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Depression and Surviving: Gold Mining at Kalgoorlie from World War 1 to 1931

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By 1910/1911 gold mining companies in Kalgoorlie had achieved very high levels of efficiency in mining and processing both refractory and free-milling gold ores. Ratios of capital to labour employed, to gold won, and to ore mined, had stabilised after a period in the first decade of the century when costs had fallen significantly and companies were mining lower grades of ore. Principally, this resulted from rapidly increasing technical and labour efficiency complemented by new investment capital. Critically, that investment and continuing profits were protected by the fact that mining companies had been able to contain the direct cost of labour in various ways, thereby ensuring that gains were not passed to labour in the form of proportionally better wages or improved conditions. Consequently, without the prospect of increases in the cost of that labour and of consumables, profits remained high and companies looked to a period of continuing high dividends.

The cycle of expansion or upswing that preceded this 'stable' phase was based on the rapid investment of capital and was underpinned by the application of the radical new technology of cyanidation that sharply reduced production costs and increased the efficiency of gold extraction. At the same time, a general recession of the 1890s provided conditions whereby the commodity value of gold increased and ensured a ready supply of labour, especially from other colonies within Australia. Notwithstanding the technical problems to be solved in relation to complex sulpho-telluride ores, the high profits enabled many companies ranging from medium sized producers to survive and prosper in the very favourable conditions. Companies were able to mine lower grades of ore, capital was available for investment, costs were declining, skilled labour was readily available on terms that favoured the companies, and the state had provided vital infrastructure in and to the goldfield.

However, after 1912 worrying trends appeared that suggested a transition to a period of stagnation or declining profits. For instance, the capacity to increase technical efficiency seemed to have been exhausted,[1] and there was a decline in the availability of skilled labour for the vital areas of ore extraction and production. Moreover, under the gold standard regime prevailing until the state intervention in 1915, the commodity value of gold in paper money value was fixed. Inevitably, pressure on mining profits increased as prices in other sectors of the economy rose and was reflected in higher costs of mining consumables and in pressure to increase wages. In response, companies began to increase the grade of ore mined in order to sustain profits, which, when measured in dividends began to fall to the extent that it could be said that the rapid gains of the early period had passed and the gold mining companies faced a period of relative stagnation or even recession. In fact, World War One accelerated the growth of unfavourable factors and brought to the forefront structural weaknesses within the industry that favourable conditions had previously masked.

The War marked a watershed for the industry for it radically and negatively altered many of the external and internal conditions under which production occurred. In the longer term, the war also marked the beginning of an extended recession, then depression, that characterised the gold mining industry in WA during much of the 1920s. The increasing costs of production and the consequences of decisions made during the War accelerated this trend and by 1919 the industry faced a crisis of profitability exacerbated by a serious shortage of labour in all departments of production.

While the War was an extraordinary force for decline, in general terms, it might be said that the companies had already entered a period of declining profits where survival would depend upon alterations to the ways in which the business of mining was conducted in Kalgoorlie. Arguably, this decline reflected an underlying phase in a trend of long wave expansion and contraction running counter to cycles within the general economy. In these cycles, recovery and expansion in the 1890s was partly based on the introduction of radical new technologies, just as it was in the 1930s when flotation to concentrate gold in process sharply increased the productive capacity of gold mines.

Critically, profitability and survival in the downturn that followed the onset of war was related to the companies' capacity to alter local conditions. Wholly or largely outside its control in the wider sphere were mechanisms such as the operation of the gold standard system or the availability and cost of investment capital. In part, industry actions were collective and directed through their peak body, the Chamber of Mines, which was dominated by the management of Kalgoorlie/Boulder mines. This was the case in approaches to the state for assistance or concessions, or their response to state attempts to force structural change on the industry. The Chamber was also central to their relations with labour and their attempts to reduce or hold down the costs of labour through the state arbitration system. Also collective were their approaches to the formal structures of tributing introduced by a number of mines, which became the subject of considerable dispute involving the mines, a tributers' association, and the State Government.

Other responses were structural in the sense of decisions regarding investment or production. Here the decisions reflected individual priorities and circumstances, as well as responses to the forces tending towards concentration of capital and the centralisation of production.[2] These decisions were as important as the other collective responses, for they not only influenced whether or how companies survived during the depressed period but also powerfully shaped their profitability and position within the industry in the 1920s and beyond. One notable outcome was the emergence of Lake View and Star as the predominant company on the field by the beginning of the 1930s.

It has been suggested that new investment follows the upturn and the introduction of radical new technology. However, in spite of the depressed conditions in the 1920s, one gold mining company in Kalgoorlie, Lake View and Star, managed to make some new investment. As a result it was able to continue limited attempts to increase technical efficiency and to improve the scale of production. At the same time it began, with the state, the technical R&D work relating to flotation. That it could be as 'progressive' in the face of adversity was partly a function of the aggregation of properties and partly of its capacity effectively to use the tributing system to generate profits that could sustain some advance in the efficiency of its production. Consequently, in 1928 it was able to attract large scale investment from New Consolidated Goldfields, an Anglo-South African mining group. Therefore, when a new depression in the wider economy increased the commodity value of gold, and combined with technological changes and new techniques in gold production to radically reverse the profit outlook of gold miners in Kalgoorlie/Boulder, this company moved most rapidly from recession to high profitability and became the dominant producer on the field.

Trials and tribulations

An immediate effect of the war was a sharp increase in prices for materials and services and the loss of access to others. Thomas Butement, a lecturer at the WA School of Mines in Kalgoorlie, compiled data in 1919 that revealed increases ranging to over 300 per cent in the period from March 1914 to 1918.[3] Importantly, those consumables that companies used in large amounts – explosives, cyanide, oils, zinc and steel/iron manufactures had all risen significantly.[4] Further, those companies using the 'all slime', Diehl/bromocyanide process now found it impossible to obtain the cyanide from the sole suppliers in Germany.[5] As a result, the Lake View and Star Company was forced to modify its plant at a cost of £8,300 in order to avoid losing gold during processing.[6]

To these problems were added others equally significant: difficulties in transportation of supplies from overseas; the increased insurance costs on gold shipments, and, in 1915, the embargo that the Commonwealth Government placed on gold shipments, effectively freezing the price at the standard and preventing producers from selling into the markets where they might obtain a higher price.

Labour shortages that accompanied the war and an arbitrated increase in wages from 1917 also exacerbated the problems. From about 1913 a worrying shortage of skilled mining labour attracted comment, a situation that became critical with the onset of war and the high levels of enlistment recorded in Kalgoorlie. Speaking at a farewell for volunteers in Kalgoorlie, Richard Hamilton, the General Manager of the Great Boulder Pty and representing the Chamber of Mines, underlined the effect of such enthusiasm for the imperial cause when he noted that:

> … it [is] pleasing to know that so many men have gone from this field, but at the same time, if the system of taking practical men continued, it must do more harm than good.[7]

Added to this difficulty was that posed by agitation against non-Britishers in the area. At the outbreak of war, there had been a rise in outright hostility towards Southern European labour (including Italians until Italy entered the war on the Allied side). Even before the war, unions had accused companies and the Chamber of resorting to policies favouring the employment of Southern Europeans. Then, as early as 1915, unions in Kalgoorlie agitated against the employment of enemy aliens, specifically Slavonic Austrians (Yugoslavs), in the mines.[8] While authorities arrested and transported a number of aliens to Liverpool (NSW) late in 1915, agitation continued and there were calls for a Royal Commission to determine whether aliens who remained on the field were hostile to the British cause.[9] Bowing to the pressure, the government appointed a Commissioner who sat in Kalgoorlie during September 1916. Not surprisingly, the

Chamber of Mines was represented and argued cases for the Commission to certify that individual aliens were not hostile. Significantly, police later found a number of aliens employed on the mines, a companies' practice that ensured continuing friction among labour and between British workers and the companies.

The combined effect of these developments was a decline in the size of the workforce, a fall in output and productivity, a marked increase in the cost of production, and a sharp rise in the ratio of fixed capital to labour employed. Between 1915 and 1917, the average number of men employed on the Kalgoorlie mines fell by some 839 (18.55 per cent), 555 of whom were lost from the underground workforce, placing further pressure on piecework rates.[10] As well, a 1917 arbitration decision increased the minimum wage and reduced working hours from 47 to 44 per week.

Over the period of the war, annual output of ore and gold fell by about 38 per cent and 23 per cent respectively, the result of falls in productivity and restricted mining. Labour productivity fell as shortages forced companies to replace experienced workers with others less so. For instance, notwithstanding a reduction in development work, tons of ore broken by underground labour fell 10.31 per cent, from 617.34 tons per person employed underground in 1915 to 553.68 tons in 1918.[11] Productivity also fell as companies reduced throughput of ore, thereby losing economies of scale, especially in surface treatment plants.

Table 1: *Working Costs of Three Large Kalgoorlie Gold Mining Companies, 1914-1919*

Year	Working Costs per Ton of Ore Mined and Treated (shillings and pence)		
	Great Boulder Pty (a)	Golden Horseshoe Estates Ltd (b)	Lake View and Star (b)
1914	26s 5d	21s 7.83d	19s 3.09d
1915	26s 6d	23s 11.77d	20s 4.14d
1916	na	26s 7.55d	na
1917	28s 8d	28s 5.79d	na
1918	32s 6d	29s 9.89d	na
1919	35s 8d	32s 1.20d	27s 8.60d

Note: (a) Costs per long ton (2240 lbs); (b) Costs per short ton (2000 lbs).
Sources: Directors' Annual Reports to Shareholders, Guildhall Library, London.

The increases in working costs (Table 1) and capital/labour ratios were marked. Of the former, development cost increases were among the greatest and contributed to the February 1916 agreement by members of the Chamber of Mines to halt all but essential development work so that employers could transfer miners to stoping in developed areas of mines.[12] Critically, the ratio of fixed capital (plant and mining requisites) to labour on the nine largest mines in Kalgoorlie rose by almost 33 per cent from £285.78 per person employed in 1914 to £379.28 in 1918.[13]

Not surprisingly, companies were unable to pay the same totals in dividends.[14] However, while overall profits fell and capital costs increased, over the period 1914 to 1918 the companies still maintained high rates of dividend. Compared with the five years before the war when companies had achieved relatively efficient production and when they paid an average dividend of £0.4602/ton of ore raised and £1.0159/oz of gold produced – in the five years of the war companies paid an average of £0.355/ton of ore and £0.8110/oz of gold.[15] In other words, while costs had increased and while efficiency had decreased, dividends were at least partly maintained by introducing savings like cutting development work that created inefficiencies.

While the halt in development work was one of the most radical responses to the altered conditions of production and reduced surpluses, companies also adopted other measures to cut costs. Like Lake View and Star, some reorganised production processes; this was especially the case with those companies dependent upon the bromocyanide process. As well, companies adopted at least four other strategies. First and most significantly, companies increasingly turned to the tribute system of mining thereby establishing it as an important alternative labour process on the field. Between 1915 and 1918 the local Warden noted an increase from a total of 21 tribute agreements to 93.[16] Secondly, nearly all companies began to lift the grade of ore they mined so that the average for the nine main mines rose by about 20 per cent from 7.72 pennyweights (dwt) per ton to 9.31 dwt between 1914 and 1918.[17] Thirdly, companies retrenched workers. Lake View and Star, for example, directed its Kalgoorlie managers to 'reduce staff and cut expenditure', a directive that led to the managers laying-off 240 workers and some administrative staff.[18] Finally, some mines, such as the Chaffers and Main Reef that were heavily indebted, closed down, though such closures provided opportunities for the immediate consolidation of capital and for the centralisation of production in the longer term.

The fall in profits and the diminished employment were not the only consequences of company responses to war and recession. Importantly, their decisions to reduce development and to draw on reserves inevitably reduced the reserves of ore that were 'in sight'. Equally, it created a backlog of development work that progressively increased over the period of the war. Thus, while companies may have anticipated a return to monetary 'normalcy' after the war, they also faced major new works to return reserves to an economic level. Inevitably, continuing high material costs meant that to develop ore reserves for a return to full-scale production would prove a relatively greater burden than before. Such prospects and the poor returns on capital also caused investors to retreat.[19]

The Australian Government's 1915 embargo on gold exports had prevented companies from selling gold overseas during the war. Consequently, companies were unable to take advantage of higher prices for gold that were quoted, particularly in Asian markets. Like their Anglo-South African counterparts, company representatives in Australia had put considerable pressure on the Australian Government either to allow exports or to pay a bounty on gold production. In the event, in February 1919, the Australian Government acceded to submissions that the industry made through their newly formed Gold Producers' Association (GPA) and granted a temporary export permit that was later renewed.

Almost immediately, companies were able to take advantage of the higher prices. Indeed, the first group of GPA sales realised a premium of 19.48 per cent and prices for gold sold continued to increase up to a maximum premium of just over 36 per cent in the last half of 1920. Thereafter prices fell steadily (except for a short period late in 1923 and into 1924) and in November 1924, when telegraphic transfer rates exceeded the premiums, the GPA ceased selling overseas.[20]

The higher premium prices offered only a temporary relief from the recessive conditions. First, companies used a substantial proportion of the increased profits to continue to pay high dividends even though they faced a backlog of development work.[21] Secondly, costs of fixed capital and consumables did not fall in the immediate post-war period. One indicator of such prices, the Melbourne Index of Wholesale prices (all commodities), showed substantial increases (28.2 per cent) from and index figure of 1,934 in the year 1918 to 2,480 in 1920.[22] While the index fell thereafter and while the 1924 gold price had practically returned to the standard price, the 1924 index figure of 1,885 remained 65 per cent above that of 1914. As well, because Britain was a major supplier of mining consumables to Kalgoorlie, continuing rises in British prices generally during the immediate post-war period added to the cost pressures on gold producers. These increases were reflected in the cost of most major consumables which peaked around 1923/24 before stabilising at lower levels yet higher than those of 1918/19.[23]

Moreover, under changing arrangements for ore production, companies were not able to appropriate as much of the surplus as they had intended; indeed, the amount of 'windfall' profit available by way of the premium declined from late in 1920 as the selling price fell in markets such as India. At the same time as they increased their use of tributers, companies became embroiled in protracted disputes with those tributers over the respective share of the premium prices to which each was entitled.[24] Thus, when the Government appeared to take the side of the tributers in legislating to control tributing and after an inquiry in 1921 that recommended tributers have an equal share of the premium prices, companies cemented their view that it was preferable to return to the 'normalcy' of a classical gold standard regime. Under such classical orthodoxy, they believed that prices and wages would fall against a fixed gold price. In fact, the average price of certain important consumables did fall for much of the period after the decline of premium prices and the return to a gold standard. Moreover, under a standard system, states guaranteed producers a fixed price and a market, without the costs of realisation now borne by the GPA. This enabled producers to save the costs of marketing that were a charge on the industry as a whole and that were an increasing proportion of the now declining premium on the standard price.

Companies also faced other cost pressures. In 1920, Justice Burnside, a Commissioner in the WA Arbitration Court, modified the general mining award in several ways that acted to increase labour's share of the surplus on production. Among other provisions, he included one for two weeks paid annual leave; he significantly increased award wages and overtime rates; he effectively ruled out junior rates of pay so that pieceworkers were guaranteed not less than the minimum rate for their position; and he reduced the normal hours of work from 48 to 44 per week (including crib time). However, he also limited the award to one year. In granting the award, Burnside ruled that price increases had eroded the real value of wages.

Through the Chamber of Mines, companies had argued in the Court there should be no change upwards in wages; indeed, they held that the Court should reduce them.

This should be so, they contended, because the premium prices were not likely to continue. They argued further that as monetary stability would return because of the British Government's position on a gold standard at pre-war parity, the prices fuelling demands for improved wages and conditions would continue to fall.[25] The Chamber also argued that the index Burnside based his conclusions upon was flawed and that the industry did not have the capacity to pay the increases that labour sought. In fact, they claimed increases would 'destroy the industry'.[26] When Burnside delivered his judgement, the companies immediately signalled that they would seek a variation at the earliest opportunity.

Fighting back

Such a step was only one of a number that the companies took in the early 1920s. Even as they sought to reverse the Burnside award, one company, the Great Boulder Perseverance, was working to introduce new arrangements for production underground. By increasing its use of tributers underground, the company, which had earlier gone into voluntary liquidation, was successfully able to avoid final liquidation. Companies more generally extended tributing from 1922 and so gained considerable savings. In addition, some companies sought ways of restructuring that might effect savings or preserve capital through sale of assets and shareholdings in other companies. Finally, companies collectively and individually sought state assistance.

When the Burnside Award expired in December 1921, the Chamber of Mines launched a concerted attack on the increases the Award had effected. It lodged a new log of claims, publicly announced a warning to the AWU and other unions that it had withdrawn from the award and threatening closures and job losses.[27] The transfer of the dispute to the public domain reflected the forceful way that companies were prepared to act to bring about a reduction in wages and conditions. At the same time, companies increased their use of tributers and worked to create a strong sense of uncertainty as to the future of the industry in Kalgoorlie. [28]

In July 1922, the companies gained a minor victory when Justice Draper handed down an award that reduced the basic wage to only 15 shillings per shift. However, the fact that Draper did not greatly revise other aspects of Burnside's Award tempered this sense of success. Importantly, Draper accepted Burnside's computations of a cost of living index as a reasonable basis for determining wage rates. Again, the Award was to run for only one year.

Subsequently, companies again sought to have wages and conditions varied when the Draper Award expired in 1923. Unusually, only four months passed between the expiry of the Draper Award and the hearing of the application before Justice Northmore.[29] In two respects favouring the employers, Northmore's decision in the case was a significant departure from the previous wage determinations. Unlike Draper, he rejected Burnside's cost of living indices and accepted the employers' argument as to what constituted a fair wage, including, at least in part, their arguments about capacity to pay. By using the 1913 award figure as an appropriate base rather than the award of 1916 as Burnside had done, Northmore was able to arrive at a minimum figure of 13s 6d per shift - close to what the companies sought. He also discounted the higher cost of living in Kalgoorlie - contemporary indices showing it to be approximately four per cent. Clearly, Northmore's Award was a significant victory for mining companies.

In a further revision of the award in 1925, Burnside granted a small increase of 10 pence per shift and took some account of the capacity of the industry to pay when setting conditions. Among others, he reduced the Sunday overtime rate from double time to one and one-third time and he refused to reintroduce a district allowance for Kalgoorlie that Draper had dropped in 1923.

While these changes were important for some sections of the mining workforce, they became increasingly less so underground because companies employed more workers as tributers in the mines and, therefore, were not directly responsible for the wages of an increasing proportion of the underground workforce. Besides the consistent increase in the number of tributes and tributers, there was a consistent fall in the size of the underground workforce, so that by the latter half of the 1920s, tributers, whose wages were not a direct concern of companies, constituted a high proportion of the underground workforce. Significantly, union membership reflected these changes for, in the case of the AWU, it fell from 2,983 to 1,592 between 1921 and 1923.

In June 1926, the AWU served a new log of claims on companies in which it sought to arrest this change in the nature of relationships between labour and employers in the Kalgoorlie mines. Besides seeking to reverse several unfavourable aspects of previous awards, the union sought to create a situation that might counter the increasing use of tributers, and to arrest what it saw as a decline in piecework rates. In making these claims, the union was particularly critical of tributers – either those working tributes themselves or those who arranged for others to work the tribute area – increasingly using southern European labour at contract rates even below the minimum award rates for miners and truckers.[30] Through a process of protracted negotiation, companies were able to delay arbitration and the Court did not give a decision until August 1927 and then the Commissioner rejected almost all the union claims.

Having secured wage restriction, companies moved to challenge the conditions under which they employed labour in the mines, especially those affecting productivity. Early in 1928 when the prevailing practice was for all mines to close down for two weeks from Christmas to early January, companies began a concerted effort to break union resistance to the rotation of annual holidays. Rotation would enable companies to work mines and plant continuously, an immediate increase of 4 per cent in annual working time. Managers, Bewick Moreing, asked the Under Secretary for Mines, whether the Government could 'induce a more reasonable spirit in the interpretations of industrial conditions' particularly the question of holidays.[31] While S.W. Munsie, Labor Minister for Mines, was sympathetic and would 'at the earliest opportunity endeavour to influence the Union at Kalgoorlie' to accept alteration of the existing practice,[32] the unions refused to accept rotation.

The Chamber of Mines continued its efforts to change the holiday arrangements. While it was not successful until 1931, it is noteworthy that it continued to enjoy the help of the state in its efforts. The Chamber of Mines had the support of J. Scaddan, Minister for Mines in the new Nationalist Government. Scaddan openly supported the change and its alleged benefits,[33] and worked to facilitate changes such as the extension beyond the Christmas period of the annual holiday concession fares from Kalgoorlie, in the hope of overcoming union objections.[34] When unions finally accepted the offer in September 1931, companies consolidated the gains they had made in containing labour costs through arbitration during the 1920s. Further, the September agreement included removal of the award clause limiting shift work in precisely defined 'hot' areas in mines to six hours.[35] Besides potentially increasing working time in some places, the concession was vital for companies because underground temperatures increased at depth and it was at depth that companies had to look for much future development and production.

Tributing

Besides working to cut labour costs by reducing wages and conditions in those departments of mining where they still directly employed labour, companies also sought to introduce the practice of tributing (as noted previously) which had long been a part of mining internationally and in Australia.[36] By using it as an alternative to directly employed or contracted (piecework) labour, companies were able to avoid selective mining in their main workings, to limit the costs of development work, to reduce labour costs, and to increase profits. Where a company such as Lake View and Star chose to reorganise production, tributing played an important role; for, while it did not generate the surpluses that could finance such a change, it reduced the cost of labour so that Lake View and Star could be confident of retaining the bulk of the additional surplus from reorganised production.

The level of tributing in Kalgoorlie is evident in the numbers who replaced underground labour contracted directly to the companies. At the end of 1925 there were in force 141 tributes employing between 350 and 420 miners on Kalgoorlie mines, an increase of 25 per cent on the numbers at the end of 1922. The numbers increased markedly over the decade so that it is estimated that in 1930 between 60 per cent and 75 per cent of the underground workforce in Kalgoorlie mines were working as, or for, tributers.[37] Tributing only declined in the 1930s after the gold price increased and after the State Government intervened through legislation.

Tributes were, in essence, agreements by mines to allow subcontractors to work parts of their mines. Of course, the terms and conditions reflected the historical circumstances of the particular locale and the conjuncture. In return for an agreement, tributers paid a royalty according to the grade of ore they mined, and also certain charges. They bore the costs of development work, of breaking and trucking ore to the hauling shaft, of haulage to the surface, and of crushing and extraction. In short, the tributer was responsible in one form or other for all the costs of producing and realising that gold, and on a scale of costs that was directly variable with the grade of ore the tributers mined.

Of course, tributes were also favourable to some miners. The capacity to profit depended on good fortune or good favour, though, as noted above, sliding scales of royalty and payment would ensure that the company also shared their good fortune. Besides, tributers who employed others to work their tributes were able to find cheap contract labour at a time when there was a ready reserve of labour that would work at below award rates; something of which the AWU was especially critical.

This change in the arrangements for production was particularly important in the case of the Lake View and Star mine, which had very high numbers of tributers from the mid-1920s. In the year to 30 June 1931, the company treated 94,370 tons of its own ore with a standard value of £171,170 while its tributers mined 78,741 tons of ore that yielded gold with a standard value of £435,286. On the one hand, treatment of tributers' ore brought direct income so that under the Mining Act's various scales of royalty and charges, the company would have earned a total of about £245,000.[38] As well, because the company only paid for gold at £4 per fine ounce, nearly 5s per ounce less than the Mint price, it profited to the extent of another £25,600 (less the costs of refining/realisation) on the tributers' gold. On the other hand, the company also benefited from the arrangements because of the economies of scale it provided: underground and haulage equipment were fully utilised; its treatment plants operated closer to capacity; and its service departments and surface workers were fully employed in meeting the needs of both its contract workers and of the fee-paying tribute workers.

Similarly, other mines benefited. In the year to 31 December 1928, the Great Boulder Pty mine had treated 36,744 tons of tributers' ore for 50,484 ounces of gold. This gold had yielded the company a royalty alone of £43,133.19.7.[39]

Turning point

Tributing was one important part of Lake View and Star's strategy of restructuring its operations in Kalgoorlie to achieve cost savings through economies of scale in production and treatment. It also sought to do so by centralising operations to consolidate ore handling and processing from its leases. In so doing, the company attempted to emulate aspects of the group system of mining that had developed on the Rand gold mines in South Africa. However, it was only able to complete the process of restructuring when it could attract overseas investment capital in the latter half of the 1920s.

While Lake View and Star had consolidated property and acquired companies that had failed, for much of the early 1920s Lake View and Star struggled to retain its profitability and to transform the scale of production. Like others, it suffered from the external conditions and those arising from operating decisions made during and shortly after the War. However, by the beginning of the 1920s Lake View and Star commanded the resource of property needed to expand low grade production using existing technology, yet it struggled to raise the capital necessary to fund the processes of acquiring additional property and the fixed capital needed to reorganise and expand its mining and treatment operations. Notwithstanding, Lake View and Star made some headway in two ways. First, it acquired the Ivanhoe Gold Mine in 1924, gaining access to its considerable cash reserves and mining property that could readily be worked by tributers. Second, and more significantly, because it commanded sufficient mining property, it increased its tributing workforce after 1923 more rapidly than others in Kalgoorlie. With tributing as a source of profit and operating capital, the company was able to do considerable work on preparing for larger scale production and to participate in developments regarding the application of froth flotation to gold concentration.

Yet substantive progress was hampered by its reliance on financing from production. The turning point for the company came in 1928 when Consolidated Gold Fields of South Africa gained control and began a series of large investments in this and the Wiluna gold mining area in Western Australia.

The case of Lake View and Star was atypical, for most Kalgoorlie companies were not yet able to effect the amalgamations and reorganisations that a series of state inquiries during the 1920s had promoted. The Boulder Perseverance company exemplified the problems that faced some companies, especially the group of small to medium scale producers. The increased costs and the lack of sufficient development work during the war caused the directors to place the company in liquidation after the war and to rely extensively on tributers for production in the early 1920s. While it was able to build up some ore reserves and to increase the grade of ore that it mined, and while it had greatly reduced its reliance on tributing after 1923, Boulder Perseverance could not raise new capital for plant extensions and renewal except at rates that the directors deemed unserviceable. Consequently, over the decade of the 1920s working profits for Boulder Perseverance gradually declined to the point where, in the 15 months to 30 December 1930, it reported a loss of £801 on gold production valued at £224,355.[40]

In the face of the depressed conditions, a number of other medium and even large producers chose to close their operations. In this category were the Kalgurli Gold

Mines, Ivanhoe Gold Mines, Associated Gold Mines, and the Oroya Links Company. Their decisions to withdraw provided opportunities for other companies to increase their leasehold property and plant, in particular, the Lake View and Star company. Together with the property of the Chaffers Gold Mining Company which it purchased from the receiver in 1915, the properties that it purchased in the 1920s gave Lake View and Star control over the largest lease area on the Golden Mile and access to considerable plant that it used to treat tributers' ore in the 1920s.

The recession even forced larger companies to close or to adopt radical measures to survive. The Golden Horseshoe Estates company struggled for much of the 1920s in the face of limited ore reserves and almost no forward development work, a direct consequence of the policies it had adopted to meet the wartime conditions. From the mid-1920s it limped along with government assistance and in 1926 it was forced to suspend operations. It failed in attempts to gain local finance with prospective purchasers like the wealthy Melbourne Baillieu family being 'quite cold on it'.[41] Shortly after, control of the company passed to the London group linked to the old Associated Gold Mines of WA and in 1929, Lake View and Star, now under the control of Consolidated Gold Fields, purchased the mine and plant in Kalgoorlie.

The Great Boulder company had long been seen as the most successful of the Kalgoorlie companies. Its holdings included the richest leases retained by the Adelaide syndicate responsible for pegging much of what was to become the Golden Mile and, for the period to 1921, its cumulative dividends of £5,925,550 made up 26.68 per cent of the field's total.[42] It did not pay a dividend in 1923 and after paying a small dividend in 1924, it did not pay anything further until 1929 by which time it had introduced tributers to the mine. Like others, the company suffered from the effects of the war and the measures most companies adopted at the time. However, unlike others, its manager refused to employ tributers during the early 1920s until, having virtually exhausted its proven and developed reserves of ore, it became apparent that the company could not continue in any other way. From November 1926, it opened the upper levels of its mine for tribute and within a year had registered over 40 tributes on its leases. Significantly, its poor operating position prevented it from effecting an amalgamation with the ailing Golden Horseshoe Estates company in 1927; an amalgamation could have provided the basis for a large-scale, consolidated operation on the western part of the Golden Mile.

Seeking concessions

The process of amalgamation of property that characterised the faltering industry during the period of the war and the 1920s was one that grew out of the 'natural' operation of mining as a capitalist enterprise. However, during the mid-1920s the State Government sought to force companies into a more radical process of amalgamation of property and concentration of treatment processes. Yet it was unable to do so, for companies in Kalgoorlie resolutely resisted attempts by the State to use the recommendations of a Royal Commissioner as a pre-condition for aid to the industry. Undoubtedly, companies did so because those recommendations and the means by which the State Government sought to implement them lay outside the logic of their processes of capital accumulation.

In broad terms, Kingsley Thomas, the Chair of the Commission, recommended that the industry in Kalgoorlie consolidate into two 'group' mines, that it introduce labour saving devices, and that it centralise services and operations within the industry. The State Government was keen to pressure companies to adopt the recommendations without conceding further reductions in wages and by making some specific proposals conditional on industry action. Not surprisingly, industry declined to limit their own power to direct the course of their actions and defended their position with the refrain that their woes were almost entirely due to high wages and generous award conditions.

The companies so steadfastly resisted any attempt to force change upon them that by the end of 1926 the State Government had virtually abandoned any attempt to do so and subsequently conceded extensive aid to the industry. The only major area where companies appeared seriously to consider Thomas' suggestions was when they jointly agreed with the State to investigate a centralised power supply for the mines. However, negotiations revealed irreconcilable differences over the guarantees the State wanted regarding implementation of other of Thomas' recommendations, and when neither side would give ground and when uncertainty grew about the actual cost of power to be supplied, the companies declined to proceed with the scheme.[43]

Notwithstanding the state's stated policies on aid, companies were able to gain vital assistance from it during the latter half of the 1920s. The industry requested, and was granted, significant concessions and support in the form of special assistance. More generally, besides ensuring adequate labour and a formal arena for working out awards, the state also ensured that the necessary social and technical conditions for continued gold mining existed by taking responsibility for certain health costs and for continuing education and critical research into new treatment technology for the industry. In 1930, after a long debate, it also provided a bonus on new gold production.

Special assistance took the direct forms of taxation relief, reductions and rebates on infrastructure costs such as rail and water charges, loans for mine development, and payment of workers' compensation insurance charges. In August 1924, the Commonwealth extended exemption of gold mining profit from income tax until mine owners had recovered the whole of invested working capital. This benefited Kalgoorlie companies because expenditure on new plant and development could be offset against profits.

Of more benefit to Kalgoorlie producers were changes to the Commonwealth Income Tax Act in September 1924, which exempted from tax all income and dividend income derived from companies principally engaged in gold mining. Industry representations to the State Government also brought some positive response though it was only prepared to grant reductions in income tax and dividend duty related to profits from new mining ventures.[44]

The state also provided substantial rebates on water charges. Indeed, the Mitchell Nationalist Government's decision to reduce water costs in 1923 was a major concession: an assured supply of cheap fresh water was important for mining companies because of its use in all mining processes; and, cheap water had an important bearing on the cost of living in a remote region and, hence, on the price of labour. In the period to the end of 1929, the rebates saved the Kalgoorlie companies a great deal in direct charges: on average about £50,000 per year and £310,753 in total.[45]

In the matter of freight concessions, the State Government was more circumspect in its support. On the one hand, it was mindful that any reduction for the mining areas would place pressure for a rise in rates applying to the other main user, the agricultural sector. On the other hand, the State Government needed to convince unions that its pragmatic approach to the realities of the situation would somehow benefit others besides mining companies in unspecified ways. In August 1924 when he met a union deputation, M.F. Troy, the Labor Minister, noted that he intended to support freight concessions to the industry, wishing 'to help the industry and to try to restore it to prosperity'. Furthemore, even though the government might 'resent it also' they ought 'not to take objection to the concessions…(if) the companies do not reciprocate…by giving workers a fair deal…because we think it gives greater advantages'.[46] The concessions on rail freight to the gold mining industry generally rose from £898 in 1925 to £17,372 in 1929.[47] Together with the reduction in water prices they gave a substantial benefit to Kalgoorlie companies in the latter half of the 1920s.

When Parliament passed amendments to the Workers' Compensation Act in 1925 raising the rates of premium payable under the Third Schedule of the Act, the State Government again acted to assist the gold mining industry. First, it refrained from gazetting the changes until 1927. Secondly, it accepted the industry argument that the increase in the rate from £2.17.10 per cent to £7.7.10 per cent would halt their expenditure on research work and conversion of plants, and would undermine confidence of shareholders in the industry. Through the Chamber of Mines, the industry persuaded the State to pay Third Schedule premiums, initially for one year from the beginning of October 1927 and eventually until the end of March 1930. Across this period, the total assistance amounted to £83,154.19.10.[48] Because they employed over half the persons working in gold mining in WA at the time, the Kalgoorlie mines were the chief beneficiaries of this assistance.

Government assistance not only took the form of general concessions, but was also directed to particular companies. In January 1926 the State Government guaranteed a £50,000 loan from the Bank of New South Wales to the Golden Horseshoe Estates Company and in 1927 it granted the company £5,000 out of a Commonwealth Disabilities Grant.

Of equal importance was the assistance that the state provided by socialising the health and rehabilitation costs of treating workers affected by the poor ventilation and 'dry' operations in many gold mines. Even though the extensive ills were preventable and directly the result of productive processes and lack of action on the mines, the State Government began to consider taking responsibility for the welfare of those workers when it first considered legislation to withdraw miners suffering defined diseases from the industry. Following proclamation of the Miners' Phthisis Act in September 1925, the state assumed responsibility for substantial compensation and for employment of miners withdrawn from the industry.[49]

That the state bore these costs did not mean that it intended to do so in the longer term. As Senior Mines Inspector Phoenix noted in his report for 1927, 'Liability for industrial diseases may be looked upon as a portion of the cost of production that should be a charge upon the industry'.[50] Indeed, changes to workers' compensation premiums went some way towards that end. However, in its actions over health during the 1920s and as with other assistance the State was mindful of the industry's '[in]capacity to bear the burden'.[51]

Along with subsidising the health costs of the gold mining industry during the 1920s, the state also provided support for education and research that ensured the technical conditions for the reproduction of the industry. Apart from the ongoing work of the Mines Department, it did so through the School of Mines, an institution that generated the necessary technical labour for the industry. Besides, from 1923, the School extended the work of its Metallurgical Laboratory to include research on the application of froth flotation to the concentration of gold in sulpho-telluride ores. The work of A.S. Winter and B.H. Moore, proved that the flotation process could be applied with significant cost saving over existing methods. Their work began in 1923 almost a year before that of local companies and when those companies suspended their experimental work Winter and Moore carried on to prove the process that was an important part of the recovery in the 1930s.

The timing of such assistance was critical for it reflected action by the state to socialise costs or risks that mining companies were not prepared to take during a period of recession. Moreover, by taking such risks and developing the knowledge base, the state provided companies with a much quicker route to the application of new cost-saving technology and, therefore, accelerated the industry's recovery by allowing it to reduce costs early in the boom period of the 1930s. This was particularly so in the case of Lake View and Star which acted to restructure in the 1920s and which benefited from the decision of Consolidated Goldfields to invest, enabling it to implement the new treatment process some four years ahead of other Kalgoorlie companies.[52]

Finally, the campaign to introduce a gold bonus was one further means by which the Kalgoorlie producers sought relief during the depression of the 1920s. It was a campaign that received strong support from the State Government but which the Commonwealth consistently opposed. Initially, the Kalgoorlie Chamber of Mines, representing local producers, had opposed a bonus on gold produced but in 1925 it decided to support the case, which the entrepreneurial Claude de Bernales had strongly advocated.[53] Originally favouring a bonus on ore production because this would enable them to mine and treat lower grade ores, the Kalgoorlie producers altered their position because the increasing reliance on tributers' ore was also a reliance on higher-grade ore and increased gold output. During 1930 the Chamber of Mines again reversed its position calling for reduced tariffs and measures to reduce labour costs rather than a bonus on production.[54]

In contrast to the State Government and its agencies, during the 1920s the Commonwealth Government was less inclined to support Kalgoorlie gold producers. In general its policies may have been said to have mirrored the sentiments in the statement of H.W. Gepp, the Chair of the Development and Migration Commission who held in 1928 that gold did not warrant any special support because '[it] does not bring to Australia any advantage to distinguish the value of producing it from that of producing any other commodity'.[55] The assistance considered was to be contingent upon expenditure for new, Australian made plant, while the actual grants were only to be to the extent of the equivalent of duty payable on similar machinery and plant imported from abroad and then, effectively, only for new machinery employed in the technical reorganisation of existing mines, or on new mines.[56]

Conclusion

Undoubtedly, gold producers in Kalgoorlie could do little to change the general conditions of production that were determined by the monetary function of gold and the developments in the capitalist world's economies during and after World War I. However, while these factors gave shape to the general conditions, particularly in an industry heavily dependent upon commodities and capital imported from overseas, local factors also played a significant part in shaping the historical development of the industry in Kalgoorlie. At first, the general response of companies to the radically altered circumstances of production and realisation of gold during the war created a diminished base of essential forward work, skilled labour, capital and profits from which companies were forced to meet the conditions after the war. While temporarily increased prices for gold enabled companies to maintain some profitable returns to shareholders, in the longer term it was by winning struggles to reduce the price of labour – either by arbitration or by introducing altered labour processes for ore extraction, and by gaining state support that a number of companies remained viable during the 1920s. Importantly, they did so without conceding control over the direction of their development to the state which sought to make certain aid conditional upon undertakings to alter the structure of capital and organisation of production on the field. Yet there were significant alterations but these structural changes arose from within the processes of capitalist production and accumulation. Over the course of this period of recession in the 1920s, processes of concentration of capital and the centralisation of production were evident in Kalgoorlie's gold mining industry. A number of companies failed and others withdrew from the field or effected forms of amalgamation. The chief beneficiary in these processes was the Lake View and Star company which was able to acquire property and capital. On these it began to build a larger scale, centralised mining and treatment business, supplementing the work with extensive use of tributers in its mines. In some ways, it sought to develop along the lines of the group system that operated in South Africa. By the end of the decade, and in order to raise additional capital to carry on the processes of reorganisation, Lake View and Star sold a controlling interest to the large Anglo-South African gold miner, Consolidated Gold Fields. Already well advanced in becoming a large scale, low cost producer, the additional capital allowed it to immediately adopt the new technology of froth flotation. This enabled it to assume a dominant and highly profitable position among the remaining Kalgoorlie producers when the long recession ended and profitable conditions returned with the radical changes to world monetary and economic conditions in the early 1930s.

Endnotes

[1] This was, of course relative. There was a continuing capacity to increase the scale of production but this would have required devalorisation of certain capital invested and, inevitably, the concentration of ownership as some companies or capital units disappeared. That 'weaker' companies could resist this tendency was a function of the still relatively 'good' profits generated and the existence of readily accessible deposits of gold within mines. Of course, increases to the scale of production would have required major new investments in mine infrastructure and underground workings, something less and less likely as levels of profits stagnated and even declined.

[2] Concentration understood here as a reduction in the number of operating companies through processes of amalgamation, takeover, sales of mines or the failure of companies. Centralisation being the processes whereby the amount of production was not reduced but where mining and treatment operations were modified to reduce the number of plants while increasing the scale of operations under and above ground.

[3] T. Butement, *Chemical Engineering and Mining Review*, 5 January 1919, p. 108.

[4] For instance, the directors of the Lake View and Star Company noted that the price of Cassell cyanide, that most commonly used with free milling ores and in the 'all roast' processes, had risen over 37 per cent

in price from 7.375d per lb to 10.125d per lb between April 1916 and April 1917; Lake View and Star Ltd, Minutes of the Board of Directors meetings [hereafter LVSBM], 5 April 1916 and 12 April 1917, located at Normandy-Poseidon Office, Adelaide. In March 1917, the British Government classified cyanide as a prohibited export except under licence, and Cassells could only guarantee supply for three months ahead, LVSBM*,* 12 April 1917.

[5] Details of the approaches companies made to the British Government and the German refusal to release the cyanide for export from October 1915 can be found in LVSBMs, 9 September 1915, 4 November 1915, 30 December 1915, and 17 February 1916.

[6] LVSBMs, 19 February 1916 and 16 March 1916.

[7] *Australian Statesman and Mining Standard*, 14 April 1916, p. 322.

[8] In May 1915, the Eastern Goldfields District Council of the Australian Labour Federation passed a motion that it 'should make representations to the Defence Dept that in … [its] opinion … the time has arrived when all enemy aliens should be interned', Minutes of Council, Minute Book of the Eastern Goldfields District Council of the ALF, vol. 1.

[9] The Commissioner deemed 33 of the 138 aliens as hostile, barring them from working on the mines.

[10] P. Bertola, 'Kalgoorlie, Gold and the World Economy, 1893 – 1972', vol. 2, PhD thesis, Curtin University, 1994, table 2.8, p. 447.

[11] *Ibid*. Overall productivity in the East Coolgardie Goldfield fell by 13.31 per cent from 354.68 tons per person to 307.46 tons in the same period. However, gold production rose from 147.40 ounces per person to 153.43 ounces, the result of extracting higher-grade ores and reducing 'dead' work.

[12] *LVSBM,* 17 February 1916.

[13] Bertola, 'Kalgoorlie, Gold and the World Economy', vol.2, Table 2.6.

[14] *Ibid*., Table 2.2.

[15] *Ibid*., Tables 1.1 and 2.2.

[16] Mines Dept of WA correspondence files [hereafter MD] 300/16 and 538/19. See also LVSBM*,* 10 May 1917, for the company's decision to use tributers on the surface of leases and in the upper levels of the newly acquired Chaffers mine. References to the use of tributers can also be found in contemporary annual reports of company directors to shareholders.

[17] Bertola, 'Kalgoorlie, Gold and the World Economy', vol.2, Table 2.4.

[18] LVSBM, 23 April 1917 and 27 May 1917.

[19] For instance, Francis Govett led the Lake View and Investment Trust, a major shareholder in Lake View and Star, in disposing of it's holding in the Kalgoorlie company in 1919.

[20] See Gold producers Association circulars to members in MD 713/19.

[21] In the period 1919 to 1922 inclusive, Kalgoorlie companies paid dividends of £323,250, £303,500, £310,500, and £186,251 respectively; Bertola, 'Kalgoorlie, Gold and the World Economy', vol. 2, table 3.7, pp. 470-1.

[22] Commonwealth of Australia, *Year Books of Australia*.

[23] See *W. A. Statistical Register* for the years 1919 to 1931. The main exception was for cyanide, which declined significantly in the latter part of the period.

[24] Bertola, 'Kalgoorlie, Gold and the World Economy', vol. 1, p. 136ff, and 'Tributers and Gold Mining in Boulder: 1918-1934', *Labour History*, 65, November 1993, pp. 54-74.

[25] This argument was, at least, opportunistic, for company boards in London were certainly aware of the monetary conditions in Britain and in the capitalist world more generally. In particular, following the Inchcape inquiry and the subsequent Bank of England negotiations with the South African producers that led them to sell gold into the US but to agree to do so via Britain, the Australian producers would not have expected an early return to a gold standard.

[26] *Kalgoorlie Miner*, 21 December 1920.

[27] Secretary of the Chamber of Mines to the Secretary of the AWU, Boulder, published in the *Kalgoorlie Miner*, 14 February1922.

[28] Lake View and Star, for instance, sacked 135 workers and only offered vague references about the possibility of future work for the employees despite their firm intention to reopen parts of their mine to new tributers.

[29] Justice Draper was 'conveniently' absent in the north of WA and this meant that Justice Northmore, who was more hostile to labour, heard the case. In spite of the fact that there were 68 applications listed ahead of the Chamber of Mines' application, and against accepted practice, it was heard quickly and the award handed down immediately. In contrast to this speed, between 1924 and 1931, union claims for increases resulted in only three awards, partly because the Chamber successfully argued for two-year awards, and partly because it was able to delay the AWU bringing the cases to arbitration.

[30] Analysis of tributes registered indicates that the percentage granted to southern Europeans increased over the decade and far outweighed the southern European composition of the population or the 'normal' workforce.
[31] G. Klug to Calanchini, 11 January1928, MD 39/21.
[32] Calanchini to Klug, 16 February 1928, MD 39/21.
[33] *West Australian*, 16 July 1930; *Sunday Times*, 27 July 1930. Williams, *Kalgoorlie Miner*, 24 September 1930, was critical of Scaddan's involvement in the issue, arguing that while supportive of company attempts to rotate holidays, he had not intervened to protect workers against the tactics of rotating holidays.
[34] Railways Department file 3386/30, WA State Records Office, Alexander Library, Perth.
[35] *Kalgoorlie Miner*, 19 September 1931. Instead, the AWU agreed to accept that there only needed to be more vaguely defined 'adequate' ventilation before employees worked a full shift in such areas.
[36] See Maurice Dobb, *Studies in the Development of Capitalism*, London: Routledge and Kegan Paul, rev. ed., 1963, pp. 247-7, 250, for descriptions of tributing in early British tin and lead mining. He sees tributing as an integral part of the development of capitalist modes of production in mining, as it was in Kalgoorlie.
[37] Bertola, 'Tributers and Gold Mining', p. 73.
[38] Comprised of royalty at between 20 per cent and 22.5 per cent of the gold value; charges for compressed air and hauling at 12s 6d per ounce; and from treatment of ore at 23s 9d per ton.
[39] Great Boulder Pty Gold Mines Ltd, Directors' Report to Shareholders for the Year to 31 December 1928.
[40] *Industrial Australian and Mining Standard*, 10 July 1930, p. 27. In contrast to the proportions of tribute ore and gold on the Lake View and Star and the Great Boulder mines at about the same time (see above), during 1930, the Perseverance company had treated only 4,072 tons of tributers' ore compared with 69,194 tons of its own ore.
[41] *Ibid*.
[42] Mines Department of WA, *Annual Reports*, and *Statistical Register of WA*, from information provided by the Chamber of Mines and the Government Statistician's Office. The company's cumulative total exceeded that of the next nearest company by almost £2 million.
[43] See *MD* 573/26 and 'Memorandum to the Committee on Supply of Electric Power to the Kalgoorlie Mines, by the State Mining Engineer, on the Prospects of Maintenance of Gold Production in the Kalgoorlie District', Mines Department of WA, *Annual Report 1926*, pp. 95-100.
[44] Minutes of meeting between Troy and the Chamber of Mines, 8 August 1924, and minutes of meeting between Troy and a combined union deputation, 8 August 24, MD 1141/24.
[45] MD 580/30.
[46] Transcript of meeting between Troy, and the AWU and combined unions, 8 August 24, MD 744/24.
[47] MD 580/30.
[48] MD 220/30.
[49] Report of A. D'Arcy, administrator under the Miners' Phthisis Act, 18 June 1928, MD 1014/28. In 1930, the cost of subsidised employment alone was £7,020.
[50] Mines Department of WA, *Annual Report 1927*, p. 32.
[51] *Ibid.*
[52] Lake View and Star also benefited from their connection to Consolidated Gold Fields which was a major shareholder in Wiluna Gold Mines where the flotation process was first used on a large scale. When constructing a completely new plant at Wiluna, Wiluna Gold Mines could readily implement the new technology in its treatment plant.
[53] Arguably, de Bernales' advocacy had much to do with his plans to float gold mining leases as companies. A state guarantee of a higher price for gold would have done much to enhance the attractiveness of such ventures for potential investors.
[54] See *Industrial Australian and Mining Standard,* 14 April 1930 and 15 May 1930; *West Australian*, 22 and 23 January 1930.
[55] Report of the Technical Committee of the Development and Migration Commission, p. 9; see MD 818/28.
[56] Where plant was unavailable locally and was imported for new construction, the grant would equal the amount of duty payable under the British Preferential Rate.