for luxury goods as well as essentials, with the money to make large purchases. In the near term, the outlook for air freight demand is relatively bright. Private consumption will be the main engine of economic growth in 2016, contributing 4.3 percentage points (pp) to headline growth of 6.9%. As in much of the region, the collapse in oil prices has translated into lower fuel costs in Tanzania and this will contribute to lower average annual inflation in 2016, bolstering consumer purchasing power. While headline inflation has edged steadily higher recently, it remains low, and we expect price conditions to remain broadly benign over the coming months. The upshot of lower fuel costs will mean more cash in consumers'

pockets, which should in turn translate into increased spending on other goods and services, including consumer goods transported by air, although overall demand will remain low.

Kilimanjaro International Airport (KIA) is the country's main cargo airport, providing services such as cargo acceptance and documentation, warehousing, cargo delivery, special cargo handling, cargo palletisation and cold storage facilities. Pharmaceuticals and consumer electronics form the bulk of the imports, and perishable foodstuffs represent the key airfreight exports. With regards to exports, we highlight that Tanzania's exports (and the transit cargos coming from the EAC states and other states which are reliant on Tanzania's ports) are largely limited to agricultural and mining commodities, with little in the way of airfreight cargos.

Longer-term growth prospects are increasingly positive. There is a raft of new developments ongoing at new and old airports throughout Tanzania at present. Although these are primarily aimed at the burgeoning tourism sector - which is experiencing even more rapid growth due to the security troubles which are denting the Kenyan tourist sector - we expect that air freight will also benefit. More tourists will necessitate the import of more consumer goods, and the facilities will be able to hand a certain quantity of cargo in addition to passengers, even if it is just bellyhold.

The Tanzania Airports Authority has announced that construction of a third terminal at the Julius Nyerere International Airport in Dar es Salaam is on schedule to be completed in 2017. The terminal is expected to improve the quality of air transport in the region. Phase 1, which will handle 3.5mn passengers annually, will be completed in 2016 and phase II of the terminal will handle 2.5mn travellers every year. Additionally, Dutch contractor **BAM International** has secured a EUR37mn (USD39.06mn) design-build contract to renovate and expand Kilimanjaro International Airport, between Moshi and Arusha, in northern Tanzania. The construction of a second terminal at the Karume International Airport in Unguja Island in Tanzania's semi-autonomous region Zanzibar will soon commence.

Table: Air Freight (Tanzania 2014-2020)

	2014	2015e	2016f	2017f	2018f	2019f	2020f
Air Freight tonnes	36.54	38.14	39.91	41.82	43.83	45.79	47.68
Air freight tonnes % y-o-y	4.4	4.4	4.6	4.8	4.8	4.5	4.1
Air freight tonnes-km (mn ton km)	2.31	2.39	2.48	2.58	2.70	2.84	3.02
Air freight tonnes-km % y-o-y	15.0	3.4	3.8	4.2	4.6	5.5	6.3

e/f = BMI estimate/forecast. Source: National sources, BMI

Shipping Forecast

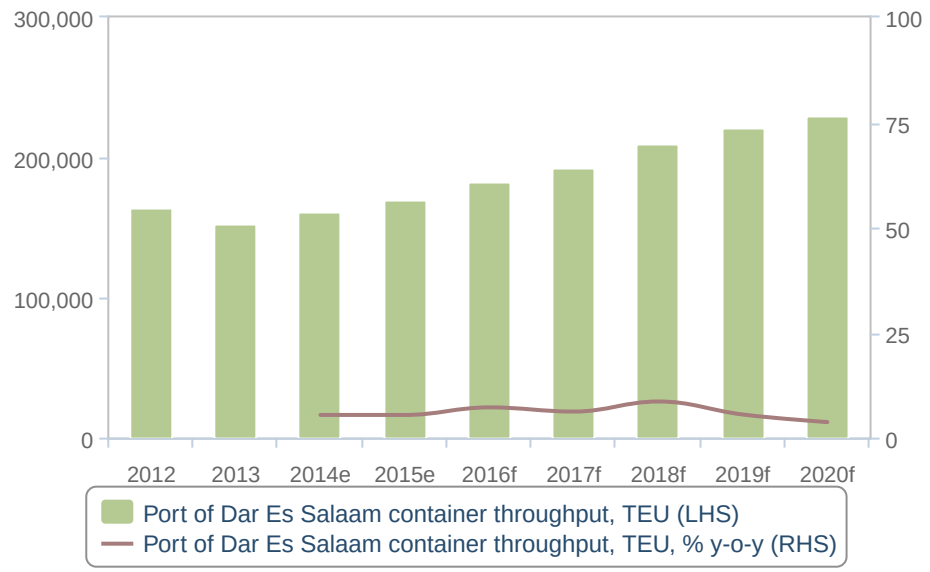
BMI View: *The port of Dar es Salaam, Tanzania's largest, will post strong growth in tonnage throughput and box handling in 2016, which will be sustained over the medium term. The government is concentrating efforts to enhance the port's infrastructure and business through investment in facilities and improving international trade relations and connectivity. This will prove important in competing with neighbouring ports and supports our positive outlook.*

Latest Updates

- Tanzania is set to become an LNG exporter, with liquefaction the preferred monetisation method for large gas discoveries. Land for the plant was acquired earlier this year and the government will soon start looking for export markets. This will increase shipping activity in the country, with LNG carrier vessels transporting the gas, but the long construction time of such energy projects make this development a long-term consideration.
- The World Bank has provided a USD600nm loan to Tanzania Ports Authority (TPA) for major improvement at Dar es Salaam Port. TPA will contribute another USD60mn for the project which will significantly increase the port's cargo handling capacity. This will make the port more competitive and help enhance its gateway role.
- An Omani delegation visited Tanzania in April and held meetings with senior officials to discuss trade and investment opportunities with connecting the ports of Duqm, Salalah and Sohar with Dar es Salaam Port set as a priority. New shipping lines and stronger trade relations will increase port throughput.
- We forecast container traffic at Port of Dar es Salaam to increase by 7.2% to 182,144 twenty foot equivalent units (TEUs) in 2016 and tonnage throughput growth at 8.2% reaching 19.5mn tonnes.

Growth To Remain Robust

Port of Dar Es Salaam Container Throughput TEU & % Change y-o-y (2012-2020)



e/f = BMI estimate/forecast. Source: Tanzania Port Authority, BMI

Ocean Shipping

The port of Dar es Salaam is set to see y-o-y tonnage growth of 8.2% in 2016, while box gains will come in at 7.2%. The facility is a regional rather than global hub, and the government has been weighing up whether to concentrate solely on upgrading Dar es Salaam and Mtwara, or continue with the proposed new megaport at Bagamoyo.

The government plans to construct a 2,561km (1,536-mile) standard gauge railway connecting the port of Dar es Salaam to Tanzania's land-locked neighbours, Rwanda and Burundi, at a cost of US7.6bn, which should boost volumes at both the port and in the rail freight sector, reported Reuters.

However, prolonged instability at Tanzania Ports Authority (TPA) is said to be undermining the competitiveness of the port of Dar es Salaam at present, IPP Media reported in January 2016. Dar es Salaam Corridor Group (DCG) Chief Executive Officer Eric Kok said 'The multiple changes are not giving any stability in at the port and as everyone is scared of his/her job, no decisions can and will be made. TPA has

at this stage lost touch with its stakeholders.' The knock-on effect of the instability is that cargo is being lost to other regional rivals.

Tanzanian President John Magufuli dismissed the head of the country's port authority as part of an anti-graft campaign in the country at the end of 2015. Magufuli sacked Director-General of the Tanzania Ports Authority (TPA) Awadhi Massawe, and the permanent secretary in the transport ministry, Shaaban Mwinjaka, following the disappearance of more than 2,700 shipping containers at the port. 'President Magufuli has also disbanded the board of directors of the ports authority due to its failure to take action against the Dar es Salaam port's long history of poor performance,' read a statement by Prime Minister Kassim Majaliwa's office, Reuters reported.

Over our medium-term forecast period to 2020, we expect the port of Dar es Salaam's average y-o-y tonnage growth to come in at 8.0%, reaching 26.5mn tonnes, while container throughput is pencilled in to grow on average by 9.8% y-o-y, to reach 271,168TEUs. Tanzania's Minister for Works, Transport and Communications Makame Mbarawa explained that the government planned to upgrade berths 1 to 7 and construct two additional ones, 13 and 14, at the port of Dar es Salaam. The World Bank has reportedly agreed to fund the upgrade of berths 1 to 7 and the refurbishment is set to be complete by 2018.

Table: Major Ports Data (Tanzania 2013-2020)

	2013	2014	2015e	2016f	2017f	2018f	2019f	2020f
Port of Dar Es Salaam throughput, tonnes '000	12,530	14,400	18,000	19,476	20,917	22,569	24,420	26,496
Port of Dar Es Salaam throughput, tonnes '000, % y-o-y	15.3	14.9	25.0	8.2	7.4	7.9	8.2	8.5
Port of Dar Es Salaam container throughput, TEU	153,091	161,357	169,990	182,144	193,356	209,966	221,454	229,674
Port of Dar Es Salaam container throughput, TEU, % y-o-y		5.4	5.4	7.2	6.2	8.6	5.5	3.7

e/f = BMI estimate/forecast. Source: BMI/Tanzania Port Authority

Table: Key Trade Indicators (Tanzania 2013-2020)

	2013	2014e	2015e	2016f	2017f	2018f	2019f	2020f
Food and agricultural products import, USDmn	1,025	1,174	1,081	1,107	1,152	1,203	1,251	1,305
Food and agricultural products import, % y-o-y	-17.6	14.5	-8.0	2.4	4.1	4.4	4.0	4.3
Food and agricultural products export, USDmn	1,368	1,498	1,596	1,675	1,757	1,841	1,941	2,040
Food and agricultural products export, % y-o-y	-13.8	9.5	6.6	4.9	4.9	4.8	5.4	5.1
Chemical, industrial and fuel products import, USDmn	5,977	5,586	5,104	5,239	5,470	5,734	5,979	6,258
Chemical, industrial and fuel products import, % y-o-y	24.8	-6.5	-8.6	2.6	4.4	4.8	4.3	4.7
Chemical, industrial and fuel products export, USDmn	634	904	1,055	1,176	1,302	1,432	1,584	1,737
Chemical, industrial and fuel products export, % y-o-y	-43.1	42.7	16.7	11.5	10.7	10.0	10.7	9.7
Manufactured consumer goods import, USDmn	1,439	1,469	1,348	1,382	1,440	1,506	1,567	1,637
Manufactured consumer goods import, % y-o-y	3.1	2.1	-8.2	2.5	4.2	4.6	4.1	4.5
Manufactured consumer goods export, USDmn	434	486	539	581	625	670	723	776
Manufactured consumer goods export, % y-o-y	-16.0	12.0	10.8	7.8	7.5	7.2	7.9	7.4
Metals and articles thereof import, USDmn	1,161	1,040	950	975	1,018	1,068	1,114	1,166
Metals and articles thereof import, % y-o-y	37.8	-10.4	-8.7	2.7	4.5	4.9	4.3	4.7
Metals and articles thereof export, USDmn	1,712	1,895	2,061	2,193	2,330	2,472	2,639	2,807
Metals and articles thereof export, % y-o-y	-14.9	10.7	8.7	6.4	6.3	6.1	6.8	6.3
Machinery and complex manufactured products import, USDmn	2,923	3,323	2,992	3,084	3,243	3,424	3,592	3,784
Machinery and complex manufactured products import, % y-o-y	-15.1	13.7	-10.0	3.1	5.2	5.6	4.9	5.3
Machinery and complex manufactured products export, USDmn	264	298	329	354	381	407	439	471
Machinery and complex manufactured products export, % y-o-y	-17.0	12.7	10.5	7.6	7.3	7.1	7.8	7.2

e/f = BMI estimate/forecast. Source: BMI/TradeMap

Table: Top 5 Trade Partners - Product Imports (2013), USDmn

	2008	2009	2010	2011	2012	2013
Total Product Imports	**8,087.74**	**6,530.82**	**8,012.87**	**11,184.22**	**11,715.59**	**12,525.41**
India	865.71	772.87	895.01	1564.95	880.63	2308.71
% change y-o-y	68.85	-10.72	15.80	74.85	-43.73	162.17
% of total product imports	10.70	11.83	11.17	13.99	7.52	18.43
Switzerland	139.80	134.59	562.59	1102.19	1581.60	1621.96
% change y-o-y	-45.08	-3.73	318.01	95.91	43.50	2.55
% of total product imports	1.73	2.06	7.02	9.85	13.50	12.95
China	721.34	692.07	876.53	1056.32	1162.89	1595.86
% change y-o-y	73.43	-4.06	26.65	20.51	10.09	37.23
% of total product imports	8.92	10.60	10.94	9.44	9.93	12.74
United Arab Emirates	978.94	631.57	672.18	1243.28	1025.69	1193.19
% change y-o-y	25.11	-35.48	6.43	84.96	-17.50	16.33
% of total product imports	12.10	9.67	8.39	11.12	8.75	9.53
South Africa	829.39	686.63	771.72	988.15	934.86	729.67
% change y-o-y	39.25	-17.21	12.39	28.05	-5.39	-21.95
% of total product imports	10.25	10.51	9.63	8.84	7.98	5.83

Source: Trade Map

Table: Top 5 Trade Partners - Product Exports (2013), USDmn

	2008	2009	2010	2011	2012	2013
Total Product Exports	**3,121.08**	**2,982.41**	**4,050.55**	**4,734.96**	**5,547.23**	**4,412.55**
South Africa	265.53	187.86	433.69	857.60	982.83	764.58
% change y-o-y	30.14	-29.25	130.86	97.75	14.60	-22.21
% of total product exports	8.51	6.30	10.71	18.11	17.72	17.33
India	172.97	187.83	226.50	210.18	480.64	752.17
% change y-o-y	118.83	8.60	20.59	-7.21	128.68	56.50
% of total product exports	5.54	6.30	5.59	4.44	8.66	17.05
Switzerland	629.96	584.69	710.37	916.32	798.58	404.71
% change y-o-y	43.83	-7.19	21.49	28.99	-12.85	-49.32
% of total product exports	20.18	19.60	17.54	19.35	14.40	9.17
China	270.44	387.27	656.69	677.37	525.02	309.42
% change y-o-y	72.58	43.20	69.57	3.15	-22.49	-41.06
% of total product exports	8.66	12.99	16.21	14.31	9.46	7.01
Democratic Republic of the Congo	144.64	85.46	156.08	128.10	187.35	237.56
% change y-o-y	72.57	-40.91	82.64	-17.93	46.25	26.80
% of total product exports	4.63	2.87	3.85	2.71	3.38	5.38

Source: Trade Map

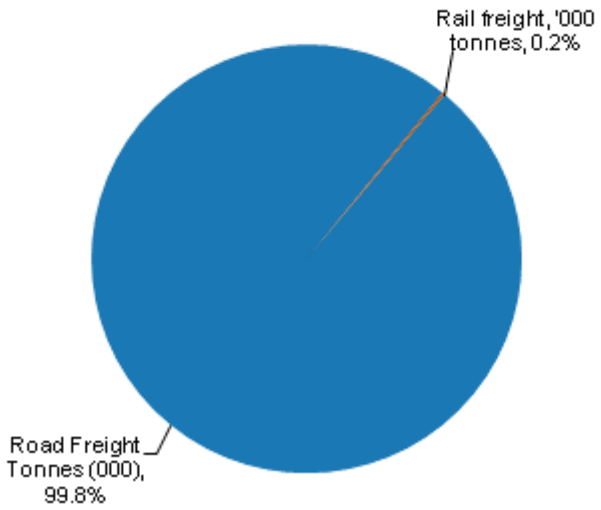
Market Overview

BMI View: *Road transport is by far the most dominant in the freight mix, with rail playing a small role and air transport accounting for very little overall freight. As some much-needed investment in the rail network in the country bears fruit, growth will increase throughout the next three years and then fall back slightly from 2019. Road tonnage will see a steady increase in growth throughout the period.*

Unpaved roads, high rates of traffic accidents, delayed rail lines and port congestion present high risks to investors' supply chains in Tanzania. The country's role as a regional transit hub to landlocked East African countries is limited by the poor state of its transport network, particularly its roads, of which just 15% are paved. We award Tanzania a score of 24.2 out of 100 for its transport network, demonstrating the poor state of its infrastructure from a global and regional perspective. This ranks the country 35th out of 48 states in Sub-Saharan Africa (SSA), between Liberia and Guinea.

Road Dominance Significant

2016 Tanzania Freight Mode Breakdown, % Of Total



Source: BMI

Road Freight

As mentioned above, road freight is by far the dominant freight mode in Tanzania and we expect it to maintain its share over the coming years, with its proportion of the total remaining at around 99.8% to 2020. Freight volumes are usually transported on the roads at some point, even if they are nominally being air freighted or transported by rail, as road haulage is far more effective at linking all nodes.

Road-based supply chains in Tanzania face heightened risks from the country's dirt track roads, which cause high rates of traffic accidents and are prone to cargo theft. While the country has a higher-standard network of tarmac and all-weather roads connecting major towns, the majority of roads are hazardous, increasing the likelihood of traffic accidents and adding to transportation costs. Further pressure on the country's roads stem from Tanzania's role in regional transportation, facilitating links for the country's landlocked neighbours of Malawi, Uganda, Rwanda, Zambia, Burundi and the eastern region of the Democratic Republic of the Congo through regional roadways such as the Central Corridor to Tanzania's ports.

There are 86,472km of roads in Tanzania, of which about 15% are paved. The rest vary from gravel to dirt rural tracks. The main 'trunk' roads are numbered 'A' or 'B' and link the major centres. However, their classification does not necessarily mean that they are either paved and/or in good condition, thereby heightening risk of delays to domestic supply chains. The best roads are from Arusha across the border to Nairobi, Arusha to Dar es Salaam, and Dar es Salaam to Zambia and Malawi, highlighting the investment made to ensure Tanzania's gateway role. On Zanzibar, the major road that loops around the island is tarred and in good condition. The relatively good condition of Tanzania's tarred roads is demonstrated by its score of 3.22 out of 7 in the World Economic Forum's Global Competitiveness Index. This score ranks the country 17th out of 44 states in SSA and is a reflection of the fact that 97.4% of Tanzania's paved roads and 69.1% of unpaved roads are deemed in good or fair condition.

However, despite the relatively good condition of Tanzania's road network from a regional perspective, investors face significant risk from the country's high rate of traffic accidents, which at 22.7 road deaths per 100 people is the 18th highest in SSA. A number of road deaths have involved large vehicles, such as inter-city buses and lorries, suggesting heavy cargo vehicles face increased risk of accident than smaller vehicles. A large number of road accidents are due to roaming animals, ranging from chickens to wild boars. Road accidents add to transportation costs for investors in the form of delays and damage to cargo.

Businesses based in urban centres benefit from a well-connected road network, which ensures rudimentary national and regional connectivity, linking the coast to the capital city and regional corridors and thereby

limiting expenses incurred for road transport. However, companies based in rural areas do not enjoy the same level of national connectivity; in 2010, only 24% of the country's rural inhabitants lived in close proximity to an all-weather road, translating into increased difficulties for firms dependent on transport capabilities between rural and urban areas.

The construction of a proposed four-lane motorway connecting Anusha city with Kilimanjaro International Airport (KIA) will help to drive both the tourist industry and air freight volumes in the medium-to-long term. The project is one of the largest road projects in Tanzania, costing an estimated USD60mn. The road will form part of the planned corridor linking Arusha city with Holili and Taveta border towns via Moshi and Himo. Businesses working around the commercial capital of Dar es Salaam will also enjoy improved connectivity and better quality roads following the completion of USD2bn worth of roadway improvements and reforms. In May 2015, the Tanzanian government announced its intention to lower congestion in the city by constructing new roads and establishing a rapid transit bus system. Within this, new bridges and interchanges will also be constructed, thereby lowering transport costs for local firms and facilitating trade throughout the country and the region.

Rail Freight

Despite our forecast that rail freight will enjoy growth over the coming years thanks to ongoing investment and an increase in transit volumes, its proportional share of the freight total will not see any increase over the course of our forecast period. Indeed, its proportional share has shrunk in recent years; in 2010 it accounted for 0.5% of all volumes. However, in 2016, we forecast it will be 0.2%, remaining at this level through to 2020.

Tanzania's railways are in a poor condition, with breakdowns and cancellations of already infrequent services common. The network, however, plays an important role in regional trade, reinforcing road connectivity, particularly for bulk freight. Freight traffic densities are comparable to those of neighbouring countries such as Uganda, Kenya and Zambia, despite being considerably lower than South Africa's traffic flows.

Tanzania's rail network comprises 3,689km of standard gauge (1,000mm), making it the 47th longest rail network in the world. **Tanzania Railways Corporation** operates the Central Line, which runs between Dar es Salaam and western Tanzania. The line splits at Tabora in the middle of the country; one branch continues to Kigoma on the shores of Lake Tanganyika, while the second branch goes north to Mwanza on Lake Victoria.

The route between Dar es Salaam and Mbeya in the southwest and on to Kapiri Moshi in Zambia is run by the **Tanzania and Zambia Railway Authority** (TAZARA). There is a break-of-gauge at Dar es Salaam to the Tanzania-Zambia Railway Authority 1,067mm line in Zambia, which will delay supply chains as gauges must be changed, increasing time and transport costs. A second link is at Kidatu, where the TAZARA line meets the Kidatu branch. From Tangya, a line to Kenya is currently not in use; however, plans to rehabilitate the line, along with the central line, will improve efficiency in Tanzania's rail network, as well as enable landlocked countries greater access to the Port of Dar es Salaam.

Extensive investment from both the government and partnering country, China, has seen the expansion of the company's rolling stock as well as vital financial support needed in order to avert further industrial unrest amongst employees and tackle the debts held by the company. Investment in the railway will be vital in order to support demand arising not least from the growing copper industry in the region.

In March 2014, a memorandum of understanding was signed by the governments of Tanzania and Burundi for the joint construction of a 195km railway line from Msongati in Burundi to Uvinza in Tanzania. The project will facilitate the smooth transportation of cargo between the two countries and decrease reliance on Tanzania's road network, helping to alleviate congestion. In addition, it is estimated that transport costs from the Port of Dar es Salam to Rwanda and Burundi will drop by 40%, reducing inland transportation and handling costs for investors and reducing overall trading costs.

Later that year, the Tanzania Railways Corporation initiated a USD130mn plan to modernise its railway infrastructure, a move that is expected to improve the quality and efficiency of rail travel. In addition to purchasing new locomotives, the project will also equip trains with a cargo tracking system to increase efficiency and enable businesses to know the geographic position of their cargo at all times.

In March 2015, another major railway project was announced by the transport minister that, upon its completion, will greatly enhance Tanzania's prospects as a regional transport hub. Over the next five years, the state will allocate an estimated USD14.2bn to build a new railway network, which is expected to meet demand for cargo transport within Tanzania and to landlocked neighbouring countries, including Rwanda, Uganda, Burundi, and the Democratic Republic of the Congo (DRC). Additionally, this project will relieve pressure on over-congested and poor quality roadways, thereby diversifying transport options for regional traders.

Air Freight

Air freight carries a negligible proportion of Tanzania's freight, and according to our forecasts this will not change over the medium-term, despite growth in the sector. Tanzania's airports suffer from poor quality and low safety standards. The uncompetitive quality of the airports is demonstrated by the country's weak score of 2.76 out of 7 in the World Economic Forum's Global Competitiveness Index for airport quality. This score ranks Tanzania's airports 38th out of 48 states in SSA.

Mainland Tanzania (excluding Zanzibar) has 26 airports. These airports are primarily equipped to cater for the country's booming tourist industry, as opposed to for commercial purposes, and therefore operate limited freight options. Julius Nyerere International Airport is the principal airport serving Dar es Salaam, the largest city in Tanzania. The airport is well connected and has flights to destinations in Africa, Europe and the Middle East. It is predominantly a passenger airport; however, major cargo lines serving the airport include **Astral Aviation**, **Martinair Cargo**, **Etihad Airways** and **Safair**.

The Kilimanjaro International Airport is the country's main cargo airport, providing services such as cargo acceptance and documentation, warehousing, cargo delivery, special cargo handling, cargo palletisation and cold storage facilities. **Equity Tanzania** and **United Aviation Services** are registered companies based at the airport and provide full logistic support, including meet-and-greet services to commercial and private jets.

Company Profile
Tanzania Zambia Railway Authority (TAZARA)

Strengths	▪ Access to booming copper exports from Zambia and DRC, boosting freight tonnage.
	▪ The majority of its line has standard gauges which match those in South Africa and Botswana, boosting the ease of shifting rolling stock onto those lines and reducing transhipment delays.
	▪ Strong support from both governments, and Chinese investors.
Weaknesses	▪ Gauges shift along the line, which can result in delays while gauges are changed making the line less attractive to supply chains.
	▪ Continued delays and stoppage of services due to strike action.
	▪ Inadequate infrastructure, which is outdated and deteriorating.
	▪ Rail freight is being undercut by road freight, further reducing customer base.
Opportunities	▪ Heavy investment into infrastructure will improve the service and boost reliability, making it a more attractive freight mode.
	▪ Rising commodities exports from the DRC and Zambia will boost freight volumes.
	▪ Additional revenues will come from the development of private partnerships to allow other logistics operators to run services along the line.
	▪ Additional lines will increase customer base.
Threats	▪ The new DRC-Angola rail line to Lobito port could divert some cargos away from TAZARA.
	▪ Any upheaval in the DRC or Zambia would impact productivity and reduce potential cargos.
	▪ The slowdown in the Chinese economy will reduce funding from Chinese investors.

Company Overview

The TAZARA railway line, connecting Tanzania, Zambia as well as the DRC, was constructed in the 1970s. It is run by the Tanzania and Zambia Railway Authority (TAZARA). The line exists to connect the DRC and Zambia to sea ports, and transports around 480,000 tonnes of freight a year, on average. In 1993, a bilateral agreement came into effect between the two countries' governments, enabling the TAZARA Act, which focuses on the overview of the authority and the provision of the railway's services.

Strategy

At present, the railway network's main route is between Dar es Salaam and Mbeya in the south-west and on to Kapiri Moshi in Zambia. A second link is at Kidatu, where the TAZARA line meets the Kidatu branch. Its key aim is to provide a connection for the landlocked states to get their copper exports (and other commodities) to sea ports. However, the line is outdated and deteriorating and needs sustained investment to modernise it, and equalise much of the rail lines. There is a break-of-gauge at Dar es Salaam to the Tanzania-Zambia Railway Authority 1,067mm line in Zambia, which will delay supply chains as gauges must be changed, increasing time and transport costs. Investment is ongoing and there are extensive development plans, funded by the Tanzanian and Zambian governments. The company also continues to rely on Chinese investors for financial support.

We believe the company aims to situate itself as an alternative to road freight for these, and other, countries. However, in order to achieve this, it will need to provide sustained investment into its infrastructure and boost its public profile which - at present - is tarnished by the unreliability and delays of the service.

Throughout the next five years, the company has a strategic plan to spend USD211mn on dealing with the multiple infrastructure shortcomings which have lowered productivity. Repairs and rehabilitation efforts will require USD90mn, while infrastructure expansions will require USD64mn and the company is also looking to invest heavily in ICT developments. These investments are focused on boosting rail freight capacity to handle 1.8mn tonnes by 2018 and on ensuring that the company will be self-reliant financially by this latter date rather than being dependent on tax-payer bailouts. Investment from foreign partners as well as collaborations between neighbouring countries will add to the rail company's funding base from which it can increase its capacity and develop in line with increasing demand for rail services in the country.

Latest Activity

USD22.4mn Lifeline From China

In November 2015, it was announced that China had lent Zambia and Tanzania USD22.4mn to invest in new engines and rolling stock for a railway to carry copper from Zambia and the Democratic Republic of Congo to the port of Dar es Salaam. The funding will increase the number of locomotives available on the line by around 33% following years of underinvestment and loss of business. This move follows an injection

of financial support by the Tanzanian government to bail out the TAZARA, which has been plagued with financial problems, struggling to pay staff and facing strikes and loss of custom.

Port Project Offers Opportunity For Railways

Plans for the construction of a USD10bn port and Special Economic Zone in Bagamoyo will have a positive impact on the surrounding infrastructure, including the railways linking to the port with freight throughput projected to rise following completion of the port.

Zambia Quarry To Help TAZARA

The restoration and recommissioning of Mununga Quarry in Zambia looks set to help TAZARA to reduce its costs and increase its income by supplying enough quarry products to meet the demands of the rail company. TAZARA also owns Kongolo Quarry Mbeya which is located next to the Kondgolo Concrete Sleeper Plant. These supply the company with the products necessary to build its own construction materials and support its expansion and maintenance needs.

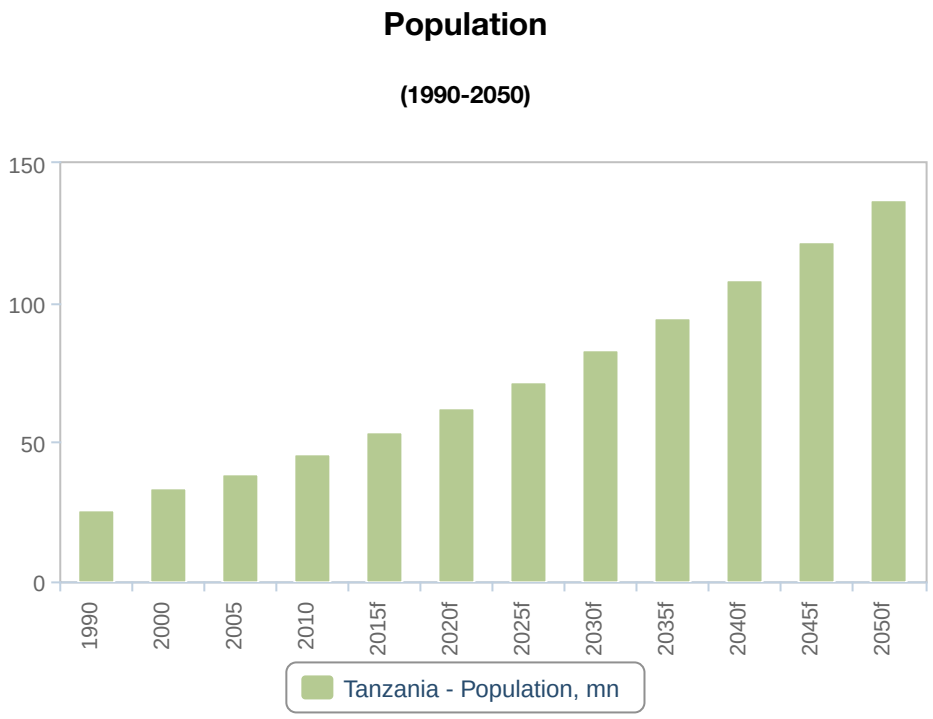
DIKKM Rail Tender Launched

The governments of Tanzania, Rwanda and Burundi are seeking expressions of interest for the DIKKM railway project in Africa. The railway line will run from Dar es Salaam to Isaka in Tanzania, and then to Kigali in Rwanda, with a further 197km extension to Burundi that will run from Keza to Musongati through Gitega. The Dar es Salaam to Isaka section will be about 970km long, while the new line from Isaka to Kigali will be 494km long. The winning bidder will design, build, finance, operate and maintain the entire 1,661km railway line under a public-private partnership arrangement. The successful bidder will also be responsible for procuring and installing operating equipment and systems, and rolling stock for the project.

Demographic Forecast

Demographic analysis is a key pillar of **BMI**'s macroeconomic and industry forecasting model. Not only is the total population of a country a key variable in consumer demand, but an understanding of the demographic profile is essential to understanding issues ranging from future population trends to productivity growth and government spending requirements.

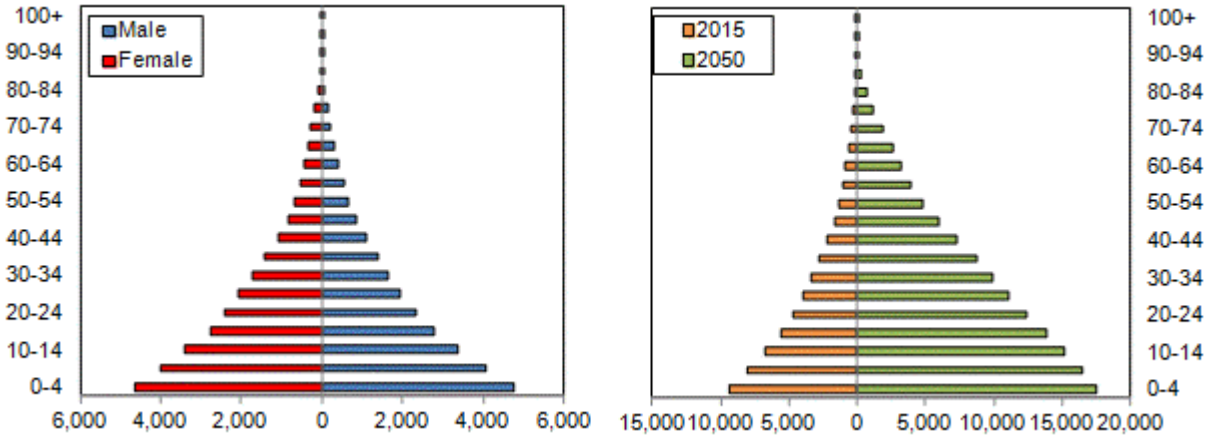
The accompanying charts detail the population pyramid for 2015, the change in the structure of the population between 2015 and 2050 and the total population between 1990 and 2050. The tables show indicators from all of these charts, in addition to key metrics such as population ratios, the urban/rural split and life expectancy.



f = BMI forecast. Source: World Bank, UN, BMI

Tanzania Population Pyramid

2015 (LHS) & 2015 Versus 2050 (RHS)



Source: World Bank, UN, BMI

Table: Population Headline Indicators (Tanzania 1990-2025)

	1990	2000	2005	2010	2015f	2020f	2025f
Population, total, '000	25,458	33,991	39,065	45,648	53,470	62,267	72,032
Population, % y-o-y	na	2.6	3.0	3.2	3.2	3.0	2.9
Population, total, male, '000	12,608	16,910	19,394	22,665	26,574	30,992	35,900
Population, total, female, '000	12,849	17,080	19,671	22,982	26,896	31,275	36,132
Population ratio, male/female	0.98	0.99	0.99	0.99	0.99	0.99	0.99

na = not available; f = BMI forecast. Source: World Bank, UN, BMI

Table: Key Population Ratios (Tanzania 1990-2025)

	1990	2000	2005	2010	2015f	2020f	2025f
Active population, total, '000	13,054	17,744	20,295	23,641	27,590	32,573	38,575
Active population, % of total population	51.3	52.2	52.0	51.8	51.6	52.3	53.6
Dependent population, total, '000	12,403	16,247	18,769	22,006	25,880	29,693	33,457
Dependent ratio, % of total working age	95.0	91.6	92.5	93.1	93.8	91.2	86.7

Key Population Ratios (Tanzania 1990-2025) - Continued

	1990	2000	2005	2010	2015f	2020f	2025f
Youth population, total, '000	11,713	15,283	17,606	20,578	24,167	27,686	31,072
Youth population, % of total working age	89.7	86.1	86.7	87.0	87.6	85.0	80.6
Pensionable population, '000	690	963	1,163	1,428	1,712	2,007	2,384
Pensionable population, % of total working age	5.3	5.4	5.7	6.0	6.2	6.2	6.2

f = BMI forecast. Source: World Bank, UN, BMI

Table: Urban/Rural Population & Life Expectancy (Tanzania 1990-2025)

	1990	2000	2005	2010	2015f	2020f	2025f
Urban population, '000	4,807.5	7,583.2	9,705.8	12,833.6	16,900.9	21,879.5	27,804.7
Urban population, % of total	18.9	22.3	24.8	28.1	31.6	35.1	38.6
Rural population, '000	20,650.7	26,408.4	29,359.8	32,814.9	36,569.5	40,387.8	44,228.2
Rural population, % of total	81.1	77.7	75.2	71.9	68.4	64.9	61.4
Life expectancy at birth, male, years	48.5	49.9	55.1	60.6	64.1	66.2	67.6
Life expectancy at birth, female, years	51.5	51.1	56.1	62.8	66.9	68.6	70.4
Life expectancy at birth, average, years	50.0	50.5	55.6	61.6	65.5	67.4	69.0

f = BMI forecast. Source: World Bank, UN, BMI

Table: Population By Age Group (Tanzania 1990-2025)

	1990	2000	2005	2010	2015f	2020f	2025f
Population, 0-4 yrs, total, '000	4,641	5,907	7,008	8,135	9,398	10,427	11,486
Population, 5-9 yrs, total, '000	3,822	5,031	5,695	6,816	8,019	9,297	10,337
Population, 10-14 yrs, total, '000	3,249	4,344	4,901	5,625	6,750	7,961	9,248
Population, 15-19 yrs, total, '000	2,722	3,733	4,191	4,811	5,540	6,663	7,880
Population, 20-24 yrs, total, '000	2,247	3,166	3,599	4,107	4,717	5,441	6,559
Population, 25-29 yrs, total, '000	1,844	2,590	3,031	3,502	4,005	4,614	5,333
Population, 30-34 yrs, total, '000	1,510	2,066	2,429	2,917	3,393	3,900	4,507
Population, 35-39 yrs, total, '000	1,222	1,646	1,897	2,309	2,797	3,282	3,792
Population, 40-44 yrs, total, '000	1,036	1,322	1,488	1,786	2,194	2,687	3,175
Population, 45-49 yrs, total, '000	836	1,062	1,215	1,404	1,695	2,101	2,591

Population By Age Group (Tanzania 1990-2025) - Continued							
	1990	2000	2005	2010	2015f	2020f	2025f
Population, 50-54 yrs, total, '000	676	891	976	1,142	1,329	1,615	2,014
Population, 55-59 yrs, total, '000	539	709	821	903	1,077	1,259	1,538
Population, 60-64 yrs, total, '000	416	555	643	755	839	1,006	1,181
Population, 65-69 yrs, total, '000	303	412	485	564	677	758	913
Population, 70-74 yrs, total, '000	200	279	339	408	476	577	650
Population, 75-79 yrs, total, '000	114	163	199	257	309	366	448
Population, 80-84 yrs, total, '000	51	76	96	141	163	200	240
Population, 85-89 yrs, total, '000	16	26	33	44	67	80	100
Population, 90-94 yrs, total, '000	3	5	7	10	14	22	27
Population, 95-99 yrs, total, '000	0	0	0	1	1	2	4
Population, 100+ yrs, total, '000	0	0	0	0	0	0	0

f = BMI forecast. Source: World Bank, UN, BMI

Table: Population By Age Group % (Tanzania 1990-2025)							
	1990	2000	2005	2010	2015f	2020f	2025f
Population, 0-4 yrs, % total	18.23	17.38	17.94	17.82	17.58	16.75	15.95
Population, 5-9 yrs, % total	15.01	14.80	14.58	14.93	15.00	14.93	14.35
Population, 10-14 yrs, % total	12.76	12.78	12.55	12.32	12.62	12.79	12.84
Population, 15-19 yrs, % total	10.70	10.98	10.73	10.54	10.36	10.70	10.94
Population, 20-24 yrs, % total	8.83	9.32	9.22	9.00	8.82	8.74	9.11
Population, 25-29 yrs, % total	7.25	7.62	7.76	7.67	7.49	7.41	7.40
Population, 30-34 yrs, % total	5.93	6.08	6.22	6.39	6.35	6.26	6.26
Population, 35-39 yrs, % total	4.80	4.84	4.86	5.06	5.23	5.27	5.26
Population, 40-44 yrs, % total	4.07	3.89	3.81	3.91	4.10	4.32	4.41
Population, 45-49 yrs, % total	3.29	3.12	3.11	3.08	3.17	3.37	3.60
Population, 50-54 yrs, % total	2.66	2.62	2.50	2.50	2.49	2.59	2.80
Population, 55-59 yrs, % total	2.12	2.09	2.10	1.98	2.01	2.02	2.14
Population, 60-64 yrs, % total	1.64	1.63	1.65	1.66	1.57	1.62	1.64
Population, 65-69 yrs, % total	1.19	1.21	1.24	1.24	1.27	1.22	1.27
Population, 70-74 yrs, % total	0.79	0.82	0.87	0.89	0.89	0.93	0.90
Population, 75-79 yrs, % total	0.45	0.48	0.51	0.56	0.58	0.59	0.62
Population, 80-84 yrs, % total	0.20	0.23	0.25	0.31	0.31	0.32	0.33

Population By Age Group % (Tanzania 1990-2025) - Continued							
	1990	2000	2005	2010	2015f	2020f	2025f
Population, 85-89 yrs, % total	0.07	0.08	0.09	0.10	0.13	0.13	0.14
Population, 90-94 yrs, % total	0.01	0.02	0.02	0.02	0.03	0.04	0.04
Population, 95-99 yrs, % total	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Population, 100+ yrs, % total	0.00	0.00	0.00	0.00	0.00	0.00	0.00

f = BMI forecast. Source: World Bank, UN, BMI

Methodology

Industry Forecast Methodology

BMI's industry forecasts are generated using the best-practice techniques of time-series modelling and causal/econometric modelling. The precise form of model we use varies from industry to industry, in each case being determined, as per standard practice, by the prevailing features of the industry data being examined.

Common to our analysis of every industry is the use of vector autoregressions, which allow us to forecast a variable using more than the variable's own history as explanatory information. For example, when forecasting oil prices, we can include information about oil consumption, supply and capacity.

When forecasting for some of our industry sub-component variables, however, using a variable's own history is often the most desirable method of analysis. Such single-variable analysis is called univariate modelling. We use the most common and versatile form of univariate models: the autoregressive moving average model (ARMA).

In some cases, ARMA techniques are inappropriate because there is insufficient historical data or data quality is poor. In such cases, we use either traditional decomposition methods or smoothing methods as a basis for analysis and forecasting.

We mainly use OLS estimators and in order to avoid relying on subjective views and encourage the use of objective views, we use a 'general-to-specific' method. **BMI** mainly uses a linear model, but simple non-linear models, such as the log-linear model, are used when necessary. During periods of 'industry shock', for example poor weather conditions impeding agricultural output, dummy variables are used to determine the level of impact.

Effective forecasting depends on appropriately selected regression models. We select the best model according to various different criteria and tests, including but not exclusive to:

- R^2 tests explanatory power; adjusted R^2 takes degree of freedom into account;
- Testing the directional movement and magnitude of coefficients;
- Hypothesis testing to ensure coefficients are significant (normally t-test and/or P-value);
- All results are assessed to alleviate issues related to autocorrelation and multicollinearity.

BMI uses the selected best model to perform forecasting.

Human intervention plays a necessary and desirable role in all of our industry forecasting. Experience, expertise and knowledge of industry data and trends ensure analysts spot structural breaks, anomalous data, turning points and seasonal features where a purely mechanical forecasting process would not.

Sector-Specific Methodology

There are a number of principal criteria that drive our forecasts for each transport variable:

- GDP Growth

As transport activity is heavily influenced by real GDP growth, this factor is examined to ascertain its relationship with overall trade volumes. Projected GDP growth is calculated using **BMI**'s own macroeconomic and demographic forecasts. The level of port throughput activity is also influenced by real GDP growth. This is used to represent the level of demand in a country and movement in this indicator will indicate changes in net exports volumes, hence throughput volumes.

- Real Trade Volumes

The sum of imports and exports plays a particularly important role in developing countries with a small domestic industrial sector. The focus is on goods, as services do not employ transport. The volumes are forecast based on the following criteria:

- Trends manifested through historical data;
- The impact of future step changes to the economy (such as future membership of the EU or some other regional body).

The port throughput forecasts consider historical trends in trade data and the impact of changes to the trade openness in an economy, such as sanctions or membership of trade unions.

- External Factors

External factors also influence the shipping throughput forecasts. These include the likelihood and impact of strikes at local port level, and future investment plans that aim to improve port capacity.

Freight Transport Tonnage Estimates

BMI aims to generate best estimate figures for freight transport for countries where raw data on freight tonnage is not published or accessible. The estimate for tonnage data integrates macroeconomic, country

area, transport and infrastructure data into our model. A parent market is selected which represents the benchmark for the region, and we then use weighted scale factors to adjust the raw data of the parent to calculate estimated proxy figures for a given market.

The three indicators for which we estimate tonnage data are road freight, rail freight and air freight.

One indicator used in estimating for all three indicators is real GDP. This is the value of output for a given country adjusted for inflation. This is used to represent the size of an economy and the level of transport activity in a country. It is one of the main scale factors used when generating our estimates.

The additional indicators used in freight tonnage estimations are given below:

- **Population:** The number of people living in a country. The data is sourced from the UN and the World Bank.
- **Total road length:** The total length of the road network in a given country. The data is sourced from the CIA World Factbook.
- **Country area:** The sum of all land and water areas within international boundaries. The data is sourced from the CIA World Factbook.
- **Number of airports with paved runways:** The number of airports with concrete or asphalt landing surfaces. The data is sourced from the CIA World Factbook.
- **Length of railways:** The total length of the railway network in a country. The data is sourced from the CIA World Factbook.
- **Number of airline take-offs:** The number of domestic registered carrier departures worldwide from a given country. The data is sourced from the World Bank.

Road Freight

Road freight tonnage data is estimated with parent market data, which is then scaled by a 25% weighting for real GDP, 25% for population and 50% for total length of roads.

The population in a country represents demand for goods and thus the size of the road freight market. The total length of the road network determines how much freight can be carried by heavy trucks and goods vehicles.

Rail Freight

Rail freight tonnage data is estimated with parent market data, which is then scaled by a 25% weighting for real GDP, 25% for country area and 50% for length of railways.

The length of railways and the country's size will determine the demand and capacity to carry rail freight. A large country with an active railway network will likely use this to move greater volumes of goods over long distances.

Air Freight

Air freight tonnage data is estimated with parent market data, which is then scaled by a 25% weighting for real GDP, 50% for number of airline take-offs and 25% for number of airports with paved runways.

The number of domestic airline take-offs is used to represent how active the airline market is in the country. Airports with paved runways indicate that a country is able to accommodate larger planes which carry goods.

Sources

Sources used in Freight Transport & Shipping reports include local transport ministries, officially released company results and figures, established think tanks and institutes and donor agencies such as the World Bank and the Asian Development Bank.

For shipping tonnage and container data we source information from port authorities, officially released shipping company performance reports, and established port news reports and articles.