

TO
Beer
OR NOT TO
Beer?

**A Liquid History of Economic
Development in Canada and Zambia**



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“Beer propelled the shift from our hunter-gatherer way of life to agrarianism. It bankrolled British imperialism, and eased post-communist Eastern Europe into a market economy.”

– Swinnen and Briski, 2017:162



“Drink sir, is a great provoker of three things.... nose-painting, sleep and urine. Lechery, sir, it provokes, and unprovokes; it provokes the desire but takes away the performance.”

– Shakespeare, Macbeth: Act 2, Scene 3



“God invented whiskey so the Irish wouldn’t rule the world.”

– Jim Bishop

1. Introduction

Sometimes complicated statistical analysis is appropriate, at others intuitive and inquisitive sniffing of the developmental air is even more appropriate. Lant Pritchett is a doyen of both approaches. For the latter he has proposed a rigorous sniffing methodology, which he refers to as a ‘four-fold smell test’ (Pritchett, 2014). He defines this olfactory method more specifically as a “four-fold criteria for whether something is potentially an important determinant of development, or more narrowly, just economic growth” (para. 3). These four criteria assert: i) developed countries should have more of it than non-developed countries, ii) developed countries have more of it today than when they were less-developed, iii) it is more prevalent in rapid development successes than in development failures, and iv) there is more of it in a country in periods when development progress is rapid than in periods when development progress is slow.

A glance at a world map shows that, in general, higher-income countries of the world consume more alcohol than the Global South. For example, in 2019 countries in Europe such as the UK (3.53 liters per capita per year), Poland (5.72) and Italy (1.99) consumed more than Nigeria (0.73), India (0.23), and China (1.66). Western offshoots such as the US (3.97), Canada (3.5),

and Australia (3.71) were also significant consumers. Although, contrary to this North-South division, were various parts of the Global South that were also noted sippers, including most of Central and South America – Brazil (3.84), Argentina (3.62), and Mexico (3.72) – and Southern Africa – South Africa (3.99) and Botswana (2.93) (Ritchie and Roser, 2024). Such data suggests that though beer and alcohol more generally do pass the Pritchett ‘smell test’, there is a broadly rising and falling pattern of consumption in the Global North and South respectively. There are also clearly some cultural-religious factors that intervene in this development relationship, with very low levels of alcohol consumption across North Africa and the Middle East (Ritchie and Roser, 2024).

For this paper, I undertook a week of fieldwork in Toronto, Canada in late 2023. I use the term ‘fieldwork’ in a very loose sense though, since there were no actual fields. My fieldwork was in urban Toronto, specifically the bars, pubs, and restaurant-bars of downtown Toronto. Beer was everywhere. Not just the insipid, watery best-sellers Molson or Coors Light but also exciting, innovative, locally produced craft beers. Beer seemed integral to Toronto nightlife, and to the socializing that helped integrate the young-migrant population of the city and turn them into Canadians

more rapidly. Beer was intimately bound up with the iconic sports teams of the city, most notably the Maple Leaf's ice hockey team and the Blue Jays baseball team. Before every home game the pubs and bars were crowded with fans bedecked in the jerseys of the home teams.

Academic research has confirmed that beer is associated with social traditions, friends, and networking, with drinks in general typically consumed socially. Among college students in the US, there has been a sharp fall in preference for homeland beer and a rapid adoption of local beers as part of changes to this convivial process. There is a clear and positive association between consumption of US beers and length of time in the US (McCluskey and Shreay, 2011:161, 167) and migrants become quickly associated with local beer consumption rather than nostalgic imports. The reasons for this in Toronto seem clear enough; beer largely passed the Pritchett smell test and was undoubtedly associated with much of what makes Toronto a contemporary global city. Schroders (the London-based asset management company) recently compiled a Global City Index of nine hundred cities, structured around its measures of the environment, economy, innovation, and transport. As of February, 2023 Toronto was rated 6th on the list, above both Singapore and Paris (www.schroders.com/en-gb/uk/intermediary/spotlight/global-cities/global-cities-index/). The Economist Intelligence Unit (EIU) publishes an annual 'Global Liveability Rank', comparing 172 cities for their quality of urban life. In 2023, Toronto was rated 9th (EIU, 2024).

Beer is clearly part of what makes Toronto a global and livable city, yet a recent biography, Levine (2015), of Toronto is entirely negative about the historical impact of alcohol. This is a paradox, because while beer is associated with development, it is ignored as a key driver of that development. This is reflected in the contemporary Global South. In Zambia, another country with which I am familiar, I studied one of

the newly established special economic zones, the Lusaka South Multi-Facility Economic Zone (MFEZ), specifically the list of targeted industries for foreign and domestic investors. The Lusaka South MFEZ offers special incentives, "to commercial and small holder farmers through the linkages created by the agriculture and agro processing industry" (<https://www.lsmfez.co.zm/targeted-industries/>). The specific agro-goods for which the government seeks investors are "wheat, soyabean, cotton, tobacco, spices, sugar and vegetables". Beer and brewing were conspicuous by their absence. Under manufacturing, electronics and electrical goods were listed as targeted sectors, but, again, there was no active encouragement of brewing.

This paper, first, demonstrates that while beer and brewing are central to the economic history and development of humankind, Canada has long had a difficult relationship with alcohol, including vigorous temperance movements in the 20th century. This dilemma is covered in a major recently published history of Toronto that portrays the link between beer and the city in a wholly negative light. This paper takes issue with this portrayal and shows that beer is an easy source of taxation for developing countries, and is typically a pioneer of industrialization in poor nations. Although brewing is increasingly dominated by a few global multinational firms, brewing generally attracts foreign direct investment (FDI) and local consumption comes from local production. Therefore, it is not a product that generates a drain on foreign exchange by boosting imports. Finally, brewing often creates a strong economic interest in cleaner urban water, with potentially massive, and much wider, positive externalities for urban health. This more rigorous analysis of the developmental impact of brewing shows that beer passes all four criteria of the Pritchett smell test.

2. Beer Changed the World but Corrupted Toronto?

This section shows how human history is inseparable from brewing, that Canada, and particularly Ontario, have had a difficult historical relationship with alcohol in general, and how a major, recent history of its largest city, Toronto, paints the historical impact of alcohol in a wholly negative light.

2.1 A Grand History of Beer

The consumption of beer requires brewing. Yet brewing cannot be undertaken by hunter-gatherers as it requires the adoption of a settled agrarian lifestyle. Brewing has, consequently, been closely associated with the transition to civilized society. The first recorded brewing was in Mesopotamia in 6000 BC, the cradle of civilization, and is known in China from 5000 BC, coincident with the stirring of urban civilization. Beer is integral to humanity's earliest written texts, including the 2000 BC *Epic of Gilgamesh* (Swinnen and Briski, 2017:7). In ancient India, the philosophical and religious epics, including the *Rig Veda*, contain frequent verses praising the intoxicating pleasures of Soma-rasa, a kind of beer produced from milk weeds and mixed with other ingredients (Murthy, 2015).

Brewing stimulated economic development. In 3000 BC, beer in ancient Egypt was used as currency (Swinnen and Briski, 2017:8). In ancient Babylonia, brewing helped stimulate the spread of written laws, where there were laws to protect and preserve beer brewing (Poelmans and Swinnen, 2011:4). Beer can also be said to be symbolic of Roman colonialism, echoing their cultural heritage from Greece. Romans despised beer drinkers as barbarians and areas incorporated into the Roman Empire gradually switched to wine drinking. For the Celtic peoples of France, Spain, Belgium, Germany and Britain, beer was consumed as a nationalist snub to Roman colonialism (Poelmans and Swinnen, 2011:6). Arab-Islamic colonialism from

the sixth century BCE onwards destroyed grape-growing economies and alcohol (especially wine) drinking cultures in Egypt, Lebanon, and Syria. In more recent centuries, the spread of beer consumption has continued to follow patterns of colonialism. In particular, British colonialization of North America (seventeenth century), and later German migration to the region (eighteenth century), was associated with the spread of a beer drinking culture.

By the sixth century BCE in India, the emergence of Buddhism saw abstinence from alcohol as central to the cultural challenge the new religion provided to established Hinduism. The process was repeated again when the Islamic (Mughal) conquest of India from the sixteenth century onwards brought with it Koranic injunctions against alcohol that challenged local consumption habits (Murthy, 2015:29). As we will see later in section 3.1., British colonialism in the eighteenth and nineteenth centuries, by contrast, saw the acceptance of alcohol consumption and efforts to tax it. The nationalist reaction against colonialism in the twentieth century was partly framed around a campaign to discourage alcohol consumption, thus depriving the colonial state of tax revenue. The constitution of newly independent India, which came into effect in 1950, upholds the principle of prohibition in its directive principles. While many states have sought to ban the consumption of alcohol, many more states have encouraged it as a reliable source of tax revenue, particularly after the 1990s when alcohol was also associated with FDI from global brewers (Murthy, 2015:32). In more recent times the spread of beer drinking has been both a cause and consequence of contemporary globalization. Over the decades since the 1990s, western brewing companies, through their advertising, have promoted a sharp increase in beer drinking in India, Russia, China, and elsewhere (Colen and Swinnen, 2011:125).

2.2 Temperance in Ontario

The prohibition era of the US (1920-1933) is globally famous, partly through its impact on organized crime, both real (Al Capone) and fictional (Don Vito Corleone in the Godfather movies). By the 1920s, Canada had witnessed a century-long temperance movement; however, this has led to the nationalization of alcohol sales rather than their prohibition (Dupre, 2008:3). In 1898, 51% of Canadians voted in favor of prohibition in a national referendum, including 57% in Ontario (the home state of Toronto). Even so, the magnitude of the victory was insufficient to induce prohibitive legislation (Dupre, 2008:4). There were bans on alcohol sales in 1916 and 1917 across all states (except Quebec), taken as temporary measures during World War I, which were lifted in 1919. Prohibition in the US created huge export opportunities for Canadian brewers and distilleries throughout the 1920s, which generated large revenues for the government, upon which it was happy to capitalize through a sharp increase in the level of excise and sales tax on spirits in 1921 (Dupre, 2008:6).

In Ontario, there were two prohibition referendums, in 1919 and 1924, which pitted organizations including the Women's Christian Temperance Union (WCTU) and the Dominion Alliance against retail associations, hotels and restaurants, as well as military veterans. In 1919, the 'dry' alliance won 62% of the vote on a 73% turnout. In 1924, the early results from Toronto generated a lead for the 'wet' vote. Once the predominantly 'dry' votes from rural Ontario started to filter in though, this lead turned into a loss and the 'dry' vote declared victory with 51.5% of the vote on a 66% turnout. In the general election of December 1926, the winning Conservative government had campaigned, and subsequently governed, on the basis of a promise to set up state-level liquor boards. The Ontario Liquor Board was duly established on June 1st 1926 (Dupre, 2008:13). In the 1920s, alcohol comprised some 15-18% of provincial tax revenue,

and the lure of those revenues was more tempting than the political gains from prohibition (Dupre, 2008:14). Sales of alcohol were nationalized and funneled through government-run premises.

2.3 The History of an Urban Success Story: Toronto

A much-lauded recent of Toronto, Levine (2015), reflects the long-standing hostility of Ontario to alcohol, especially to brewing. The name 'Toronto' is likely derived from the Mohawk term *tkaronto*, which translates as 'where there are trees standing in the water'. The book is full of vignettes of individuals who made a big difference to the history of the city: Etienne Brule, the first European to explore the Toronto area in September, 1615; John Graves Simcoe, the first lieutenant governor of Upper Canada (1791-1796), who initially named the city 'York'; Captain Gother Mann who, in 1788, was tasked with laying out a plan for the town, around the harbor. York (Toronto by 1834) was drawn into the global drama of British colonialism. During the Anglo-French wars over Canada (1697-1763), the local fort fell to the British in 1758. At the signing of the 1763 Treaty of Paris Canada became British. In 1813, the city was looted by US sailors and soldiers during the (American) War of 1812. After people and colonialism, a third facet of the book is the brewing industry.

Beer is often mentioned and, in my reading of the book, never in a good way, with numerous examples of its ill-effects. By 1841, the city boasted 140 drinking establishments, or one tavern per hundred population. This level of drinking was bound up with corruption, as city officials sold tavern licenses to themselves, their friends, and their political supporters (Levine, 2015:51). There is a suggestion that alcohol had skewed the development priorities of city leaders. It is noted that in the 1870s a glass of ale or lager cost three cents and whisky five cents a glass, which was both cheap and safer than drinking water (Levine, 2015:77). This

is contrasted to the various cholera outbreaks due to the lack of drains and sewers and reliance on well-drawn water. In an 1832 outbreak 273 died, while 500 died in 1834 (Levine, 2015:51). The high rate of infant mortality (children dying before they reach 6 months of age) averaged 153 per 1,000 and was strongly linked to the enduring poor quality of the city water supply (Levine, 2015:125).

In 1857, according to the Toronto police register, more than half of those arrested were involved in 'liquor' related issues. The leader of a city newspaper between 1858 and 1868 published a section 'Drunkards' to report on the link between alcohol and crime (Levine, 2015:78). In 1886, William Howland was elected mayor, with a mandate to combat the "evil of drink and debauchery" (Levine, 2015:108). In 1921, there was a wild party in the Ontario legislature, attended by drunken members of government and "scantly clad secretaries", in direct violation of the prevailing state prohibition act (Levine, 2015:152). In the early 1950s, an excessive number of bar licenses were widely blamed for a perceived increase in, and greater visibility of, prostitution in and around bars near Jarvis and Dundas Street. The 'problem' was sensationalized in articles published in the Telegraph newspaper (Levine, 2015:187).

3. Why Brewing is Good for Economic Development

The desire to attract foreign investment has been a global phenomenon over recent decades, whether among governments of countries, states, regions, or cities. Many countries have set up dedicated investment promotion agencies or designated certain geographical areas as special economic zones (SEZs) that offer generous tax concessions, visa access, and world-class infrastructure to prospective foreign investors. The introduction to this paper showed how Zambia has been strangely reticent about targeting

foreign investment in brewing to its MFEZ program. This was contrasted with a contemporary snapshot of a successful urban case study that demonstrates that Toronto is both a world class city and has a plentiful supply of beer. This section now delves into a more detailed time-wise explanation of how brewing contributes to economic development.

3.1 Tax Revenue

The price elasticity of demand for alcohol (i.e. how much the demand for alcohol declines for every one-percentage point increase in the price) is fairly low, meaning that governments can increase taxes without having much impact on demand. This makes it a relatively easy source of revenue. A recent study using data on state-level beer shipments in the US found that the price elasticity of demand was very low, at only -0.045 (Freeman, 2011:118). There is a widely accepted moral case for alcohol taxation and, consequently, more support for taxing alcohol than other basic consumption items such as food or energy (WHO, 2024a). There is also ample historical and contemporary evidence to confirm the contention that alcohol in general, and beer in particular, has long been an excellent source of tax revenue. Historically, those taxes have been used to fund everything, from imperial conquest to schools and hospitals.

In the fourteenth century, the port of Hamburg was an early center of brewing, importing hops from small Baltic towns and grain from the surrounding Elbe Valley. Brewing generated up to half of the city's tax revenue (Swinnen and Briski, 2017:18). As noted in the following section 3.2., the Industrial Revolution in the UK after the eighteenth century, as well as in many other countries that went on to experience industrialization, resulted in growth in the scale of breweries. The profitability of these breweries and the concentration of production in a few locations also made them easy to monitor for taxation purposes (Nye, 2011; Swinnen and Briski, 2017).

Between 1689 and 1815, Britain was at war for 91 years, mostly against France (Swinnen and Briski, 2017:27). There was a steep rise in the burden of taxation to pay for those wars, which generated a dramatic expansion of government revenues. An index (1601 being equal to 100) shows that revenue (by 1801) from customs duty increased to 500, from land tax to 250, and from excise duties to 1,500 (Beckett and Turner, 1990:384). Excise duty was imposed on various consumption items, including candles, team tobacco, sugar, but especially beer. By 1787-88 malt and beer made up roughly two-thirds of all excise duty (Beckett and Turner, 1990:392). The eventual success of these wars against colonial rival France “facilitated the rise to world power” of Britain (Nye, 2011:63).

In India, the British, through the East India Company, introduced an excise duty on alcohol for the first time in 1790. The previous cultural and political constraints on alcohol consumption were challenged by a top-down government, which encouraged drinking despite consumers having to pay the resulting taxes (Murthy, 2015:30). By 1905, the excise was the largest source of government revenue after land tax, and even then revenue from alcohol increased by another 65% between 1910 and 1918 (Murthy, 2015:30). The nationalist reaction against British rule often focused on alcohol taxation, the revenue being regarded as a source of British power in India, and any pernicious effects of increased alcohol consumption being an obvious complaint against the exercise of that power. After independence, and continuing into the 1990s and 2000s, various states experimented with prohibition. Many of these orders were soon reversed as the 20% of excise revenue stemming from alcohol proved impossible to replace with other taxes (Murthy, 2015:30). Indeed, alcohol remains a useful source of revenue for governments across the Global South. On their website, Zambian Brewers proudly proclaim that they paid almost \$50 million in excise revenue in 2020, up 15% compared with 2021(ZIB, 2022:7).

3.2 Promotion of Industrialization

Economists have long acknowledged the unique contribution that manufacturing can make to wider economic development, through its impact on generating employment, exports, productivity growth, and linkages with other economic sectors (Kaldor, 1967). Brewing is associated with the establishment of pioneering, and relatively large-scale, industrial enterprises. The use of hops in brewing resulted in a product that could be better preserved, and so produced in larger batches and traded at greater distances. Around the ninth century, the Emperor Charlemagne established monasteries as centers of large-scale brewing. (Swinnen and Briski, 2017:16). In the UK, by the end of the seventeenth century there were almost 200 brewers, producing around 7,000 barrels of strong ale a year. Brewing was among the pioneering industries of the subsequent British Industrial Revolution, and key to this was a significant rise in scale of industrial production. By the end of the eighteenth century, around a dozen large-scale breweries dominated the UK market and produced half of the beer consumed in London. They also owned a vast network of taverns in which to sell their product. In London, by 1760 five brewers were producing 50,000 barrels annually (Nye, 2011; Swinnen and Briski, 2017).

1842 saw the German Groll brewery produce its first batch of bottom fermented beer, which created a clear, golden colored beer of consistent quality and is the pioneer of the lagers we drink today. The addition of refrigeration technology and pasteurization facilitated preservation. In 1892, William Painter patented the crown cork, a technology that allowed for the use of automatic bottling machines. Glass bottles preserved beer better than casks. Late nineteenth century improvements in train and steamboat transport made it even easier and cheaper to trade beer. All these technological changes in combination allowed for

trade at distance in beer, and for the large-scale, industrialization of brewing (Poelmans and Swinnen, 2011:15; Swinnen and Briski, 2017:38).

The industrialization of brewing and consequent advantages of scale in production led to a dramatic rise in the scale of production but a consequent decline in the number of brewers. In the UK, the number of brewers declined from 6,447 in 1900 to 142 in 1980, while the average output of a brewery increased from 0.9 million liters in 1900 to 48.1 million liters in 1980. In the US, the number of brewers declined from 1,816 in 1900 to 101 in 1980, yet their average output increased even more dramatically, from 2.6 million liters in 1900 to 219.2 million in 1980 (Poelmans and Swinnen, 2011:22). The years since 1980 have seen this growth and consolidation of brewing at an international level, with the emergence of multinational brewers, including Heineken (Holland), SABMiller (South Africa), and Interbrew (Belgium).

As a case study, the history of Toronto in Canada is inseparable from the story of brewing and of politics more generally. When the original city of 'York' was founded in 1793, the Robert Henderson brewery was producing 30 barrels a week. Production created a demand for social consumption and the first tavern, the Playters Tavern, opened in 1806. Toronto taverns started to become centers of political discussion and debate, and in August, 1837 the Declaration of Reformers was signed at Doel's Brewing from where an (unsuccessful) insurrection was launched (St John, 2014:18). Table one shows that the number of Toronto taverns increased rapidly across the nineteenth century, from 76 in 1837 to 309 in 1874. However, by 1911, the number of taverns had declined sharply and there was now only one tavern per 3,426 people. This is a strong reflection of the politics of prohibition already discussed in section 2.2.

Table one: Taverns in Toronto, 1837-1911

Date	Number of taverns	Population of Toronto	Persons per tavern
1837	76	9,652	127
1874	309	68,000	220
1911	110	376,900	3,426

Source: St John (2014:16)

It was from brewing that the initial fortunes were made that gave Toronto businessmen wider influence. The fortune the Helliwell family made in brewing enabled Thomas Helliwell to eventually become the director of the Bank of Upper Canada in 1834 (St John, 2014:28). The profits earned by Joseph Bloore from the Farmers Arms and Brewery provided the capital for an entry into land development and, from the 1830s, to lay the foundations for much of modern Toronto. Enoch Turner made revenue enough from brewing to become a prominent donor in the establishment of the University of Toronto in 1849 (St John, 2014:41). John Severn used his brewing wealth to propel himself into a political career and in 1875, as a counselor in Yorkville, to help establish the Yorkville Waterworks, which brought treated water to the town (for drinking, and not coincidentally for any brewers) (St John, 2014:59).

In contemporary Zambia, the same historical patterns are now unfolding. *Zambian Breweries* is one of the largest industrial establishments in the country, claiming 900 employees. In 2022, *Zambian Breweries* announced an \$80 million capital investment project that would double the production capacity of their Lusaka plant over the next couple of years. This project represents one of the largest industrial investment projects in the country (ZIB, 2022:4). Similar to nineteenth century Toronto, brewing in modern Zambia sits at the center of a network of linkages. *Zambian brewers* rely on input purchases from local farmers and their beers are sold to a booming local pub, café, and nightlife culture that reflects the growth of a *Zambian middle class*. In 2021, it was estimated brewing supported more than 80,000 jobs in the country (ZIB, 2021:3).

3.3 Income-Elastic Consumption for Developing Countries

The structural patterns of demand in developing countries mean that the consumption of alcohol (and, so, tax revenue and employment) is likely to increase rapidly during the early stages of development. Brewing is a good bet for economic development. When North and Western Europe were in the early stages of their own development, between the fifteenth and seventeenth centuries, the consumption of beer grew extremely rapidly, reaching an average of 250 liters per person per year (Unger, 2011:46). The reason for this is that alcohol is a 'normal good', meaning that as an economy grows (positive GDP growth), then demand for alcohol increases. One study, using US data for 1970 to 2007, confirms this, finding alcohol to have an income elasticity of demand equal to between 0.5 and 0.8. This means that for every 1% increase in income, demand increases by between 0.5% and 0.8% (Freeman, 2011:107). If Zambia achieves its targeted income growth (GDP) of 7% or 8% per year, this would imply very rapid increase in demand for alcohol.

Beer consumption tends to peak only at very high-income levels. This is probably related to health concerns, shifts to higher-status drinks such as wine, and government efforts to limit alcohol consumption and sales (developed country governments also tend to be less reliant on alcohol tax as they have developed the capacity to tax incomes and corporate profits better). Peak consumption occurred in Belgium (1974), France (1976), UK (1980), and Germany (1983) (Colen and Swinnen, 2011). Studies have found that the turning point in per capita beer consumption occurs at average incomes (GDP per capita) of \$21,000 (Swinnen and Briski (2017:108) or \$29,000 (Colen and Swinnen (2011:137). In 2021, Zambia had an average income of \$3,200, implying that per capita beer consumption is likely to be on the rise for decades to come (CIA, 2023).

A second reason for optimism about the prospects of brewing in Zambia is that the country has a young population. In the US, peak beer consumption occurs in the 35-40 age range (Freeman, 2011:119). In 2023, Zambia had a population of 20.6 million, 42% of whom were aged 0-14 (by comparison, this age accounted for only 11% in Japan) (UNPF, 2024). With such a mass of population who will be entering the beer drinking years in the near future, *Zambian beer production* is poised to benefit from this demographic sipping dividend.

A third reason for brewing optimism is that Zambia has a religious structure that inclines the country towards beer consumption. One study found that globally, Catholics and Protestants tend to drink more beer, while Jews and Muslims tend to drink less beer (Colen and Swinnen, 2011:138). An estimate from 2010 (the most recent religious data) found that 95.5% of the *Zambian population* was either Protestant (75.3%) or Catholic (20.2%), while only 2.7% were other religions and 1.8% declared no religion (CIA, 2023).

Zambia has faced difficult economic conditions in the last few years, including a growth slowdown and

national debt default in 2023. Despite this, Zambian Brewers could happily report total sales volume increasing by 7% in 2022 (ZIB, 2022:4), demonstrating the economic resilience of brewing and beer in Zambia.

3.4 Attracting Foreign Investment

There has been a global shift over the last few decades among countries of both the Global North and South to attract more FDI. FDI is widely seen as a source of potential benefits for the host economy, through demonstrating new technology, management methods, or production techniques, training labor, boosting exports and competition, as well as generating linkages with local firms through the purchase of inputs from or provision of inputs to local firms (Crespo and Fontoura, 2007).

Over the last few decades, whenever countries have opened up to freer trade and investment, or launched privatisation programmes (including state-owned breweries), breweries have often led the way (Swinnen and Van Herck, 2011:254). In the 1990s, when Eastern and Central Europe broke free of domination by the USSR and Communism, there was a flood of FDI. In Slovakia in 1997, Heineken acquired Corgon, Martiner and Gemer, and by 1999 had gained a near 40% share of the total national beer market. Elsewhere in Eastern Europe, Interbrew, SABMiller, and Carlsberg bought out local firms (Swinnen and Briski, 2017:66). In Russia, the transition and privatization of the 1990s similarly led to a massive influx of FDI. The Scandinavian joint venture BBH purchased the state-owned Baltika brewery in 1992, Indian SUN Group acquired five breweries in 1993, and InBev bought the Rosar Brewery in 1998 (Deconinck and Swinnen, 2011:291).

In India, greater openness to FDI after 1991 impacted those states that had liberal alcohol consumption laws such as Goa and Maharashtra (state-level prohibition was maintained in states like Gujarat, Haryana, and

Andhra Pradesh). In 2006, Carlsberg, Heineken, and AB InBev all invested in Indian brewing, with others soon following. By 2009, SABMiller claimed 34% of the Indian market through its purchases of Fosters India, Knock Out, Haywards, and Royal Challenge. The response of domestic producers was dramatic, with Indian owned United Breweries holding more than 40% of the local market with its famous Kingfisher brand (Arora et al., 2011:319). In Slovakia, within a few years production capacity increased by 200%, even though the number of employees across the brewing industry had been reduced from 30,000 to 850 (Swinnen and Briski, 2017:68). Across Eastern and Central Europe, entrant MNCs made significant efforts to source inputs from local agriculture and upgrade the capacity of local farmers. Heineken and others provided credit to barley farmers for seed, fertilizer, pesticide and equipment, while also helping upgrade the domestic supply chain (Swinnen and Briski, 2017:69).

3.5 Importance of Domestic Production

There is a widespread fear across much of Africa that domestic manufacturing production is high-cost and that opening up to freer trade will lead to cheap imports from China, Vietnam, India and elsewhere, displacing local production. If true, this implies that Africa faces an enduring risk of import-led de-industrialization, long-term import dependence, and a future locked into agricultural production or catering to high-end tourism (Wood and Mayer, 2011).

Whatever the truth to this debate is, it is not applicable to brewing, where local production tends to cater to local consumption. Despite the massive increase in most measures of globalization in the US between 1980 and 2014, domestic production declined relatively marginally, from 98% to 86% of the local market. Imported beers tended to cater to exotic tastes at the higher-end of the market (Swinnen

and Briski, 2017:121). In Germany, despite the free and open trading market across the European Union (EU), domestic production constituted 97% of local consumption in 2003 and 93% in 2008 (Van Tongeren, 2011:584). In China, even with the massive increase in consumption of beer, by 2007 domestic production was equivalent to 99.5% of domestic consumption and the leading brand, Tsingtao, exported only 0.15% of its Chinese domestic production overseas (Bai et al., 2011:273).

The typical business model has been for MNCs to buy local firms and then produce domestically, both their own global beers and also local brands. In China, there was a flood of brewery-oriented FDI associated with greater openness and domestic consumption growth in the 1980s and 1990s. The strength of Chinese manufacturing is evident in the fact that local firms then conducted buy-outs of the foreign investor, which led to Fosters, Bass, Carlsberg, and Asahi all leaving China in late 1990s and early 2000s (Bai et al., 2011:280). The likely reasons for this distinctive business model revolve around the costs of transport and culture. The preference for serving beer in bottles, and local rules about returning bottles for recycling in Germany means that beer is expensive to transport over international distances (Van Tongeren, 2011:584). Local culture is also important and I restate here the point from the introduction. Beer is largely consumed on social occasions, and over time migrants tend to switch from beers they associate with home to local beers, in a process of convivial socialization to local norms (McCluskey and Shreay, 2011:161, 167).

Contemporary Zambia fits into these patterns with aplomb. Zambian Brewers reported minimal exports; none in 2021 and only \$750,000 of exports, mainly to Tanzania and Mozambique, in 2022 (ZIB, 2022:28). Zambian Brewers was progressively bought out by foreign investors in the 2000s and 2010s, so that now more than 87% of the company shares are owned by the MNC Anheuser-Busch (AB) InBev. This takeover,

however, was not used to facilitate imports. AB InBev has started domestic production of its iconic global brands (Carling, Budweiser, Stella Artois, and Corona) in Zambia and has also retained domestic production of the local brands that dominate the Zambian market (Mosi, Eagle, and Castle).

There is the added bonus that Zambia is still dominated by agriculture, so domestic consumption of beer is not just met from the domestic output of breweries. Production helps create a wide network of local linkages. Zambian Breweries reported in 2022 that their supply chain is tightly integrated into local small-scale agriculture. In 2022, they partnered with “the Ministry of Agriculture, UN World Food Programme (WFP) and the Zambia Agricultural Research Institute (ZARI) to boost production of sorghum by small-scale farmers in Gwembe District of Southern Province” (ZIB, 2022:5). Zambian Brewers have a current target that by 2025, “100% of our direct farmers will be skilled, connected and financially empowered” (ZIB, 2022:11).

3.6 Dominated by a few MNCs?

There is a long-standing fear amongst developing countries of a power imbalance between large MNCs and weaker local governments. In the extreme, this may allow MNCs to dominate exchanges with local government and leverage this relationship to avoid paying taxes or abide by labor regulations, while, at the same time, piling on pressure to local government to provide infrastructure, utility connections, and access to cheap land. There is some reason for particular concern in brewing, where the industry has been dramatically oligopolized in recent decades. As a point of comparison, the government of Zambia collects about \$2 billion a month on average in taxation, while the MNC AB InBev (owners of Zambian Brewers) generate about \$5 billion a month in sales.

In the US, between 1950 and 2000 the number of mass-production breweries fell from 350 to 24

(Swinnen and Briski, 2017:48) and by 1990 the top three breweries were responsible for 90% of US beer consumption (2017:2). This oligopolization was linked to the domination of television advertising by large brewers, their purchase of the rights to major sporting events, and also to the opportunities for economies of scale brought about by technological innovations in packaging, automation, and water treatment (George, 2011: 214, 220). As China moved towards an open market economy in the 1980s, there was a flood of investment in new breweries, the market shifted to a process of consolidation after the late-1990s, and the market share of the top three breweries increased from 10% in 1998 to 40% in 2007 (Bai et al., 2011:273). As the largest brewing MNC in the world, AB InBev has its roots in Artois, a Belgian brewery established in 1366. Artois merged with Piedboeuf in 1987 and the company began a rapid expansion through global acquisitions and mergers. Key events were the buy-out of Canadian brewery Labatt in 1995 and UK Bass Breweries in 2000. In 2004, the company merged with AmBev in Brazil (Perysn et al., 2011).

The history of brewing in Zambia echoes these global trends. Northern Breweries was created in 1963, 80% owned by South African Breweries (SAB) and 20% by Labatt Breweries of Canada. The company was nationalized by the Zambian government in 1968, with the government taking a 55% stake. In 1988, Labatt Breweries, one of the minority shareholders sold its stake to the Zambian government. During the 1990s, the firm was privatized, initially into two new companies, Lusaka Breweries (later known as Zambian Breweries) and Northern Breweries. In 1994, SABMiller of South Africa purchased 45% of the shares of Zambian Breweries and assumed management control of the firm. In 1999, Zambian Breweries bought out control of Northern Breweries and reunited the two firms. In 2016, AB InBev acquired SABMiller and Zambian Breweries became part of the world's largest MNC brewery.

In some countries public policy and cultural tastes have been supportive of diversity in production, of

local ownership, and local beers. In Germany by 2000, the four-firm concentration ratio was only 29% (Adams, 2011:230), and the number of brewers remained quite stable at around 1,300 between 1995 and 2010 (Van Tongeren, 2011:58). Consumers in Belgium have long had a preference for consuming a wider variety of beers than any other country, often distinguished by the addition of fruits or spices. In Belgium after 2000, for the first time in more than a century, the number of breweries started to increase (Perysn et al., 2011:79). Elsewhere, a niche for small-scale breweries has increasingly opened up. In the US, this dates from pro-active legislation in the 1970s. In 1976, President Carter reduced the excise duty on small breweries. In 1979, the US removed federal restrictions on home brewing and 'brewpubs' (a legacy from the years of prohibition in the 1920s) (Adams, 2011:149). A second influence has been the global shift (especially among developed countries) from consuming standardized, mass-produced goods to a preference for variety, local production, the use of traditional European brewing traditions, and an emphasis on quality rather than low-prices. As a result of these policies, alongside wider structural changes, the number of craft brewers in the US increased from 2 in 1977 to more than 1,700 in 2009. Among the largest is the Boston Beer Company, which was producing 2 million barrels of beer a year by 2010 (Tremblay and Tremblay, 2011:152).

3.7 Brewing and the Local Water Supply

It is not difficult to find details on the harmful health effects of alcohol consumption. WHO (2024b) advocate for higher alcohol taxes, not just to raise tax revenue but also to reduce consumption, as they note:

Alcohol is a toxic and psychoactive substance with dependence producing properties. In many of today's societies, alcoholic beverages are a routine part of the social landscape for many in the population. This is particularly true for those in social environments with high visibility and societal influence, nationally and internationally, where alcohol frequently accompanies socializing. In this context, it is easy to overlook or discount the health and social damage caused or contributed to by drinking.

Looking at the story of development can give us a more nuanced picture of the health impact of alcohol, and brewing in particular. In late 2023, Zambia experienced its worst outbreak of cholera in recent memory. By early 2024, almost 8,000 people had been infected and more than 300 people had died. A sports stadium in the capital Lusaka was re-purposed as a treatment center and schools and colleges were instructed to remain closed until the end of the month. The outbreak was directly linked to the lack of clean water and proper sanitation (Water Aid, 2024).

Historically, the construction of good sewage and water treatment has had a massive impact on both morbidity and mortality by reducing the incidence of diarrhea or illnesses such as cholera. One study uses data on mortality and access to water infrastructure

for 80 neighborhoods in Paris between 1880 and 1914, when access to sewage increased from zero to 68% of all buildings. The study finds that connection to the sewage system had a “large and positive impact on life expectancy” and reasonably concludes “sewers saved lives” (Kesztenbaum and Rosenthal, 2017:183). Another study examines the impact of introducing clean water technologies into US cities. In 1900, waterborne diseases accounted for around 25% of the reported deaths from infectious diseases in major US cities. The introduction of water filtration and chlorination systems led to major reductions in mortality and explains nearly half the overall reduction in mortality between 1900 and 1936. In addition, clean water was responsible for 75% of the decline in infant mortality, around two-thirds of the decline in child mortality, and led to the near-eradication of typhoid, a waterborne disease prevalent until the early twentieth century (Cutler and Miller, 2005).

The rate of return to clean water technologies has been estimated at 23 to 1 (Cutler and Miller, 2005), so why do people still die en-masse in countries like Zambia from poor access to clean water? The answer is that clean water technology, while simple and standardized, is often very expensive and inconvenient as it involves digging up public streets to lay pipes, as well as requiring intrusive access to private dwellings to connect them to the network. While the costs of clean water infrastructure are often borne by government, the benefits are dispersed in the form of better health. It is difficult to charge for water connections to the poorest households. There are also difficult politics of water supply. Much of the middle class in developing countries like Zambia have managed to insulate themselves from the costs of bad water through being able to purchase bottled water or home filtration systems. Consequently, they do not apply political pressure on governments to clean up water and are unwilling to pay the necessary taxation to make it affordable for the state to do so, as they will themselves receive no additional benefits.

The brewing industry, however, has provided a constant important source of economic incentive, political pressure, and personal influence to clean up water. In the Netherlands of the sixteenth century, water pollution was a real threat to brewers. At that time it took 2.5 liters of water to make one liter of beer, water constituted 85% of the final beer product, and water was also needed for cooling and cleaning brewing equipment. The brewing guilds took it upon themselves to clean up water. In 1577 in Haarlem, for example, the brewing guilds brought a private lawsuit against bleachers who were dumping their waste into canals (Unger, 2011:40). In Toronto, John Severn, the owner of the John Severn Breweries, became Councillor in Yorkville and led the political effort to create the Yorkville Waterworks to provide drinking water to the town (St John, 2014:59). These are not irrelevant archival examples and it is no surprise to see Zambian Breweries as equally engaged as their historical counterparts in efforts to clean up water in Zambia. Here, a profit-driven incentive for Zambian Breweries is in alliance with the social benefits to a wider population of clean water. Zambian Breweries rightly make this link absolutely clear in their 2022 Annual Report, where they present their corporate goal:

100% of our communities in high-stress areas will have measurably improved water availability and quality. Water is the largest input in the manufacturing of our products, and we believe that water is a shared resource and its access must be secured, particularly in high-stress areas. We continue to build new partnerships and strengthen existing ones to enhance the safe and clean water supply of the communities in areas where we operate. The conservation of both the Kafue and Zambezi River basins continues to be an area of focus in our partnership with WWF. (ZIB, 2022:12)

This aspiration was supported by practical endeavors.

This year we collaborated in a workshop with the objective of strengthening watershed protection initiatives and creating a working model to ensure the quality and measurable impact of our initiatives. We also remained engaged on the board of Lusaka Water Security Initiative and continued in joint action to celebrate World Water Day and World Environment Day, which called for transformative action on a global scale to protect the planet. Through this joint action we also supported various initiatives towards raising awareness and enhancing water access and security in communities around the City of Lusaka. At the Itawa Springs project site, we completed phase 2 of the project to enhance the sewer management system for the housing developed in the area. The project aims to ensure improved water quality in the watershed as well as adequate water and sanitation access for the surrounding community. (ZIB, 2022:12)

4. Conclusion

Much of the world is convinced of the benefits of FDI and expends much energy on practical policy-making endeavors to attract more FDI in the belief that it will bring with it a cornucopia of good things: examples of better management, employment, new technology, and access to global export markets. Here, though, the successful lesson of Dubai can highlight a problematic impact. Countries across the world are inspired by the example of Dubai in leveraging foreign investment to transition into a commercial, industrial, technology hub. Yes, there are sound lessons to be gleaned about the importance of good infrastructure. Dubai was ready to host FDI by building the airport (1960) and dredging the creek to create a deep water port (1967). Dubai also realized that to attract FDI you need to make sure the investors have somewhere to live. The boom between 2001 and 2008 was facilitated by permission being granted to foreigners to buy homes in Dubai. Where the Dubai case causes distraction is in the choice of sectors to target. Dubai gave generous incentives for IT companies, such as unlimited visas, and repatriation of profits with no income or corporation tax. Microsoft was the trophy anchor tenant, acquiring its location rent-free for 50 years, and in 2005 Harvard University Medical School opened a campus in the new health-care zone (Krane, 2009). These are fine targets, and one can congratulate Fumba Town Free Economic Zone in Zanzibar, for example, in recently attracting both the African School of Economics (ASE) and the Indian Institute of Technology (IIT) Madras as early investors. However, while it was reasonable for Dubai (or Zanzibar) to forget alcohol, being a predominantly Muslim country, this link has been widely forgotten among other countries of the Global South.

For those countries of the Global South, with no religious or cultural inhibitions about alcohol, brewing in particular makes for an ideal investor. Beer and brewing are an easy source of taxation for developing countries and are typical pioneers of industrialization in poor countries. Although brewing is increasingly dominated by a few global multinational firms, it is not a product that generates a drain on foreign exchange by boosting imports. Brewing generally attracts FDI and local consumption comes from local production. Finally, brewing often creates a strong economic interest for cleaner urban water, with potentially massive, and much wider, positive externalities for urban health. There may be implied dangers of large brewery MNCs negotiating with Global South governments and leveraging the power imbalance to their own advantage. This has not stopped brewery MNCs paying taxes, boosting local industrialization, providing good jobs, and using that local influence to improve the quality of the local water supply. Despite the anti-alcohol prejudice of the recently published history of Toronto, this paper argues that brewing should be a priority target for countries across the Global South as a liquid source of economic development.

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