

‘A star-spangled dragon’: What was the immediate effect of the McKinley Tariff on the South Wales tinplate industry: 1880-1895? A reassessment of Welsh production and foreign protectionism.

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Abbreviations

AVBT - A Vision of Britain Through Time.

Morfa Tinsplate Works – MTW.

Morrison Tinsplate Company – MTC.

SWMGTA - The South Wales, Monmouthshire and Gloucestershire Tinsplate Makers Association.

SWDN - South Wales Daily News.

SWE - South Wales Echo.

Chapter One

Introduction

Tinplate – thin sheets of iron or steel coated in tin to prevent rusting, and used to craft various containers, food cans, utensils and roofing materials – emerged as one of Wales’ many industrial success stories of the nineteenth century. By 1891, due to its proximity to natural resources, excellent transport links, and an abundance of industrious manpower, South Wales had become home to 90 of the 98 works in the United Kingdom (Figure 1). This allows us to confidently talk of the UK industry, which dominated the global marketplace, as a distinctively Welsh trade (Minchinton, 1957, p. 25). Throughout the nineteenth century, America emerged as a voracious consumer of Welsh tinplate. By 1890, Britain shipped 325,000 tons (72% of its total output) to the United States (Figure 2) (Figure 3). For some US politicians, haemorrhaging this much money from the national economy to foreign businesses was unacceptable. ‘We want a change’ (US House of Representatives, n.d), proclaimed Representative Thomas Brackett Reed, and change was indeed imminent – on both sides of the Atlantic. Proposed by the outspoken protectionist Representative William McKinley of Ohio, Chairman of the influential House Committee on Ways & Means, and passed into law on October 1st 1890, the Tariff Act imposed a 2.2c/lb tax on tinplate imports – amongst other industrial products – to be commenced on July 1st 1891, an increase from 1c/lb to 70% *ad valorem*, severely reducing the profitability of Welsh tinplate exports to America and encouraging the birth of an infant industry on US shores. Following a 49% increase in exports between 1890-1 as America gathered stocks, the South Wales industry experienced falling prices and a turbulent readjustment as its US trade was gradually lost to indigenous production by the end of the century (Figure 2) (Jones, 1914, pp. 101). As early as 1893, South Wales had become a cautionary tale in Parliamentary debates on free trade and protectionism (Bousfield, 1893).

Disagreements surrounding the Tariff’s effect on Welsh industry revolve around three central issues – to what extent Welsh agents and producers were able to counteract protectionism, how far the Tariff *itself* was responsible for the downturn of the 1890s, and how

the industry reacted to the new selling environment. In 1903, Wilkins provides the first portrayal of Welsh tinsplate as lacking in 'mechanical invention' (Wilkins, 1903, p. 309), but he nevertheless concedes that the Tariff was the *sole* cause of depression (Wilkins, 1903, p. 323-47). The historiography of the Tariff's relationship with Wales was largely established by two lecturers of social economics, J. H. Jones of the University of Glasgow and Walter Minchinton of Swansea University. In *The Tinsplate Industry* (1914), Jones claims that it is wrong to attribute the 1890s depression solely to the McKinley Tariff, citing amongst other reasons the counter-productive actions of management and workers (Jones, 1914, pp 98-9). Minchinton's 1957 work, *The British Tinsplate Industry*, again shies away from attributing the depression solely to the Tariff, and takes criticism of production practices even further (Minchinton, 1957, p. 107). In 1989, Melanie Walters partly echoed these criticisms in her MSc Economics thesis, but disagrees with the view of an immediate death blow (Walters, 1989, p. 35). Sadly, due to her untimely death mere months after completing her thesis, which inhibited further dissemination of her research, Walters' work has been overlooked. More recently, *Tinopolis* (1995), Jenkins' *Twenty By Fourteen* (1995) and Richards' *Tinsplate In Wales* (2008) are all works by Welsh industry veterans that indirectly play down Welsh culpability, by representing the Tariff as an unavoidable body blow which had a crippling effect in its own right. Whilst this group of authors serve up richly detailed histories of the trade, they fail to acknowledge the part some firms played in their own downfall, or conversely, how resilient some proved to be following the Tariff's imposition.

This dissertation seeks to make an original contribution to knowledge by problematising the McKinley Tariff's effects and establishing a middle-ground between the two ends of the historiographical spectrum, by examining the underlying character of the industry and its output. There are three main justifications. Firstly, the received wisdom requires a realignment. The orthodox and inflexible views of Minchinton, that of the industry as its own worst enemy, has given way in Wales to Jenkins' and Richards' revisionist stance that portrays the put-upon Welsh enduring a set of circumstances that they had very little control over, which is contrary to the evidence. Secondly, the tinsplate industry in general does not receive the academic attention it deserves, relative to its economic and cultural impact on South Wales. Despite

playing an important role in the existence of communities such as Llanelli, Neath, Morriston and Pontardawe, the path of twenty first century scholarship lies in the direction of the better-known industries. In one of the main survey works of Welsh history, Geraint Jenkins' *A Concise History of Wales* (2007), 'iron, steel, copper, coal and slate' (Jenkins, 2007, p. 174) are used to exemplify Welsh industrial might, with tinsplate being conspicuous in its absence. Thirdly, the Tariff itself has come to be misunderstood. Philip Jenkins unequivocally accuses the Tariff of 'wrecking the prosperity of the Welsh industry' (Jenkins, 1992, p. 230). If the entire trade has now become characterised by one event in the eyes of eminent scholars, it is surely deserving of further attention.

The dissertation does not provide a detailed analysis of any one aspect of Welsh tinsplate's relationship with the McKinley Tariff, such as labour relations or the development of specific machinery post-1891, nor is it a comprehensive account of events between 1880-1895. It is intended to provide a general overview of the immediate post-Tariff period, and suggest an alternate view of the legislation's effects by discussing several key areas of the trade. The study will focus on archival and published primary material in the form of production data from a selection of South Wales firms and the national trade, the private correspondence of owners and newspaper reports made available following the digitisation project by the National Library of Wales in 2013 (Henry 2013). To effectively critique the existing scholarship, the dissertation will adhere to the chronological approach usually adopted by historians of the trade, and will follow the story of tinsplate in South Wales through three key periods.

Chapter two will interrogate the state of the industry between 1880-90, challenging the depiction of Wales as a scientifically conservative nation by examining the business practices of prominent producers. The role of agents will be discussed via their correspondence, newspaper reports and econometrical data, to expose their role in hindering profitability, and offer partial mitigation for the actions of owners. The chapter will also establish that a lot more could have been done on the part of producers to offer a defence against protectionism, by giving examples of regular meetings and overriding concerns that were periphery to the pressing issue of the Tariff. Chapter three will focus on the grace period of 1890-1 and establish that the Tariff did not of its own accord cause a boom in production or revenue, by contextualising sales

records with pre-existing patterns of output. It will also be shown via Hansard that whilst there was an absence of political intervention, this was a by-product of the late-Victorian political environment. The dissertation will conclude with events following the Tariff's imposition from 1891, ending in 1895 by which time the American market was largely lost. The historical treatment of economic migrants will be discussed via newspaper reports and academic judgements on national identity. Sales ledgers and acquisition records will be used to show that the post-Tariff downturn was not as immediately disastrous as modern Welsh interpretations suggest, nor was there a complete lack of structural change to cope with the new environment, as mid-century scholarship has pointed out.

Chapter Two

Perceptions and practices during the period of monopoly, 1880-1890

In order to fully to understand the effects of the McKinley Tariff, it is necessary to examine how the industry conducted itself during the period of monopoly, and how it was positioned at the dawn of protectionism. Whilst the 1880s is sometimes portrayed as a time of 'extreme difficulty' (Chappell, 1940, p. 74) for South Wales tinsplate, the failure rate of smaller firms – as many as 30 throughout the decade – is misleading (Chappell, 1940, p. 74). Employment increased 61% from 15,500 in 1880 to 25,000 by 1891 and output rose steadily from 6.3 million boxes in 1880 to 11.7 million by 1889 (Figure 3) (Walters, 1989, p. 13). America's appetite for tinsplate remained resolutely dominant, beginning and ending the decade with approximately 75% of the UK export trade (Figure 4).

The predominant view is that of an industry which contented itself with archaic methods of production throughout the 1880s, inhibiting its ability to roll with any economic punches from across the Atlantic. Minchinton propagates Wilkins' anglocentric depiction of the archetypal Cambrian as 'possessing a mind little capable of consecutive reasoning or mechanical contrivance' (Wilkins, 1904, p. 309), next to the 'boldness' (Wilkins, 1904, p. 309) of Saxon ingenuity (Minchinton, 1957, p. 107). However, such generalisations possess some obvious flaws. The Gilbertsons of the Pontardawe Works were a group of manufacturers that stern critics of the Welsh industrial character fail to account for. Arthur Gilbertson reduced his operating costs via incremental improvements to process, instead of relying on market forces to achieve his margins, resulting in him being recognised as 'one of the best in the trade' (Welsh Industrial Times [1890] in Jackson, 2001, p. 17) by the impartial *Welsh Industrial Times* at the end of the decade. Arthur gave his co-producer and eldest son Frank a 'scientific education and [a] good practical knowledge of chemistry' (Gilbertson [1894a] in Jackson, 2001, p. 19), continuing the tradition of Thomas Morgan, who devised the annealing pot in 1829, and Edmund Morewood of the Llanelli Works who developed patent rolling in 1866 – both acknowledged by Dunbar as 'important innovations' (Dunbar, 1915, p. 3). This offers a counterpoint to Daunton's depiction of change in the Welsh industry only being valid when it

meant radical new production methods, instead of the development of existing processes/plant (Daunton, 1986, p. 151). Also in evidence is the marriage of commercial acumen with scientific ideals. Arthur Gilbertson foresaw the dangers of relying on one market, boasting in a letter to his competitor, E. Rice Daniel, that he had developed his business from the start to become 'independent of the American trade' (Gilbertson [1894b] in Jackson, 2001, p. 58). Although this can be construed as a fanciful entrepreneurial embellishment, records show the firm averaging £11,350 profit p.a. post-Tariff, between 1892-6 (Jackson, 2001, p. 20).

Whilst there were indeed many who avoided the challenges of scientific advancement, the Gilbertsons were not alone. In 1888, John Player patented the automatic tinning machine, a device which he claimed cut production costs by 3.5% on the box (Player, 1890, p. 161). Far from treating engineers with suspicion, research into sales correspondence shows that firms employed men whose 'wisdom was looked up to in matters relating to machinery' (Player, 1890, p. 161), and Player targeted these individuals when marketing his labour-saving devices around South Wales (Minchinton, 1969, p. 107) (Player, 1890, p. 161).

The purchasing environment was a complex one, and the Welsh producer had to contend with domestic forces that conspired to constrict the level of working capital, as evidenced by a damning Factory Inspectorate Report in 1888, and with it the financial breathing space to combat the post-Tariff difficulties (Dunbar, 1915, p. 5). Welsh tinsplate manufacturers operated via a network of UK merchants, who worked on commission and negotiated prices directly with the buyer. It is low average pricing that presented the greatest barrier to prosperity for the Welsh tinsplate producer in the 1880s, rather than any underlying flaw in their industrial character. Figure 5 shows the high, median and low prices for I.C coke tinsplate during 1880-90, with a polynomial average given for each. The trade offered a large selection of grades, but we can use figures for some products to gain a wider view. A sustained fall is visible from 1883 onwards in the value of the lowest priced tinsplate, which the market fails to claw back. Crucially, in 1886, this diverges from the average trend in high and median box prices, both of which rally by the end of the decade. Vulnerable producers were badgered into selling at ruinous rates to secure the merchant his fee over his competitors. Requests sent to the Morryston Works from the merchants Phelps James & Co., and John Elwell, show a continual

pressure to sell at the lowest possible price (MTC, 1873) (MTC, 1875). This demonstrates a level of responsibility that has previously been ignored - merchants are usually given roles as mere facilitators by historians, or ignored entirely as in Walters' case (Minchinton, 1957, pp. 97-9) (Jones, 1914, p. 104). Later criticism from some of the more astute producers acknowledges the role they played in diverting revenue away from firms, and the pressing need for the maker to 'become his own merchant' (Gilbertson, 1896) (SWE, 1889, p. 4). The producer was of course not obliged to sell at unfavourable rates, but most works were parochial enterprises, with low barriers to entry, that were closely tied to the local community and required a reliable stream of revenue due to their relatively small size. The Clayton Works of Pontardulais possessed no fewer than nineteen local shareholders (Jenkins, 1995, p. 43) and Robert Protheroe Jones' meticulous research has shown that out of 88 mills in Wales at the end of the decade, 44 had between 3-5 mills, with 25 possessing just 3 mills (Protheroe Jones, 2002, p. 171). Tinplate's shareholders were among the many Welsh industrial capitalists of the late-Victorian era who adhered to the Marshallian philosophy of '[maximising] short-run rates of return' (Williams, 1986, p. 193) in their search for a modest, low-risk, reliable addition to their monthly income.

Even though short-termism is sometimes excusable, and notwithstanding its scientific character, the Welsh industry's failure to act as one in preparation for the Tariff remains its biggest indictment throughout the 1880s, and significantly amplified the post-Tariff disruption. Despite this, recent Welsh scholarship fails to acknowledge any meaningful suggestion of culpability, with Richards offering the merest hint of a 'collective myopia' (Richards, 2008, p. 102), and Jenkins curiously refusing to engage with the notion at all (Jenkins, 1995, pp. 40-44). Walters offers a marginal defence of the Welsh, stating that collaborative action was an impossibility given the fragmented nature of the industry, however evidence suggests that Welsh producers did indeed attempt to act in a collective self-interest, through regular correspondence and meetings, but either chose ineffective courses of action or refused to pursue the greater good for the sake of their own profits (Walters, 1989, p. 61). Following the election victory of President Benjamin Harrison in November 1888, the Republicans came to power pledging to promote infant industries on US shores via the use of tariffs (Pallardy, 2013). American 'whisperings had become a tumult' (Brown [1943] in Palen, 2010, p. 398). Despite

this, at one of the regular quarterly meeting of Welsh tinplate producers and merchants on 12th July 1889, the agenda was preoccupied with pricing and the high cost of raw materials, which research shows accounted for up to 80% of monthly costings at some works (SWE, 1889b) (John Player & Sons Ltd, 1888). Rather than attempting to combat the looming withdrawal of demand, or searching for new markets, Welsh producers were voicing their ‘satisfaction that the quantity of tinplate and sheets’ (SWE, 1889a) sent to America was *increasing*. Whilst we must be mindful of any periphery discussions, the mood of the industry is undoubtedly clear. Interviews with several influential industry figures, among them Sir John Jenkins and Joseph Mayberry, proves that Welsh producers cast a keen eye to developments across the pond, supporting Jones’ view of the average owner as both ‘highly intelligent and a keen politician’ (Jones, 1914, p. xi) (SWE, 1889b, p. 4). Despite their political awareness, Welsh producers refused to believe that America had the gumption, or the manpower, to compete with them (Jones, 1914, pp. 72-6).

Even where collective action is in evidence – such as the belated attempts to control the market in March 1890 with a stoppage in 32 works – some producers had no intention of jeopardising their own profits to come to the aid of their fellow manufacturers, and simply ignored any calls to cease production. The implacable Arthur Gilbertson had ‘orders to get on with’ (Gilbertson [1890] in Jackson, 2001, p. 17). As confirmation of the Tariff was received in 1890, for most, change was still not on the agenda.

Chapter Three

The countdown to protectionism, October 1890 - June 1891

On October 1st 1890, the House of Representatives passed the Tariff Act by 164 votes to 142. As the legislation made its way through the Senate, John C. Spooner introduced an amendment which delayed its imposition until July 1st 1891, allowing for an American industry to develop, and to ensure adequate stock of Welsh tinsplate on US shores in preparation for a tariff wall (US Senate, 2018) (Irwin, 2000, pp. 340-1). This act of emollience is often cited as the cause for a boom in the South Wales industry between 1890-1, and as partial explanation for the consequences of the post-Tariff downturn in prices and the resulting unemployment (Protheroe-Jones, 1995, p. 101) (Jones, 1914, p. 73). Despite Jones correctly identifying the grace period as ‘the most critical’ (Jones, 1914, p. 101) in the history of the trade up to 1914, Jenkins, Pride and Richards fail to single it out for discussion. Their assessments tend to focus on the ‘inevitable’ (Jenkins, 1995, p. 41) fall in prices, representing the Tariff as an unconquerable force, even though the Welsh industry – and its political advocates – made a significant contribution towards the post-Tariff difficulties (Pride, 1959, pp. 6-8) (Richards, 208, pp. 102-12).

Confirmation of the Tariff did cause some of the more enterprising producers to develop new products and markets – such as the production of tin tea chests – but it can be said that overall, the grace period caused the American trade to ‘monopolise the attention’ (Gilbertson [1891] in Jackson, 2001, p. 55) of the South Wales industry, as orders from America increased and prices continued to rise (Gilbertson [1891] in Jackson, 2001, p. 55). This reaction can partially be explained by the fact that throughout 1891, certain owners clung onto the hope that the legislation would be rescinded at the eleventh hour. An entry in the journal of Morfa Tinsplate Co. from 30th June 1891 details an amount for depreciation of tinsplate already landed in America, to the new post-Tariff selling price with 2.2c/lb added on, but the amount was deemed to be cautionary as the firm was ‘waiting on the result’ (Morfa Tinsplate Co. 1891, p. 37) of the Tariff. All of this a day before the new duty came into effect.

If a boom can be categorised as a sudden rise in production and revenue, there is strong evidence to suggest that the Tariff itself did not in fact cause an upsurge in either of these in the nine months between October 1890 and July 1891. This qualifies Sir John Jenkins' contemporary assessment of an industry that had been troubled by pricing fluctuations since its inception, with the pre-Tariff period being no different (Spectator, 1903). Figure 6 shows the total revenue gained from exports to America between 1880-1895. There is no significant divergence between 1890-1, only the continuance of a trend that began in 1887, a year before the Tariff had entered the international debate. 1891 ended 11% up on the previous year's returns, but this was nothing out of the ordinary - 1887 witnessed a 15% increase from 1886. Whilst the median box price was indeed higher in 1891, there is again little deviance from the post-1888 trend of rising highest-rate prices, which, by October 1890, agents could sell at more frequently given America's urgent need to gather stocks (Figure 5). Similarly, there was no divergent rise in output during the same period, but merely a realignment of production priorities (Figure 3). The Tariff's effect upon passing was not to compel Welsh makers to look elsewhere. Instead, production was focused on American orders at the expense of other markets. Imports of Welsh tinsplate in America rose a staggering 48%, from 5.2 million boxes in 1890 to 7.7 million boxes in 1891, but Brooke has overall production increasing by around only 6% during the same period (Brooke, 1944, pp. 1-2) (Jones, 1914, pp. 101). To put this in a local context, research shows that in the 13 months between August 1889 and September 1890, Morfa sold an average of £9,408 per month to the United States, in contrast to the period between September 1890 and June 1891, which averaged £13,122 per month – an increase of 39% (MTW, 1891) (MTW, 1894). Whilst they are illuminating, Morfa's figures are, of course, merely the story of one company. A far more detailed analysis is required to obtain a comprehensive picture, which considers data from many other firms, but when considering the behavioural patterns of late-Victorian industrial entrepreneurs (as discussed in relation to the 1880s), it is far harder to defend the actions of tinsplate makers during 1890-1, who by then should have recognised that they were soon to lose their cash cow.

For some politicians, the McKinley Tariff created an opportunity to consolidate their image as advocates for the working classes, by setting themselves in direct opposition to the

evils of protectionism and encouraging rising prices, despite the obvious spectre of a downturn. At a public meeting on 25th October 1891, the Liberal MP for Gower, David Randell, urged producers to continue selling at the highest rate possible, whilst increasing the basic wage rates the industry had paid out since 1874 (Randell, 1890). This fanciful strategy was no doubt popular with the workmen, but the masters had little desire to share the Tariff's remunerative effects with their workers and wages remained the same throughout the grace period, despite the increased profits from a rise in lucrative exports (Jones, 1909, pp. 299-301). In accordance with this, unions were slow to react. The South Wales, Monmouthshire and Gloucestershire Tinsplate Makers Association, whilst being preoccupied with protecting wages, showed no sign of agitating for a profit share (Jones, 1909, pp. 299-301). In partial mitigation, the 1874 list was an assured income next to the alternative of wages being tied to fluctuating prices, as witnessed in the coal industry during the 1890s (Mitchell, 1984, p. 207).

The whole notion of political intervention is an area of study that interpretations of the Tariff at both ends of the spectrum have neglected, likely due to the Tariff having little effect on debates in the House of Commons. Despite a renewed sense of national purpose amongst Liberal Welsh MPs in the last quarter of the nineteenth century, attention was given to matters of education, land reform, and disestablishmentism, rather than devolving economic policy or co-ordinating a defence against protectionism. Even where the Welsh press reported directly via Washington on the Tariff's potential to impact the industrial constituencies of South Wales, producers were very much on their own after the legislation was passed in 1890 (SWE, 1890) (Morgan 1991, p. 112). As McKinley's measures navigated the choppy waters of the US Senate, an extensive search of Hansard shows no mention of the law in Commons debates, apart from a solitary reference by an English MP in June 1891 (Lowther, 1901), although committee records remain elusive. We can explain – or at least attempt to understand – the lack of a political reaction by placing the Tariff within the wider context of late-Victorian politics. The *nouveau* radical South Walian MPs operated in a Commons that was preordained to serve English interests over any other nation, with John Williams asserting that Wales was 'never a unit for decision-making in economic policy' (Williams, 1984, p. 196) in the early 1890s. This lack of

legislative intervention meant that on the morning of July 1st 1891, when the Tariff finally took hold, the South Wales tinsplate industry faced a great deal of uncertainty.

Chapter Four

The immediate aftermath, July 1891 - 1895

Early twentieth century assessments describe the ‘severe depression’ (Jones, 1909, p. 300) which began in part due to the Tariff ‘ushering in bad times’ (Wilkins, 1903, p. 347) in the form of mill closures, unemployment and the migration of labour, and later scholarship is in broad agreement as to the severity of the downturn (Protheroe Jones, 2002, p. 172) (Jenkins, 1992, p. 230). Whilst American competition undoubtedly made the selling environment inherently more adverse, Walters presents a more accurate depiction of events, arguing that the ‘popular notion of an immediate death blow is much exaggerated’ (Walters, 1989, p. 35).

Brooke’s figures, whilst not fully cited, suggest that there was no dramatic reduction in total output between 1891-5. This is from a source, in E. H. Brooke himself, that possessed an intricate knowledge of the South Wales industry, borne from decades of recording the output of individual works, and writing to them for verification before publication (Brooke, 1944, p. 1) (Figure 3). The real problem – and a far more manageable one than any basic lack of demand – came in the form of reduced profitability on the existing make. In 1892, American competition sent UK prices downwards, and revenue careened towards 1881 levels by 1894, exacerbated by the volume of exports to America steadily declining as US domestic production established itself (Figure 2) (Figure 6) (Irwin, 2000, p. 339). However, the situation in South Wales was not a wholly impossible one. Far from American markets being immediately ‘closed to British tinsplate’ (Minchinton, 1957, p. 25) as is claimed, some firms ended 1895 relying on pre-existing commercial relationships in America *more* than they had done previously. Research into ledgers from the Morfa Works shows that in the 13 months immediately after the Tariff came into effect, the firm shipped 77% of its product to America, and by February 1895, instead of dwindling away, this figure had *increased* to 84% (albeit with a reduced average monthly make, due to stoppages in January and February) (Figure 7) (MTW, 1891) (MTW 1894).

Even after the Tariff compelled the industry to modernise and save costs, certain producers clung onto traditional methods of manufacture for dear life. A Mr Phillips of Swansea

was reticent to adopt John Player's labour-saving tinning pots, due to the fear of labour unrest (Player, 1892). Making up for his earlier reluctance, Jenkins is therefore correct in levying some responsibility on the Welsh manufacturer by stating that those firms that failed did so largely due to 'inefficient' (Jenkins, 1995, p. 41) manufacturing practices. However, we cannot discount the fact that ownership largely possessed a parochial 'social conscience' (Protheroe Jones, 2002, p. 172), being so closely tied to their communities through their local shareholders, and were consequently reticent to address labour costs.

Ironically, these good intentions paved the way to even greater failure, in the form of complete closures. Works that failed to prepare for post-Tariff pricing, or secure adequate working capital throughout the 1880s, faced a great deal of difficulty. Mill closures contributed to an estimated 10,000 job losses before the Autumn of 1892 (Thomas, 1940, p. 78). Historians seek to align this period with a general economic downturn in the UK during the 1890s, but only one other metal industry in Wales during this period – zinc production – witnessed a reduction in employment (Protheroe Jones, 2002, p. 172) (Jenkins, 1995, p. 40) (AVBT, 2017). Tinsplate was therefore unique in its struggles. Census figures are problematic, given that 1891 returns class the manufacturing of tinsplate goods, and the making of tinsplate itself, as one field – the two sectors were not separated until 1901. However, the data is still useful when attempting to understand the Tariff's effects on unemployment. In Glamorgan, Carmarthen and Monmouth – counties where there was very little employment in the making of tinsplate *goods* – aggregate employment in the two fields fell 31% from 22,057 in 1881 to 15,228 in 1901 (AVBT, 2017). However, closure figures throughout 1891-5 should be treated with care, and there was clearly money still to be made. Progressive firms such as the South Wales branch of Baldwins Ltd. acquired works that had succumbed to the new environment, at a significantly reduced price, and re-employed the local workforce. In 1892, the firm restarted the Pontymoile Works, adding the Panteg Works in 1895, which later converted to galvanising sheets (Brooke, 1944, pp, 20-1).

The workforce was diminished in ways not limited to mill closures. The United States had long since attempted to lure Welsh knowledge of the ferrous trades to their own shores, by dispatching agents to the streets of South Wales, and the post-McKinley years proved no different (SWE, 1892) (Jones, 2003, p. 20). Given the fact that Welsh arrivals at US ports were

often classed as English, and in the absence of any dedicated academic study of emigration within the industry, it is difficult to obtain a precise view of how many tinsplate workers crossed the Atlantic from 1891 onwards after confidence in the trade took a knock, but there appears to have been a 'great cry' (Davies, 1892) for Welsh industrial expertise that was met with gusto by the South Wales workforce (Morris, 1995, p. 74). Very few secondary sources mention the difficulties that ex-pats faced, but economic migrants did not always find the tin-coated El Dorado that they were promised (SWE, 1892). William Davies, a migrant rollerman formerly of the Llangennech Works, wrote home in November 1892 warning his countrymen of low wages, sluggish growth and a surplus of labour (Davies, 1892), however this frustration was likely borne out of the American industry being far more dispersed and disorganised than the Welsh were accustomed to. Most works in Wales were a stone's throw from one another and shared the same culture and traditions.

A curious aspect of the post-McKinley years is the treatment of entrepreneurs that crossed what David Samuel, Headmaster of Aberystwyth County School in 1890 called 'yr *ymwahanydd mawr*' [the great separatist] (Samuel [1890] in Jones, 2003, p. 40) of the Atlantic, and what was expected of them in accordance with their national identity. Walters is uncharacteristically scathing in her criticism of 'individualistic and disunified' (Walters, 1989, p. 138) producers that sought to capitalise on the Tariff's effects by establishing tinning operations in America. The search for profit during the post-McKinley years is viewed as pejorative trait, over the requirement to remain faithful to national industry, such as that later identified by David Monger in the 'conrescent communities' of First World War British industrial patriots (Monger, 2012, p. 196). It is more acceptable to some historians for Welsh production to have operated as an *ersatz* combine, even if it was to their commercial detriment. Further research on this would no doubt prove interesting. Jenkins et. al. are predictably silent on the matter, and contemporary opinion did not always exhibit the same sentiments. In 1904, Wilkins took a far more agreeable and philosophical stance, rightly declaring that tinsplate had become Wales' gift to the world, endorsing the dissemination of Welsh expertise caused by post-Tariff migration (Wilkins, 1903, pp. 421-2). Neither did such producers incur the wrath of the learned

press. Reports of several leading producers' American business interests were merely that - reports, not judgements (SWDN, 1892).

Minchinton states that 'little was done to develop marketing techniques ... or to adapt the structure of the industry' (Minchinton, 1957, p. 71) post-Tariff, however this ignores some sizeable readjustments that occurred after 1891, and Emrys Pride correctly identifies the nurturing of new markets as the saviour of the South Wales tinplate industry (Pride, 1959, p. 8). The Tariff levied a smaller duty of 1.4c/lb on blackplate – untinned sheets, ready to be coated – making it an inherently more profitable product. To capitalise on this, the Pontardawe, Bryn and the Raven Works were among many that adjusted their operations to focus on manufacturing blackplate for sale to the US, allowing for American producers to coat Welsh sheets and pass them off as their own (Minchinton, 1957, p. 75). This move also caused an unprecedented split in labour organisation and contributed towards the raft of disputes that characterised the post-Tariff years. Workers in the tinhouse (the section of works that dipped the prepared plates in tin) were opposed to this new tactic, as it did not require their labour. For the very first time in the industry's history, there was a 'clear division of interests' (Jones, 1908, p. 300) between workers in the mill and the tinhouse, brought about because of the Tariff. The South Wales, Monmouthshire and Gloucestershire Tinplate Makers Association was unable to reconcile the conflicting interests of its members, and the union collapsed. In 1895, US blackplate production dramatically increased, the price of American tinplate goods behind the Tariff wall tumbled below that of UK prices, and remained so indefinitely. Despite its efforts, Wales had lost the vast bulk of its lucrative transatlantic trade (Irwin, 2000, p. 339).

Chapter Five

Conclusion

The aspersions cast by Minchinton et. al. on the commercial and scientific acumen of the Welsh producer, that seek to generalise levels of expertise, are incongruent with the multifarious nature of ownership. Innovative and progressive manufacturers did exist, and positioned their works more favourably than others at the onset of protectionism, by relying less on the American trade and reducing production costs. The South Walian producer was hampered by the actions of unscrupulous agents that acted in their own self-interest. Despite these external forces, it is evident that where the industry did engage in collective action, and possessing knowledge of the looming Tariff, the results were ineffective, and characterised by a short-term attitude that later Welsh scholarship conspicuously fails to acknowledge. However, producers' actions should be viewed through the lens of Victorian parochial capitalism, rather than used as a categorical indictment of the Welsh industrial character.

During the 9 month grace period between 1890-1, instead of precipitating a boom in sales as is often claimed, the Tariff caused the industry to re-align its existing productive capacity to meet the increasing demand from America, exhibiting the same pattern of sales and output that began in the mid-1880s. To exacerbate matters, the Welsh industry experienced a complete lack of legislative support. MPs were preoccupied with other matters, and hindered by an adverse legislative process. Even though certain works looked to develop new products once confirmation of the Tariff arrived, there is no evidence of an overarching scheme that successfully counteracted the financial difficulties that the Tariff would undoubtedly bring.

The received wisdom of the Tariff's effects throughout the 1890s – that of it causing an immediate depression in the trade – needs to give way to Walters' suggestion of a far more gradual downturn. Evidence suggests that certain companies in South Wales continued to take refuge in the American market, and firms that had prepared well, or were willing to adapt, displayed an admirable level of resilience. The pricing fall of 1892-5, and with it the resulting mill closures and migration of labour, emerges as the Tariff's most injurious consequence, even

if the legislation wasn't entirely culpable – laws do not set prices or dictate production costs, buyers and sellers do. The Welsh finally resolved to adapt their practices via the production of blackplate for the American market, however this came at a cost to what had hitherto been a harmonious working relationship between the mill and the tinhouse.

By the end of the century, due to the success of collective organisation that finally allowed tinsplate to '[speak] with one voice' (Richards, 2008, pp. 13), and the development of new markets in places such as sub-Saharan Africa, the trade had largely recovered from America's entry into the marketplace, but the industry had learnt a great deal about its capabilities and shortcomings in the 5 years following protectionism (Richards, 2008, pp. 108-13). Historians who identify the various effects of the McKinley Tariff as arising solely due to the legislation itself, or attribute them to any one group in particular, run the risk of oversimplifying what is a complex and nuanced topic. Protectionism was not as immediately or singularly damaging to the Welsh tinsplate industry as has been claimed, and we should also recognise that whilst the trade clearly could have positioned itself better, the industrial economist P. W. S. Andrews is correct in stating that:

'The decisions of industrialists are not amenable to analysis in rational economic terms. They are explicable only if other factors are considered.'

(Andrews [1949] in Minchinton, 1969, p. 109)

Word count – 6,110

Appendix

Figure 1 - Number and location of tinsplate works in the UK, 1850 & 1891 (p. 23).

Figure 2 - Imports of tin and terne plate into America from Wales, 1890-1900 (p. 24).

Figure 3 - Estimated UK tinsplate output and home consumption, 1880-1900 (p. 25).

Figure 4 – UK tinsplate exports to America vs. other regions, 1880-90 (p. 26).

Figure 5 - Highest, lowest and median I.C coke box prices, 1880-90, with polynomial averages (p. 27).

Figure 6 - Revenue from UK tinsplate exports to America, 1880-1895 (p. 28).

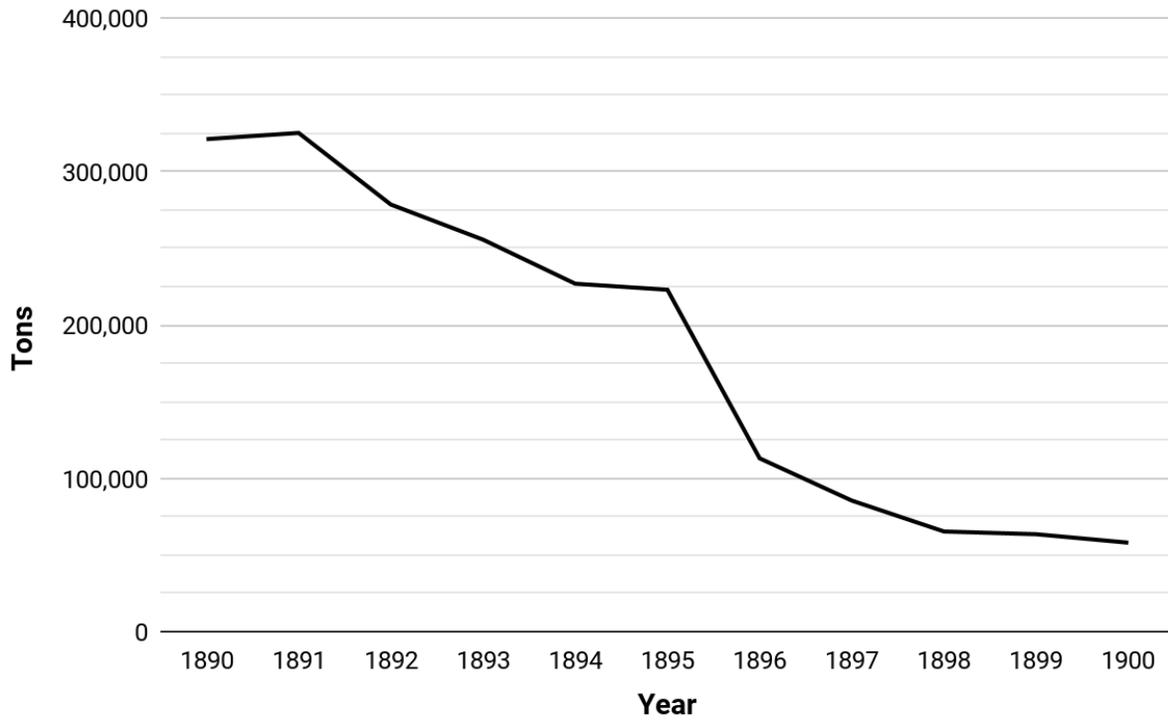
Figure 7 - Production and export data from Morfa Tinsplate Co, 1889-1895 (pp. 29-30).

Figure 1 - Number and location of tinsplate works in the UK, 1850 & 1891

Year	No. of works in Wales	No. of works in the UK	Percentage in South Wales
1850	25	35	71%
1891	90	98	92%

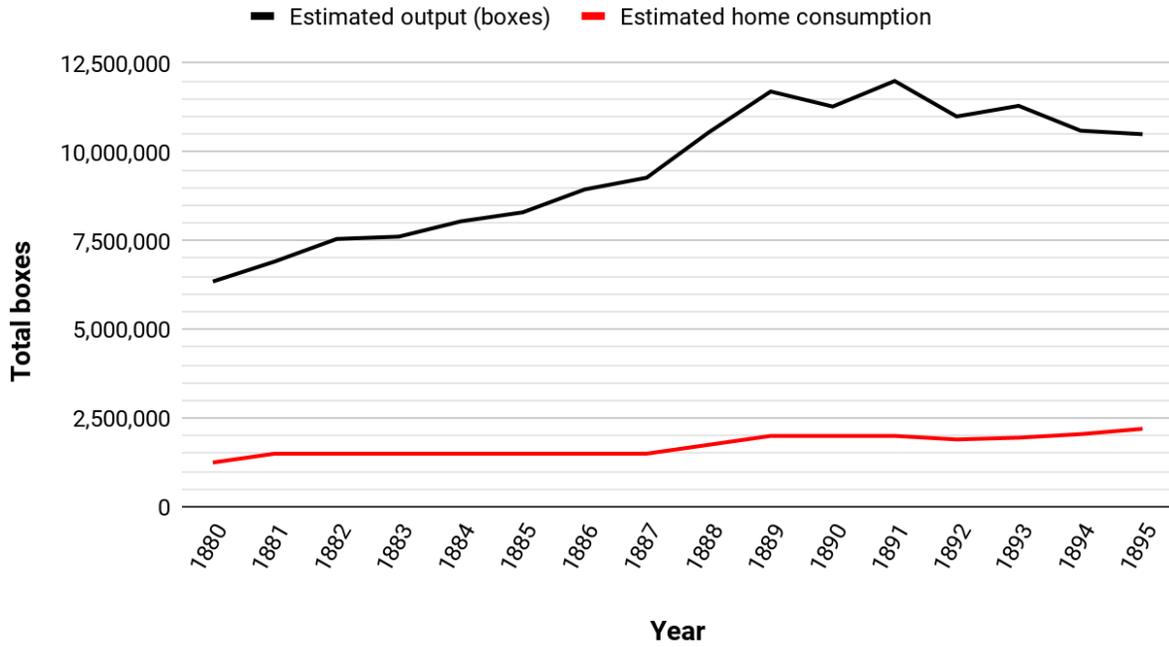
Obtained directly from Brooke (1944) in Jenkins, P. (1995) *Twenty by fourteen: a history of the South Wales tinsplate industry: 1700-1961*, Llandysul, Gomer, p. 28.

Figure 2 - Imports of tin and terne plate into America from Wales, 1890-1900



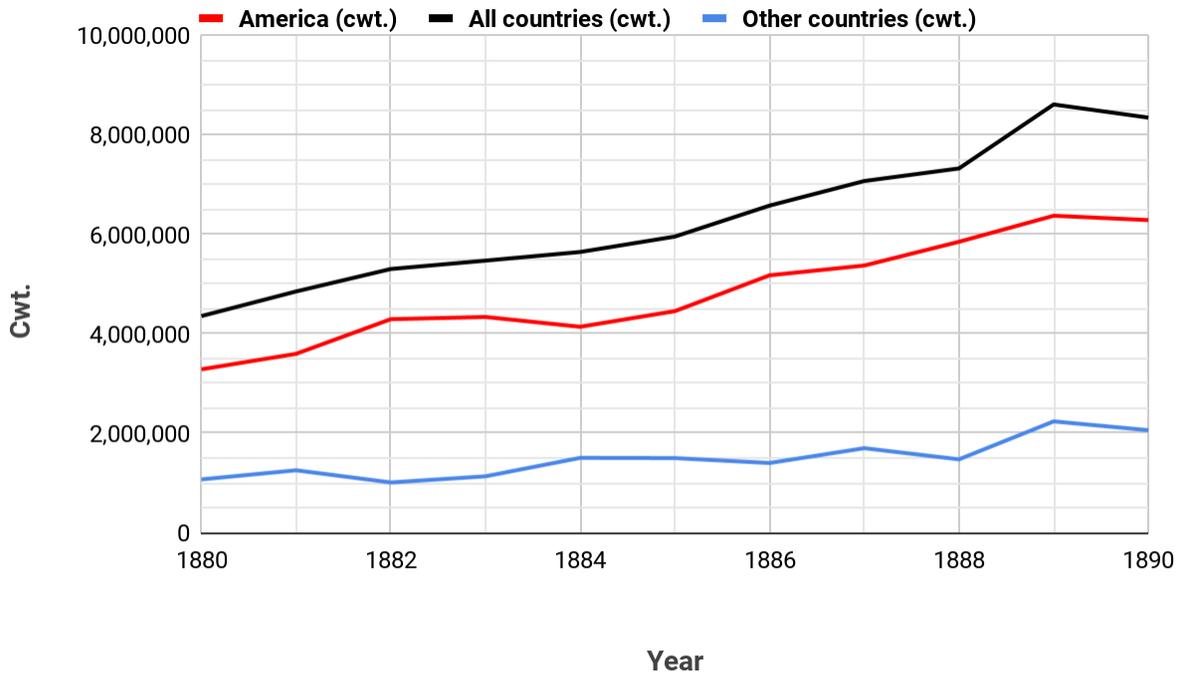
Based on figures from Dunbar, D. E. (1915) *The Tin-plate Industry: A comparative study of its growth in the United States and Wales*, Cambridge, Houghton Mifflin, p. 23.

Figure 3 – Estimated UK tinfoil output and home consumption, 1880-1900



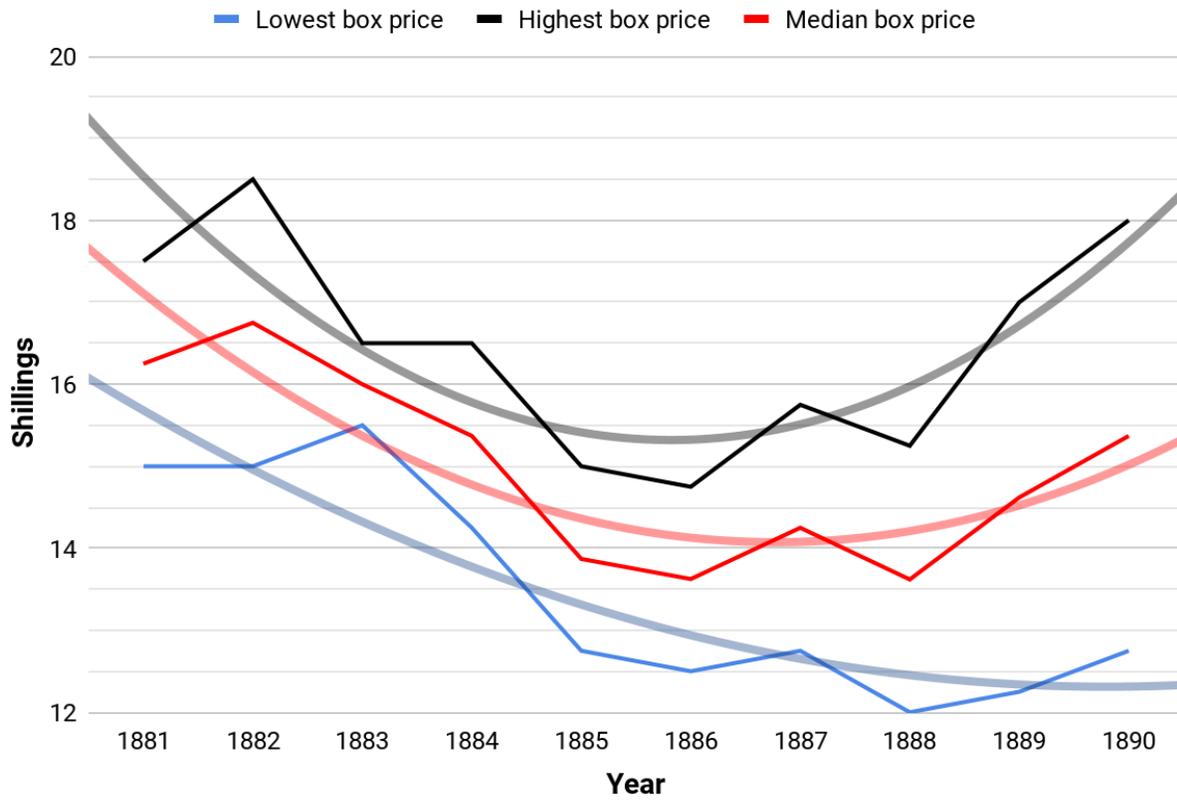
Based on figures from Brooke, E. H. (1944) *Chronology of the Tinfoil Works of Great Britain*, William Lewis, Cardiff, p. 1.

Figure 4 - UK tinplate exports to America vs. other regions, 1880-90



Based on figures from the South Wales Echo. (1891) 'The Tinplate Trade', *South Wales Echo*, 21 January, p. 4.

Figure 5 - Highest, lowest and median I.C coke box prices, 1880-90, with polynomial averages



Based on figures from the South Wales Echo. (1891) 'The Tinplate Trade', *South Wales Echo*, 21 January, p. 4.

Figure 6 - Revenue from UK tinsplate exports to America, 1880-1895



Based on figures from Samuel, J. R. (1924) *A short history of tin and the tinsplate trade*, Maidenhead, Williams Press, p. 10.

Figure 7 - Production and export data from Morfa Tinplate Co, 1889-1895

Region	13 months 89-90			9 mths - '90 to June '91			13 mths - '91 to Aug '92			10 mths - Aug '92 Jul 1893			12 mths - Jul '93 to Jun '94			8 mths - Jun '94 to Feb '95		
	Boxes	Revenue	Agents	Boxes	Revenue	Agents	Boxes	Revenue	Agents	Boxes	Revenue	Agents	Boxes	Revenue	Agents	Boxes	Revenue	Agents
USA	97,801	122,313	12	84,278	118,104	16	87,808	86,194	13	82,669	77,262	12	75,500	60,737	14	58,523	43,328	13
South America	751	767	4	1,273	1,518	12	1,252	1,228	6	1,034	1,038	9	259	245	8	230	184	3
Norway & Sweden	4,434	4,846	6	2,666	3,000	4	6,233	6,088	4	4,019	3,625	4	5,094	4,418	4	1,935	1,352	5
Holland	3,084	3,484	2	1,982	2,336	2	3,253	3,493	2	453	461	3	891	855	2	487	495	2
Denmark	1,976	3,720	10	877	1,085	9	821	858	9	616	664	5	168	143	1	9	9	1
France	1,277	1,847	4	449	645	2	472	531	2	230	250	2	506	559	2			2
Total	109,322	136,977	38	91,525	126,688	45	99,837	98,392	36	89,021	83,300	35	82,418	66,957	31	60,864	45,368	26
Manchester	3,898	4,601	4	3,033	3,654	4	2,703	3,254	4	1,542	1,779	4	2,050	2,444	3	1,893	2,048	2
Newcastle	514	612	2	230	334	2	654	808	3	403	473	2	458	509	2	323	348	2
London	6,486	7,149	20	4,665	4,751	24	7,772	6,955	22	7,437	6,427	15	8,061	6,299	14	1,534	924	9
Yorkshire	2,212	3,484	6	1,493	2,462	5	2,040	3,123	8	713	978	7	607	796	5	188	175	4
Birmingham	14,039	18,073	20	7,529	10,658	16	10,400	12,917	17	4,332	5,309	13	4,795	5,479	15	3,977	3,260	15
Bristol & W. England	1,149	1,521	10	415	539	10	448	555	12	513	631	13	501	655	11	322	397	9
Total	28,278	35,420	62	17,365	22,448	61	24,017	27,642	66	14,940	15,597	64	16,472	16,152	50	8,015	7,150	41
Unclassified	988	1,427	26	376	79	13	3,291	2,917	24	3,164	2,856	20	3,641	3,086	22	199	231	13
Retail	137	108		109	102		67	59		41	36		34	25		34	24	
Total	1,125	1,535	26	485	181	13	3,358	2,976	24	3,205	2,892	20	3,675	3,111	22	233	255	13
Grand total	276,325	346,329	226	218,265	298,453	225	251,066	255,044	228	211,127	200,686	198	201,455	169,329	184	138,031	105,291	147
USA share	70%	70%	10%	77%	79%	13%	69%	66%	10%	77%	75%	11%	74%	70%	13%	84%	82%	16%
Other foreign share	9%	9%	21%	7%	6%	24%	9%	9%	18%	6%	6%	21%	7%	7%	17%	3%	4%	16%
Home market share	20%	20%	49%	15%	14%	51%	19%	21%	52%	14%	16%	49%	16%	19%	49%	12%	13%	51%
Unclassified share	1%	1%	20%	1%	1%	12%	3%	2%	20%	3%	3%	19%	3%	4%	21%	1%	1%	17%

Based on figures from Morfa Tinsplate Works. (1891) *Journal 1891-93*, Swansea, Swansea University Archives, GB 217 LAC/78/17 and Morfa Tinsplate Works. (1894) *Journal 1894-97*, Swansea, Swansea University Archives, GB 217 LAC/78/18.

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