



GIB

ASSET
MANAGEMENT

World Diabetes Day

14 November 2023

By Mark Evans

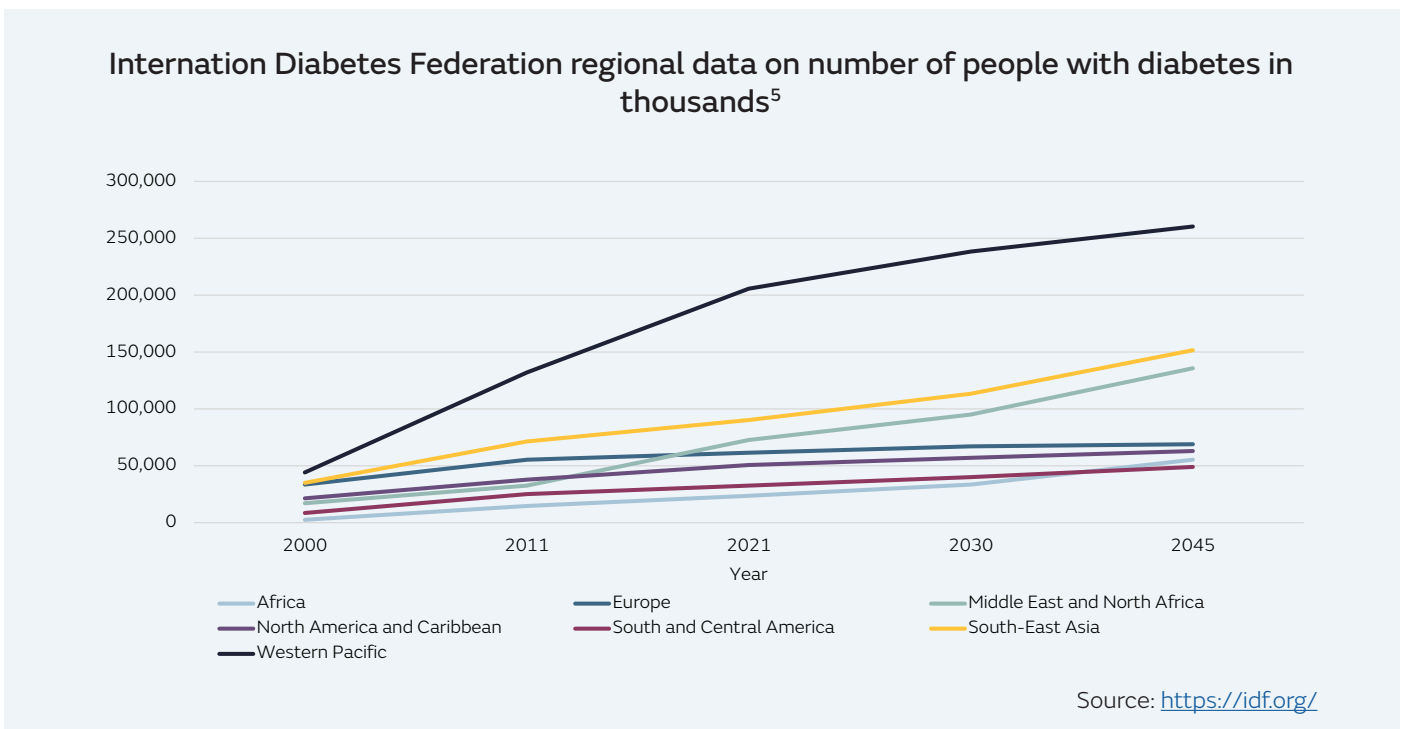
How diabetes and obesity might be transformed by GLP-1 drugs that pharma companies Novo Nordisk and Eli Lilly have been launching

14 November 2023 will be the 22nd anniversary of world diabetes day, which started in 1991. It is marked every year on the birthday of Sir Frederick Banting, who co-discovered insulin along with Charles Best in 1922, one of history's most significant medical breakthroughs that we have written about before¹.

Diabetes as a huge and growing human health issue

Diabetes is one of the greatest human health issues of our time. The issue of obesity is closely interrelated: obesity is believed to account for 80-85% of the risk of developing Type 2 diabetes². Our GIB AM Sustainable World team have a specific High Impact Disease - Diabetes theme that focuses on investing in the solutions to this enormous and growing issue.

The number of adult diabetics has risen rapidly from 151 million in 1991³ to 537 million adults (1 in 10) living with diabetes in 2021. This is expected to soar to 643 million by 2030 and 783 million by 2045⁴.



¹<https://gibam.com/insights/a-century-of-innovation-100-years-of-insulin>

²<https://www.diabetes.co.uk/diabetes-and-obesity.html>

³<https://www.thelancet.com/action/showPdf?pii=S0140-6736%2816%2900618-8>

⁴<https://worlddiabetesday.org/about/facts-figures/>

⁵<https://idf.org/>

Diabetes: the facts

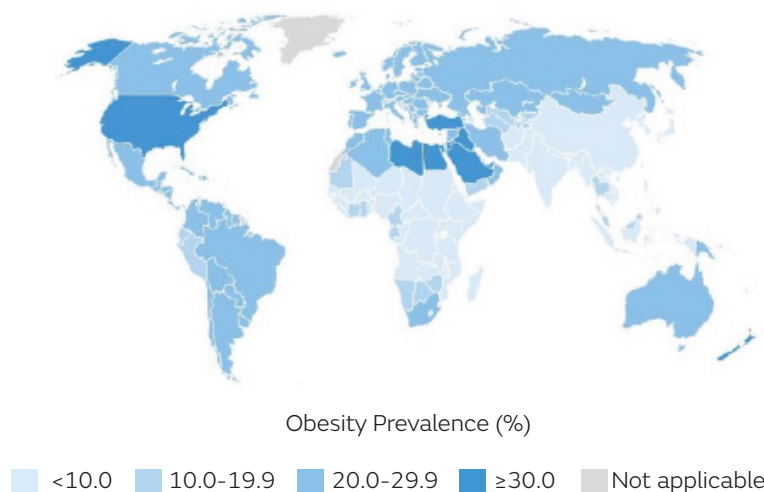
- Over **3 in 4 adults** with diabetes live in **low- and middle-income countries**.
- **1 in 2 adults** with diabetes **go undiagnosed**⁶.
- Diabetes is responsible for **6.7 million deaths in 2021** - 1 every 5 seconds⁷.
- Life expectancy is **8 years shorter** for those with Type 1 diabetes, driven by 200% increased risk of all-cause mortality.
- In 2021, there were about **8.4 million individuals worldwide with Type 1 diabetes**, with the rest having Type 2⁸.

The link between diabetes and obesity

Obesity and Type 2 Diabetes (T2D) are very closely interrelated. 90% of adults with T2D are overweight or obese. The more excess weight as person has, the more resistant muscle and tissue cells become to his/her insulin hormone⁹.

Obesity is believed to account for 80-85% of the risk of developing Type 2 diabetes¹⁰, while recent research suggests that obese people are up to 80 times more likely to develop Type 2 diabetes than those with a BMI of less than 22. But the obesity problem is bigger than diabetes (460 million globally) with obesity affecting ~764m people¹¹.

Obesity is a global epidemic affecting more than 764 million people



Source: [Q2 2023 Presentation \(novonordisk.com\)](#)

⁶<https://cdn.ipaper.io/iPaper>

⁷<https://diabetesatlas.org/>

⁸[https://www.thelancet.com/journals/landia/article/PIIS2213-8587\(22\)00218-2/fulltext#:~:text=Findings,aged%2060%20years%20or%20older.](https://www.thelancet.com/journals/landia/article/PIIS2213-8587(22)00218-2/fulltext#:~:text=Findings,aged%2060%20years%20or%20older.)

⁹<https://www.obesityaction.org>

¹⁰<https://www.diabetes.co.uk/diabetes-and-obesity.html>

¹¹<https://cdn.ipaper.io/iPaper>

Glucagon-like peptide-1 receptor agonists ('GLP-1s') that treat Type 2 diabetes and now obesity

GLP-1s are injectable diabetes drugs that mimic the blood sugar-lowering hormone GLP-1 and are increasingly prescribed for weight loss. GLP-1 works on the insulin-producing cells of the pancreas, telling them to produce insulin when blood sugar rises too high. Insulin helps cells store this sugar and helps bring the body back to normal (glucose homeostasis).

What do GLP-1s achieve?

GLP-1s were initially developed solely as a treatment for T2D, as they have been further researched, and have a systemic impact throughout multiple systems of the human body:

1. They stimulate insulin production by binding to beta-cells in the pancreas. This helps the body make use of glucose, preventing high blood sugar—one of the most damaging effects of diabetes. Importantly, this increase in insulin happens only when glucose levels rise (i.e., when the body needs insulin). As glucose levels fall and insulin needs drop, GLP-1s agonists stop stimulating the production of the hormone.
2. They slow digestion, reducing blood sugar spikes. Because food remains in the stomach for longer, nutrients (like glucose) pass more slowly into your bloodstream.
3. They reduce food intake by binding to nerve cells in the brain and by slowing the emptying of the stomach (which creates a sensation of fullness). This overall reduction in calories can mean that one will consume less overall carbohydrates (which become glucose), helping maintain more stable blood sugar.

Brief History

In the early 1980s, GLP-1 was discovered independently by researchers both in Massachusetts, USA, and in Copenhagen, Denmark. As a drug, a GLP-1 receptor agonist (RA) activates GLP-1, thereby telling the pancreas to produce insulin and helping bring everything back “in range” or to achieve glucose homeostasis .

The initial drugs developed couldn't stick around long enough in the body to work.

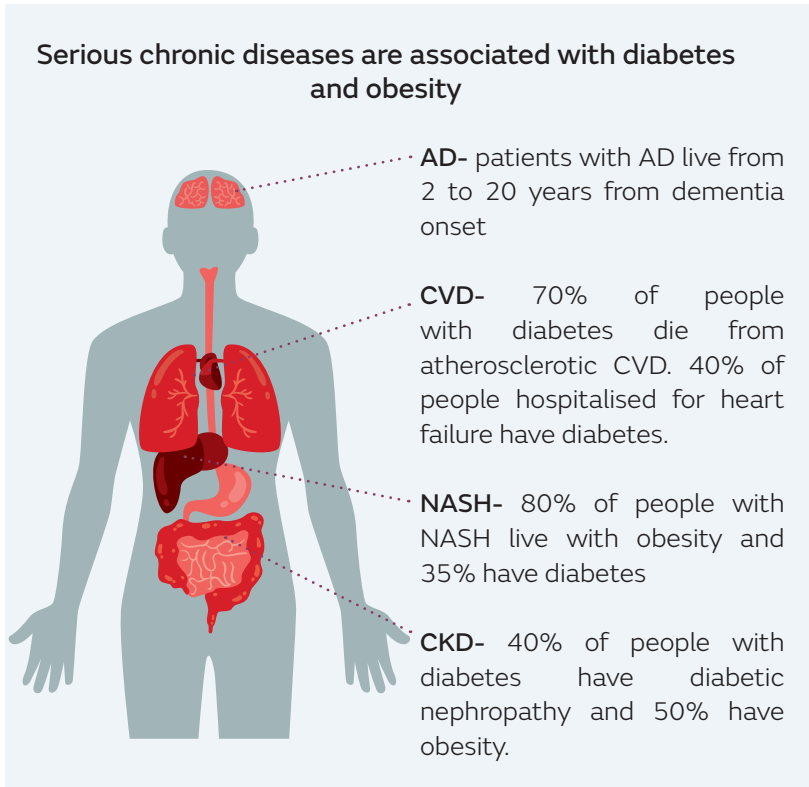
In 1990, a researcher in the Bronx noticed that the venomous Gila monster was able to keep its blood sugar levels stable even when fasting. Dr. John Eng found a variant of GLP-1 in the lizard's saliva that lasted longer.

Novo Nordisk launched its first GLP-1 receptor agonist, Victoza (liraglutide), in 2010.



GLP-1s are now approved to treat both obesity as well as Type-2 diabetes

Lots of serious chronic diseases are associated with diabetes and obesity, including Alzheimer's Disease (AD), Cardiovascular Disease (CVD), Non-alcoholic Steatohepatitis (NASH) and Chronic Kidney Disease (CKD).



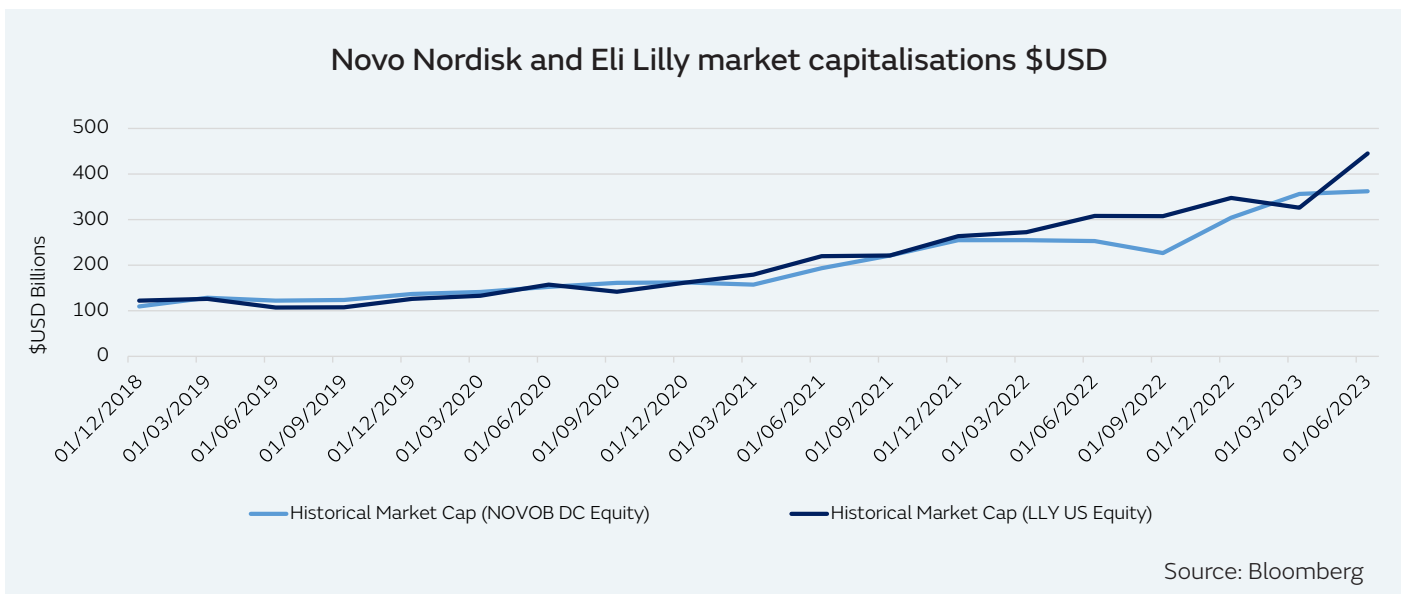
New therapeutic areas represent patient populations with high unmet medical needs

| Estimated Patients | |
|--------------------|-----------------------|
| AD | ~85 million |
| Estimated Patients | No. of related deaths |
| CVD | ~420 million |
| | ~20 million annually |
| Estimated Patients | Diagnosis rate |
| NASH | ~15-40 million |
| | ~20% |
| Estimated Patients | Diagnosis rate |
| CKD | ~200 million |
| | ~20% |

Source: [Q2 2023 Presentation \(novonordisk.com\)](#)

Impact & financial performance

The market capitalisations of Novo Nordisk and Eli Lilly have risen over the past five years respectively from about \$101bn USD to \$362bn USD and from about \$122bn to about \$445bn.



Over the past year, they are up in simple price terms over 162% and 177%, considerably more than Apple, Microsoft and most other tech names.

Novo Nordisk has been so successful that its market capitalisation now exceeds Denmark's GDP¹², prompting concerns the country's fortunes have become too closely tied to a single company, as Finland's was to Nokia in the early 2000s.

Similarly, many medical device and processed food companies have seen their market capitalizations fall significantly.

The Walmart CEO in early October (2023) said:

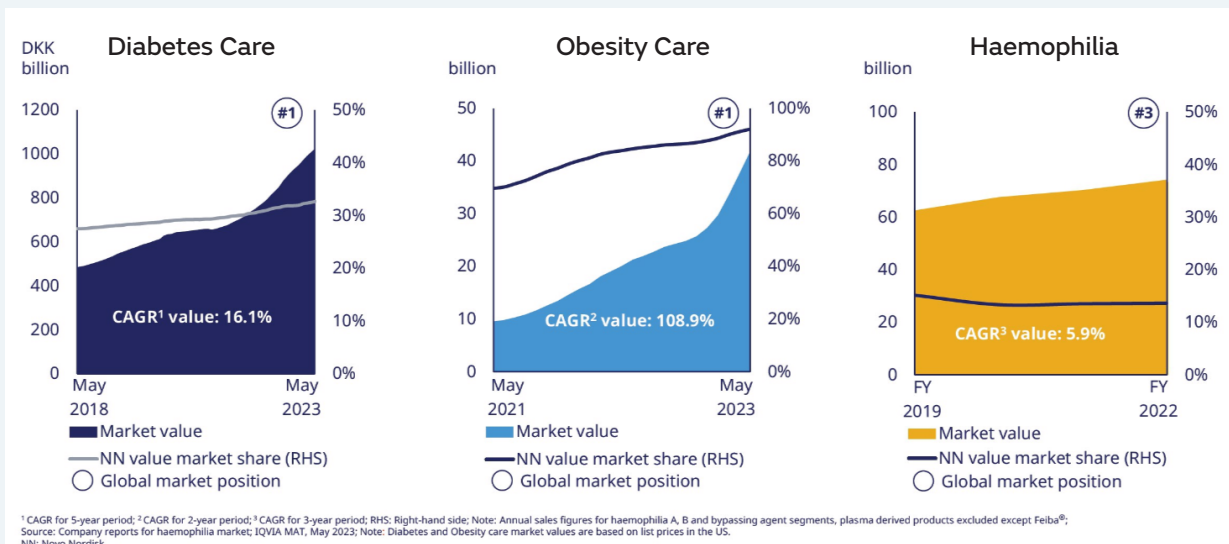
"We definitely do see a slight change compared to the population, we do see a slight pullback in overall basket. Just less units, slightly less calories"¹³

These comments alone were enough to cause a short term fall in the share price of consumer staples companies such as Pepsico (soda), Mondelez (snacks) and Molson Coors (beer).

Why we invest

The GIB AM Sustainable World strategy has a current holding in Novo Nordisk. It also the largest holding in the GIB AM European Focus Strategy.

Novo Nordisk has leading positions in diabetes, obesity and haemophilia

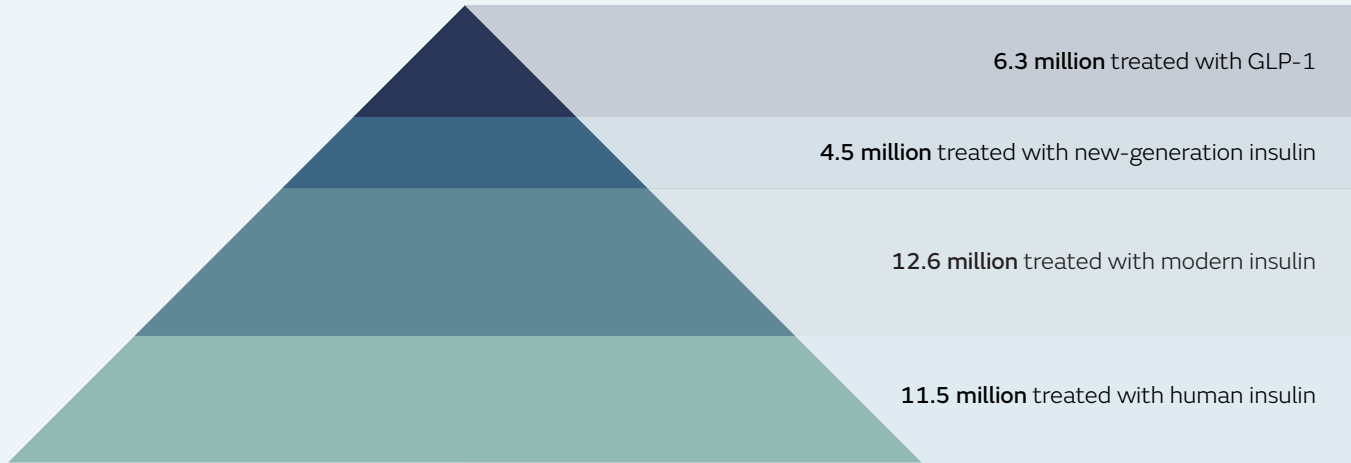


Source: [Q2 2023 Presentation \(novonordisk.com\)](https://www.novonordisk.com)

The company's purpose is: 'to drive change to defeat diabetes and other serious chronic diseases such as obesity, and rare blood and rare endocrine diseases.' And the company's insulin obesity and rare disease care products deliver a huge benefit to society: 'of the 537 million global diabetics, 36.3 million people are currently treated with Novo Nordisk diabetes products'¹⁴.

¹² <https://www.ft.com/content/c4e8a5e2-6be4-47dd-a995-ffe4eb0b05b7>
¹³ <https://fortune.com/2023/10/04/walmart-ozempic-people-buying-less-food/>
¹⁴ <https://cdn.ipaper.io/iPaper>

Of the 537 million, 36.3 million people are currently treated with Novo Nordisk diabetes products¹⁵



Source: [Q2 2023 Presentation \(novonordisk.com\)](https://www.novonordisk.com)

For the most recent financial year,

- About 30% of sales came from insulins, and 10% from rare disease (such as Haemophilia) treatments
- About 47% of sales came from GLP-1s approved for diabetes care (under the brand names Victoza, Ozempic and Rybelsus)
- About 10% of sales came from GLP-1s approved for obesity care (Saxenda and Wegovy) Wegovy saw its Commercial relaunch in January 2023

It is these last two categories that may well grow very substantially as the use of GLP-1 to tackle diabetes and obesity expand.

GLP-1s are currently delivered by syringes¹⁶, but Novo Nordisk is working on oral versions:

The opportunity

The investment opportunity for producing GLP-1s for Novo Nordisk - and peers - could be substantial, in our view. The global obesity market revenue opportunity is in its early stages. Estimated global GLP-1 share of total diabetes prescriptions is c.5%. The US obesity market for GLP-1s, using conservative assumption from BNP Paris Exane, was worth about \$2.3bn in 2022. It could reach \$12bn in 2031. The global obesity market, using conservative assumptions from BNP Paris Exane, was worth about \$129mn in 2022. It could reach \$8.8bn in 2031.

¹⁵ [Q2 2023 Presentation \(novonordisk.com\)](https://www.novonordisk.com)

¹⁶ <https://www.wegovy.com/taking-wegovy/how-to-use-the-wegovy-pen.html>

In summary:

Beware of the hype, but the long term health and financial impact could be profound

We are at a high level of market hype/anticipation regarding GLP-1s at the moment, both regarding the transformational health benefits of GLP-1s and the specific financial prospects of Novo Nordisk and Eli Lilly. There is even a suggestion that a wide range of addictive disorders (such a drug, alcohol and tobacco use) could be treated¹⁷.

There have been many similar medical excitements before: for example, statins in the 1980s.

There are many questions still to be answered, for example around the short and long-term health side effects/impacts, what happens when patients cease taking GLP-1, and whether health insurance plans will provide coverage. While GLP-1s have been around for a number of years the long-term impacts of artificially stimulating (amongst millions of patients) GLP-1 pathways remain unknown.

There is still the fundamental question as to whether they are really the best solution for long-term metabolic health for most people?

Regarding the financial prospects of Novo Nordisk and Eli Lilly, many new GLP-1 are under development, and their current products will come off patent in the early 2032 onwards. This ‘patent cliff’ and need for constant innovation means pharmaceutical companies are rarely the steady compounders found in other sectors.

When the hype dies down, there is a chance these drugs and their branded and generic replacements could have a very profound impact on the global obesity epidemic:

In reality, many people don't and won't ever eat healthily and take exercise

To change your mind as an investor can be hard. When a supposed medical breakthrough happens, it is much easier to say the market is over-reacting. While we don't know what will happen, there is a chance these drugs as a class, could have a very profound positive impact on the global obesity and diabetes epidemics and continue to provide investment opportunities.



¹⁷ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8820218/>

This document has been prepared by Gulf International Bank (UK) Limited (GIB UK). GIB UK is authorised by the Prudential Regulation Authority ('PRA') and regulated by the Financial Conduct Authority and the PRA. GIB UK is registered as an Investment Adviser with the Securities and Exchange Commission in the United States. None of the content in this communication is investment advice, and the information contained herein is for information purposes only. There can be no assurance that forward looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements.

The views expressed in this publication are those of the author(s) alone and are subject to change without notice. GIB UK has no obligation to update this publication. The information contained in this publication has been obtained from sources that GIB UK believes to be reliable, but makes no representation that the information contained herein is accurate, reliable, complete, or appropriate.