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The Promise of Kiruna's Iron Ore in the Swedish Imagination, c. 1901–1915

ABSTRACT Iron ore mining in the Norrbotten region of Sweden began in the early years of the twentieth century as a commercially uncertain and even dangerous proposition. But even before it began to generate profits, public debate began over the appropriate role of the state and of private capital (including foreign investors). This included whether iron ore should be exported for profit or retained for future processing in Sweden—even though the technology and infrastructure for such domestic industry did not exist. Tracing the evolution of this debate in the Swedish news media through to the First World War, this paper argues that the revenue generated by exports became more attractive than the promise of future domestic industry because that revenue could underwrite pressing political objectives. Although domestic iron ore processing remained linked to visions of future industrial prosperity, uncertain visions of future prosperity lost appeal as the capacity for export revenues to generate prosperity in the present became more potent.

KEYWORDS Kiruna, iron ore, economics, Sweden, LKAB, Norrbotten

Introduction

The story of the iron ore deposits in the mountains of Kiirunavaara and Luossavaara is often told as a triumph. During the early modern period the mines and smelters in the Bergslagen region of central Sweden became internationally renowned for the quality of their products. Sami residents were aware of iron ore deposits further north well before they came to the attention of Swedish authorities in the eighteenth century via the Sami informant Amund Amundson Mangi (Ahlström 1966). Although early attempts to extract profits from the ores proved unsuccessful, English capitalists—chief among them the financier Sir Ernest Cassel—invested heavily in mining and infrastructure around Gällivare from the nineteenth century.¹ Despite a series of bankruptcies and dubious financial dealings, by 1902 mining was underway in both the Malmberget and Kiruna regions and railways connected the mines with the harbors of Luleå and Narvik. In 1903 the Swedish company Trafiksällskapet Grängesberg-Oxelösund (TGO) took over the complicated affairs of LKAB and Aktiesällskapet Gällivare Malmfält (AGM) from the controversial wholesaler Gustaf Emil Broms (1849–1903). Ore production boomed, and the promise of the mountains became reality. Kiruna quickly became a thriving town of over ten thousand inhabitants. A 1907 deal with the Swedish state allowed TGO to increase export production and obtain security regarding fees and charges in exchange for the state collecting royalties and freight charges and 50 per cent of the company, with a right to purchase the remaining 50 per cent in the future. LKAB, which became wholly state-owned in 1957, rode out rises and falls in global iron ore prices. Kiruna continued to thrive on the company's back.

This narration celebrates iron ore mining as the lifeblood of Kiruna and its community. Mining created local development in both economic and social terms, defining a pathway that has remained to the present. But the ores of Norrbotten have historically been invested with a range of meanings that enabled them to be enrolled in nationally-based visions of Swedish prosperity and prestige, with Sweden's ascent to the ranks of powerful and civilized nations at least as important as the economic development of upper Norrbotten. My aim in this paper is to examine how the iron ore that lay in the mountains around Kiruna fuelled public debate in early twentieth-century Sweden over exactly how iron ore could (and should) unlock both local and national economic development. Far from determining the path for economic and social development, the commencement of iron ore mining intensified a debate over which of two paths should be taken: one in which iron ore was a source of capital in its own right that attained value through export, and one that privileged a thriving domestic iron and steel



Map 1. Malmfälten—the Norrbotten iron ore fields, and the historical mining region of Bergslagen (inset).

industry based on those ores. The former eventually became more influential than the latter (although both continued to have supporters). Dreams of industrial might based on domestic iron processing gradually shifted toward a more pragmatic acknowledgment that exporting the ore to become steel elsewhere—mainly in Germany—could be regarded as a rational realization of value from a substance within the economic, infrastructural, and technological context of the time.

I have been strongly influenced by Sverker Sörlin's (1987) seminal analysis of Norrland as a "land of the future" in turn-of-the-century Swedish

thought and the work of geographers such as Gavin Bridge (2010) who have emphasized resource-making processes, in addition to Dag Avango's work in linking resource-making with future-making within the context of actor-network theory (Avango 2005; see also Avango, Nilsson & Roberts 2013). Hence, this is not a local story about the birth and adolescence of Kiruna as a community or LKAB as a company. The first managing director of the company, Hjalmar Lundbohm, has been mythologized (and more recently studied critically) as the benevolent founder of a model community (Åström 1965; Persson 2000; Persson 2015). Kiruna has been described and analyzed from a range of both academic and popular perspectives (Johansson i Backe 1977; Brunnström 1981). The economic historian Nils Meinander (1968) wrote a weighty history of TGO that remains indispensable reading over fifty years after its publication (for a longer perspective, see Ahlström 1966). Two commemorative histories of LKAB have appeared (Barck 1990; Myhr 2015), the value of the first somewhat diminished by the claim in the opening of the second that "no collected history [of the company] has ever been done" (Jakobsson in Myhr 2015, loose leaf insert).

What I have instead done is to use newspapers to explore how the ore in the mountains became a resource for politicians, captains of industry, engineers, and professional economists to construct visions of a prosperous and powerful Swedish nation. I have relied heavily upon the fifteen volumes of press cuttings on Norrbotten mining from 1901 to 1916 held at Riksarkivet (The Swedish National Archives) in Arninge within its LKAB collection.² The collection cannot be presumed to be comprehensive, and in my judgment there is a bias towards Stockholm newspapers, in addition to a rather artificial starting point of September 1901 (when TGO appears to have begun following Norrbotten mining with a higher level of scrutiny). I am nevertheless satisfied that the cuttings cover the full ideological spectrum and offer an important window into the hopes and fears that were inscribed upon Norrbotten's iron ore. Newspapers constituted a vital forum for public debate in addition to the dissemination of information. Lengthy editorials were common. These could take the form of letters from individual correspondents (often reprinted in full and accompanied by editorial comments), or attacks on rival newspapers that often went back and forth over a number of days, in addition to opinion leaders. A surprisingly complex picture of how Kiruna's iron ore became invested with the ambitions and anxieties of early twentieth-century Sweden emerges from these pages—one that explores how a particular resource was constructed in the context of the political and social relations of a certain time and place, and that demonstrates how a particular understanding of the value of a natural resource became dominant, establishing a consensus that to a large extent persists today.

LKAB. The Broms Years

In September 1901 rumors began to circulate concerning a sale of AGM and LKAB. The history of iron ore mining in Norrbotten had thus far been characterized by bankruptcies, despite the involvement of major financial players such as Knut Agathon Wallenberg, with the first unsuccessful attempt to sell AGM to the state coming already in 1891 (Meinander 1968: 87). The conservative *Norrköpings-Tidningar's* (hereafter *NT*) vision of “hazy millions” captured a sense that Norrbotten’s iron ores had a mirage-like quality that attracted “speculation,” contrasted with the solid foundations of enduring ownership for the public good (*NT* 1901). The right-leaning *Nya Dagligt Allehanda* (hereafter *NDA*) emphasized that the future profits from the mines—which might run to billions of crowns—should benefit “Sweden and Swedes” (*NDA* 1901a). This did not necessarily mean state ownership or operation: *NDA* and the right-leaning *Aftonbladet* were more worried about foreigners gaining a controlling interest through share purchases, with the latter preferring Swedish businesses and businessmen to foreign capitalists and speculators (*Aftonbladet* 1901a). This fear of foreign influence in the Swedish economy was both a cause and a consequence of earlier developments in the mining sector. Economic historian Jan Glete argued that the formation of TGO in 1896 caused a sensation in Swedish financial circles, to the point where it could be said that “the [Stockholm] stock exchange in its modern form came about to organize the trade” of TGO shares (commonly known as *grängesbergare*) (Glete 1987: 13). This included small-time investors as well as established capitalists. Meinander (1968: 108) argued that TGO also marked a new development as it was a Swedish joint-stock company behind which the role of foreign capital in Swedish iron ore mining could be obscured.

Now that the mines were in operation and the railway lines connecting Kiruna and Gällivare with export harbors either completed or nearly completed, the financial insecurity of LKAB and AGM became a more serious threat given its potential to derail a development of significant value to the nation. The conservative *Stockholms Dagblad* (hereafter *StD*) claimed in October 1901 that the existing restrictions on foreign share ownership in LKAB, due to its contract with the state over building the Gällivare–Riksgränsen rail line, did not prevent AGM being subject to a foreign takeover that would then control LKAB through the former’s dominant share in the latter (*StD* 1901). The state thus emerged as a safer alternative to private ownership. A state purchase of the mine could be costly, and *Aftonbladet* wondered whether the opaque financial arrangements of the companies precluded the state from being able to adequately appraise what it was buying (*Aftonbladet* 1902). By the end of the year the scandals included a libel

action by Wallenberg against Harald Sohlman, editor of *Aftonbladet*, who had aggressively reported on Wallenberg's earlier dealings with AGM (Wetterberg 2013: 61). But *StD* felt that "some sacrifice" was warranted to prevent the Norrbotten iron ore fields falling into foreign hands, particularly with reports that German interests were following the situation closely, although they too had reservations about becoming involved (*StD* 1901).

Despite an injection of short-term financing in December 1901, the liberal-leaning *Stockholms-Tidningen* (hereafter *ST*) thought it a certainty that state intervention would come up in the following year's session of the national parliament (*ST* 1901a). *Aftonbladet* (1901b) had declared that the problem of how to arrange a state purchase was "not altogether insoluble." But on 31 January 1902 multiple reports emerged that the purchase would likely not be presented to the parliament and hence would not go ahead. Opinions were divided on whether this was a good thing, with the admitted risk of a purchase highlighted by *Aftonbladet* (1902) while *NDA* (1902a) regarded that risk as necessary to ensure that the iron fields were safely held in state hands.

All sides agreed that if the ore fields were to be developed capital would have to be sought either from the Swedish state or from abroad. *NDA* felt that the mines were of sufficient economic importance to make them essential to "the general economic future of the homeland [*fosterlandet*]," and blamed Broms for exposing them to foreign danger by attempting to sell his interests to foreign investors (*NDA* 1902b). Others were less willing to conflate foreign capital with foreign control. Notably, in December 1901 *ST* (1901b) had argued that foreign capital was so important for the development of the Norrbotten mines that it was unpatriotic to spread rumors abroad that could hinder investment. The liberal *Svenska Dagbladet* (hereafter *SvD*) claimed in August 1902 that Norrbotten was particularly dependent upon foreign investment for economic growth and hence disproportionately affected by the uncertain investment climate that the government had created through its inaction (*SvD* 1902a). *Norrbottens-Kuriren* (hereafter *NK*) argued in December 1902 that foreign capital had greatly benefited development in Sweden, even if it agreed that in an ideal situation, domestic industry would grow under its own steam (*NK* 1902b). The newspaper had earlier endorsed plans for an ore processing facility at Karlsvik, Luleå, in July 1902 on the grounds that "new blood" was needed to stimulate industry and employment (*NK* 1902a). The businessman behind the project, William Olsson, dismissed concerns about foreign investment and instead pointed to the need for development as decisive (*SvD* 1902b).

By February 1903 rumors appeared frequently about TGO intervening in Broms's distressed financial affairs, and a deal was soon presented to par-

liament. TGO would get preferential traffic rights on the Ofoten line and a commitment to allow 1.5 million tons of iron ore to be exported through it (up from 1.2 million), in addition to a loan of 20 million Swedish crowns, the end of a long-running court case between the state and AGM over ownership of the Gällivare fields, and a commitment that the company would be compensated for any export duties through reduced freight fees. In exchange the state would have a representative on the company's board, the right to purchase shares at par if TGO chose to sell them, and the comfort of knowing that the Norrbotten mines were in Swedish hands. Such was the political power of this final factor that the loan could be justified as a means of preventing TGO from being forced to seek foreign investment (Meinander 1968: 112). Reaction from the press was mixed. The populist *Vårt Land* (hereafter *VL*) worried that increased extraction would mean the ore body was emptied earlier without corresponding benefit to domestic Swedish industry (*VL* 1903a). This was a strong articulation of a conception of iron ore that would prove durable throughout the decade—as a fixed store of value to be released through the process of industry. *StD* argued that having the mines in Swedish hands was the most important thing, and hoped that the government would do what was necessary to ensure it was secured (*StD* 1903). But the liberal *Dagens Nyheter* (hereafter *DN*) argued that Broms had played upon fears of foreign ownership to extract a favorable deal from the state and that TGO had been happy to thereby grab a powerful market position. The conservative-leaning prime minister Erik Gustaf Boström lost the vote convincingly amidst continued debate about whether TGO's ownership could really be considered an effective guarantee against foreign interventions, and rising concerns about whether the exports would remove the raw material for a domestic iron processing industry. Shortly afterwards TGO took over Broms's shares anyway, pleasing those for whom it was a shield defending Swedish interests.

Exports versus Domestic Processing

Why did domestic industry assume such a large role in public debates? Gerard De Geer wrote in 1961 of the iron industry in Bergslagen as “a powerful lever for economic and political advancement” during the early modern period (De Geer 1961: 19). De Geer argued that Swedish iron attained its status partly through ready access to wood for fuel, but also through a centralized administrative structure that prevented uncontrolled mining and processing (De Geer 1961: 22–23). Visions of a thriving future domestic iron industry thus required political will in addition to natural resources—and in the case of Kiruna, also the development of new technological processes.

Unlike ores from Bergslagen or Gällivare, most Kiruna ores were comparatively rich in phosphorus, and hence incompatible with existing industrial facilities in central Sweden. In 1879 the Englishman Sidney Thomas developed a process for working high-phosphorus content iron ore that rapidly came to dominate steelmaking in the Ruhr Valley, where rich coalfields could now make use of the phosphorus-rich ores from the nearby Lorraine, annexed to Germany following the Franco-Prussian War of 1870–1871 (Lynch 2002: 270–271). Boosters of Swedish domestic processing relied on faith that new technological advances would be able to replace coal (which Sweden lacked) with electricity from hydropower (which potentially existed in great quantities in Norrbotten), thus making the Thomas process viable in Swedish conditions. This meant invoking a promise of technological innovation that had not yet come to pass, but which appeared tantalizing given the potential of northern rivers. Faith in technology thus combined with nostalgia for a past golden age to make a new era of prosperity based on domestic iron ore processing seem both tangible and logical.

This historical legacy was complemented by an emerging sense that industrialization had made iron processing the most important index of national strength. Powerful nations processed iron ore; weaker nations exported it. Here the growth of the Ruhr industrial complex and its seemingly insatiable appetite for iron ore became a symbol of German strength—and by extension Swedish weakness. Whether that national strength would necessarily translate to local or regional development was another matter. At the height of debate over the proposed TGO deal in May 1903 the liberal-leaning *Svenska Morgonbladet* (hereafter *SvM*) argued that state intervention in the mines was necessary not only for their value to the national economy, but for their potential to drive Norrbotten's cultural development (*SvM* 1903). On the other hand, argued an unnamed expert in *VL* (1903b), that potential would be lost if the ore were exported without being processed domestically, leaving Norrbotten as a squeezed lemon that would "make us worthy of the fate of Finland" (then part of the Russian Empire). If Germany was the paradigmatic example of how iron had made a modern powerhouse, the cautionary example was Spain. *Värmlands Dagblad*, which covered part of the historical Bergslagen region, was a frequent voice in favor of domestic processing and argued that the region around Bilbao had little to show for its many years of mining as the ores began to run out. Would the same happen in Norrland, thus denying the possibility of a "whole culture" coming into bloom (*Värmlands Dagblad* 1903)? *ST* (1903) captured the essence of the matter by claiming that the iron ore in Kiruna was "a resource for our land's development and for Norrbotten's culture." Domestic iron ore processing thus added value in both financial and cultural terms.

As the TGO takeover alleviated immediate fears of foreign ownership of the ore fields, media attention turned to domestic processing of iron ore as both a means of maximizing economic gain and a symbol of Sweden's status as an industrial nation rather than a resource exporter. Export duties on iron ore had been raised as a means of protecting domestic industry as early as February 1902 (*NDA* 1902*b*; *DN* 1902). Were more of the ore to remain in Sweden the nation's dependence upon imports of certain iron products would be reduced, and Norrbotten's development would be stimulated, argued William Olsson (1903) in *NDA*. Besides, a foreign buyer would lack the patriotic commitment to creating Swedish industry. But while protectionism had many supporters, so too did more liberal economic ideologies whose advocates characterized restraints on trade as outdated. In May 1903 *SvD* criticized the arch-protectionist Per Emil Lithander, who argued strongly for export duties on Kiruna ores, and claimed that the parliament too often allowed itself to be guided by outdated economic principles, or acted without principles at all (*SvD* 1903).

The criticism of Lithander is striking for its foregrounding of economic ideas—and ideas about Sweden's future economy—as the relevant battleground. This was a feature of debates over the Kiruna ores through the early twentieth century. Alfred Elis Törnebohm, head of the Swedish Geological Survey, reduced the prospects of a Norrbotten iron processing industry to a factor of the accessibility of coal and iron. Without readily accessible coal reserves, Kiruna would never become a center for iron production. Törnebohm also observed that about 80 per cent of ores from Kiruna and Luossavaara were exported to Germany, where the implementation of the Thomas process had created a thriving technological system oriented toward precisely the kind of ore that Norrbotten produced (*DN* 1905). A system existed through which ores could be turned into capital through export to a market that through its structural features, was likely to remain both stable and hungry for some time to come.

Törnebohm's optimistic view of the total reserves (793 million tons in Kiruna and Luossavaara) was quickly contested by Hjalmar Sjögren, curator of mineralogy at the Museum of Natural History in Stockholm, who put the figure at closer to 300 million tons. This in turn allowed him to argue that the threat to domestic industry was greater, as the percentage of total ore lost to future domestic industry through present exports was higher. Sjögren held that because iron processing was such a powerful index of national strength, ore exports were a zero-sum transfer of power that gave Sweden's future away, irrespective of the present availability of coal (*StD* 1905*a*). A subsequent pamphlet repeated his claims and equated the present situation to not having a plan for "the housekeeping of the country's pantry"

(*Göteborgs Aftonblad* 1905a). The two men continued to argue. Törnebohm stuck to his original estimates but found common ground with Sjögren on one point: even if Sweden's reserves were greater than he believed, that did not mean they could be "wasted" through excessive exports, suggesting that Törnebohm remained unwilling to entirely abandon dreams of an industrial future for the Kiruna region (Törnebohm 1905).

The frequent calls for export duties in 1905 were linked also to the profits that TGO was starting to make and to broader debates over the merits of free-market capitalism. *StD* (1905b) agreed that export duties could be justified in some circumstances, but failed to see a rationale behind the calls, beyond concern that TGO was making a fortune. Those profits were precisely what led *Göteborgs Handels- och Sjöfartstidning* (1905a; hereafter *GHST*) to suspect that TGO was set to be punished for excessive success. On the other hand, the party organ *Social-Demokraten* (hereafter *SDk*) felt that it was a simple question of economic justice. The state had a right to the profits, as the money flowing from Norrbotten ought to go to the Swedish people and not simply the pockets of capitalists (*SDk* 1905a). The business-oriented *Stockholms Handelstidning* (1905) refuted this claim by asserting that the iron could not be converted into wealth except through exports, and thought it odd that Social Democrat leader Hjalmar Branting (whose byline appeared below many articles on the iron ore question) should want to deny workers their bread. As a parliamentary vote on the question neared, the Norrbotten Chamber of Commerce issued a statement urging the rejection of export duties and pointing to the local economic benefits that the mines had brought (*Nordsvenska Dagbladet* 1905). *SDk* (1905b) reported the visit of a workers delegation from TGO who feared the impact of duties on their livelihoods (although the newspaper continued to be scathing in its attitude to the company and its profits). When the parliament rejected the proposal by a surprisingly decisive margin, newspapers which had pushed for duties depicted the vote as a "scandal" that would ensure the nation's wealth was shoveled into the hands of capitalists and foreigners (*Fäderneslandet* 1905; *Göteborgs Aftonblad* 1905b).

The export duties question reemerged in early 1906 when the Swedish-German trade treaty came up for renegotiation. *DN* claimed in March 1906 that there were by now two clearly identifiable schools of thought on the iron ore question: a protectionist view that wanted ore exports stopped altogether, believing that the value of iron ore could (and should) only be unlocked through its processing; and a more liberal view that regarded the cash from exports as the best means of extracting value from the iron ore as long as there was no domestic industry to take advantage of it (*DN* 1906a). Amidst claims that the threat of German reprisals was overblown, given the

extent of Germany's dependence on ore imports from Sweden, a broader point emerged concerning the wisdom of removing an instrument of policy through a pledge to not impose export duties. This again related to national pride in addition to economics. *Stockholms-Bladet* (1906) saw it as symptomatic of a willingness to accept humiliations, and *SDk* (1906a) regarded it as symbolically important in showing that the Swedish state would not rely on big capital to ensure the welfare of its workers. After much debate a treaty was agreed that precluded export duties while ensuring that the Swedish state held control over the total *amount* of ore exported through the Ofoten line, using this as an alternative means of controlling the flow of iron ore exports.

The role of export duties and freight privileges in the treaty negotiations again affirmed that despite claims to the contrary, instruments of economic policy could never be regarded as apolitical. When *SvD* (1906a) argued that the iron ore question was of “essentially a technical character”—and therefore a simple function of whether domestic processing was feasible or not—it vainly attempted to eliminate “political feelings” from an inherently political debate. From a protectionist perspective sacrificing the right to levy export duties constituted a voluntary renouncement of the path to national greatness, which lay through domestic processing, rather than an expedient way of earning income in the absence of the structural conditions for domestic industry. Such a view located Kiruna's ores within a political and technological system that privileged domestic iron processing as the supreme goal of a modern state, thanks to the presumed link between steel and national strength. Even the right to private property could be legitimately overridden if it meant the stimulation of domestic industry, argued *Stockholms-Bladet* (1906a). Instead of exporting ore because there was no domestic industry to process it, Sweden should put all its efforts towards the technological advancement that would make electrical processing based on hydropower viable (see for instance *SDk* 1906b). *Skånska Aftonbladet* (1906) quoted the Swedish consul in Hamburg as claiming that “ore exports do not befit a civilized nation” in March 1906 as part of a broader attack on laissez-faire economics. A new day was dawning in which the state drove economic development in close concert with the natural sciences.

Because the promise of electrically-driven ore processing proved a powerful resource for opponents of exports, liberal advocates of exports increasingly emphasized arguments that de-privileged the unique position of domestic industry to extract value from iron ore. In February 1906 the journalist and inventor Hjalmar Cassel (no relation to Sir Ernest) argued that natural resources only possessed value when circumstances made them useful, thus denying any natural law dictating that domestic processing was

always the optimal use of the ore. He bluntly reduced the whole question to “Can we make steel cheaply enough to compete on the world market?” (H. Cassel 1906*a*). If electricity proved a viable substitute for coal in large-scale processing, then Sweden would get a booming domestic industry, but not necessarily concentrated in Norrbotten. Instead he proposed concentration in existing centres as a wise strategy for a demographically small country (H. Cassel 1906*b*). This in turn rested on a railway linking the north to the south and center of the country, the “inland line” project. If cheap coal could be imported to the west coast of Sweden, a line from the north bearing iron ore could meet it at a point further south (*StB* 1906*c*). Even then the phosphorus-rich composition of most Kiruna ores meant they could not be used within existing Swedish plants (the only exception being the so-called “A-grade” ores). This distinction gained power in early 1906 as part of a new position that distinguished between ores that could not be processed within existing industrial structures—but which could be converted into capital through export—and ores that could be processed domestically (*DN* 1906*b*). Shifting the field of debate from whether exports were *ever* an appropriate use of ores to the circumstances under which they could be exported marked an important departure. Domestic industry and exports were now placed upon a continuum rather than as exclusionary positions.

In May 1906 a new deal was negotiated between TGO and the state. The state would obtain half the shares in LKAB with an option to purchase the remainder after 25 years or take them over after 50, along with the right to restrict exports of ore that could be processed within Sweden. TGO would get certainty over freight rates for up to fifty years and an end to the legal cloud that still hung over its Gällivare operations. The deal was structured so that four-fifths of the estimated ore reserves in Kiruna would remain at the end of the fifty years, along with two-thirds of those in Gällivare. Opinions were predictably divided, but the differences were now of degree as much as kind. *SDk* (1906*c*) felt the deal was weighted in favor of TGO due to the long time period, while *VL* (1906*a*) worried about whether the capital earned through exports would be invested in domestic processing. Even organs such as *GHST* that could hardly be considered protectionist seemed comfortable with state control as a hedge against foreign interests, and the newspaper judged the bill's ultimate narrow rejection more as an invitation to present a revised bill than a repudiation of the deal altogether (*GHST* 1906).

In the wake of the 1906 rejection *GA* (1906) felt that the iron ore question was becoming sufficiently complex that the voices of experts were needed—but lamented that such experts tended not to write newspaper articles. That statement would soon be disproven. Most notably, the econ-

omist Gustav Cassel, professor at Stockholm University and brother of Hjalmar, turned his attention to the Norrbotten iron ore fields from 1906 onwards. In his first major intervention, Cassel (1906a) echoed his brother's position with a more academic economic framing. Ore must be treated as a commodity capable of bringing in capital through exports and thus stimulating the domestic economy, rather than the stimulation necessarily occurring through the domestic processing of the ore (which could only be established through the application of capital). Furthermore, compound interest would accrue on capital but not on the ores themselves as long as they remained in the ground. The greatest barrier to Sweden staying in touch with other modern countries was not lack of domestic industry, but rather the “woefully” low level of technical and economic expertise that the parliament applied to the iron ore question and the low level of public awareness of economic principles. Soon afterwards Gustav Cassel (1906b) introduced a new argument: turning the ore into capital through exports would allow for more spending on national defence, whereas leaving it in the ground presented a prize for an invading power.

Gustav Cassel's argument about capital for domestic processing accorded with an increasing consensus that exports were a means through which domestic industry could be advanced rather than being its zero-sum antithesis, provided the technology and logistical infrastructure were in place (see for instance *NDA* 1906). The pejorative term *rofbrytning* (extraction prefaced by a word describing robbery) had by now become common on both the social democratic left and protectionist right, particularly when linked to the profits of TGO (*SDk* 1906d, *VL* 1906b, *SDk* 1906e). This was a further sign that the debate was becoming more about *how much* rather than *whether* to export, and who should benefit. Opinions such as the protectionist critique in *Skaraborgs Läns Tidning* (1906a), which crudely claimed that natural resource exports were placing Sweden on a par with the world's “half-civilized” countries, were now noticeably away from the mainstream.³

By early October a distinct sense can be discerned in the newspaper landscape that serious investigation of domestic processing combined with continued exports was desirable, with TGO as at worst a necessary evil. The opening of a small electrical ironworks at Karlsvik added to the sense that domestic industry was a realistic if as yet not fully realized possibility (*ST* 1906). That consensus appeared again when the Swedish newspapers unanimously criticized the German *Kölnische-Zeitung's* complaint that by restricting exports the Swedish government was violating the terms of the trade treaty, an argument that the German government also quickly disavowed (for a particularly good example see *DN* 1906c). The consensus soon faded, however, as more identifiably ideological divisions over the role of

private industry and the rights of the state to intervene reemerged (*SvD* 1906*b*, *Aftonbladet* 1906, *Vårt Land* 1906*c*). This now included more frequent analogies to forestry management—including the landmark 1903 law that categorized forests as renewable but finite resources (Nyland 2009)—a theme that until now had largely remained separate from the iron ore question. Excess timber could be turned into charcoal and used to fuel iron ore processing, transported by railways that functioned as arteries for new cultural and economic life rather than funnels for exports (*SvD* 1906*c*). Reports from Karlsvik were also encouraging. By December 1906 it was claimed to be producing 40 tons of pig iron a day from Malmberget ores (*SvD* 1906*d*).

Such was the renewed interest in the ore question that from December 1906 *GHST* ran a series of commentaries from leading figures in politics, industry, and science on the matter. Most contributors were open to state oversight or ownership, and to exports at present or greater levels. The conservative parliamentarian Rudolf Kjellén argued that the state ought to buy the iron ore fields in a straight transaction and then use export revenues to finance the new inland line. In this manner exports would open up Norrbotten for development and facilitate Sweden's dreamed-of industrial age (Kjellén 1906). The impact of the mines on the community of Kiruna was such that removing its lifeblood of exports in favor of an uncertain industrial future constituted an unacceptable risk, claimed the Liberal Georg Kronlund (1907). Even the arch-protectionist Per Emil Lithander (1907) now accepted the value of exports, while remaining insistent that the state not relinquish its right to control freight rates or levy export duties (the latter being a subject almost no one else still considered relevant). Summarizing the fifty-four responses, *GHST* saw the key question as being how the ore fields could benefit the nation and its economic life, with state ownership favored by a majority—though certainly not all—and an agreement with TGO almost unanimously considered to be essential (*GHST* 1907*a*).

The Grand Bargain of 1907 and its Aftermath

In late March 1907 the framework of a new deal became public. The state would be part owner of LKAB (into which a number of mines would be incorporated), with a shorter period to potential full control over the company (25 or 35 years), and formal guarantees that usable ore would be reserved for domestic industry. The deal met wide approval. *SvD* (1907*a*) argued that it paid appropriate attention to the national economic dimension—supporting a strong domestic industry—without getting sidetracked by the state financial dimension (raising revenue through duties and charges). *Helsingborgs-Posten* (1907) noted a drift away from extreme positions of state socialism and private ownership: as the *GHST* articles had demonstrated, it was

possible to at once want the reassuring hand of the state on a key national resource and to reward the patriotic and brave risk that TGO had taken in assuming control of an uncertain proposition and turning it into a financial success. Even *SDk* (1907*a*) expressed positivity, its main concern being the exact price the state would have to pay. The railway engineer and upper chamber parliamentarian Claes Adelsköld (1907) published a 139-page pamphlet arguing for stronger state control based on a more pessimistic assessment of the Kiruna reserves, which *NDA* felt barely worth discussing due to its obviously poor prospects for success, although it almost condescendingly noted that the author's "patriotism is undoubtedly burning and true" (*NDA* 1907*a*). More attention went to William Olsson, who decried the deal as a socialist confiscation in a letter to *DN* (Olsson 1907), but the editorial comment beneath his letter was scathing. Even more conservative organs like *NDA* (1907*b*) regarded Olsson's intervention as at best unhelpful.

Did the debate and subsequent decision bear out Gustav Cassel's insistence (1907) that the ore question was one for economics, based on prudent and rational analysis rather than a particular article of ideological faith? The final vote certainly confused ideological boundaries, with *GHST* (1907*b*) noting a number of odd bedfellows, including the conservatives Kjellén and Ernst Lindblad making common cause with the Social Democrat Branting. Lindblad echoed Prime Minister Arvid Lindman in saying that the vote had indeed been about concluding a business transaction rather than debating state socialism or liberal economic theories (*GHST* 1907*b*). A correspondent with the pseudonym "Impartial" similarly insisted that the iron ore question ought to be considered on business principles (*Opartisk* 1907).

Attention now turned to what the state ought to do with its projected windfall. *SDk* (1907*b*) predictably warned against it ending up in the pockets of "capitalists and profiteers." The astronomer and popular science writer Nils V.E. Nordenmark—who not coincidentally also worked in the insurance industry—argued in *SvD* that a national social insurance scheme along Bismarckian lines would best ensure industrial growth (Nordenmark 1907). There was little enthusiasm for the inland line, which was increasingly discussed in cost-benefit terms within the context of existing transport arteries (see for instance *NDA* 1907*c*). Hjalmar Cassel was particularly critical, regarding the general idea as sound (and patriotic) but arguing that its advocates were blindly keen to start work in defiance of obvious geographical difficulties with the route and an almost complete lack of economic analysis of its prospects. A serious and "impartial" investigation was needed (H. Cassel 1907). *SvD* (1907*c*) worried about over-reliance on the harbor at Narvik, though it could see no firm reason why Norway would create difficulties. Others were less certain. *VL* (1907) cautioned against any deal without an

assurance from Norway that it would not interfere. The language of expertise, impartiality, and rationality also suffused an editorial in *SvD* (1907d) on the need to assess the nation's mineral stocks, another prerequisite for informed decision-making.

There was also continued interest in how the state should support domestic iron processing, and the extent to which exports were a means to this ultimately superior end. Voices such as *VL*'s continued to use the term *rofbruk* to describe exports that did not generate capital benefiting domestic industry. In a February 1908 editorial the newspaper glorified the role of the German and Japanese states in actively making the future through industry rather than sitting back and waiting for events to unfold, positioning them as the vanguard of a new way of economic thinking that held the keys to future power (*VL* 1908). This resonated with a wider sentiment that equated industrial development to power and civilization, and in which the failure of Spain to develop a significant domestic industry on the back of its iron ore exports could be considered a frightening cautionary tale (see for instance *NDA* 1908). On the other hand Hjalmar Cassel (1908) pointed to the Dunderland Valley of northern Norway, where a promising iron ore field had turned into a fiasco thanks to the ore not being amenable to processing through the Edison separation method. By late August 1908 *SvD* could dissect the "tragedy" of Dunderland as an example of how even a prospect started in the most auspicious circumstances, with the world's best inventors and specialists on hand, and plenty of capital, could still fail (*SvD* 1908).

Yet the link between domestic processing and national strength remained strong. In early 1909 Hjalmar Cassel noted that a visiting Canadian expert thought electrical processing would be the greatest breakthrough since the Bessemer process, leading some countries to ascend from their perch in the hierarchy of iron powers and others to fall as the value of ores shifted accordingly, though he again warned that the technology's development remained the decisive factor (H. Cassel 1909). Twelve months later, after economic strife that included a month-long general strike and subsequent further industrial action in Kiruna, *StD* (1910) continued to place great faith in hydropower developments in Norrland producing electricity that could drive iron ore processing and lead to great developments in national-economic perspective.

As the clouds of war gathered over Europe the ore in Norrbotten's mountains became inscribed with a new set of fears. *NT* (1911) suspected that German concerns about the reliability of Swedish iron ore supplies were a factor in the Agadir Crisis, and when the crisis was resolved *Göteborgs Morgonpost* (1911) attributed the negative German press response to Germany's not gaining access to Moroccan iron ore reserves. In addition to

their importance in the eyes of foreign powers, the Norrbotten mines possessed significance within the growing clamor for rearmament, symbolized by the public campaigns to build new F-class destroyers (popularly known as F-boats). In February 1912 Gustav Cassel argued that the security of the state owning the Norrbotten iron ore fields would be worthless if it could not defend them, and that revenue from iron ore exports could provide all the money needed for Sweden to build up its national defence (G. Cassel 1912*a*). Eli Heckscher, the liberal economist whose earlier study had questioned the link between railways and development in Norrland (Heckscher 1907), agreed enthusiastically and pointed to the example of Falun's copper deposits financing the Thirty Years' War (Heckscher 1912). At the same time Fredrik Svenonius, a geologist rather than an economist and an avowed believer in the industrial flowering of Norrland, pointed to Morocco's fate and linked it to its status as a resource exporter (although he still accepted that some exports were allowable, provided they were regulated in proportion to domestic production) (Svenonius 1912). The greatest threat to Sweden's independence came from the unpatriotic sacrifice of its industrial future.

The renewed importance of the mines within a defence context prompted *SvD* to ask a series of experts whether iron ore exports should be increased (and if so, to what ends that money should be put), along with how exports could most usefully benefit Swedish shipping. The results were almost unanimous in desiring greater exports, but differed when it came to expenditure. Forestry, hydropower, railways, paying off the national debt, and stimulating domestic ironworks were all mentioned in addition to defence. Olof Bergqvist, consecrated in 1904 as the first Bishop of Luleå, was one of the few voices of caution. His argument that production should be kept at a moderate level in order to extend the life of the mine was predicated not on maximizing the value of the capital tied up in the ores—the Cassel-Heckscher position—or even the need to preserve ores for future industry, but rather on the value of Kiruna persisting as a viable community (Bergqvist 1912). One might fairly wonder whether *SvD*'s experts were a representative sample of opinion, given the dissenting voices that appeared in other forums. *Vänsterman* ['Man of the Left'], writing in *DN*, failed to see how warships would protect the inland Kiruna fields, and noted that defence speculation had the wearily inevitable effect of raising the price of TGO shares. Export of natural resources was analogous to emigration—another grave concern at the time—as it removed the basis for future productive labor (Vänsterman 1912). *SDk* (1912) similarly warned against raising exports to fulfill particular pet projects, be they F-boats or hydropower.

One of the consequences of this debate was to focus attention on the claims to authority made by the academic economists, principally Gustav

Cassel. In the wake of criticism from newspapers including *NDA* and *DN* Cassel denied that opposition to increased exports from Norrbotten was tied to a particular party position, instead attributing it to a pervasive petit-bourgeois sentiment that infected all parties to some degree. Increased exports were an obviously good idea that the Swedish people ought to accept as a necessity, and the government's calls for more defence spending ought to be met by the resources to hand. He further suggested that it was a strange kind of democracy that refused to alleviate its own burdens in order to possibly benefit generations several hundred years in the future (G. Cassel 1912*b*). Cassel's insistence that his position was objectively true must be considered a rhetorical device, no more a product of his professional training than the geologist Arvid Högbom's insistence that the Kiruna ores should be extracted as quickly as possible to prevent their seizure by a resource-hungry Great Power (Högbom 1912). The patronizing tone would be unlikely to appeal to modern readers. But it accords with the role he adopted as a popularizer and advocate of economic theory, which earned him the title "tutor of the people" from his colleague Sven Brisman (Magnusson 2006: 95).

In a sense Cassel's preaching was also unnecessary, because much of his audience was already converted. A set of opinions solicited by *Aftonbladet* in February and March 1913 once again produced consensus that exports should be raised. In its summary the newspaper observed a growing sense that the restriction of iron ore exports while the national debt grew was clearly a bad idea in national economic terms. Iron ore was equated more to capital than to steel. An editorial in *Östgöten* (1913) plainly stated that with the future looking uncertain (in terms of both the Swedish economy and the international political scene), it made sense to look to the ore fields to fund needed developments within Sweden.

In April 1913 the Liberal government of Karl Staaff placed a motion before parliament to fund a new pension system through increased export revenues. Amid positive coverage from across the spectrum of newspapers, only a few complaints were raised as the motion passed with ease. The philologist and conservative parliamentarian Vilhelm Lundström (1913) argued in *NT* that the public finances were now hopelessly entwined with the future profits of the iron ore fields, which lay in a difficult-to-defend borderland. Lundström's complaint reflected a deeper political difference with the Staaff government over defence spending—Lundström wanted more, Staaff notoriously was ambivalent—and ultimately Staaff's government resigned in February 1914 after a march on Stockholm demanding greater investment in national defence (Lindblad 2015). But the exports continued. They had clearly become the dominant vehicle through which political goals could be attained.

By and large, the Swedish public had learned to love iron ore exports. As estimates of the Kiruna reserves grew and the near-term likelihood of processing based on hydropower remained at best unclear, the visceral objection to exports based on equating ironworks to progress faded, and the capital that flowed in as the ore flowed out from Narvik and Luleå became a resource for visions of increased government spending. Iron remained a symbol of industrial power, and its processing remained an enticing dream, but the capital it brought to Sweden was increasingly recognized as a source of wealth that could not be ignored.

Conclusions

To celebrate its hundredth birthday, LKAB commissioned a history that appeared in 1990 under the unimaginative title *LKAB 100 år* ['LKAB 100 years']—but with the rather more illuminating words “100 years for Sweden” at the top of the front cover. The implication is that the Norrbotten mining giant, fully state-owned since 1957, has strived throughout its history to contribute to the greater national good. The company is (and has been) an engine for the betterment of Sweden. Ultimately this came through exports. A large hydropower facility at Porjus was indeed built, not much more than 100 kilometres from Kiruna, but the ironworks built in its footprint never met with great success, even though the power it produced was important for allowing LKAB to expand extraction activities (Hansson 1994).

At a time when the conflation of national strength with heavy industry remains a potent political resource—consider recent attempts in the United States to use tariffs to maintain a domestic steel industry—examining how natural resources are enrolled in visions of a national future strikes me as being more important than ever. The rigid equation of domestic industry with the one true path to national greatness holds appeal in the early twenty-first-century United States because the lived experience of industrial prosperity remains in recent memory. But analogies between past and present are inevitably undermined by changes in the historical context. Bergslagen's role in Sweden's Great Power era was sometimes mobilized a century ago, but there were important differences between the past and the present (including the geological differences between ores from northern and central Sweden, and replacement of wood with coal as the primary fuel for iron processing). Nor could assessments of current and future technology be reduced to functions of knowledge about the geological properties of the ore and the engineering limits on its processing. Sverker Sörlin has argued persuasively that optimistic visions of Norrland as an engine of Swedish industrialization in the early twentieth century rested heavily on faith in a future modernization. Iron, hydropower, forestry, and railways could in some

combination produce the industry that provided such a potent yardstick of national strength. Rather than attempting to revive conditions from the past, or stave off unwanted change, advocates of northern industrial development invoked the promise of the new and the yet-to-come.

Nevertheless, the experiences and conditions of the present are essential components of attempts to make future developments seem both plausible and desirable. Frank Sejersen has pointed to the power of what he terms “proxy-futures” to represent a future grounded in the lived experience of the presence, for instance through invocation of the economic and social relations surrounding an aluminium smelter in Iceland as a proxy-future for a similar development in Greenland, and thus to shape public opinion (Sejersen 2015). His description of a proxy-future as “a juxtaposition of the wanted and the expected, framed in the form of something that is realizable” (Sejersen 2015: 76) offers hints as to why advocates of domestic processing could never bridge the gap between projection and practice. Sweden’s lack of coal precluded a replication of the Ruhr Valley. Substituting electricity for coal remained largely hypothetical. And increasingly optimistic assessments of the ore reserves undermined arguments that exports in the present would necessarily preclude domestic industry in the future. But perhaps most importantly, the capital generated from ore exports constituted a flexible resource that actors across the political spectrum could enroll in their visions of a bright national future, supporting everything from welfare to defence spending to infrastructure. Through spending in the present that future could be made to seem tangible in a way that an industrial boom in the north could not, aided by the existence of relevant infrastructure from railways to export contracts. The path was not found. It was chosen.

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NOTES

- ¹ At the turn of the twentieth century the older spelling *Gellivare* was still predominant, whereas today the name of the town is almost always spelled *Gällivare*.
- ² The cuttings are held in the TGO collection, catalogue numbers 1063–1067.
- ³ That newspaper’s political position was neatly captured by a subsequent article that depicted “the hydra of socialism” as the primary obstacle to Sweden’s national-economic competitiveness with other developed countries (*Tidning för Skaraborgs Län* 1906b).

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