an introduction to the global sugar markets

2019 – Issue three
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AB Sugar is a group of businesses that operate across 24 plants in 10 countries and employ around 32,000 people. We make and sell sugar and sugar-related products to people and businesses around the world.

The heart of our business is making and selling sugar, but we do much more than that. As well as ‘core products’, made from sugar beet and sugar cane, we also make ‘co-products’, which can include anything one or two ‘steps’ away from the sugar-making process: animal feed, soil conditioners, electricity, bioethanol and seed enhancements.

Our products are sold into industry sectors including food and drink, pharmaceutical, industrial, agricultural and horticultural, power and energy.
Around three-quarters of the world’s sugar is supplied from cane which is grown in tropical and sub-tropical regions, with around one-quarter supplied from sugar beet grown in more temperate climates.

Refined sugar is chemically and functionally identical irrespective of its source and regardless of whether it is produced from beet or cane. Many different players (including producers, traders, refiners, distributors and retailers), can be involved in delivering the final product to customers, depending on the sectors being supplied.

Global sugar consumption
Sugar is produced in over 100 countries and is used by two main food sectors; ‘food and drink manufacturing’ and ‘retail’. The ‘food and drink manufacturing’ sector uses sugar across a wide range of products dependent on what type of functionality they are seeking sugar to provide. The majority of sugar produced serves the food sector. The smaller market sector known as ‘retail’ is purchasing sugar that is often sold directly to consumers for use at home, or across businesses such as cafés and restaurants.

Total global demand
Global sugar consumption was over 185 million tonnes in 2017/18. Consumption is driven by long-term growth of around 2% annually which is expected to continue in the future.
How demand is delivered

Of the global demand, approximately two-thirds is met by local regional production, with the remainder (about 60 million tonnes annually) supplied from globally traded exports. A significant proportion (usually about one-third) of this export trade takes place under historic bilateral and preferential agreements.

...of which up to 10% is delivered through commodity exchange

sugar is traded in both raw and refined formats

55% raw sugar
Semi-refined brown sugar is internationally traded on the New York ‘Number 11’ market.

lower initial cost but requires refining at destination

45% refined sugar
Refined ‘white’ sugar is traded internationally on the London ‘Number 5’ market.

higher initial cost but does not require facilities for refining
Sugar production, whether from cane or beet, is a capital intensive process and is usually operated at scale to be competitive.

Beet sugar
The production of sugar from beet is generally done in a single step in advanced manufacturing facilities that include the full range of operations to extract the sugars from the crop, clean them and turn them into the refined sugar crystals we all recognise.

Cane sugar
The production of sugar from cane can also be done in a single step like beet, but more often takes place in two stages to supply the export sectors. In this case the majority of the processing is carried out at cane mills in the country of origin which produce partly finished ‘raw’ sugar, with only the ‘refining’ part of the process taking place at destination.

The investment needed to produce sugar from beet or cane in a single step process is therefore significantly higher than that needed just to refine raw sugar at destination refineries, and the operational complexity and jobs involved in the supply chains of the two procedures reflect this difference.

Sugar production, whether from cane or beet, is a capital intensive process and is usually operated at scale to be competitive.

The journey of sugar production starts here for AB Sugar operations...

Sugar is produced naturally in sugar cane and sugar beet. These plants grow in several different regions of the world

The harvested crop arrives at one of our processing plants

Beet and cane are processed differently but there are similarities

The raw juice passes through an important purification stage and is then concentrated

A lime solution is added to the raw juice to remove any impurities and it is then filtered to make a clear ‘thin juice’

The thin juice is then boiled at a low temperature. Most of the water is removed by evaporation resulting in a syrup called ‘thick juice’
The extraction process to recover the sugar begins. The freshly sliced beet or crushed cane is fed into the extraction equipment. Beet pulp or cane fibre (bagasse) are separated from the raw juice. Excess water is removed and recycled back to the process.

The thick juice is heated and seeded with tiny sugar crystals, which grow into the required size. The thick juice is passed to the crystallisation stage. The crystals are then washed in centrifuges to remove any remaining syrup, which can be returned to the crystallisation stage or used in co-products.

Sugar beet is washed and sliced into strips. Sugar cane is cleaned and crushed into small pieces. A natural end product. At the final stage, the sugar crystals are dried and cooled. Sugar is distributed in a variety of formats ready for both industrial and retail markets. We produce around 5 million tonnes of sugar annually across 10 countries.
Sugar is a high profile commodity both politically and in terms of trade in many of the world’s key producing regions.

Its production (whether from cane or beet) is also highly capital intensive, requiring large scale operations to be competitive. This overview covers how a handful of leading producers and their countries’ support policies impact the market.

World sugar production and trade is dominated by a small number of influential producing countries. The seven influential producing countries reviewed here (Australia, Brazil, Canada, the EU, India, Thailand and the USA) contribute to over half of global production, and Brazil and Thailand account for about half of cross border trade. For more detailed information, see our full case studies from page 15.

Operating in a residual market

The world sugar market is a residual market characterised by extreme volatility, which often trades below global costs of production'. Government sugar policies in a handful of countries, notably Brazil, Thailand and India, have a substantial effect on the world sugar market’s supply-demand balance and consequently on its trading price level. It is therefore not a normal clearing market and cannot be used as a sustainable ‘benchmark’ on which to base sugar industry policies or strategies.
Support policies and subsidies

Most global producers – in particular Brazil, Thailand and India – have responded to these conditions by developing a substantial mix of policies and subsidies to support domestic production. Collectively these support policies have a profound distortionary effect on the world sugar market.

These are usually WTO notifiable and include: quota systems, export subsidies, sugar and cane price setting, and direct aid for farmers or processors. These are commonly used in Thailand, India and the USA.

These are often not WTO notifiable and include: general (decoupled) agricultural support, loans, debt write-off, taxation schemes, differential import duties, market intervention tools and cross-subsidies. These are more prevalent in Brazil, the EU, Australia and Canada.
the EU sugar sector

The European Union (EU) is one of the world’s top sugar producers – both in terms of scale and competitiveness. The majority of EU production is from sugar beet grown in 19 Member States, with leading country producers including France, Germany, Poland, the UK and the Netherlands.

Up till 2017 the EU was a net importer of sugar. Relative to its demand from the food sector of about 16 million tonnes/year, total import availability reached 3.5 million tonnes/year at zero or low duty, of which up to 3 million tonnes/year was typically actually imported. In contrast EU sugar exports, which were restricted until 2017, averaged only about 1.3 million tonnes/year.

After 2017

As a consequence of policy reforms and abolition of quotas, the EU supply and demand balance changed significantly after 2017. EU production increased, prices fell sharply which reduced the demand for imports, and exports were no longer capped and so increased. As a result, the EU has since become a net exporter.

EU policy reforms

The sector has been progressively deregulated by two substantive reforms in 2006 and 2013. The first of these resulted in the EU beet sugar industry closing almost half its manufacturing sites and cutting production capacity by 4.5 million tonnes (30%).

A significant change in EU supply and demand balance after 2017

Increase in:
production and exports

Reduction in:
prices and imports
A substantially deregulated sector

The last stages in this reform process were completed in October 2017. The EU sugar sector became substantially deregulated, with sugar covered by the general provisions of the Common Agricultural Policy (CAP), including the decoupled basic payment scheme and crisis measures\(^4\). However, a few sugar-specific measures have remained in place beyond these general provisions, for example some limited voluntary coupled support has been agreed until 2019 for less efficient producers in 11 Member States\(^5\) for food and livelihood security and rural development.

This does not apply, however, for the more efficient Member State industries, including the UK’s.

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\(^1\) EU Commission data (FCA)
\(^2\) Between 2005 and 2015 the EU beet sugar sector closed 83 factories, cut over 24,000 direct jobs and lost 165,000 grower suppliers. CEFS and CIBE statistics, 2016
\(^3\) European Commission Sugar Management Committee trade reports, 2010/11 – 2015/16
\(^4\) Council-Parliament Regulation 1308/2006, Articles 17-20 and Articles 219-221
\(^5\) European Commission, voluntary coupled support for sugar beet, notifications by Member States, 15 April 2015
The UK demand for sugar is currently around 2 million tonnes annually and comes from two main sectors; the food and drink manufacturing and retail markets.

Roughly 85% of the demand is from food and drink manufacturers, where it is used as an ingredient in food and drink products, with the remaining balance of around 15% demand by the retail sector for consumers, cafés and restaurants.

The majority of UK consumer sugar consumption is in the form of refined granulated sugar. A smaller, but still significant share of the market is taken by speciality products, such as demerara, muscovado, caster, fondant, icing sugars and more.

**how demand is delivered**

- **50%**
  - Supplied from domestically produced beet sugar grown in Eastern England

- **25%**
  - Imported from EU beet sugar processors

- **25%**
  - Supplied from imported cane sugar, which is finished, packaged and supplied by a refinery in East London
UK beet sugar production is highly efficient, and is grown by 3,000 growers supplying about 8 million tonnes of crop annually. Sugar beet yields have been increased by 25% over the past ten years driven by joint industry targeted initiatives, and are continuing to increase at over 2% annually.

Domestically grown sugar beet is supplied to British Sugar, which extracts the sugar and converts it into a wide range of products. British Sugar has a current installed sugar production capacity of about 1.4 million tonnes annually. It operates four advanced manufacturing plants in rural areas of East Anglia and East Midlands.

The UK’s single beet sugar processor

British Sugar has consistently invested in its operations to drive efficiency improvements, reduce energy costs and emissions, and improve operational flexibility – around £250 million has been invested over the past five years.

Today it has some of the most advanced production facilities, and is one of the most cost efficient processors in the EU and is internationally competitive.

In addition to sugar, it produces a wide range of co-products including: high performance combined heat and power electricity, renewable transport fuel, renewable energy from anaerobic digestion, animal feed, horticulture, liming products and topsoil.

About 9,500 jobs are supported throughout the economy by the UK beet sugar industry, mostly in rural areas of East Anglia and the East Midlands, and over £200 million of corporation tax has been paid by British Sugar to the UK exchequer over the past five years.

£250 million invested

9,500 jobs

internationally competitive
The refining sector

Raw sugar

The UK refining industry is supplied from raw sugar which has already been extracted from cane and partly processed in the originating countries’ cane mills. Raw sugar in this partly finished state is imported from a variety of cane sugar producing countries. The mix of raw sugar supplying countries changes from year to year depending on availability and commercial considerations, but normally includes: African, Caribbean and Pacific (ACP) countries and Least Developed Countries (LDC), Brazil, Central and South America, and Australia.

In addition to the increased EU access for zero and low tariff imports, EU import rules also allow tariff-free import and refining of world market sugars provided the resulting products are exported outside the EU.

To support globally competitive refiners, EU import laws allow tariff free refining of world sugars for world market sales.

Raw sugar supplies entering the UK are refined by T+L Sugars Ltd. (TLS) at their refinery at Silvertown in East London. The refinery has a potential installed capacity of 1.2 million tonnes annually, but has been operating at a lower level than this in recent years due to competitive pressures from other refiners and technology developments in some of the cane sugar supplying countries. TLS also operates a specialist processing plant close to the refinery at Plaistow Wharf, which produces speciality sugar and syrup products. TLS is owned by ASR Group International Inc. (ASR).
Refined sugar

Sugar can also be imported into the UK in the form of refined white sugar and other specialist finished products. As part of the 2006 sugar policy reform, import and refining practices were liberalised – most imports were previously restricted to raw sugar and reserved for full-time refiners. This encouraged some cane sugar producers like Mauritius¹³ to invest in refining technology in their home country, so enabling them to supply refined, instead of raw, sugar and capture a greater proportion of the added value. Imports of this kind no longer need to be refined at destination, and can be supplied direct to customers. Although this change does not reduce the overall level of imports, it has contributed to the competitive pressure on refiners.

case studies

The sugar policies implemented in a handful of global producing countries, namely; Brazil, the EU, India, Thailand and the USA, have a substantial effect on the world sugar market’s supply and demand balance. In response to these conditions, most global sugar producing countries reviewed in this overview have put in place various support policy measures.

The following case studies review the sugar support policies used in seven of these influential producing countries, and is structured as follows:

- Australia 16
- Brazil 18
- Canada 22
- EU 24
- India 26
- Thailand 28
- USA 30

¹⁰TLS website, 2017.
¹¹TLS statements in The Telegraph, 6 June 2015.
¹²TLS website, 2017.
¹³Mauritius completes move to refined sugar exports, Mauritius Sugar Syndicate article in Agritrade, 9 August.
case study: Australia

Australia is a significant sugar net exporter. It operates a predominantly ‘free market’ sugar policy, but still offers indirect support for its farmers and intervenes in the sugar sector at times of climatic or market crisis.

The Policy Environment

Australia provides little direct support for its sugar industry, having abolished import duties and most production controls some time ago.

However, despite the natural protection afforded by its distance from other sugar producers, the government has had to provide support at periods of depressed world sugar prices in the absence of any import protection.

Single desk ‘pool’ selling and exporting arrangements

Until 2006 all Australian sugar sales and exports were compulsorily handled by a single desk called Queensland Sugar Limited (QSL)\(^1\). QSL controlled sugar contracting, export prices, storage, shipping and trading arrangements. This effectively reduced domestic competition and also provided substantial indirect government support for marketing, sales and exports on behalf of mills and cane growers.

QSL has since been privatised and is now owned by the cane growers. It represents seven milling companies and 4,000 cane growers and so retains extensive control over Australian sugar export sales and trade. Although, since July 2014, sugar mills outside QSL can sell up to one-third of their production independently, QSL retains the right to sell two-thirds of this sugar plus all the sugar from their incorporated members. In practice, this means that QSL continues to manage the majority of Australian sugar exports\(^2\).

<table>
<thead>
<tr>
<th>Domestic Production</th>
<th>Domestic Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 million tonnes</td>
<td>1.2 million tonnes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exports</th>
<th>Total Production</th>
<th>Of Countries Featured</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.8 million tonnes</td>
<td>3.8 million tonnes</td>
<td>3%</td>
</tr>
</tbody>
</table>

All of Australia’s sugar production is in these areas.
Our Analysis

Australia seeks to operate a mainly free market model for its sugar sector, with little routine direct support for cane growers or millers. As a substantial net exporter, it is heavily dependent on the world market for its income and growth.

In the past, this has been possible because of the Australian industry’s historic production efficiency, coupled with geographical remoteness plus some state intervention in marketing and sales.

However, more recently this has proved difficult to sustain. Long term falling efficiency levels and depressed world market prices for their exports have made the industry less competitive. As a result, the Australian industry is susceptible to weather shocks and the state regularly has to intervene during adverse conditions.

It also operates six bulk sugar export terminals with a combined storage capacity of 2.5 million tonnes.

These arrangements, and the substantial government-financed infrastructure behind them, provide a form of indirect support for the Australian cane sugar industry which has existed for many years.

Cane support measures

Australia does not offer routine direct support for its cane industry. However, because of its exposure to world market volatility, the cane industry regularly gets into serious difficulties, which provokes requests by the industry for government intervention. For example, in 2014 the Queensland cane growers called on the state government to cut their power costs to ‘save the industry’\(^1\). In April 2015, the Queensland grower’s association and other political commentators\(^4\) stated that cane growers need at least AU$380/tonne to break-even, and claimed that the world sugar price at that time was not sustainable.

In the previous decade, the Australian government introduced two reform packages in 2002 and 2004 which, in effect, made government support available for most of the decade as a response to a long period of low world sugar prices.

The 2002 package included financial assistance for the industry worth AU$150m with a further AU$440m over five years as a result of the 2004 package\(^5\). Measures in the two reform packages included temporary income support to stabilise the industry, cane replanting interest rate subsidies and help for those wishing to quit the industry.

General agricultural support

In common with many other countries, Australia operates a system of indirect farm support, which is also available for sugar cane growers.

For example, in response to prolonged drought affecting Queensland and New South Wales, in February 2014 the Australian government announced a new AU$280m Drought and Farm Finance Concessional Loans Scheme, as part of the existing Farm Finance program\(^6\).

This scheme was subsequently extended and increased. By June 2016 over AU$438m of concessional loans had been approved, almost half of which were for Queensland farmers including cane growers\(^7\).

\(^1\) Queensland Sugar Limited (QSL) was established by Australian government legislation to market and sell domestic sugar production

\(^2\) QSL website, 2017

\(^3\) ABC rural news, 1 April 2015

\(^4\) Senate submission by MP Bob Katter, 1 October 2014

\(^5\) LMC, Australia’s Sugar Industry Reform Programmes and their Compatibility with the WTO, Oxford, 2008

\(^6\) Australian Treasury, February 2014

\(^7\) Deputy Prime Minister announcement, 15 June 2016

\(^8\) Ibid
case study: Brazil

Northeast:
Paraíba, Pernambuco, Alagoas

Central-West/
South/Southeast:
Goiás, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Paraná, São Paulo

As the leading global producer and exporter of sugar and ethanol, Brazil is the marginal supplier and principal price setter for the world market. This pre-eminent position has been created by substantial industry expansion driven partly by the country’s abundant natural resources, but also through long-standing government support and market intervention.

The sugar and ethanol industries are particularly closely integrated and commercially interdependent. This means that any support offered to one activity can benefit the other. Both products are manufactured from sugar cane, whose lengthy crop production cycle spanning several years limits the sector’s ability to respond to market signals to inform growing decisions in terms of production scale.

Brazil has supported its ethanol industry over many years in a variety of ways, including incentivising sales to the domestic car fleet, substantial mandatory ethanol blending in gasoline, fuel price setting, supporting the development of flex-fuel vehicles and banning the purchase of diesel-powered cars.

The government also supports the sugar industry, though on a smaller scale. Subsidies are regularly provided to the less competitive Northeast producers at times of market stress or in response to crop failures, and general financial and Research and Development (R&D) support is also provided for the industry as a whole.

The Brazilian sugar-ethanol industry has expanded dramatically since 1975, the sugar cane ‘crush’ has increased 8-fold, its sugar production nearly 6-fold and its ethanol production 48-fold

The Ethanol Programme
Sugar cane can be processed to make both sugar and ethanol. Mills which do this use common plant and equipment for the front half of the

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The Ethanol Programme
Sugar cane can be processed to make both sugar and ethanol. Mills which do this use common plant and equipment for the front half of the
manufacturing operation, with considerable savings in fixed costs.

In Brazil, sugar and ethanol are particularly integrated – sugar production is between 41% and 48% of total cane cultivation, and all but sixteen (94%) of Brazil’s sugar producing mills produce both products. This means the two activities are closely linked and commercially interdependent. Co-production of sugar and ethanol reduces costs and improves overall profitability by increasing scale production, improving process optimisation and extending the operating season. Any support offered to one activity can therefore cross-subsidise the other. There is a commercial arbitrage between products allowing processors to take advantage of relative changes in market conditions.

The Brazilian government supports its ethanol programme in a variety of ways:

The Proálcool programme
In response to the oil price shocks, Brazil decided in 1975 to introduce a national policy to increase ethanol production to reduce its reliance on imported oil. Components of this policy included: subsidising the auto industry to produce ethanol engines, tax advantages for vehicles which used ethanol, setting the ethanol price at a level which made it competitive with gasoline, taxing imported oil and subsidising distribution of the new fuel. As a result of these incentives, ethanol production increased 20-fold over the two phases of the Proálcool programme between 1975 and 1997. Much of this manufacturing plant and infrastructure remains in place today and is being used for current sugar and ethanol production.

Mandatory ethanol blending
The Brazilian government sets mandatory minimum blending rates for ‘gasohol’ (a mixture of ethanol and gasoline). For the past 25 years these have typically varied between 20% and 25%, so providing a secure market for the equivalent of over 10 million tonnes of sugar each year.

Gasoline price setting
National fuel prices are set by the state-controlled company Petrobras so providing a minimum price for the blended fuel ethanol.

Tax incentives
The tax on industrialised products (IPI) is lower for flex-fuel vehicles than for gasoline powered vehicles. Since 2004 this IPI differential has been set at 18% and 25% respectively. Individual states are also empowered to tax gasoline sales through the tax for circulation of goods and services (ICMS). In recent years ICMS has averaged 18% for ethanol and 26% for gasoline.

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1 DATAGRO presentation to national ethanol conference Florida, 2012.
4 Brazilian Sugarcane Industry Association, UNICA.
5 Marcello Teixeira, Brazil ethanol mills benefit from Petrobras price hike, September 2015.
6 USDA, Brazil Biofuels Annual, GAIN report BR 16009, 12 August 2016.
7 Ibid.
8 Ibid.
Flex-fuel vehicles
About 20 years ago the Brazilian government decided to encourage the development of ‘flex-fuel’ cars with engine systems able to adapt to different blends of ethanol. In 2002, it introduced differential taxation to stimulate sales in which the sales tax on flex-fuel cars was cut below the normal rate. By 2006 over 80% of new cars were flex-fuel, and by the end of 2012 over 18 million flex-fuel vehicles were registered.

Diesel cars
Since the 1970s the Brazilian government has prohibited the private purchase of diesel-powered cars to help promote ethanol fuel sales.

Ethanol storage
The National Bank for Social and Economic Development (BNDES) has set up a sugar-ethanol support programme to help finance ethanol storage, with an annual budget of R$2bn (£480m) in 2014 and 2015.

RenovaBio
In November 2017 Brazil’s President announced a major new policy to reduce dependence on oil and cut dependency on imported petroleum against a backdrop of strong economic growth. This has involved numerous interventions such as:

Sugar cane price
Brazilian cane supply contracts include revenue sharing conditions in which the cane price paid to the supplying farmers is derived from the market prices of both sugar and ethanol. This further strengthens the integration of the sugar and ethanol ‘co-production’, and ensures that government support and subsidies – for either sector – are shared with the farm suppliers.

Direct financial support for sugar cane
A variety of government controlled financial provisions are available directly for the cane sector.

Northeast cane aid
The government offers short term subsidies at times of distress for cane growers in the Northeast, where conditions are less favourable for cane production. For example, a drought relief initiative was introduced for Northeast cane farmers in 2011 worth US$250m.

The Policy Environment
The Brazilian model is one of higher domestic prices and a substantial surplus for ethanol production or export of sugar to the world market.

The government has consistently sought to support and expand ethanol production and reduce emissions, by expanding biofuels to provide 18% of the country’s energy by 2030. The policy is formed of a biofuels-related emissions trading scheme in which ‘emissions credits’ will be created and assigned to producers in proportion to the amount of ethanol they produce. National emissions reduction targets will be broken down to individual distributors, which will be required to purchase the emissions credits from ethanol and other renewable producers. The Brazilian government will control the market dynamics and will set the targets and value of the emissions credits. It is expected that the new policy will incentivise the construction of at least 25 new ethanol plants, each with an average crushing capacity of 4 million tonnes of cane.

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8 Brazil is not ready for diesel cars, International Council on Clean Transportation, 28 September 2015.
9 USDA, Brazil Biofuels Annual BR 14004, July 2014 and BR 15006, August 2015.
11 World Beet and Cane Growers Association, November 2015.
12 Brazil Ministry of Finance, 21 May 2013.
13 Brazilian Sugarcane Industry Association, UNICA, 17 February 2014.
14 WTO, Committee on Agriculture meeting on export competition, March 2013.
Our Analysis

Brazil is the leading global producer and exporter of sugar and ethanol and its marginal supplier, and is therefore the principal price setter on the world market. The sugar and ethanol industries are closely integrated and commercially interdependent – most cane mills are able to produce both products and decisions are normally taken in concert across both industries depending on relative market conditions and attractiveness. Support offered to one industry therefore benefits the other.

The ethanol industry has received significant and long standing support from the Brazilian government, including mandatory ethanol blending, incentivising ethanol investment and sales, and discouraging the use of diesel cars. The government also controls fuel prices which provides a minimum price for the blended fuel ethanol. These policies have helped drive the substantial expansion in the ethanol industry in recent decades, which has benefitted the overall cane sector and sugar industry.

Brazil also supports its sugar industry. Direct subsidies are offered at times of economic stress to its less efficient producers and general agricultural support is also available for the sugar cane sector to improve machinery, technology and agronomy.

Because it has such a large exportable surplus of both sugar and ethanol, Brazil is the single most important influence on the world sugar market. Its government policies in both sugar and ethanol therefore have a substantial effect on world market levels, and have contributed to its instability and historically low levels.

Unrestricted access for Brazil to EU or UK markets would expose buyers, farming partners and processors to this volatility. Without insulation from extreme price cycles, our inability to respond to price volatility could put investment in the industry and its viability at risk.

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96 WTO Disciplines on Agricultural Support, David Orden et al, 2011.
98 USDA, Brazil Biofuels Annual, Gain report BR 15006, 10 August 2015.
case study:
Canada

Canada has only a small domestic sugar industry and imports the majority of its domestic requirements in the form of raw sugar. Processed by its portside refineries, located at Montreal, Toronto and Vancouver which supply over 90% of Canadian consumption. A small beet sugar plant is located south of Calgary at Taber in Alberta which produces about 100,000 tonnes/year and supplies local customers.

Although a minor player in global terms, Canada has been included as an example of a country which is almost wholly dependent on imports to satisfy domestic demand.

The Policy Environment
Canada often claims its sugar industry has little government support, and so is a ‘free market model’ for other global producers. However, Canada enforces an unusual system of additional duties on imports of refined sugar from its main competitors which effectively limits imports of refined white sugar and protects their refining industry.

Canadian sugar industry structure
Canada has no known support arrangements for its domestic beet sugar industry having scrapped its subsidy arrangements as being superfluous as the industry.

Import arrangements
Canada’s international trade arrangements also at first sight appear to be minimal. Imports of raw sugar enter the country duty free. A small duty of CAD$31/tonne (equivalent to 5% – 8% depending on world prices) is applied to imports of refined white sugar. But this does not tell the whole story, as other policy restrictions have been put in place.

USA anti-dumping duties
Under normal circumstances the USA would be expected to be a significant sugar supplier to Canada as much of central Canada is within range of the competitive US beet sugar industries.

Sugar beet production and cane refineries in Canada.
in the Red River Valley and Michigan. But in reality this does not happen.

Imports of refined white sugar to Canada from the USA are subject to ‘anti-dumping’ duties equal to 78% of the selling price to the importer in Canada\(^4\). At typical US supply prices this equates to an import duty of at least US$400/tonne which effectively prevents any significant import trade. Imports of white sugar from the USA are consequently negligible, averaging less than 1% of total imports in recent years\(^5\).

EU countervailing duties
Canada also applies countervailing duties to all imports of white sugar originating in or exported from the EU – another potentially competitive supplier. In September 2014 these duties were increased to €244/tonne\(^6\). As a result, white sugar imports from the EU are close to zero – less than 0.1% of total demand\(^7\).

This is significant in the context of the recently agreed Canada-EU Comprehensive Economic and Trade Agreement (CETA)\(^8\). Under CETA, trade in sugar between the EU and Canada theoretically becomes ‘liberalised’ after seven years\(^9\). However, the continued enforcement of the countervailing duties means that the trade agreement is not reciprocal for sugar – free trade will be possible from Canada to the EU, but not the other way round.

European country additional duties
Canada applies both anti-dumping and countervailing duties to white sugar imports from Germany, the UK, Denmark and the Netherlands\(^10\) which similarly prevents any significant quantities of refined white sugar imports from these countries.

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Our Analysis

The Canadian sugar model is less ‘free market’ than it first appears. Canada has introduced general and country-specific import tariffs which protects its refining industry by giving it unrestricted access to low cost raw sugar supplies from the world market at zero duty, while preventing imports of refined white sugar from Canada’s main competitors, and placing a small but significant duty on white sugar imports from all other sources. This system therefore also involves a form of government intervention, designed to be advantageous for Canada’s refining industry.

It does not, however, offer a sustainable basis for operating a competitive domestic industry. The only reason the small beet sugar operation in Alberta survives under such adverse circumstances is because of its remote location. Being 1,200km and the opposite side of the Rockies from the Vancouver refinery, and about 4,000km from the refineries in Montréal and Toronto, increases transport costs sufficiently to provide a small market niche for local customers for this operation\(^11\).

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\(^1\) Canada Sugar Institute website, 2016
\(^2\) Imports of refined white sugar currently account for less than 3% of total imports and Canadian demand, ISO yearbook, 2016
\(^3\) Canada Sugar Institute website, 2016
\(^4\) Canada Border Services Agency (CBSA) Statement of Reasons relating to anti-dumping and countervailing duties in respect of the USA and EU, 30 June 2005 and 30 June 2010
\(^5\) ISO yearbook, 2016; Canada International Trade Statistics Division, 2016
\(^6\) CBSA letter to CEFS, 4 September 2014
\(^7\) ISO yearbook, 2016
\(^8\) The Canada-EU comprehensive economic and trade agreement (CETA) was agreed in October 2016
\(^9\) Under CETA import duties for sugar reduce to zero seven years after entry into force of the agreement
\(^10\) CBSA letter to CEFS, 4 September 2014
case study: EU

Until 2005, the European Union (EU) operated a protectionist sugar policy as part of the EU’s Common Agricultural Policy (CAP). The sugar regime was the last part of the CAP to be reformed.

EU sugar policy has been largely dismantled in two substantive reforms in 2006 and 2013 which resulted in major restructuring of the industry, cuts in support prices, export restrictions, and elimination of production quotas and most internal controls from 1 October 2017.

At the same time, the EU also adopted a more flexible import policy. Although it still applies high fixed import duties, these have been ameliorated by a series of international agreements including unrestricted duty-free access for African, Caribbean and Pacific (ACP) countries, and Least Developed Countries (LDC) from 2009, semi-preferential ‘CXL’ Tariff-Rate Quotas (TRQs) at reduced duty, and an increasing number of Free Trade Agreements (FTAs) most of which are at zero duty. The net effect of this is that by 2017 preferential import availability to the EU will reach 3.5 million tonnes, of which 2.7 million tonnes will be duty free.

In addition to this, raw sugar can be imported free of duty, provided it is refined in the EU under customs control and then exported.
The Policy Environment

Following the removal of quotas and most support arrangements from 1 October 2017, the EU sugar sector became substantially deregulated. However, some support measures have remained in place as follows.

Direct support for sugar beet
From 2017 most market measures including quotas and minimum beet prices were abolished, and the majority of production will receive no direct payments. However, some ‘coupled aid’ was agreed for less efficient industries in 11 Member States paid from national budgets, which provides a beet price top-up averaging about €5/tonne of beet for a designated crop area up to 2019. Although notified to the World Trade Organisation (WTO) as not trade distorting (‘blue box’), this nevertheless represents a direct subsidy for one-quarter of EU sugar production worth about €180m/year. Coupled aid is not available for the more efficient European sugar industries, including the UK’s.

Import protection
Despite the substantial increase in preferential import access, the EU will still maintain its high fixed import duties for non-preferential imports.

General agricultural support
In the 2013 CAP reform agreement, the majority of farm support was switched to decoupled (i.e. delinked from production) area payments under the ‘basic payment scheme’. As an arable crop sugar beet also qualifies for this area payment, worth about €250/hectare up to 2019. Although decoupled aid does not affect crop selection decisions, it is a substantial farm income support subsidy which also benefits beet growers.

Crisis measures
As part of the 2013 CAP reform, ‘market disturbance’ measures were included in the final regulations allowing the Commission to propose market interventions in the event of market failures or crises. These measures, which are not sector-specific, include general provisions and private storage aid. Although neither has been used for sugar, they are available and could be used after 2017.

Bioethanol
The EU has agreed Directives which set a mandatory Member State target level of 10% (of which up to 7% can be derived from crop sources) for the use of renewable energy in transport fuel by 2020. This mandate is proposed to be cut to 3.8% by 2030. Beet-based bioethanol is one of the products which can be used, and was included in the latest CAP legislation for this purpose, although no specific sub-targets have been agreed.

Our Analysis

From 1 October 2017, the EU’s sugar sector became substantially deregulated. General measures will be available to respond to market crises, but these have not yet been used in the sugar sector.

Area payments are available for arable crops, including sugar beet, which are delivered for production. Direct ‘coupled’ support has also been agreed for some less efficient industries, which is capped by area and budget.

Although fixed import tariffs remain in place, substantial preferential imports have been agreed which by 2018 will total 3.5 million tonnes, of which 2.7 million tonnes will be available duty free.

After reform the EU sugar landscape is liberalised and market let. Imports in the future will be determined by market economics.
India is the world’s largest domestic sugar consumer and looks set to be the largest producer in 2018/19 with a 31 million tonnes crop.

India oscillates between being a net importer and exporter depending on prevailing sugar policy and subsidy arrangements, as well as crop output.

India is the most influential ‘swing supplier’ to the world market and contributes to its volatility.

The Policy Environment

The sugar industry in India is large and fragmented. In the states in which sugar cane is grown it has major economic and political significance because of the number of small cane growers and their families it supports. As a result, the sector is heavily regulated at both the federal and state levels.

Farmers receive minimum cane prices which are set at the federal level and supplemented by state governments. Because of the political pressures, the combined federal/state mandated cane prices often make cane more remunerative than other crops.

The government aims to support producers when the domestic industry is under pressure and consumers when domestic market prices are rising. To do this, the government controls both import and export volumes.

When it is protecting the sugar industry the government raises import tariffs (the import tariff was raised to 50% in July 2017) and it grants export subsidies. Conversely, when domestic market prices are rising, the government lowers tariffs (to zero on occasion) and authorises imports.

As a guiding principle, the government only authorises imports to the extent it believes domestic production has fallen short of likely consumption and only allows exports when it is sure the domestic market is adequately supplied. Export
Our Analysis

India’s sugar sector is protected through a combination of domestic price support, variable import tariffs and export subsidies, and soft loans. High mandated cane prices reduce the normal planting response to low world prices, which exacerbates global price volatility.

As it is such a large domestic producer and consumer and because its average supply/demand balance is close to neutral, India oscillates between being a net sugar importer and exporter; depending on prevailing sugar policy, subsidy arrangements and crop output. This makes India one of the most influential ‘swing suppliers’ to the world sugar market, which contributes to its volatility.
Thai sugar production and exports have greatly expanded in recent years and Thailand is currently the world’s second largest sugar exporter. This expansion has been driven by substantial government subsidy and protection for the industry for many years.

The Policy Environment
Until recently, Thailand operated a highly protectionist and subsidised sugar policy, with government intervention in almost all aspects of the sugar sector, which was based on the pre-2006 EU sugar policy. In response to a World Trade Organisation (WTO) challenge by Brazil, Thailand has reviewed and updated its subsidy arrangements.

Their sugar policy used to work like this:
Domestic sugar sales were controlled and limited by a fixed annual quota (Quota A – set at 2.4 million tonnes in 2014). Sugar produced in excess of this couldn’t be sold internally and had to be exported (Quotas B and C). Quota B exports (currently set at 0.8 million tonnes of raw sugar) were controlled by the Thailand Cane and Sugar Corporation which had overall responsibility for pricing and selling. The average price from the Quota A and B sales determined the final cane price paid to farmers. Quota C represents the residual surplus which had to be exported, but under the direction of individual companies.

Cane farmers also received supplementary payments whenever the world sugar price was low. These were funded by a statutory levy on sugar of THB5/kg, which has since been removed. It is unclear when these funds will run out, however the Government still paid a supplementary payment in 2018 and the provisional cane...
price for 2019 is lower still at THB700mt\(^2\). 

Export subsidies 
Thailand has no WTO commitments for sugar export subsidies and so is not allowed to subsidise its exports. In its last notification (2014) to the WTO, Thailand stated it had provided zero export subsidies from 2009 to 2013\(^3\).

Brazil WTO dispute challenge 
Brazil challenged this through its WTO settlement dispute in April 2016, claiming that Thailand cross-subsidised its sugar exports through its system of quotas and fixed domestic prices. Brazil has since accepted the changes Thailand has made to its policies, listed below, and the WTO claim is no longer active\(^5,6\). 

Post reform 
In January 2018 Thailand announced that it would abolish both the domestic sales quotas and the floating of domestic sugar prices\(^7\). Sugar has since been moved onto the Government’s list of Controlled Goods and Services, meaning its domestic sales price is capped by a limit (currently set at THB23.50/kg), and the THB5/kg statutory levy on domestic sugar sales has been effectively replaced with a THB5/kg domestic sugar premium\(^8\). However, it is still not clear to what extent these changes will affect sugar production or pricing in Thailand.

Our Analysis 
The Thai sugar policy model has been based on a combination of market differentiation using a quota system, domestic price support for cane producers and millers, and export subsidies. 

Until recently Thailand operated one of the most protectionist sugar policies in the world. In April 2016, Brazil launched a WTO legal dispute case against Thailand which documents the subsidy and support measures practiced by the Thai government\(^9\). In the introduction to this, Brazil states: “By means of its sugar regime, Thailand strictly controls virtually every aspect of its sugar sector including the production, storage, transport, sales, import, export and other activities applicable to cane, raw sugar, white sugar, molasses and sugar by-products.”

Many observers believe that the expansion of the Thai sugar industry has been directly incentivised by the extensive level of government subsidy and support for the industry\(^10\). The government wants to further increase sugar cane growth in Thailand, decreasing rice production (where huge surpluses were generated by policy), utilise extra production capacity at existing sugar mills and supply a growing biochemical industry\(^11\).

In response to a WTO challenge by Brazil, Thailand has implemented changes to its subsidy arrangements but it is not yet clear the full effect of the changes made.

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\(^1\) LMC International, Sugar and Sweeteners Market Report, Q3 2018  
\(^2\) LMC International, Startch and Fermentation Analysis, January 2019  
\(^3\) Czarnikow Article, The Sugar Market: In Transition? 31 January 2019  
\(^4\) WTO, export subsidy notifications, April 2014  
\(^5\) Reuters article, 21 February 2017  
\(^6\) LMC International, Sugar and Sweeteners Market Report, Q1 2018  
\(^7\) Brazil notification to the WTO on Thailand subsidies on sugar; 7 April 2016  
\(^8\) F.O.Lichts, International Sugar and Sweeteners Market Report, July 2010  
\(^9\) LMC International, Sugar and Sweeteners Market Report, Q1 2018
case study: USA

The USA is unusual amongst the seven countries highlighted as it is a deficit producer with minimal exports, and because its support policy is differently structured from most other countries. The US sugar industry is shared between beet and cane, with beet typically contributing about 53%.

The Policy Environment

US sugar policy is highly regulated and based on a combination of price support, production limitation, marketing and import controls. It also includes a market clearing mechanism linked to its ethanol industry.

US sugar policy is set out in the ‘Sugar Program’, authorised by the 2014 Farm Bill for the period 2014-2018.

The Sugar Program has the following key facets:

- Price support – the government ‘Loan Rate’ system
- The US government offers loans to US sugar producers by establishing a ‘Loan Rate’ each year which gives producers an alternative sales option if market prices are disappointing after harvest. Should domestic market prices fall below the ‘Loan Rate’, producers can forfeit sugar to the Commodity Credit Corporation of the US Department of Agriculture (the USDA), in return for receiving the cash value of the sugar forfeited. It is then the USDA’s responsibility to dispose of it.

This effectively sets a minimum floor price for sugar sold on the domestic market. Also, as Congress has legislated that the Sugar Program should be budget neutral, the USDA is incentivised to keep sugar market prices sufficiently above the ‘Loan Rate’ to prevent producers forfeiting their sugar.

In 2012/13, due to weaker than expected domestic prices, producers defaulted on 382,000 tonnes of sugar which were purchased by the USDA under this scheme. The USDA then disposed of the forfeited tonnage to non-food markets at reduced prices via the Feedstock Flexibility Program (see overleaf), at a cost to US taxpayers of US$280m.

All of the USA’s sugar production is in these areas.

- Hawaii

<table>
<thead>
<tr>
<th>domestic production</th>
<th>domestic consumption</th>
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<tr>
<td>8 million tonnes</td>
<td>11.1 million tonnes</td>
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<table>
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<tr>
<th>imports</th>
<th>total production</th>
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<td>3.1 million tonnes</td>
<td>5% of countries featured</td>
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<table>
<thead>
<tr>
<th>Cane refineries</th>
<th>Cane (47%)</th>
<th>Beet (53%)</th>
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<tr>
<td>Hawaii</td>
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- This table shows the breakdown of sugar production between cane and beet in the USA.
To qualify for loans, processors must agree to pass on a minimum proportion of the value of the agreed loan to cane and beet farmers, and the USDA has the authority to set minimum farmer payments. This ensures that the benefits of the ‘Loan Rate’ support system are passed to farm suppliers, and effectively acts as a minimum beet and cane price regime.

Marketing allotments
Legally binding limits (‘marketing allotments’) are set by the government which restrict the quantity of sugar each processor and miller can sell on the domestic market, so acting as a de facto quota system. The national aggregate of all the company marketing allotments (the ‘overall allotment quantity’) is calculated by reference to US sugar demand, so that domestic production is planned to account for about 85% of total US sugar consumption. The overall allotment quantity is shared between the beet and cane sectors in the ratio 54% and 46% respectively.

The Feedstock Flexibility Program
To enable the ‘Loan Rate’ system to work effectively, a market clearing mechanism is needed to allow the USDA to dispose of defaulted sugar stocks. This is provided by the Feedstock Flexibility Program. This requires the Commodity Credit Corporation to divert forfeited sugar at reduced prices from food to ethanol use, so shoring up the sugar market price and minimising the risk of further forfeits. As this sugar is sold to the ethanol industry by auction at reduced prices, it also provides the sector with access to subsidised raw materials financed by US taxpayers. This program has only ever been used in one year since its introduction in the 2008 Farm Bill.

Import controls
The US seals its domestic market from the world market by charging penal import duties. The exceptions are the limited World Trade Organisation (WTO) Tariff-Rate Quota (TRQ) for developing countries at a small import tariff and the zero tariff for imports from Mexico as a result of the North American Free Trade Agreement (NAFTA). Although in principle Mexico has free access to the US sugar market, in practice the US intent to apply anti-dumping and countervailing duties on Mexican exports has forced Mexico to agree to control its export volumes to avoid oversupplying the US market and to observe minimum prices for its exports to the US.

Mexico has priority to supply what the US cannot produce itself once preferential imports under the TRQ are allowed for.

Re-export Program
The result of the import controls is that non-preferential origins can only supply sugar to US refiners under the Re-export Program where the sugar has to be re-exported rather than being sold within America (this is equivalent to toll refining in the EU).

WTO notifications
In common with all WTO members, the USA is required to notify the WTO of its agricultural support programmes. For its most recent Aggregate Measure of Support (AMS) notification (for 2014/15), it listed support for sugar as some US$1.5bn, which was nearly half the total US agricultural AMS for all commodities for that year.

Our Analysis
The USA operates a highly regulated and protectionist sugar policy, which is based on domestic price support and production constraint. Prices are maintained through a system of ‘Loan Rates’ which set a minimum floor in the market and manufacturers are entitled to forfeit sugar to the government, if prices fall below these agreed levels.

One method for clearing forfeited sugar from the market is where the government auctions it to ethanol producers at, in effect, heavily discounted prices.

Production is restricted through a system of marketing allotments which are de facto quotas allocated to sugar beet and cane producers. The aggregate of the allotments is set equal to 85% of estimated demand which is the proportion of the domestic market reserved for US producers.

The restricted share of the US market available for imports means that, in effect, the US market is closed to imports, apart from the preferential origins under the WTO TRQ and Mexico under NAFTA.

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1 Agriculture Act of 2014 (the ‘Farm Bill’)
2 F. O. Licht, Sugar and Sweetener Report, 3 January 2014
3 Food Conservation and Energy Act of 2008 (the Farm Bill)
4 USDA Feedstock Flexibility Program guidance notes, 2017
5 Department of Commerce, Amendment to agreements suspending the anti-dumping duty and countervailing duty investigations on sugar from Mexico, signed 30 June 2017